



METAL POWDER INDUSTRIES FEDERATION

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NEWS

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3 AFT

Outstanding Powder Metallurgy Parts Acknowledged

Advanced Forming Technology, An ARCMIM Company, Longmont, Colorado, was awarded the Grand Prize in the Hand Tools/Recreation Category for a breech block made for **Smith & Wesson**. Fabricated via metal injection molding (MIM) from 4605 low-alloy steel, the block is inserted into the slide body of a .22 caliber pistol, creating the breech face and other critical functions. The unique geometry of the part—composed of two large masses separated by a channel running axially down the length of the part, creating two distinct bodies connected by very small ribs—presented a significant challenge to keeping the part together during sintering and maintaining tight final tolerances. The component was manufactured 100% to print with no secondary machining operations; it is heat treated to a hardness range of 37–45 HRC, receives a black oxide finish, and then undergoes a coining operation to qualify the width. The fabricator believes this is the first breech block fabricated using MIM, an indication that it is possible to expand the application boundaries for MIM even in a mature arena such as firearms.

Winners of the 2015 Powder Metallurgy Design Excellence Awards Competition, sponsored by the Metal Powder Industries Federation (an international trade association for the metal powder producing and consuming industries), were announced at the POWDERMET2015 International Conference on Powder Metallurgy & Particulate Materials. Receiving grand prizes and awards of distinction, the winning parts are outstanding examples of powder metallurgy's (PM) precision, performance, complexity, economy, innovation, and sustainability. The winning parts show how customers from around the world are taking advantage of PM's remarkable design advantages.

MIM is one of the PM-based technologies, that forms metal powders into precision components used in applications such as auto engines and transmissions, hardware, industrial machinery, sporting goods, defense, and firearms.

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Editor's note: For further details contact James Dale at MPIF (609-452-7700 / jdale@mpif.org).

*Advancing Powder Metallurgy
& Particulate Materials Worldwide*

A FEDERATION OF THESE TRADE ASSOCIATIONS:
POWDER METALLURGY PARTS ASSOCIATION
METAL POWDER PRODUCERS ASSOCIATION
POWDER METALLURGY EQUIPMENT ASSOCIATION
METAL INJECTION MOLDING ASSOCIATION
REFRACTORY METALS ASSOCIATION
ISOSTATIC PRESSING ASSOCIATION

Digital photos available contact dschember@mpif.org



Pistol Breech Block

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