ResinSaver
Mold System

USING THE RESINSAVER MOLDS

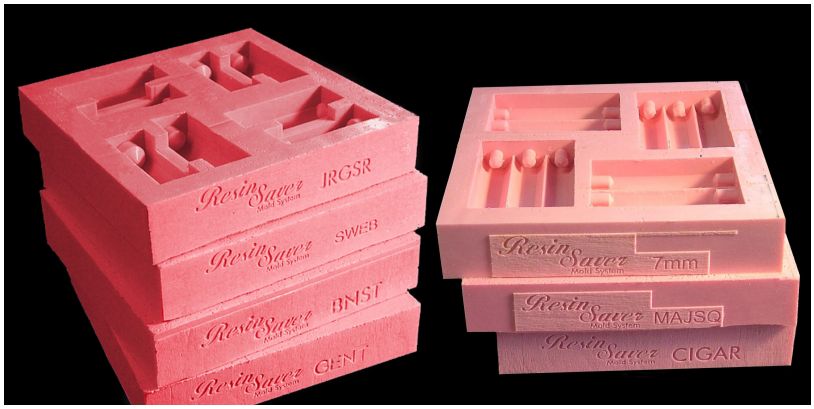
There's a few things to know before using the ResinSaver molds. Proper use and care will help extend the life and increase the detail held by the silicone.

Before you get started, take a look at the mold and become familiar with it's design.

These molds were designed with several factors in mind, not the least of which was the ability to use less resin when casting. For that reason, the bottoms of the cavities are rounded over. They also contain 'stoppers' which hold the brass tubes in place, keeping them from floating in the liquid resin and also keeping them from falling to the bottom of the mold while the casting is curing. The stoppers also keep the resin from entering the tubes. With the tubes already places inside the resin, there is no need to drill out the blank.

Also, the tubes and sides are already parallel to each other, so squaring your cured blanks is much easier. The sides of the blanks can be used up against a square in a disc sander. This will yield a squared face, provided the casting was done on a level surface.

Let's look at the mold and make note of some of the features.



Molds may vary from picture shown.
Each mold has four cavities for casting. Molds for pens that use only one tube will have four sets of double cavities. This gives you room to cast up to 8 pens at one time. Molds for pens that use two different tubes will also have four sets of cavities, but the two will be slightly different sizes according to the tube type. These mold will allow you to cast up to four pens at one time.

Some users have suggested that they would like to cast one pen or one tube at a time. Some of the users have modified their molds to put a 'bridge' in between the two cavities. While this will work, it makes handling the blanks a little less easy as there is less room to work. It would be easier to make one initial casting, cut the two pieces apart and use them as spacers. The next time you need to cast only one tube, simply put this spacer in the other half of the mold and pour as usual. Spacers should last indefinitely.

INSPECTING THE MOLDS

Take note of the stoppers. These should be inspected before each casting. While silicone is a wonderful material for making molds, polyester resins are a styrene based casting media and styrene will eventually break down the silicone. The stoppers are one place where this breakdown may show up first.

Feel the underside of the stoppers and inspect them for cuts and tears. If the silicone is torn, the resin will work it's way into this tear and will harden. When the next casting is removed, the stoppers could be torn off with the resin. You can make repairs to the mold using silicone caulking or a bathroom sealer. Most 'dollar stores' will have tubes of this silicone and it is very inexpensive. A tube will last you for years.

Smooth the silicone onto the stoppers with your finger. You want a smooth surface that the resin will not grab onto or leech into.

CLEANING THE MOLDS

Molds should be cleaned after use and release applied if possible. The release can be a commercial mold release or you can use a home brew. A mix if 10% vaseline and 90% mineral spirits will give you a brush-able solution that will protect the mold while it is stored. It can also be sprayed, but the spray mechanism may become fouled if the mixture gets cold. The mineral spirits will

evaporate, leaving behind a coating of Vaseline. Simply mix the two in a lidded jar and shake. It also makes a good release when pouring polyester resins. It is not needed when pouring urethane or polyurethane resins. Pouring epoxy resins is not recommended.

