

Standard Metal Casting Tips

This metal can produce fine detail if you take due care in casting. Just take note of following casting tricks:

Pre-dry the moulds

Heat the moulds for 30min in an oven heated to 110c. Allow the mould to regain room temp. The moulds tend to accumulate moisture from the air particularly if they are stored in a cold store. This treatment will get rid of the moisture.

Heat the metal to over 325c

On the Prince August Metal melter set the knob to max and leave the metal on the ring for **20min**. Test the temp with the Metal Stirrer. When you add metal, wait for 10min before you pour again. These instructions are specific to our electric melter, but most electric cooker will respond to the same settings.

Cut air vents in the mould.

When the metal goes in, the air needs to go out. The talcum powder and the flexible clamps all helps the air to escape by invisible air vents. However a slower metal will need physical air vents which you cut into the rubber with a vent scalpel.



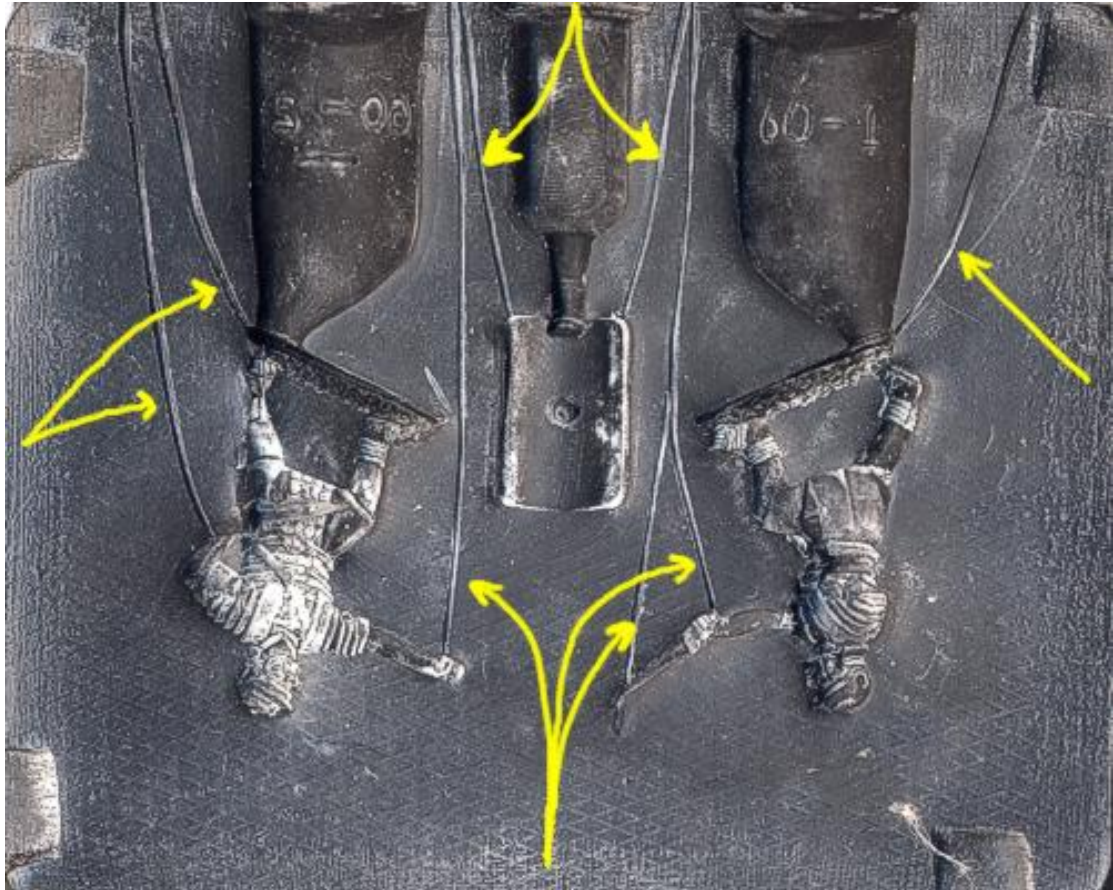
Cutting vents is easy to do with a vent scalpel (now for sale at Prince August), which has to be very sharp. Heating the mould in an oven to 50-70c will make the rubber softer and easier to cut. Be extremely careful while cutting. The blade you are using is so sharp that it will cut into the bone.

All moulds will benefit from a vent but some need several vents. The first vent should be cut in the last bit to fill in the figure.

Always let the vent go to the top of the mould. Use a biro to draw a line where you like the vent. Use a ruler if you can. Then again using the ruler cut a 1mm deep and wide v-shaped channel (see photo 2). Cast a figure in the mould and study where you have missing parts. Say if you

have a sword which is not filling; try cutting a channel from the top of the sword and the top of the mould. You can experiment with several vents until you get a perfect result. Note that once metal comes up to the vent it will fill it and block any air from escaping i.e. the vent is now useless. Also remember even though the mould fills from the top, the metal will fill from bottom up. This is important for your thought process to understand so you know when a vent is closed (see photo 3). Some alloys tend to need more vents than others.





Sometimes you will have trapped air in a buried part and there is only one way of dealing with this. Take a fine drill bit 1-2mm and drill a hole straight through the mould. This will let the air through to the outside of the mould provided you put the rough side of the support board against the mould. The metal can go out through this hole as well but you can easily nip it off and clean up the surface with a knife or file. It is therefore important to consider the cleaning up when you choose the place to drill i.e. you do not drill in the middle of a face or other places which are hard to clean. Trapped air can appear in closed in areas like a canon wheel. The rim will entrap the air so the spokes will not fill. The solution here is to drill vents in the spokes or in between the spokes.

Metal surface tension:

The surface tension can be overcome by higher temperature but also by causing the mould to vibrate. A slight tap by the ladle after pouring is normally enough. However sometimes it is necessary to tap the mould with pliers while pouring.