The Gateway

Keeping Purchasing Decision Makers Informed.

Issue No.

Published Monthly

FREE SUBSCRIPTIONS

ROUTING

Buyer _____

Mfg Engrg _____

Engrg Mgr _____

Mat Mgr _____

Production _____

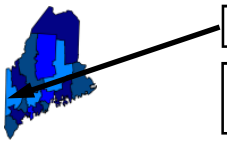
Marketing _____

Other _____

Return to _____

Reprinted Gateway Spotlight Feature Article for:

HILDEBRAN DESIGNS, INC.
Brownfield, ME



Brownfield, ME

HILDEBRAN DESIGNS, INC.

We all know: 'You can lead a horse to water, but you can't make him drink.' Likewise: 'You can take John Hildebran out of the foundry, but you can't take the foundry out of John Hildebran.' Yes, he's back, and this time he has out done himself.

John, a graduate metallurgist, has been involved with investment castings and the foundry business for 40 plus years. In 1984, after having worked in other casting facilities for 18 years, John decided to set up his own investment casting company. In 1998, because of his company's growth and success, a firm from Maine found it to be an attractive acquisition. After serving as President and Metallurgist for them until 2001, John left to pursue the creation of a state of the art, more specialized investment casting foundry with his wife, Janice. It is a brand new, gorgeous foundry building, sitting on 12 acres in Brownfield, Maine, within a stone's throw of Conway, NH.

Janice uses the continuous wax injector to create the wax patterns. The patterns are assembled on to trees that are later surrounded by the investment.

John always wanted to follow a dream to explore the solid mold investment casting process, but could never squeeze out enough time to do it justice. So, he used the past five years to develop this old technique. Most foundries today use the shell process to produce investment castings. With shell molding, there are quality and time issues that John has elimi-

John places a flask with a pattern tree set inside it, into one of many, custom Hildebran designed and built machines. This unit mixes and injects the investment (a unique type of plaster) into the flask. This entire process is accomplished in a vacuum chamber which eliminates any bubbles forming on the surface of the parts and ruining them. The investment hardens in 20 minutes and is ready for the next phase. In the shell molding process this process could take as long as 3 days.

nated using the solid mold technique. As mentioned, solid mold castings have been around for a lot longer than shell mold castings, which came on the scene in the 1940s. Although the solid mold technique is quite old, very little process documentation is available. John and Janice had to research and develop the process from scratch. It took lots of trial and error, design changes, and a ton of patience and money invested, but they have now perfected the process.

John and Janice are able to cast exquisite quality with near zero defects and much more detail. That in itself is remarkable in the investment casting business. Using the solid mold method allows long

Next, the filled flasks are ready for de-waxing. With the wax removed, the empty void leaves the investment with a reversed negative of the parts to be poured, creating a perfect, highly detailed part.

This actual pouring process is not shown because of it's proprietary design. Above is the power supply used to melt the various alloys that will be cast.

cored passages to be accomplished with ease, where the shell mold method fails. They have developed methods that actually take less time from start to finish to produce parts. John developed a high pressure paste wax injection machine that allows continuous wax injection with absolute temperature control.

For customers needing just a few parts for prototype development or small quantity jobs, John tweaked and perfected a process to create intricate rubber molds that produce highly detailed wax patterns. John has also invested in a CNC controlled milling machine and digital lathe to manufacture aluminum wax injection dies for higher volume parts.

The real secret to the Hildebran foundry that produces the most accurate, highly detailed, accurate parts… we can't write about. That part of the foundry casting process is proprietary. All we can tell you is

(right) The solid mold investment removed from the flask.

(below) The investment is washed away leaving the parts clean of any mold residue in mere minutes.

The flask will be rolled into the bake-out oven, that John built, for pre-heat and casting.

A flag holder and flag pole tip designed by John and Janice Hildebran. The buffed nameplate is ready for engraving.

that John has developed a process breakthrough that will allow Hildebran Designs to produce high detail, accurate castings for industrial, medical and aerospace parts.

What we found interesting in looking at the Hildebran method is that the traditional sandblast operation to remove ceramic mold material is no longer required. Finely cast detail is therefore retained. The investment is essentially removed with high pressure water.

John's plate says it all!

So, if you need fine, delicate parts of outstanding quality in copper, brass, bronze or other low melting alloys, call John. Got a part you'd like to reproduce? He can take your part and create a mold from it. Call John. He's looking for a challenge and to let his old customer contacts know…….

……. He's Back!

HILDEBRAN DESIGNS, INC.
370 Center Conway Road
Brownfield, ME 04010
Tel: 207-935-3729
Fax: 207-935-0114
Email: janjohn@fairpoint.net