Molds can be washed with ordinary dish detergent. They can be soaked, sponged or sprayed. While they are dishwasher safe, it is best not to introduce any leftover resin to a dishwashing system.

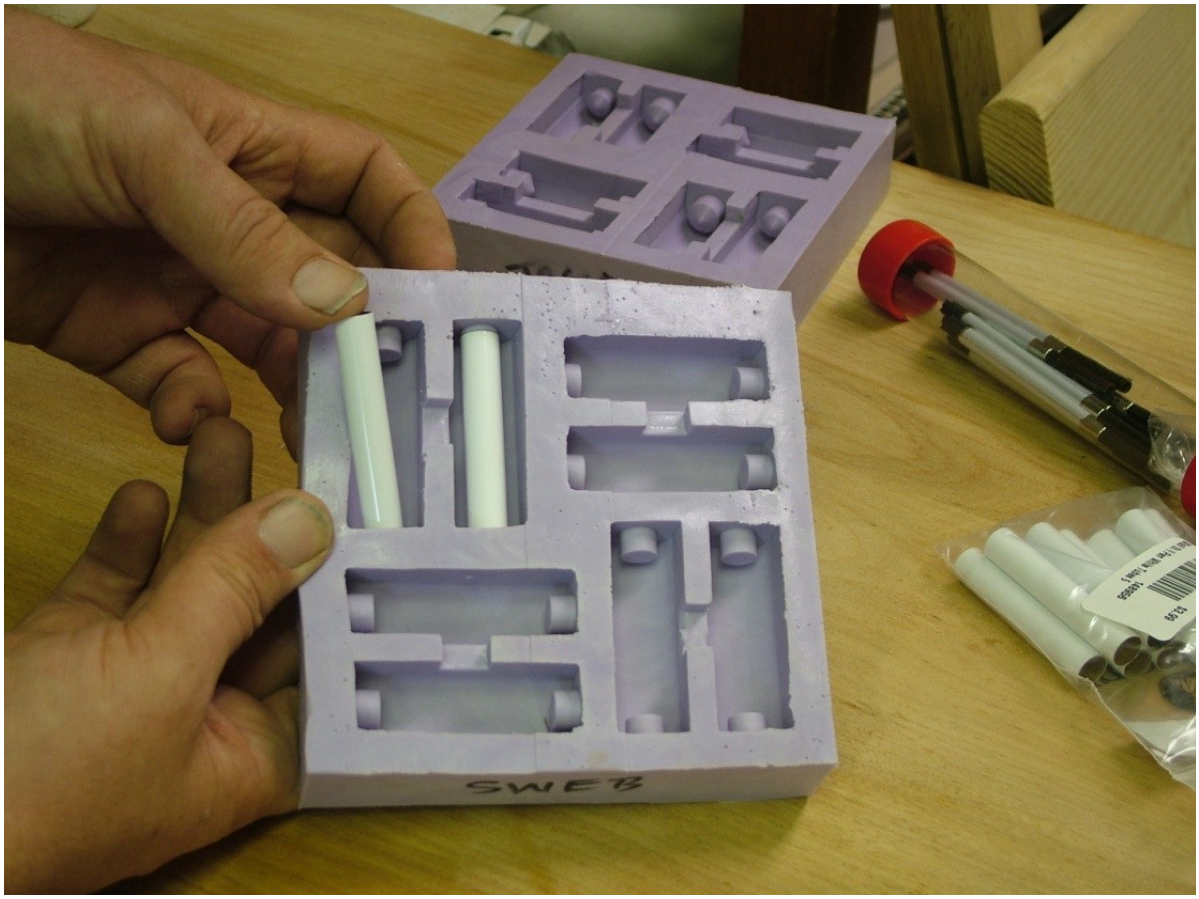
MOLD AND TUBE PREPARATION

After inspecting the molds, prepare your tubes for casting. Any paint or glues should be completely dry and time allowed for any off-gassing that might occur. Gasses released during the resin curing will cause air bubbles to be formed. The tubes do not need to be sanded, as the resin will shrink around the tube and they will be held securely within the cured resin. Tube edges can be chamfered, but care should be taken to avoid sharp edges that can damage the mold.

