

# CASTING FIGURES WITH ONE- AND TWO-PART MOLDS

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For IPMS-NOVA Tips and Techniques

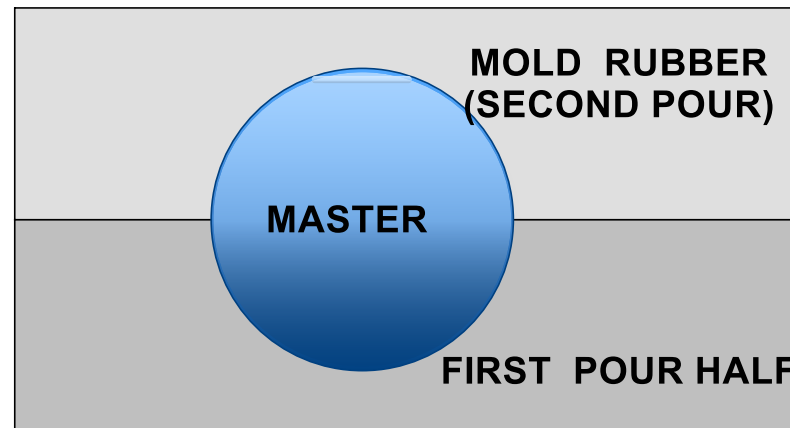
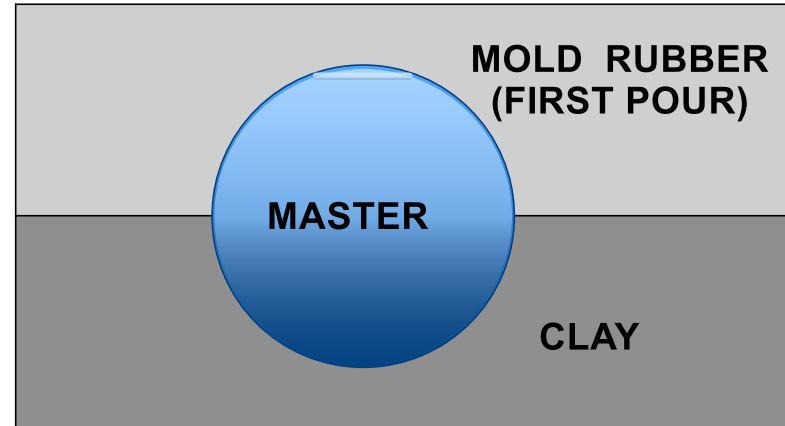
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# Casting Options: One-Part Mold (Left) and Two-Part Mold (Right)



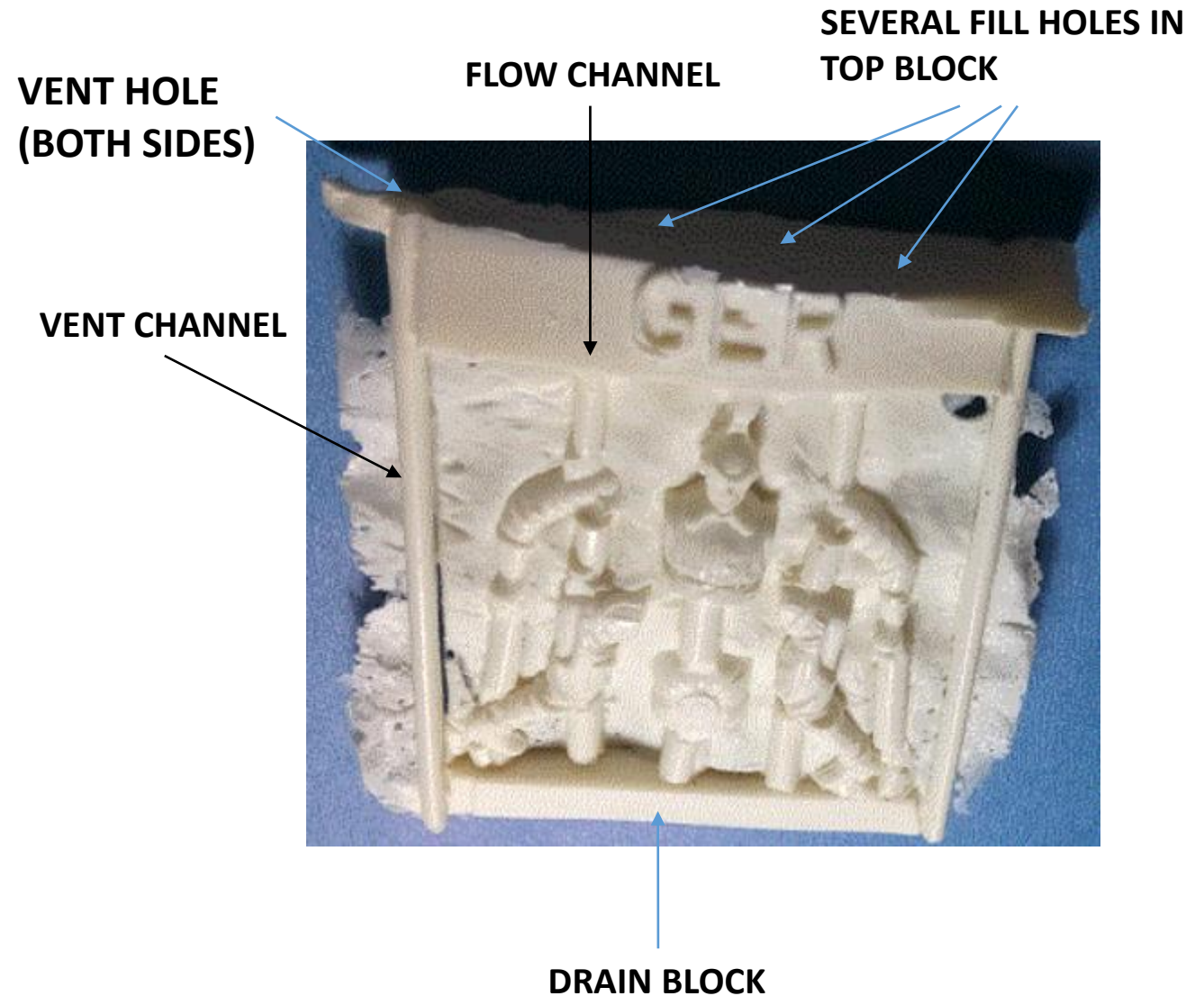
# Making a Casting from a Two-Part Mold (1)

