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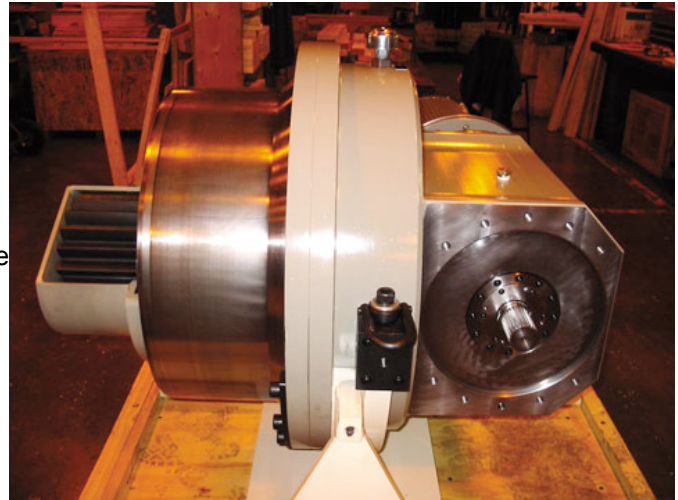
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## Excel Producing Gearbox for Navy Warship Gun System

Excel Gear, Inc., of Roscoe, Illinois, has announced its transition from the prototype to the production stage on the first order of its 36:1 ratio gearboxes, specifically designed to assist positioning of the 78-ton gun turrets utilized in the Advanced Gun System (AGS) program. BAE Systems of Minneapolis, Minnesota—the Excel customer for this project—recently approved the prototypes on these 36:1 ratio gearboxes. BAE Systems is the primary contractor on the AGS, designed for use on the DDG 1000 destroyers used to support U.S. Navy and Marine Corps expeditionary and joint operation in the littorals and deep inland.

BAE Systems developed the AGS as a complete weapons delivery system, utilizing extensive rapid and virtual prototyping for the gun, magazine, ammunitions, and support subsystems integration. The gearboxes built by Excel Gear are vital components in the positioning execution of movements on the gun turret. Overall, each gearbox is 46" long, 36" diameter and weighs 3,740 lbs. The peak output torque capacity of the gearbox is 26,500 ft. lbs.

The AGS is a 155mm gun weapon system, designed for installation on the Navy's DDG 1000 class of land-attack destroyers. The AGS produces high-volume, sustainable gunfire of guided or unguided projectiles at targets over 70 nautical miles. This system is capable of firing 12 rounds per minute from a fully automated magazine, up to 600 rounds. The 155mm rounds are approximately 6.1 inches in diameter.



Excel Gear was responsible for the complete design and prototyping of the gearbox and utilized its full CAD, finite element analysis, and manufacturing facilities to produce a pair of prototypes for evaluation and performance testing at BAE Systems, prior to release of the production order. According to N.K. Chinnusamy, president of Excel Gear, "This achievement marks a very important milestone in the history of our company and we all worked very diligently as a team to attain this business and see its successful execution. Everyone at Excel Gear is proud to be a part of the AGS program."

In operation, the Excel gearbox assists with the rotary and vertical positioning of the AGS turret. Extensive testing on the gearbox prototypes were performed at both Excel and BAE Systems to validate the specifications. In detailing the challenge of limiting gear backlash in this critical application, Chinnusamy explains, "Backlash in this case is controlled by precision grinding gears to close tolerance and also grinding splines to fit master gages. The gearbox had to meet very precise backlash, lost motion and stiffness criteria, and our two prototype gearboxes met all the criteria without any exceptions."

For more information call (815) 623-3414, send e-mail to [sales@excelgear.com](mailto:sales@excelgear.com), or go to [www.excelgear.com](http://www.excelgear.com). Gear Solutions is a trademark of Media Solutions, Inc, copyright 2002-2009. Gear Solutions and all contents are