Design and Rapid Prototyping Services

Graphicast, Inc., a contract casting house, now offers design and rapid prototyping services to assist engineers in designing parts as castings from the start, maximizing as-cast features to shorten time-to-market and reduce the costs of development, machining, and production. Graphicast is so convinced of the effectiveness of this process that, for any part designed through it, the company will apply $1000 worth of design and rapid prototyping services toward the cost of the part's graphite mold.

Even today, not enough thought is put into how parts will be manufactured. With Graphicast's assistance, engineers can design for production from the start. By selecting the production method first, manufacturing capabilities and limitations can be taken into account from the very beginning of a project, when design flexibility is greatest. Graphicast specialists will work with the customer to develop the most cost-effective casting solution for a part, incorporating draft, radii, cast surfaces, and near-net-shape geometry to take full advantage of the casting process and eliminate or reduce secondary machining.

When Graphicast is involved in a part's design from the start, customers frequently find that an SLA prototype is sufficient for all form, fit, and function checks. In cases where a metal prototype is required to test specific properties (such as thermal or electrical conductivity, EMI shielding, strength, or lubricity) or to test assembly fit or other mechanical specifications, Graphicast can produce a CNC-machined prototype from durable ZA-12, the same zinc-aluminum alloy from which production parts will later be cast.

With low mold production costs and relatively low per-part costs, Graphicast's casting process is the ideal low-risk solution for the manufacture of high-precision components in uncertain economic times. For annual production quantities of a few hundred to several thousand parts, the process offers a lower total cost per part than machining or other casting processes. Because graphite is machined easily,

graphite molds can also be modified quickly, allowing manufacturers a much higher degree of flexibility in debugging or improving products while still controlling costs — a major advantage over conventional casting methods. Typical turnaround times — from finished CAD design to production samples — are 4 to 6 weeks.

In addition to in-house design services and rapid prototyping, Graphicast's single-source production capabilities include mold fabrication, net-shape casting, secondary machining, finishing, light assembly, and CMM part inspection.

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