

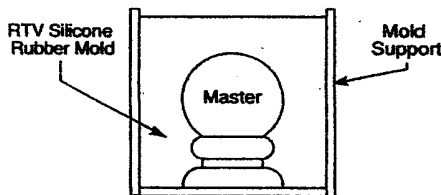
Various Mold Types

Mold Types and How to Make Them

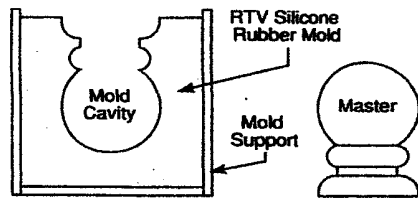
There are two common types of rubber molds; block molds and glove, or skin molds. Block molds are simpler to create. Glove molds are more flexible and use less rubber. In general, a minimum thickness of 3/8 inch works for both types, though block molds will frequently be thicker.

Block Molds

1. Block molds are made by forming a mold support around the master and pouring the RTV silicone rubber to cover the master and fill the mold support.



2. After the RTV silicone rubber cures, the bottom of the mold support is removed. A cover is placed over what had been the top of the support where the RTV silicone rubber had been poured in. The support is turned over and the master removed. This exposes the mold cavity for casting.

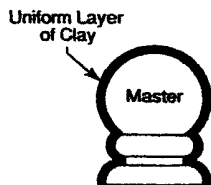


Glove Molds

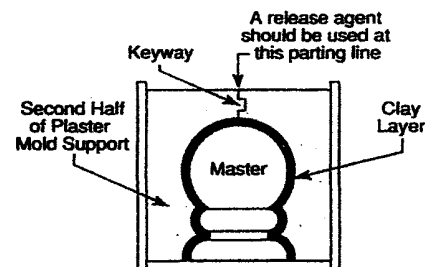
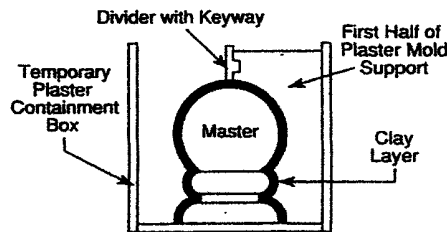
Glove molds can be made in two different ways. They can be poured or laid up.

Poured Glove Molds

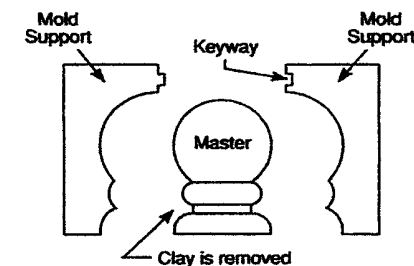
1. To start a poured glove mold, place a uniform layer of clay over the master (be careful about cure compatibility), 3/8 inches of clay is generally about right.



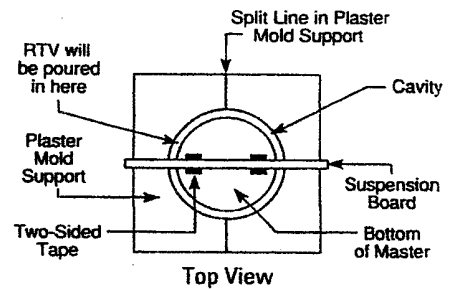
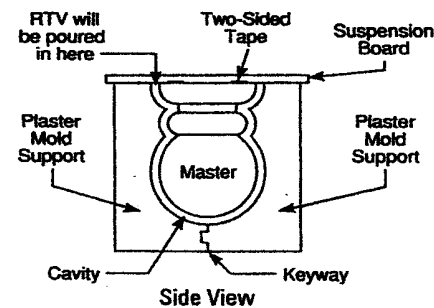
2. A mold support is now made of a material which will cure hard. Plaster or polyester with glass cloth reinforcement are popular for this mold support. To facilitate disassembly, the mold support is sometimes made in 2 steps to provide a 2 piece mold support.



3. The hardened mold support is removed and then the layer of clay is removed.

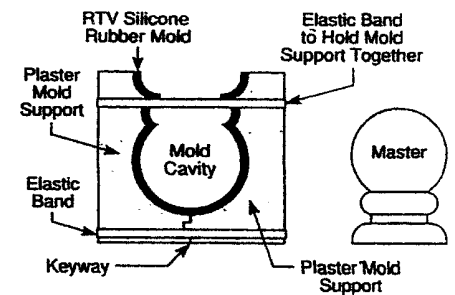


4. The master is now suspended in the inverted mold support leaving clear the area where the clay had been to provide a cavity.



5. The RTV silicone rubber is poured into this cavity and cured to form the mold.

6. The master is removed to yield a finished mold.



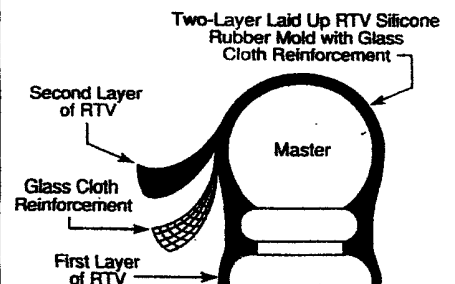
Laid Up Glove Molds

Laid up glove molds do not give as uniform a thickness as poured glove molds. They also may need to be cured in layers to get the desired thickness. However, the labor of putting on and removing a layer of clay is saved. In addition, cloth reinforcement can be added to the mold more easily using this method.

