

Tape Mold - Making the Mold



Products used in this How To:

Another method for making multiple piece molds is to tape up your parting lines, suspend your part, pour the mold using a translucent silicone rubber, and simply cut the part out of the mold. The tape will act as the parting line or divider between the two halves of the mold. Once completely poured, you will cut to the part or the tape and the mold will split open creating the two halves of your mold. This eliminates multiple pours of silicone rubber as well as not having to clay up and then clean the clay off of your original. Some parts lend themselves better than others for this process. Typically more organic shapes that do not have flat surfaces tend to be more difficult because it is difficult to achieve a smooth and clean parting line on rounded edges rather than square or flat surfaces. Taping to rounded edges is difficult. Here is one example of the process where both a flat and rounded surface are used. **The original part is an SLA (stereolithography) master that was 3 dimensionally printed from a computer file.**



Begin by making sure your master has the surface quality and finish you desire in your finished part as well as making sure your master is free and clean of any dust, dirt, oil, or grease. Then using cellophane tape, begin taping and overlapping the tape where you have determined the best place to establish your parting line.



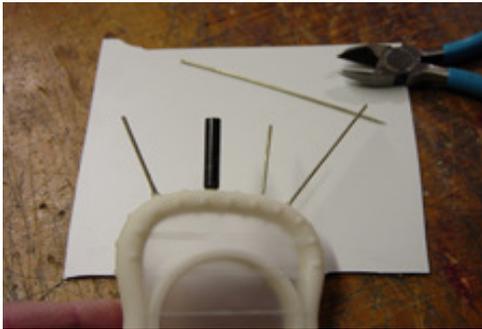
Once you have the parting line completely taped off, using an Excel Knife, trim off the excess. Cut the tape as close as you can to where the tape comes in contact with the part to avoid excess thickness in your casting that would have to be sanded down or finished after being cast.



Continue trimming the excess tape off until the entire piece is neatly trimmed. If your tape hangs out away from your original, you must color the cellophane tape with a permanent marker in order for you to see the tape in the cured silicone rubber mold. This will allow you to find the tape edge and cut directly to the tape. In this example, the tape is on the inside edge and we will be cutting to the part and therefore did not need to color the tape.



You are now ready to glue on wire, wood, or plastic tubing to your piece to act as supports for suspending but also to act as pour and vent holes in your finished silicone rubber mold.



Use a bigger tube or rod to use for the pour hole and smaller gauge wire for the vents. Trim the wire so all lengths will be the same height so you can glue them down to your mold base.



Once the supports are glued and trimmed to the proper size, glue the supports to your mold base using super glue or a small amount of hotmelt.



Build your mold box to contain the liquid silicone rubber. Seal the mold box extremely well to prevent the silicone from leaking.



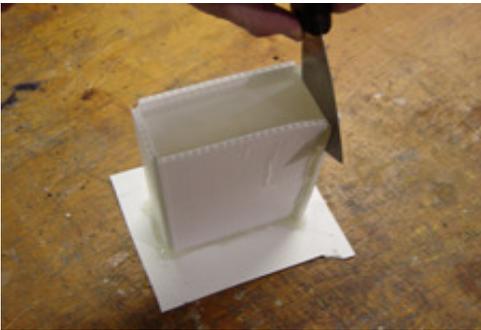
Measure your translucent silicone rubber at a 10:1 by weight mix ratio. If you need assistance calculating how much silicone rubber you will need for a particular mold box, visit our [Materials Calculator](#) page on our site.



Once the silicone is mixed thoroughly degas it using a vacuum pump and chamber. Translucent silicones are naturally pretty thick and vacuum is necessary to evacuate the bubbles before pouring. Once degassed, begin to pour the silicone in the mold box. Try to pour the stream in a corner of the mold box allowing the material to flow naturally around the part until it is completely submerged by at least 1/4" of rubber. (Opaque silicones can be used also, as long as you can mark the location of the tape and not cut blindly. This might include marking the moldbox as well and transferring the indicator to the mold once cured.)



