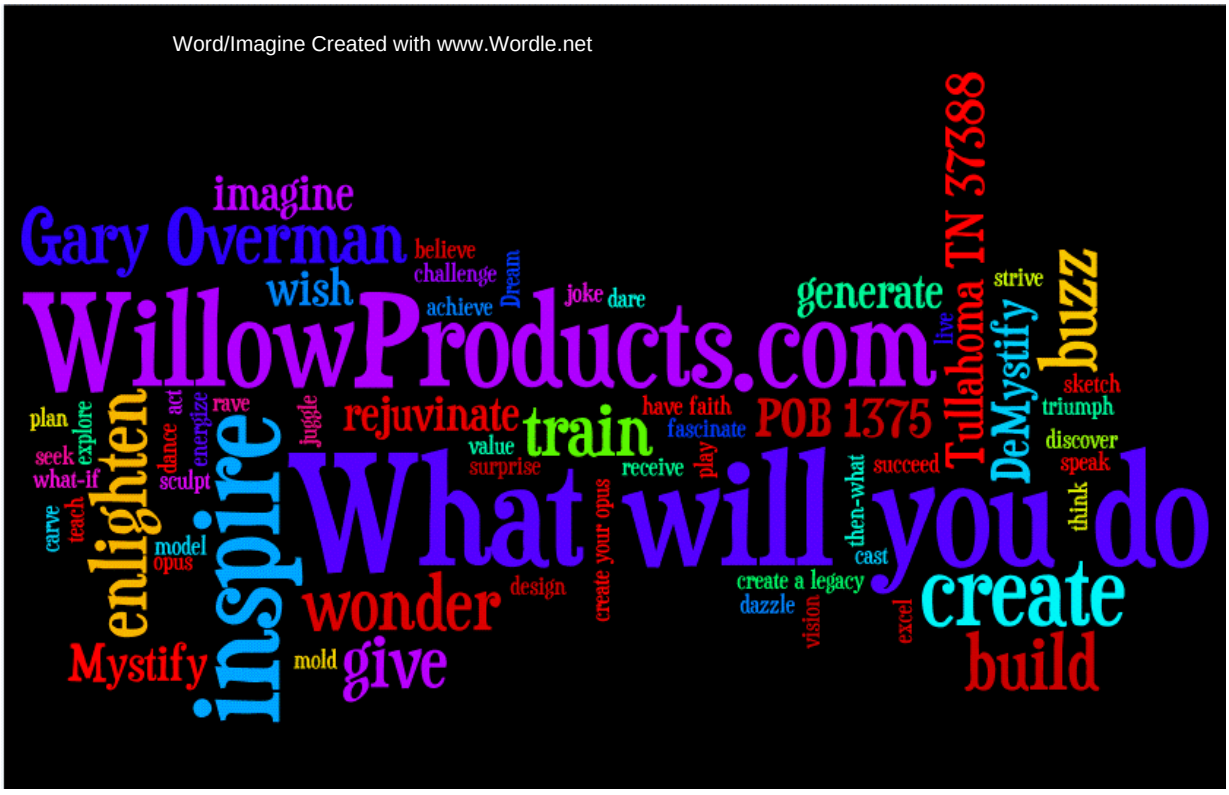

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6) Always practice safe work habits and maintain a safe work environment. If you do not understand what this means, then stop and either ask appropriate persons for help or just stop what you're doing , pack-up the project and go read a good book.

I really hate to burst anyone's bubble (ha ha ha) , but if you're not careful about the way you design your molds and your casting system, then you can easily create more bubbles and or/enlarge the existing ones. A primary example is vacuum casting. A bubble that is trapped by fluid (or within a fluid) will expand when subjected to vacuum.
That's right.. it gets bigger. If you don't believe me, put a clear cup of fluid with air trapped in it into your chamber, subject it to vacuum and watch it "boil" as the bubbles expand. Another demonstration is to put a half-filled balloon or a sheet of bubble-wrap inside your chamber and pull a vacuum. Even with just a partial vacuum they'll get bigger as the surrounding atmosphere is reduced. This allows the trapped air inside to expand as there is no longer an opposing force on their exterior.

Sooooo,
if you just pour your casting compound into a mold with long features like a hand or similar geometry, then you're bound to trap minute bubbles. **Pull a vacuum and they get bigger**... let it harden and you just created a flawed casting. So how can you remedy this problem? Venting can help. It will let the air escape as it expands without being trapped and displacing your casting compound. But there is another method you can easily do.