Castings that will eventually be turned thin will benefit by painting the tubes. Experiment with different colored paints to determine how the tube color will change the end result of your castings.

Start by putting a small amount of release on the inside of the tube with a Q-Tip. This will allow you to easily slide the tube onto the stoppers and will also allow you to move/rotate the tubes if necessary. This is especially helpful if you are doing 'inlay' work. (ie. casting resin into an opening in the blank) After the resin is poured, you can rotate the tube with a toothpick to expose a new side of the tube. This is helpful in filling in any undercuts in the casting.

The tubes should be installed on the stoppers closest to the center of the mold first. Once seated, gently pull on the outside wall of the mold to allow the tubes to be installed. Gently release the mold wall, sliding the outside stoppers into the tube. This will help avoid any stopper damage caused by sharp tube edges.



Frequently Asked Questions About the ResinSaver Molds

Q. Have these questions really been asked frequently, or did you just make them up?
A. Shut up.

Q. What is a ResinSaver Mold?

A. I'm glad you asked!
The ResinSaver was born out of frustration. I was trying to learn label casting and reading as many tutorials as I could find. I was watching videos on YouTube. I was asking questions. But I'm the type of person who needs to make his own mistakes, not learn from other's mistakes. So I spent lots of time and money getting failed casts.

One of the first things I realized is that casting mistakes can cost a LOT of money! I had boxes of discarded blanks that had tubes full of resin, tubes with labels half on, half off. Lots of labels that had smeared inks, white spots, air bubbles, tubes sticking up out of the resin .. you name it.

It occurred to me that there was resin in all sorts of places where resin just had no reason to be. And that resin costs money. It's about 20 times as expensive as gasoline.. and I was going through just about as much. (at least it seemed that way)

After trying to get mold containers as close to the finished size as possible, it came to me that I could probably make my own container easily enough, and even shape it so I could save some money in resin.

I decided to use silicone and a shaped mold. I included the stoppers right in the mold itself, saving me the trouble of gluing in corks (which sometimes failed) and if the stoppers were part of the mold itself, then I also could eliminate the wooden standoffs that hold the tubes up off of the bottom, and also hold them below the resin surface. That eliminated the step of filling the tubes with BB's for weight.

By making the mold specific to the pen tubes, there's less wasted resin for extra length or width.

Q. Which mold do I need to get?
A. It depends on which type of pen you are making. Molds are specific to tube sizes. The SWEB mold stands for Sierra, Wall St and Elegant Beauty. Other pen types may be able to use this mold, but only if the tubes are the same size. There is some leeway in tube length, as the stoppers are approximately ¼" long. As long as the tubes will fit, you should be able to use the mold. Other kits that use this tube are the Gatsby, Monet, Diplomat, Sienna

The JRGSR mold stands for the Jr. Gent (II), Jr. Statesman and Jr Retro pens. As with other molds, any other kit that uses the same tubes can be used for this mold, such

as the Jr Emperor and Jr Majestic.

BNST stands for the Baron, Navigator, Sedona and Tycoon pens. This mold is also used for the Jr Gent (I)

MAJSQ stands for the Majestic Squire pen. It fits the 3/8" tube which is also used by the Broadwell Art Deco ballpoint kit.

GENT stands for the full Gent or Statesman pens. Other kits using this tube set will also work.

CIGAR is for the cigar pens. Other names are Big, Big Ben, Big Samoan, Magnum and others, but we all know them as the cigar. The lower tube can also be used for the Rifle Cartridge pen kits.

