



**Winner of the 2012
NADCA International
Die Casting Competition
for Mg Die Casting—
Over .5 lb.: Honorable Mention**

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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Light weight, absolute ruggedness, 100% waterproof, tightly-controlled thin walls down to 0.039 in. (1.0 mm)

CWM Hot-Chamber Mg Die Casting Delivers the Exacting Housing Specs for Leupold's Rugged Spotting Scope

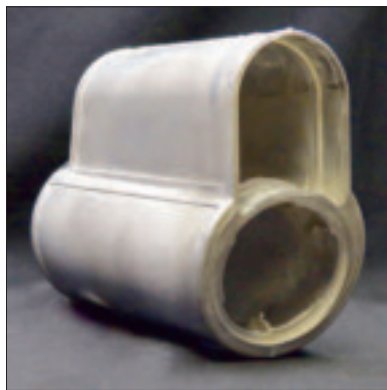
This Leupold® spotting scope, with superior optics for sharpest, brightest viewing by serious hunters at distances greater than possible with premium binoculars, has impressive housing specifications: lightweight portability, absolute ruggedness and 100% waterproof construction—nitrogen filled and guaranteed for life. The central housing, produced by Chicago White Metal Casting as a hot-chamber magnesium high-precision die casting, weighs just 8.0 oz. (226.8 gm) with thin-wall sections as narrow as 0.039 in. (1.0 mm).

The instrument designers at Leupold & Stevens, one of the world's leading producers of high-performance sports optics, selected custom die casting for production of the central housing for their Golden Ring high-definition spotting scope.

This tactical scope was designed to provide the clearest, brightest optics under adverse visibility, carrying a full lifetime guarantee. Its housing must precisely support the complex geometry required for critical alignment of internal mirrors over a tightly controlled optic path.

Part Integrity and Exacting Features

Intended for convenient use under the most difficult outdoor conditions, compactness and light weight were important, at the same time outstanding ruggedness and absolute waterproof integrity was essential—



Compact spotting scope's central housing (left), die cast in AZ91D magnesium alloy, weighs 8 oz. with selected wall sections to 0.039 in., as-cast. Completed scope assembly shown below.



the company's proprietary processing would fill each scope with nitrogen prior to inspection and testing.

CWM Hot-Chamber Mag Die Casting

Chicago White Metal Casting employed MagmaSoft® process flow simulations to optimize the critical design of the die casting die prior to die construction.

These software iterations, along with CWM's precision tool construction standards, assured that the die's automated actions on both sides of the die would maintain the critical alignment of features

required in the housing. This pre-planning optimized final as-cast production of the component's tight tolerances required for additional highly precise post-casting machining.

Magnesium AZ91D alloy was used for its light weight and high strength-to-weight ratio as well as for its optimized thin-wall die casting production with the rapid cycling hot-chamber process.

The compact central housing unit weighs only 8.0 oz. (226.8 gm). Wall sections were produced as-cast as low as 0.039 in. (1.0 mm).

For more on CWM's high-tech die casting capabilities, see CWM's website "Capabilities" section. Or contact your CWM Regional Sales Representative.