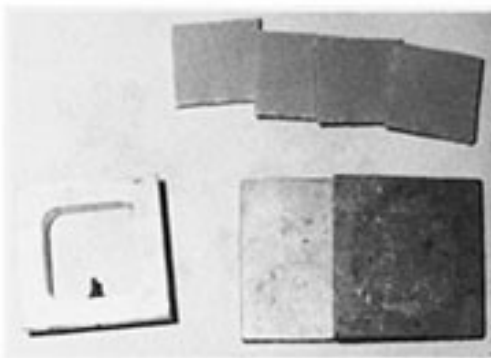


# How to Duplicate Your Jewelry with Easy Rubber Molding You Can Produce Dozen of Wax Masters

by LEE MARTIN

Anyone involved in the lost-wax process often finds himself with a single wax master, and the need for more than one. The answer to this difficulty is well-known to the professional jeweler, who makes a mold of a finished item, injects liquid wax into it, thus producing the required duplicate.

Unfortunately, the need for an expensive vulcanizer is a deterrent to the amateur, who may find that an occasional requirement for a duplicate does not warrant the expenditure of hundreds of dollars for that piece of equipment. There is an alternative solution! The writer is indebted to the Woodley Jewelry Organization in Beaumont, California for the following technique.

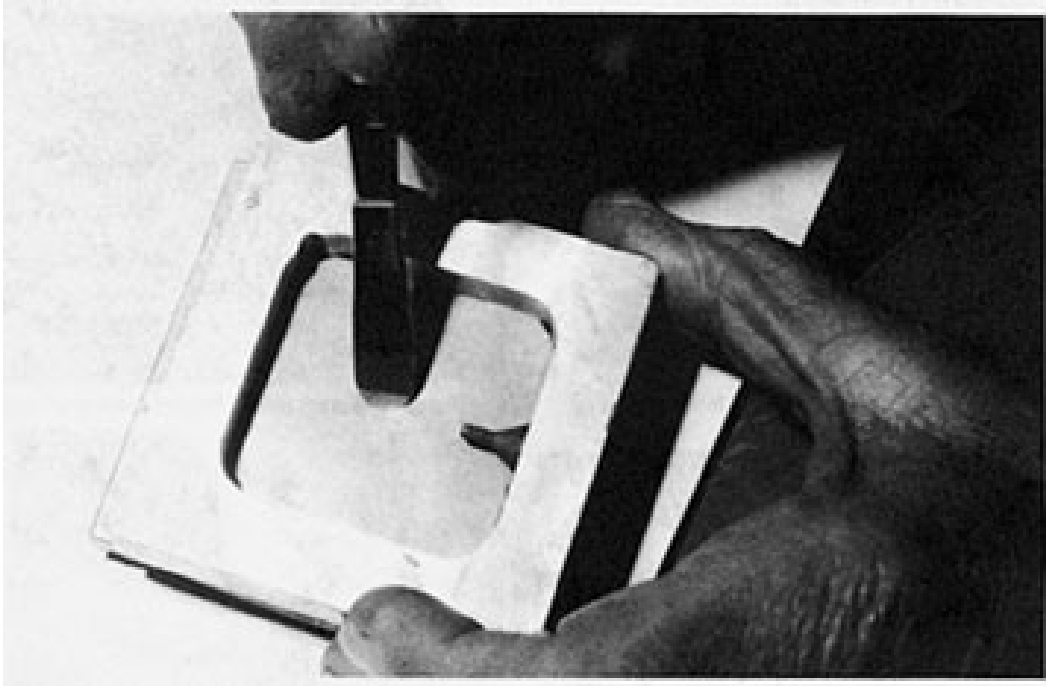


*1. The basics are Castaldo Gold Rubber and aluminum casting frame and side plates for duplicating.*

Before making a duplicate, some precautions should be observed. Do not use hollow jewelry, as the pressure of the expanding mold will usually collapse the item. Always use a sharp - preferably new blade for cutting the rubber, and the use of small rubber tips over fingers is an added safeguard. You can obtain the rubber tips from most pharmacies, who sell them as protection from infection in small cuts. There are some requirements for equipment, but most of the needed material is either in the average workshop that works with lost wax, or is easily obtained. A kiln capable of maintaining 325 degrees, [ 162° C] and rubber preferably Castaldo Gold - plus aluminum frames, which most well-supplied jewelry supply stores have, and some C-clamps, plus an X-acto blade or sharp equivalent will do the job.

