Molding/Casting No-No’s and Tips

1.) The Golden Rule: Use a hard mold (resin/plaster/plastic) for a soft cast (silicone/latex); use a soft mold (silicone/latex) for a hard cast (resin/plaster/plastic).

2.) The Silver Rule: For safety, wear rubber or latex gloves, respiratory masks, and safety glasses

HARD BOX MOLD NOTES:

1.) Make a master out of plasticine, plastilene, non-sulfur based clay, or unbaked Sculpey and put it in the freezer to harden.

2.) Before creating a mold from your master, it should be lacquered with Krylon Crystal Clear spray to create a barrier from the master and surrounding materials.

3.) You can use Klean Klay or terracotta clay to make the clay bed that will hold your sculpt before you make your mold. The bed should come up to the halfway point of your master. Use a palette sculpting tool to get the clay into any crevices. The point where the clay bed meets the master is where seam lines will be, so keep that in mind (you want seam lines to be hidden from the camera).

4.) Make keys in your clay bed with marbles or polymer clay in order to better pry open the mold after it sets. BEWARE OF UNDERCUTS! Make sure any edges are tapered smooth, and that any indentations are not too deep.

5.) At this point, you may want to make a channel to pour your casting material inside after you finish the mold, or set a piece of K&S inside for the armature. Plan ahead!

6.) To make the walls of your mold, use Legos, cardboard, or foamboard. Use hot glue or more Klean Klay/terracotta to seal the bottom and corners of the wall to make it as airtight as possible.

7.) Pour your mold material (plaster/resin/plastic) and let it set.

8.) After the first part of the mold is set, remove the walls and wash away the Klean Klay/terracotta clay bed with water. YOUR MASTER STAYS INSIDE THE MOLD; DON’T REMOVE THE MASTER!

9.) Coat the first part of the mold and your master with Vaseline (plaster) or wax spray (polyurethane resin) as a release agent.

10.) Rebuild your wall, following the steps in number 5. Note: Don’t rebuild a clay bed!

11.) Pour the mold material again and let it set.

12.) Once set, pry the mold apart and remove the master. Clean away any remnants of your master (you can use turpentine if the master was sculpted in plasticine/plastilene).

13.) Fix any mistakes in your mold

14.) REFERENCES/RESOURCES:


  b. Plaster mold for silicone casting (David Neat): http://davidneat.wordpress.com/2012/04/19/flexible-puppet-hands/

  c. Making a Silicone Head – resin mold, silicone cast (Nick Hilligoss): http://www.youtube.com/watch?v=5fWdZnQRZBO&index=15&list=PLvTxSPtycH0Of-kziqY6OTkoyKZi40zb4
d. Plaster Mold Making Part One—links to part 2 and 3 (Ron Cole):  
http://www.youtube.com/watch?v=TDW1NKIfgQQ&list=PLvTxSPtycH00f-kziqY6OTkoyKZl40zb4

e. Clay and Plaster molds for silicone casting (Kool Koala team):  
http://www.youtube.com/watch?v=sRQREn83hdQ&list=PLvTxSPtycH00f-kziqY6OTkoyKZl40zb4

f. Ultracal 30 mold for foam latex casting (Stop Motion Magazine):  
http://www.youtube.com/watch?v=mDJ71O2rUc4&list=PLvTxSPtycH00f-kziqY6OTkoyKZl40zb4&index=4

g. Plaster Mold for Silicone Cast (Ken A. Priebe):  

h. Hard and Soft Molds (Susannah Shaw):  

i. Silicone mold for resin casting/soft mold for hard cast (Sean B):  

j. Books:  
   i. Stop Motion: Craft Skills for Model Animation (second edition) by Susannah Shaw  
   ii. The Art of Stop Motion Animation by Ken A. Priebe  
   iii. The Advanced Art of Stop Motion Animation by Ken A. Priebe

SILICONE CAST NOTES:

1.) Lay your armature inside your mold. To keep the armature suspended in the center, you can stick Klean Klay near the entrance of where you plan to pour your cast material. You can also carve a groove in your mold to hold a wire. Or if you put a piece of K&S in your mold while it set, then the K&S should hold your armature. Alternatively, you can pour half of your casting material and set your armature on top of the material in the right position as it begins to set.

2.) Be sure to prepare your armature before casting it inside of your mold. You may want to add some cotton material to help the silicone stick. Protect your K&S pieces so that they don’t discolor the silicone (see note number 2 under SILICONE). If you’re using a ball-and-socket armature, apply cling wrap to cover the joints so that the silicone doesn’t clog anything.

3.) If you want to color your silicone, do that step when you are mixing it together!

