

Howmet, Miller, Signicast Take Top Honors in Casting Contest

The three winners in the Investment Casting Institute's 2004 Casting Contest represent industrial gas turbine (IGT), commercial/recreation, and aerospace markets.

Top honors went to Howmet Dover Casting, Dover, NJ for IGT; Signicast Corporation, Hartford, WI for commercial/recreation; and Miller Castings, Whittier, CA for aerospace.

Finalists were Aristo Cast, Inc., Almont, MI; Hitchiner Manufacturing

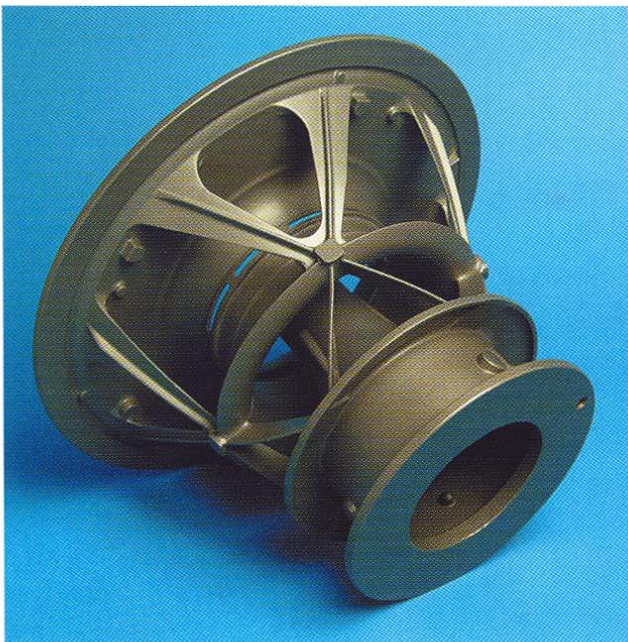
Inc.'s Nonferrous Division in O'Fallon, MO; SeaCast, Inc., Marysville, WA; and Tech Cast, Inc., Myerstown, PA.

The contest was designed to recognize investment casting facilities which manufacture components which best illustrate and promote the benefits and flexibility of the investment casting process, or which demonstrate problem-solving techniques for the customer.

In addition to recognition at the Institute's 51st Technical Conference and Expo, contest finalists are expected to be recognized in other industry magazines and publications, as well as at design shows where the Institute exhibits.

Case studies on each of the winners and finalists are included on the following pages.

The contest is an annual event conducted in conjunction with the Institute's Technical Conference and Expo.



Multiple wall thicknesses ranging from $.070" \pm .010"$ to more than $.700"$ add to the complexity of this radical redesign.

AEROSPACE WINNER-

Increased Complexity, Minimized Machining, Greater Corrosion Resistance Result from Radical Redesign of Investment Cast Part

Increased complexity, minimized machining operations, greater corrosion resistance, and operation in higher temperatures are the results of a radically redesigned aerospace investment cast part from Miller Castings, Inc., Whittier, CA.

Originally cast in magnesium and aluminum, the air inlet housing was redesigned for vacuum-cast nickel-base INCO 718. The original design was bulky and cylindrical in shape; the new design is much more intricate and closer to net shape, thus minimizing machining operations. Outer vanes are located by using table of X,Y,Z coordinate points. Multiple wall thicknesses ranging from $.070" \pm .010"$ to more than $.700"$ add to the complexity of the part. Produced from a three-piece wax assembly, the finished size of the casting is approximately 13.5" in diameter by 8.76" high.

The main benefits of the new part are naturally the function of running in higher temperatures, and corrosion resistance resulting in substantially improved product reliability and performance. Secondary operations include heat treating.