Q. How much resin does a ResinSaver mold actually save?
A. It depends on what you were using for a mold before you got smart and purchased the ResinSaver mold. I was using a Tupperware container, wood blocks, corks, BB's etc. and using about 10-14 ounces of resin to get four pens. I might have found different containers to use and be able to save some more resin, but I started making the molds instead.

On average, a tube pair now uses approximately 1 ounce of resin, sometimes less. One tube pair would be one double tubed pen, or two Sierras or Squires.

Q. Can I use vacuum with the ResinSaver molds?
A. Probably not. I haven't tested it, but vacuum will remove the air from inside of the tubes. If the air pressure (vacuum) changes once the tubes are in resin, this change will cause the resin to flood the tubes, since they are now under liquid. So unless your vacuum pump and pressure pot are 100% sealed and leak free, you will probably lose your tubes and your resin. Also, the vacuum will distort the molds, changing the shape of the casting cavity, and your cast.

Q. Can I use my pressure pot with the ResinSaver molds?
A. Yes, but not high pressure. Since the silicone is soft, it can be compressed. Pressures above 20-25psi might cause the resin to be forced past the rubber stoppers and into the tubes. Some people have successfully used higher pressure than that, but I don't

push it. Higher pressures will distort the mold and push the resin out of place.

Q. Then how do I get the air bubbles out of my resin?
A. It is best to avoid getting them in the resin in the first place. But if that isn't avoidable, then helping the bubbles to clear as quickly as possible is the next best thing. There are several articles in the IAP library about casting, and one in particular deals with pressure free casting.
Don Ward's article outlines the procedure he uses and if you've seen his snake skin blanks, you'll know there's no point in arguing with success.
http://content.penturners.org/articles/2009/casting_bubble_free.pdf
You can use an ultrasonic cleaner to help clear the bubbles out of the resin before you pour it. Warming the resin also helps immensely, as the warm resin is thinner and this allows the bubbles to float to the top much more quickly. De-gassing with vacuum before mixing the resin also helps the bubbles not to form. Stirring the resin without lifting your mixing stick will help, too. When you lift the stir stick, you can introduce air into the mix.

Q. Can I use the ResinSaver mold with epoxy resin?
A. I suppose you could, but it doesn't work very well for pens.

Q. Why is the mold cavity longer than my pen tubes? Is this a mistake?
A. No. The cavity is approximately 5mm longer than the tube because many people will use them for polyester resins which can shrink. When they shrink, the tube ends could become exposed and you would need to re-cast your blanks. The original ResinSaver molds had cavities that were exactly the length of the tubes and when tested they worked just fine. But they had been tested with Alumilite, which has little or no shrinkage. Oddly enough, the original ResinSaver molds could take higher pressure and even vacuum, since the exact length if the cavity gave the mold extra surfaces to block resin migration.

If you use PR with the mold, the shrinkage should not be enough to expose the tubes. If you are using Alumilite you can use the end mill or sander to remove the excess resin.

Q. Can I make Plexitone blanks with the Resinsaver molds?
A. Yes.
Q. Really?
A. No.
Q. Then why did you just say that I could?
A. Because this is my FAQ and I can do what I want.

Q. How do I clean my ResinSaver molds?
A. You can wash them with dish soap, rinse well and let them dry thoroughly. You can also wipe them out with acetone or denatured alcohol. In fact, since they are made with tin cured silicone, a denatured alcohol wipe or wash is a good idea before casting polyester resins.

Q. Do I need to use a mold release?
A. While not strictly necessary, it is a good idea. Your blanks will pop out nicely with no release at all. However, using a release will extend the life of the molds. I use a mix of 90% mineral spirits and 10% melted Vaseline. I mix them and pour into a spray bottle for use. If you can find it, silicone oil works very well and helps recondition the mold. You can get silicone oil from resin distributors. Two types I know of are Dow Corning 200 Fluid and Smooth-On.

