

# Thread Forming in Magnesium & Other High-Performance Applications

Mark Quebbeman, Vice President Sales/Marketing  
Semblex Corporation  
www.semblex.com

Standard thread-forming fasteners can easily exceed the ductility limits of low-ductile materials, resulting in thread damage and excess debris. However, Mag-Form® fasteners are specifically designed to eliminate tapping operations while forming strong threads in conventional magnesium die castings and similar materials with minimal debris generation and good serviceability.

Mag-Form thread-forming fasteners feature a broader flank angle than the 60° flank angle found on most standard thread-forming fasteners. Mag-Form fasteners feature a compressive action when they are driven making them ideal for use in magnesium.

And unlike standard thread-forming fasteners on the market, Mag-Form fasteners allow multiple removals and reinsertions.

As a licensee of the Mag-Form screw, **Semblex Corporation**, located in Elmhurst, IL, USA, provides these fasteners in sizes of MG1.6 to MG12 in wide-space thread designs with broad flank angles. These fasteners can be used with any external or internal head designs and with all drive systems including the TORX PLUS® Drive.

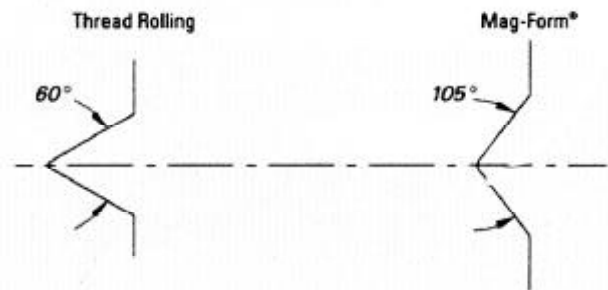
## Typical Applications

Mag-Form fasteners can be effectively used in a wide range of automotive magnesium die-casting applications including engines and transmissions, mirrors, pedal brackets and other components and assemblies.

Because they produce minimal debris during installation, these fasteners offer an optimal solution for critical automotive applications such as steering components and airbag assemblies.

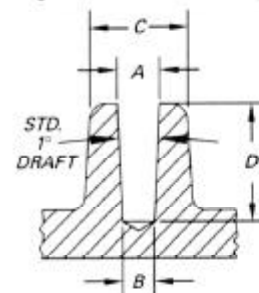
Mag-Form fasteners are also ideal for use in small engines, power tools, lawn and garden equipment, electronics, cellular telephones and computers.

The Mag-Form® thread-forming fastener features a broad flank angle that provides a compressive action when the fastener is driven. This results in strong threads with minimal debris generated.



Standard 60° flank angle (above left) on conventional thread-forming fasteners could exceed the ductility limit of the material into which they are installed, causing damage to the formed threads. The broader flank angle of the Mag-Form® fastener (above right) allows ideal use in low-ductile materials such as magnesium.

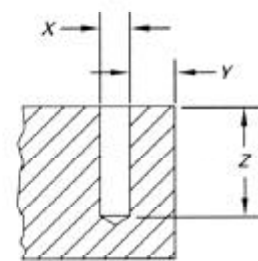
Mag-Form® Cored Hole Casting



Cored Hole Casting:

A = Hole Diameter (top)  
B = Hole Diameter (bottom)  
C = Boss Diameter  
D = Core Hole Depth

Mag-Form® Drilled Hole Casting



Drilled Hole:

X = Hole Diameter  
Y = Distance to Edge  
Z = Through Hole Depth

**Minimum engagement length of full threads is generally 2 x basic screw diameter; Recommended engagement length does not include lead threads (2 pitch ref.); Typical hole engagement is 65% to 70%.**



**Mag-Form® fasteners are ideal for use in steering components & airbag modules.**