

## Casting

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### **Cracks in Ring-less Investment Molds** (Originally published in Sept 1998)

**Question:** I have been trying the ring-less casting method with the rapid burnout technique and have experienced cracks in the molds when they are removed from the burnout oven. I am using an investment designed for the ring-less/rapid burnout technique and I have not changed any of my other techniques. The castings still fit well and there is no finning. How can I prevent cracks in the investment mold?

**Answer:** Several factors cause cracks in investment molds. Since there is no finning, the cracks are not very deep. This leads me to believe there is rapid steam expansion on the surface of the investment. You are probably rinsing the mold after scraping the top of the mold or, you are wet trimming the mold. Dampening the mold introduces water on to the surface that causes rapid steam expansion and cracks. Carefully scrape the top and then inspect the sprue area. Remove any debris with an instrument and place the mold in the furnace.

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### **Minimizing Bubbles in Investments and Stone** (Originally published in Jan 2000)

**Question:** How can I eliminate bubbles in my casts and investment? I have perfected my technique and am using the best fine-grain investments and stones. Is there anything else I can do to minimize or eliminate bubbles?

**Answer:** Assuming you have done everything possible to reduce bubbles and your vacuum investor is working properly, there is a rather simple thing you can do. Place the investment ring or poured impression in a dry pressure pot. Bubbles in artificial stones and fine-grain investments show significant reduction in the number and size of bubbles when allowed to set under pressure of 30 psi. Coarse-grain investments require 80 psi or higher to reduce bubbles. Pour some test samples, let them set under pressure, cut them in half, and then compare them to bench set samples. Bego (800) 342-2346 and Lang (800) 222-5264 produce pressure vessels. The Bego Wiropress SL holds up to three impressions and has a maximum pressure of 50 psi. It retails for \$895.00 and has a government price of \$750.00. The Lang Invest-Press holds one impression with a maximum pressure of 160 psi and retails for \$500.00 (government price is \$325.00).

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