Call it the " Overman Vacuum Pour Mold System" . Or you can just call it common sense :-)

Page 2 of this document is a diagram of how I make my molds. The CPVC pipe and cap is very inexpensive and usually can be used many times before having to be discarded. Filling the mold cavity while holding a vacuum is very effective at minimizing or even eliminating the bubbles. Just remember to break the vacuum BEFORE the casting hardens. Why? Remember the above statements? When you break the vacuum, any remaining bubbles will meet the returning atmospheric pressure and get slammed by the 14.696 pounds per sq. inch atmosphere and either burst or return to their almost invisible micro stature.

On my blog you can see a video of a similar setup that vibrates the mold to assist gravity in filling the mold. But that is only needed for really thick materials. Gravity is more than enough for thin casting materials commonly in use.

Feel free to pass this on, just keep the document in tact and give the old codger (me) credit in your blog or whatever :-)

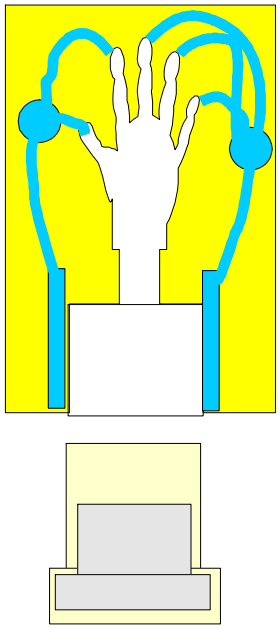
Air Vent

Gate

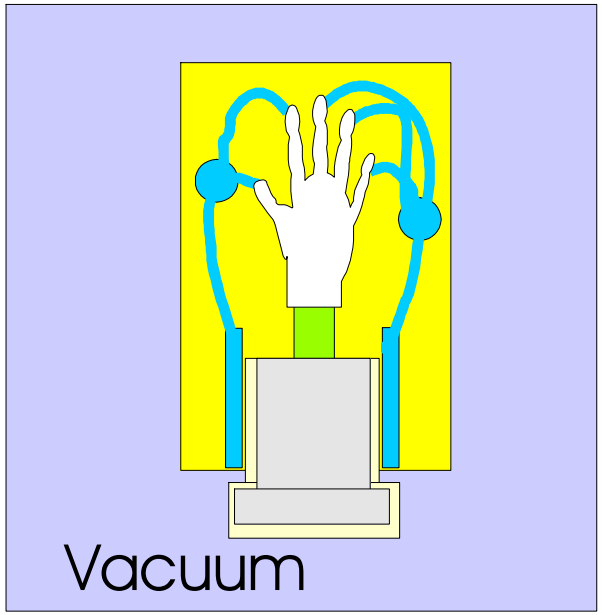
Mold Material

Casting Material

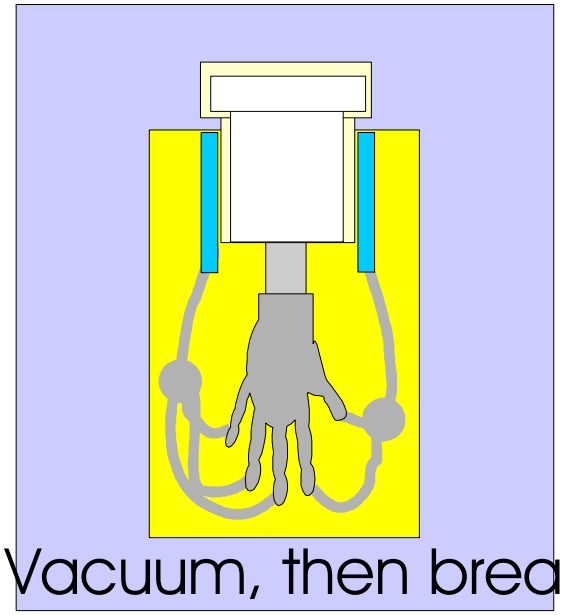
CPVC Reservoir made from common pipe and cap



Step 1 .
Casting material is poured in CPVC reservoir.



Step 2 .
CPVC reservoir is placed in mold. Mold is place in vacuum chamber. Vacuum pulled. Casting material "crests" in coddle. Gravity prevents material from prematurely filling the mold and trapping air as vacuum enlarges air bubbles.



Step 3 .
Chamber and mold is inverted. Mold material leaves reservoir and enters mold cavity while under vacuum. Vacuum is then broken while mold is inverted to let atmospheric pressure collapse any remaining bubbles. Gravity holds material in mold until set.

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Printer Friendly

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BY THE NUMBERS

4,000,000

The number of children from nearly 100 countries who have participated in the Lions International Peace Poster Contest during the last 20 years. Through their art, they have learned to express their feelings about peace in the world.

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