- Immerse one-half of the master in clay and held firm. Be sure to lay in drain paths. Requires flow channels like injection-molded items on a sprue Master should be relatively flat.
- Pour rubber to cover the masters plus more for support
- Remove the rubber mold half with the embedded master from the frame and turn it upside down so the other side of the master was exposed,
- Pour the second half of the mold.
- When set, separate the mold halves and remove the master.



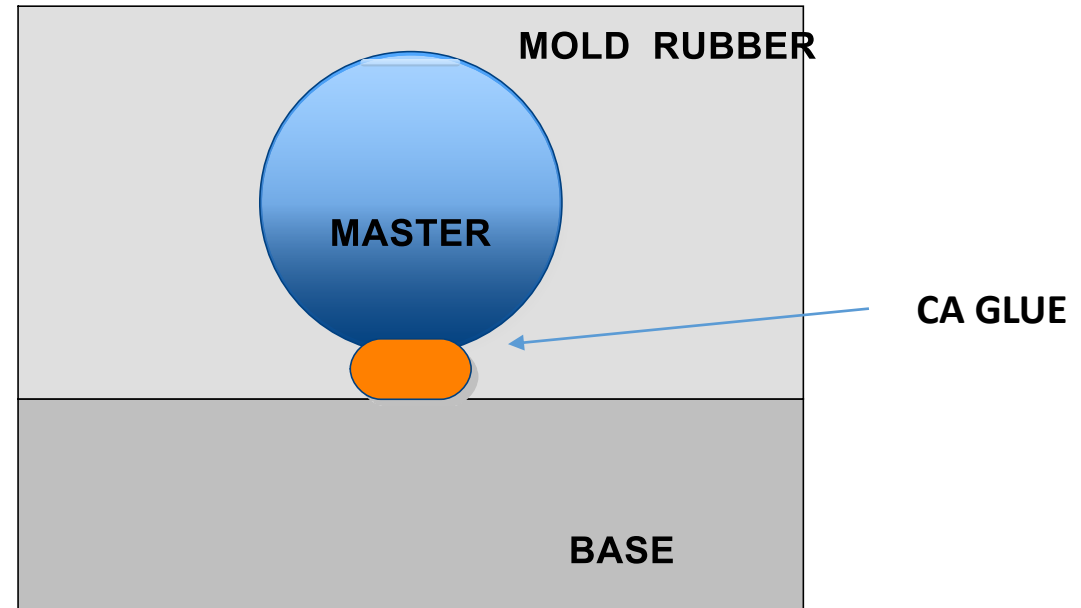
# Making a Casting from a Two-Part Mold (2)

- When casting, bind the two halves tightly and fill the two part mold from the top.
- Fill from the top center.
- When set, separate the mold halves and remove the casting.
- Note that if the halves are not bound adequately, a carrier will be created



# Making a Casting from a One-Part Mold (1)

- Mount the master on the base. At first I used clay, but changed to CA glue for better hold and a smaller contact point. Master should be relatively flat.
- Pour the mold rubber.
- Trim and flex as necessary to remove the master
- Resultant mold will be a cavity mold.



## Making a Casting from a One-Part Mold (2)

- Pour casting resin into mpld.
- Squeegee off excess but leave a thin film to serve as a carrier
- Remove casting when set by flexing mold.



# RECOMMENDED MATERIALS

- Mold rubber: Smooth-On OoMoo
- Casting resin: Smooth-On 320 or 300.
- Sheet plastic for base.
- Lego-type blocks for making mold forms
- Smooth-On mold release
- Blades for separating edges of mold from mold form

# Advantages and disadvantages of one-part mold casting over two-part casting

- Advantages

- One-half the mold rubber consumption
- One-half the time to produce a mold
- Less resin waste
- Less trimming of the casting
- Flexible mold allows easy removal of castings

- Disadvantages

- Casting does not include 100% of master – attachment point will be flat. Judicious positioning of master will result in flat spots not being visible; e.g. backs of pilots, insides of legs



# General remarks

- Master should be relatively flat to allow for easy removal of master and casting. May require cutting the master apart when making the mold and assembling pieces of the casting into a full figure.
- Inexpensive and uncomplicated because no vacuum system is needed.
  - For two-part mold system, gravity works vertically, especially if side vent channels are provided.
  - For a one-part mold system, gravity fills the mold cavities.
  - Eliminate bubbles by poking a straightened paperclip in the mold immediately after the pour. Important in the casting phase.
- Clamp two-part mold with rubber bands both horizontally and vertically. Two plexiglass flats and a C-clamp might be a better approach. Objective is to reduce the flash between the pieces.