4.) If you decide to pour your casting material:
   a. After you’ve secured your armature, clamp your two-part mold together tightly.
   b. Set up your mold vertically so that the mold cavity is upside down.
   c. After the silicone is mixed, tap the container firmly onto a flat surface to coax out any air bubbles.
   d. Pour the silicone in the mold’s entrance hole in a thin, high pour, raising it slowly about one foot above the mold.
e. If you follow this process in a specially build vacuum-chamber, that will also suck out any air bubbles as you work with the silicone.

f. Let the silicone set, and remove the mold when it's done.

g. Trim the seams of the excess silicone with fine scissors.

5.) If you decide to cast without pouring:

a. Leave both halves of your mold open, mix a batch of silicone, and either pour or paint an initial thin layer of silicone into your mold halves. Do this step carefully to avoid any air bubbles and let the material set. This layer will keep any air bubbles from being seen on the surface of your cast, and will prevent the armature from getting to the surface.

b. Top of both halves of the cast and fill them all the way. On one half, while the silicone is still runny, rest your armature on the silicone in exactly the right suspended position.

c. Quickly sandwich the two halves together and squeeze them tight using clamps. Don't remove the clamps until the silicone is cured.

d. Once the silicone has set, remove the clamps and pry apart the mold.

6.) Proceed to trim and seam the finished cast with fine scissors.

7.) REFERENCES/RESOURCES:


f. Making a Silicone Head (Nick Hilligoss):
   [http://www.youtube.com/watch?v=5fWdZnQRzB0&list=PLvTxSPtycH00f-kziqY6OTkoyKZi40zb4](http://www.youtube.com/watch?v=5fWdZnQRzB0&list=PLvTxSPtycH00f-kziqY6OTkoyKZi40zb4)

g. Casting and Seaming Silicone (Kool Koala Team):
   [http://www.youtube.com/watch?v=SGq11GY4-bE&list=PLvTxSPtycH00f-kziqY6OTkoyKZi40zb4](http://www.youtube.com/watch?v=SGq11GY4-bE&list=PLvTxSPtycH00f-kziqY6OTkoyKZi40zb4)


j. Books:

1. Stop Motion: Craft Skills for Model Animation (second edition) by Susannah Shaw
2. The Art of Stop Motion Animation by Ken A. Priebe
3. The Advanced Art of Stop Motion Animation by Ken A. Priebe
MATERIALS NOTES:

PLASTER:
1.) Don’t add water to dry plaster—it will create lumps
2.) Common brands of moldmaking plaster include Cystalcal R, Ultracal or Hydrocal 30. Ultracal has lime in it, SO USE GLOVES!
3.) Avoid plaster-to-plaster undercuts by tapering your keys in your mold. Use less than half a sphere if you plan to indent with marbles.
4.) To avoid air bubbles in a mold, brush a layer of plaster on first before pouring the rest.
5.) You may want to add some fiberglass or hessian reinforcing to your mold.

FOAM LATEX:
1.) Foam latex gives off ammonia fumes, so work in a well-ventilated area and wear a respirator!
2.) Casting in Foam Latex Tutorial (Stop Motion Magazine): [http://www.youtube.com/watch?v=22X04a6bw6A](http://www.youtube.com/watch?v=22X04a6bw6A)
3.) Foam Puppet Fabrication Explained (Tom Brierton): [http://www.awn.com/mag/issue2.11/2.11pages/2.11briertonani.html](http://www.awn.com/mag/issue2.11/2.11pages/2.11briertonani.html)
5.) Chapter 7, “Building Puppets”, of the original *The Art of Stop Motion Animation* by Ken A. Priebe has information on foam latex.

SILICONE:
1.) Use “Nitrile” gloves when handling silicone, as latex gloves will not work!
2.) Brass can interfere with silicone, causing discoloration. If you’re using K&S tubing in your armature and plan to cast your puppet in silicone, make sure to create a barrier between the K&S and the silicone. You can paint the K&S with acrylic paint,
3.) Latex and sulfur-based modeling clays do not react well with silicone.
4.) Molding silicone is typically denser and harder than casting silicone, and comes in bright colors. Certain brands of molding silicone include Mold Max and RTV. Many molding silicones are of the tin-cure variety, but platinum-cure can be used as well.
5.) Casting silicones are mostly platinum-cure, softer, and flexible. MAKE SURE YOU USE A CLEAR/TRANSPARENT CATALYST if you plan on coloring the silicone cast! Brands include DragonSkin, Plastil, and Eco-Flex.
6.) You can color casting silicone with an acrylic tint or oil-based paints or foundation makeup, HOWEVER beware of altering the chemistry of your silicone by doing this!
7.) Smooth-On makes a product called Soma-Foma, a silicone foam that bonds well with other brands and can help make lightweight puppets. If you use Soma-Foma in the center of your cast, use a platinum-based silicone for the ‘skin’.