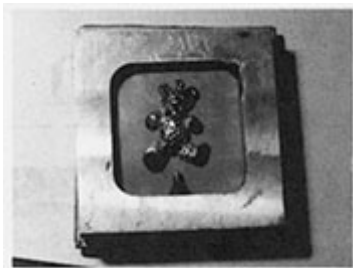
Once the mold is made, a wax injector unit is necessary, but this is a basic item and seems to be available in most rock shops. Obviously a small supply of wax, and wax spray allowing the easy removal of the pattern from the completed mold, are "must have" items.

Step number one is to obtain a subject that must be reproduced. WARNING: do not reproduce someone else's original designs unless you are going to substantially change the wax pattern, as lawsuits over "copy" work are major headaches. It is doubtful, however, if anyone who does not intend to sell the item, but will use it as a personal collector reward, will have to face such a suit.

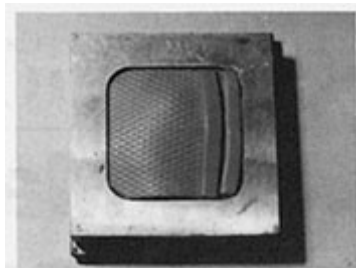


2. *Two layers of rubber, master to be molded, more rubber, are needed.*

The aluminum frames are available in a variety of sizes, and should usually be close to the size of the subject to be copied, in order to save on material costs. A basic frame of an inch or so in thickness, with an opening of two or three inches, seems to be acceptable in size for many jobs. If you are handy in a machine shop or have contacts, why not make an assortment of sizes to cover all potential needs? The price of aluminum is reasonable, and the array of size opens a lot of doors to subject matter.



3. *Here a gold teddy bear is on the bottom layers, ready to cover.*



4. *"Alibi strips" of rubber are added so mold cavity will fill.*



5. *After rubber layers are packed into mold, side plates are added.*



6. *C-clamps hold side plates, but special clamps may work better.*



7. Rubber is softened with a temperature of 325 degrees F. in kiln.



8. Serrated clamps act as fingersavers when rubber is cut with a very sharp X-acto or razor blade.



9. Slit in rubber is probed carefully to located metal master, so cut can be centered on the master.



10. Zig-zag cut of mold edges will make it easier to align the two sides for casting a wax master.



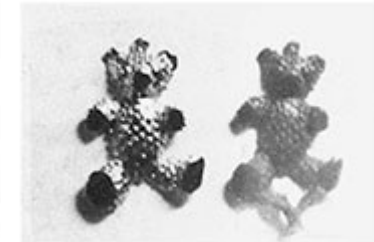
11. While carefully cutting around the metal teddy bear master, slits are also cut to allow later venting.



12. Metal master is at top, wax reproduction at right, hollow half-mold in rubber is at left.



13. Funnel-shaped opening on rubber mold can be enlarged for better flow of melted wax when casting.



14. Once the metal master has been cast in rubber, many wax masters can be made from the same mold.

Here are the steps involved in this casting technique:

Castaldo Gold rubber, in this instance 1/8-inch [3 mm] thick per piece, and the aluminum frame with side panels of aluminum, to retain image and rubber, were used.

Mold is produced by placing four pieces of rubber in the frame. Two 1/8-inch [3mm] slices, then the metal master, and finally the last two pieces of Castaldo Gold. The funnel in mold frame will allow wax to flow into position when mold is injected, upon completion.

A small gold Teddy Bear was placed into position, and was covered by two additional pieces of rubber for final packing.

So called "alibi strips" are used when complete packing is readied. Tiny strips of rubber will fill small spaces and ultimately melt into a single mold area. Other large mold frames are often filled with chunks of rubber which will be cut away and reused.

This temporary filling is an economical way of adding or subtracting rubber.

The aluminum frame, with rubber packing in place, is covered with two pieces of aluminum acting as side covers, to be retained by C-clamps or other firm retaining devices.

C-clamps tend to soften during kiln heating, so stronger heat-impervious retainers are practical and available from jewelry supply stores.

A temperature of 325 degrees [ 162° C] will melt the rubber and, using a time of about 10 minutes per layer of rubber and aluminum (approximately an hour), will satisfy all requirements. Under-timing will cause too soft a mold and air bubbles, and over-timing will cause loss of resilience.

A home-made mold retainer can be made from two serrated clamps, plus a chain to restrain the clamp, allowing easy cutting of mold. Mold should be carefully cut with a sharp X-acto blade. Probe to insure you are cutting where master is.

The importance of careful cutting cannot be over-estimated. The screwdriver-like device is used as a probe, to give some idea of master's placement and size before cutting. Some decrease in size can be achieved by immersing the mold in water as soon as removed from the kiln; otherwise shrinkage is minimal.

The mold is cut so that the edges will be serrated and irregular, thus allowing a more accurate closing of the mold.

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