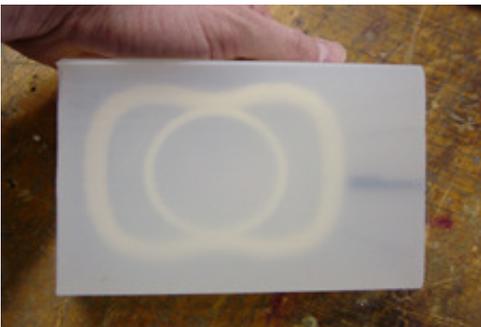
Allow the silicone to fully cure before demolding. Standard demold times are overnight at room temperature.



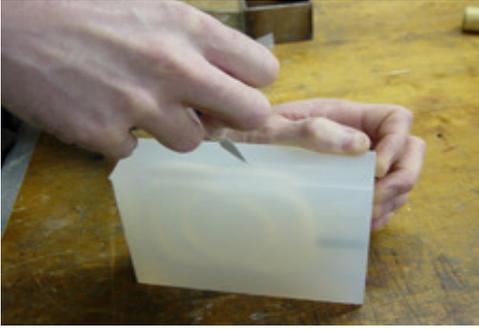
Once cured, break away your mold box.



Then remove it from the base.



Your part, tape, vents, and pour holes are now perfectly encapsulated in your clear silicone mold.



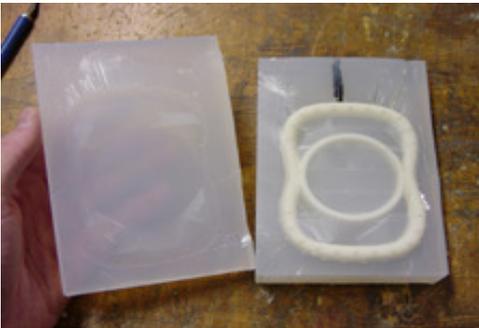
Using an Excel Knife, begin cutting down the edge to the outside of the part. Make single cuts rather than short choppy cuts to create a smoother and cleaner seam line.



Continue cutting around the part being careful not to put too much pressure on the part that would damage it. Some small scratches on the original may be unavoidable.



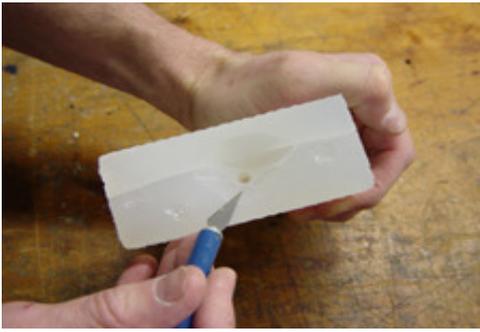
As you cut to the part, the tape will separate the inside portion of the mold and provide you with a perfectly smooth and crisp parting line.



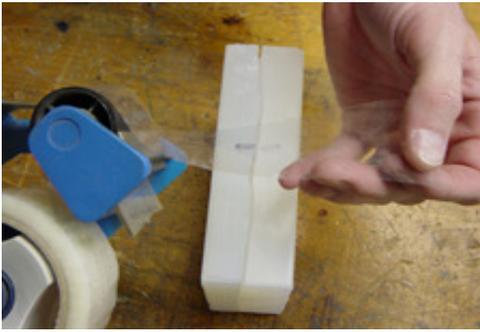
Continue until you have completely divided the mold into two halves.



Remove the tape from the inside flange area and remove your piece as well as your vents and gates.



Using your Excel Knife, cut a wide opening around the pour hole to act as a reservoir to hold the resin you use to fill the mold. This volume of material in the reservoir will also help displace air crushed during pressure casting to ensure a complete fill in the mold reducing the possibility of a short pour.



Using packaging or duct tape, tape the mold shut to prepare to pour resin into it. Once taped together, the mold is now ready to pour.