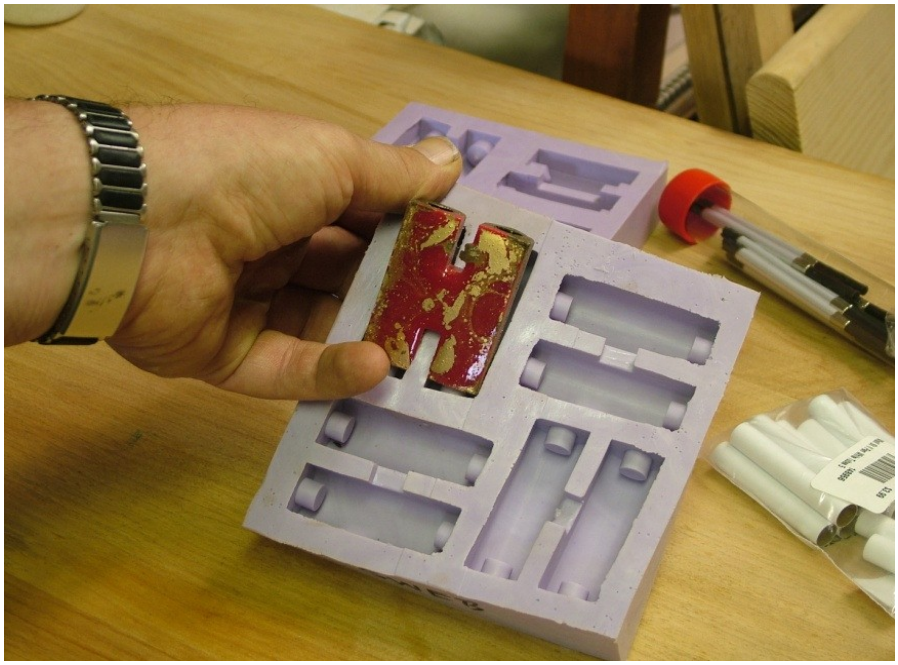
Q. Can I modify the mold? I want to block up that little bridge between the tubes.
A. Yes, you can. But make sure you can get your fingers in there to insert and remove the tubes before you make any modifications.
A better way to use half of the mold is to pour one complete mold, cut the tubes apart and same them to block half of the mold later on.

Q. I tore one of the cavities in the mold. How do I fix this?
A. You can make repairs with any silicone. You can use caulking or bathroom sealer, as long as it is 100% silicone (not 'siliconized') it will adhere to the mold permanently. Be sure to shape and smooth before it cures because you won't be able to remove it later.

Q. What if I don't want to cast labels? Can I use the ResinSaver molds for something else?
A. I'm glad you asked.
While the molds were originally made for label casting, people have told me that they use them for casting colored resins with the tubes already in them. This eliminates the drilling and gluing of tubes, as well as saving the resin that would normally have to be drilled out of the center of the tubes. Other turners have used them to "re-cast" damaged or blown out blanks. By repairing the damaged blank and then putting it into the mold, they can now cast it in clear resin, turn and sand/polish. This gives you a clear resin finish.

Blanks that have been turned too far (over-turned) and are now smaller than the pen parts can be re-cast to build back up the width. Turn, sand and polish.

With some imagination, you can likely find more uses such as power carving or engraving your blanks and then casting with another color before turning. This will 'reveal' the engraving when you turn it down to size.



Some people use them to cast translucent resins. When you can see through the blank, you can see the unsightly glue sticking to the tube. To avoid this, you'd need to paint the tubes but that will change the color of your blank. But by pouring your resin directly in the mold with the tube already in place, you won't see any sanding marks (no sanding needed) or any glue lines when you look through the resin.

You can also pour resins impregnated with powdered stone, porcelain or other media.

Q. Can I "post cure" my blanks while still in the mold?
A. Yes. The molds will be fine in a warm oven while your resin post cures. The silicone can likely take higher heat than the resin can. Do not exceed 450F.

Q. Can I stack my molds in the pressure pot?
A. Yes, provided you don't completely block the cavities. A piece of plywood between the molds should suffice. Tilt it at an angle to make sure it doesn't block the mold underneath it.