



# Molded Inserts in Aluminum Castings

**BACKGROUND & APPLICATIONS:** Similar to the plastic injection industry, we are able to cast inserts of all shape, sizes, and materials into our Permanent Mold Aluminum Castings. This technology is most commonly used to cast threaded brass inserts in place of drilled/tapped holes, the main advantage being that brass thread is stronger and more wear-resistant when compared to aluminum. Also, if your tapped holes are currently heli-coiled, then additional savings can be realized by using steel or stainless steel inserts, *thereby eliminating the need to heli-coil!*



**LOCKING MECHANICS:** The critical feature of our insert design is a coarse knurl around the OD (Fig. 1). This coarse knurl is actually what enables the insert to lock into place. Specifically, the molten aluminum flows into every nook and cranny around the insert and then freezes, thereby permanently locking the insert into position (Fig. 2). To 'jack' the insert out of the casting would at a minimum require shearing the aluminum all around the insert. In other words, the casting would literally have to break for the insert to fall out!

**VERSATILITY:** In addition to threaded inserts, we are capable of casting inserts of just about any size, shape, or complexity. For example, a high stress area can be reinforced with a steel insert while the rest of the part remains lightweight aluminum. This technique minimizes the overall part's weight while maximizing strength and impact resistance where needed most.

**SUMMARY:** The application of molded inserts in aluminum castings is virtually endless and is limited only by the design engineer's imagination. In summary, molded inserts can be both a powerful engineering advantage as well as a potent cost benefit. We invite you to challenge us with your ideas.

## **CONTACT GUPTA PERMOLD:**

If you would require more information on our molded insert capability, please contact us. Also please reference the inside of our brochures which show some examples of various molded insert applications.

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Figure 1

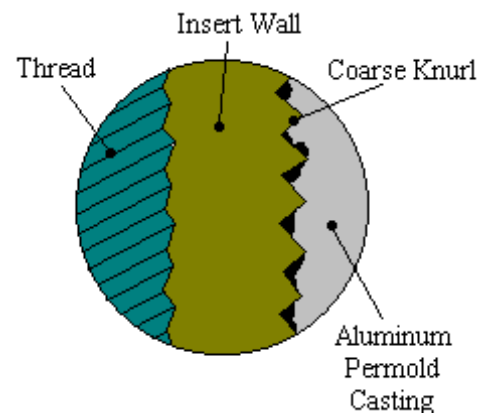


Figure 2

***Gain the Advantage.™***

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