

## SIMPLIFIED RESIN CASTING

by John Canfield

The steps are pretty simple.....first, you have to make a mold into which you will pour the resin. For parts that are flat on one side, I make a simple box out of sheet styrene. The box should have your mold "master" on the center of the box floor flat side down. You should leave room around your master so there is a fairly substantial wall around it when the mold comes out. The box should also be tall enough so there is room above the top of the master. When your mold is done, the top of your box will be the bottom of the mold so it needs to be thick enough to support the resin you are pouring into it. I then use a MicroMark mold release and brush it all over the master part and the inside of the box as this helps the rubber not to stick to the box.....it usually doesn't but it's a precaution, anyway.

Now you're ready to pour rubber. I use the Micromark two-part rubber with which you mix equal portions of each part to make the rubber. I pour equal parts of each rubber into separate little Dixie Cups. the cups are transparent enough that you can see through the sides and make sure each cup has the same amount of Part A versus part B. I then pour the rubber from the cups into one of those little gladware plastic storage dishes because the rubber doesn't stick to it. With the Micromark rubber one part is white, the other is blue so I gently mix the rubber well with a craft/popsicle stick until it's a uniform blue color. Once it's mixed, you pour the rubber into the box all over top of your master. Pour the rubber from at least a couple inches above the box as this helps to prevent bubbles. The mold takes about 4 hours to fully cure and once it does, you simply remove the plastic box from around the mold and you have the rubber mold with your part still in it. Gently take out your part and there's your mold.....they're generally good for 20-100 castings depending on how complex and big the master is.

For the resin, you mix equal parts of the two. Micromark gives you little plastic measuring cups and I use these to measure the equal parts and then pour them into a Dixie cup and mix them up. With Micromark CR-600 resin you have about 10-15 minutes before it starts to set up. I then pour the resin mix into the mold until it's level with the top of the mold. If air bubbles come up, I squish 'em with a craft stick. If you have tiny indentations in your mold, like for rivets, I take a pointed toothpick and poke it into the indentations to make sure the resin gets in them.....sometimes it doesn't for smaller openings like N scale rivet heads! So then you just let the resin cure, I do for about 30 minutes, then remove the part. You don't have to but to keep the back of the part nice and flat, after I pour the resin in and it's ready to start to cure a take a piece of wax paper and smooth it over the top of the mold (what will be the flat back part of the casting) and then when the part fully cures and you take it out of the mold just peel off the wax paper. Sometimes it sticks a little but it keeps the back nice and flat.

If the part you want to make is not flat on one side but has details on both (like a car tire) you will need to make a two part mold. what i do is start the same way and make the box. Then I drill tiny holes in each side of the part and then holes in the side of the box. I then insert wire through the holes and into the part and it's suspended in mid-air inside the box. I then mix the rubber and pour it into the box about halfway up the side of the part. When that is fully cured, I

then brush the Micromark mold release all over the top so the second rubber pour doesn't stick to the first. When part 2 fully cures, you remove the plastic box and gently peel apart the two mold halves and remove your master part. You should have two mold with roughly half the part open on each half of the mold. To get the resin into the mold and to get the air out, I cut two chimneys on each half of the mold so that when they are pressed together you have openings that go from that side of the mold down to the cavity where your master was. to make these parts I take two pieces of cardboard and place them on either side of the mold and then tightly wrap rubber bands around them. This keeps the halves together so they don't shift and the sides don't match up. I then mix the resin and pour it down one of the chimneys. I pour until I see resin start to come up the other chimney which means the cavity inside the two halves is full of resin. I then gently "burp" the mold by squeezing it on both sides to force air out. Once the resin has cured, you remove the rubber bands and the cardboard, pull the two halves apart, and you now have your casting with two sprues on it made by resin in the "chimneys." Trim them off and you're ready to go.

There are other more complex types of molds to make such as for hollow passenger car roofs but this should be enough to get started. Good luck! Listed below are some sites that can get you started with explanations and/or videos from You Tube.

<http://www.b9robotresource.com/molding1.htm>

<http://www.alumilite.com/HowTos.cfm>

<http://www.youtube.com/watch?v=cL33dO8mQuQ>

John Canfield