



**GUPTA
PERMOLD
CORPORATION**

BETTER CASTING AT LESSER COST.

CAST-IN INSERTS

Part Name:
*Speed Sensor Bearing Cap and
Front End Cap*

Competing Process:
Sand Casting, Ductile Iron Casting

Why Our Permold Wins: One of the most unique advantages of our Permanent Mold process is the ability to cast-in inserts. As you can see, the speed sensor bearing cap is cast with a stainless steel insert to provide an extra-hard surface while the front end cap is cast with four fully threaded brass inserts to provide durable long-lasting threads. In high-volume situations, cast-in threaded inserts are sometimes even less expensive than drilling or tapping. Either way, cast-in inserts are a very potent cost-saving technique available only through Gupta Permold.

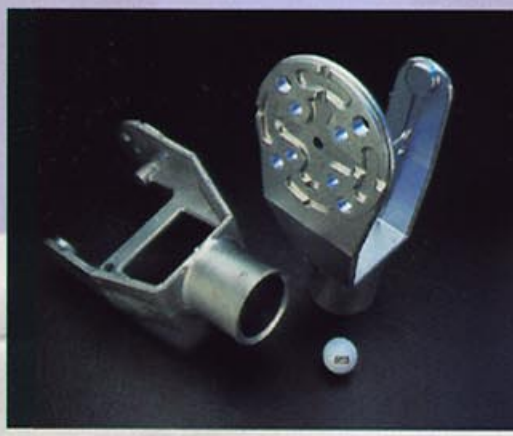


COMPLEX SHAPES

Part Name:
Blade Hinge

Competing Process:
Sand Casting

Why Our Permold Wins: Our molds are machined out of blocks of special steel. As you can see in the blade hinge casting, complex shapes with thin walls can be cast using ingenious coring techniques so no machining is needed. In some cases it is even possible to cast undercuts. Fully machined cavities, intricate coring techniques, and state-of-the-art molding make casting aluminum parts of complex shapes and contours not only a plausible task, but a routine one.



FLEXIBLE QUANTITY

Part Name:
Double Elbow and Handwheel

Competing Process: *Sand Casting,
Die Casting*

Why Our Permold Wins: Another way Gupta Permold can meet your most demanding requirements is with flexible quantity. The activity of the double elbow casting is less than 250 pieces per year while that of the handwheel is more than 90,000 pieces per year. Both are possible due to our revolutionary mold designs which balance tooling costs and piece prices. Our mold makers have turned full production Permanent Mold tooling around in less than four weeks! Our Rush Order programs can have castings at your door in five working days. Flexibility is another way we provide first class service.



CLOSE TOLERANCE

Part Name:
Gear Case Cover

Competing Process:
Stamping Machined

Why Our Permold Wins: The gear case cover was previously made by machining a steel stamping. All holes had to be drilled and mating surface machined, making the cost of the finished part unbearably high. The customer came to us and gave us this mission: reduce the cost without compromising quality. We did exactly that. By utilizing state-of-the-art tooling and equipment which provided negligible dimensional variance from piece to piece, we were able to cast all thirty of the holes to their true position and size and cast the mating surface smooth and flat—all with 100% repeatability. Mission accomplished!



CUSTOMER SATISFACTION ALWAYS GUARANTEED

LESS MACHINING

Part Name:
Cable Drum

Competing Process: *Machined
Sand Casting*

Why Our Permold Wins: The continuous fine groove on the OD of the cable drum was originally planned to be machined by the customer. When we proposed casting the full groove, the customer was skeptical. However, when he saw the prototypes he was very pleasantly surprised and was able to use the as-cast groove right into his assembly, saving a staggering amount of money. Eliminating machining, even in the most demanding applications, is how we can provide value beyond the dollar figures.



LOW COST

Part Name:
*Knuckle-Head
Assembly*

Competing Process:
*Sand Casting, Precision Casting,
Lost Foam, Shell Molding*

Why Our Permold Wins: Worm gear, bracket and housing castings comprise the knuckle-head assembly which is the heart of a bull float. All features are used as-cast including the hob sprocket on the bracket and the double helix on the worm gear. Because our customer was able to use these parts as-cast, they realized phenomenal savings from the elimination of machining. Our firm belief in "Design for Manufacture" resulted in proprietary mold designs that cost a little more than \$11,000 combined. Better than that, the combined piece price is less than \$20 per knuckle head. Globally competitive pricing is just another way Gupta Permold offers you the competitive advantage.



HIGH STRENGTH

Part Name:
Tach End Bell

Competing Process:
Sand Casting

Why Our Permold Wins: The tach end bell casting is used in a servomotor assembly which is UL rated Explosion Proof. In this case, high strength is not a luxury, it is an absolute necessity. By precisely controlling the molding process to provide close to near-perfect directional solidification, shrink porosity is eliminated. Spot chilling and forced cooling produces a fine grain structure that results in mechanical properties that top the charts: a high-strength aluminum casting that is not brittle. In addition, this part was cast in aluminum with an iron bushing placed at the center to give it the strength of iron without the corresponding weight, increasing the value of our customer's product.



HIGH QUALITY

Part Name:
Gear Cases

Competing Process:
*Sand Casting, Precision Casting,
Lost Foam*

Why Our Permold Wins: Consistent high quality is the number one requirement for the gear case (left hand shown). Its application in the drive system of motorized wheelchairs demands fail-safe operation and performance to rigorous specifications for noise and vibration. Gupta Permold's gear case castings consistently meet those tough requirements.

Continuous in-process monitoring and 100% final visual inspection are the lynch pins of our Quality Assurance Program as stated in our Quality Assurance Manual that we use every day. This devotion to our Zero Defect policy enables us to provide our customers with the finest castings in the world.



FINE SURFACE FINISH

Part Name:
Filterhead

Competing Process: *Die Casting*

Why Our Permold Wins: The filterhead is an excellent example of a fine surface finish with a tooling cost that was just a fraction of the typical die casting tooling cost. The customer was so impressed with the finish—especially the fact that O-rings have been used right on the cast surface—they decided to use the piece as-cast, without any costly painting, polishing or buffing. The clean, silvery, showroom finish of the castings complemented his assembly and provided him with a unique advantage over his competition.



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Minority-owned and -operated company.
Your inquiry is invited.