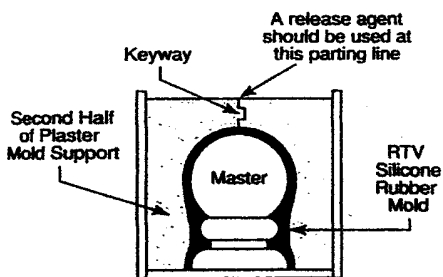
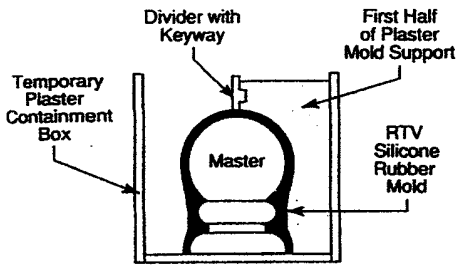
moldmaking compound with Beta 2 curing agent becomes a thixotropic paste soon after mixing. It's non-sagging nature is appropriate for laying up a mold, even on a vertical surface.

Fumed silica can be added to other RTV silicone moldmaking compounds to make them thixotropic pastes for laying up molds also.

1. The thixotropic RTV silicone rubber can be applied with a spatula and/or stiff bristle brush. A jabbing motion with the brush may be required to make sure RTV silicone rubber gets into certain areas.

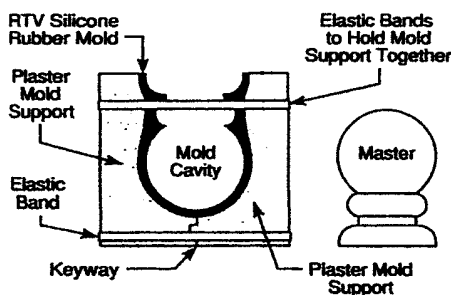


2. A mold support can now be made as was done over a layer of clay for the poured glove mold.



3. The master can now be removed to yield the finished mold.

Note that the finished mold looks similar to the poured glove mold.

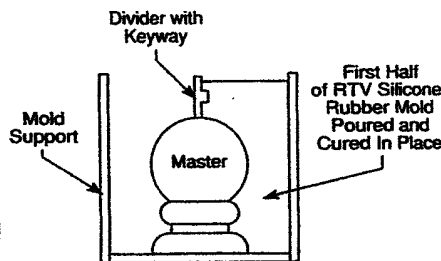


Two Piece and Split Molds

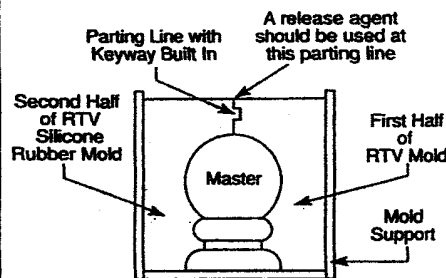
Often, due to part configuration, it is desirable to make a mold in two pieces rather than one; or, sometimes to cut a split into a one-piece mold to make part removal easier. This can be done with either block or glove molds. In either case, careful consideration should be given to where the split is located on the part, as it will leave a parting line on it.

Creating a split mold involves simply making a cut in the mold. During part removal, the mold can be opened at this split. Creating a two-piece mold involves several steps. We'll demonstrate here with a block mold.

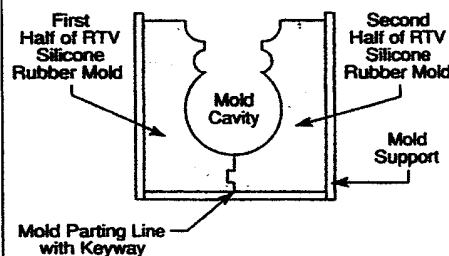
1. First, place the master within the mold support. Put a divider where the parting line is desired. A keyway built in at this divider will assure alignment of the two halves of the mold each time. Pour the first half of the RTV silicone rubber mold and allow it to cure.



2. Remove the divider. Apply a mold release on the exposed portions of the first half of the mold which will contact the second half to prevent the two mold halves from adhering together. Pour the second half of the RTV silicone rubber mold and allow it to cure.



3. A cover is placed over what had been the top of the support where the RTV silicone rubber had been poured in. What had been the bottom is removed. This exposes the base of the master. The mold can be removed from the mold support. The two halves can then be separated to remove the master. When reassembled without the master, the two halves form a finished mold.



Cloth Reinforcement

Occasionally, a mold will tend to tear in a particular location. In these cases, it often is desirable to reinforce the mold with glass cloth. The glass cloth is actually built into

the rubber. With poured molds, this can be done by suspending the cloth above the master and pouring around it. With laid up molds, usually a first layer of RTV silicone rubber is put on the master. Before this layer becomes tack free, the glass cloth is laid into it so that the RTV silicone rubber soaks through. A second layer of RTV silicone rubber is then applied to make one integral mold. This procedure requires more labor, but gives increased resistance to tear.

Mold Support

RTV silicone rubber molds are flexible. This is important for removing cast parts; however, to maintain proper dimensions of produced parts during the casting process, often it is necessary to build a rigid mold support structure around the silicone mold. This rigid mold support structure may be referred to by various names; e.g. mother mold, mold box, chase or surround. This mold support is usually, but not always, removed from the RTV silicone rubber mold before removing cast parts.

The mold support can be made of wood, metal, plaster, cast or fabricated plastic or a combination of these materials. Urethane, epoxy and glass-reinforced polyester are examples of plastics which can be used.

Sometimes the mold support is designed to fit quite close to the cast parts and conform to them, as is the case with a true glove mold. Other times the support is quite a bit larger than the part and doesn't follow the contours of the part at all. This would be the case with a true block mold. A hybrid is formed when a larger mold support has some pieces of wood or plastic, etc., used to fill some of the excess space. The space-filling pieces are called plugs.

