Basic Mold Making & Pewter Casting

By Prior Helmut

I'll avoid boring you with a redundant history lesson on pewter and molds, other handouts can cover the history and minutia of the details so lets get right to the basics.

RULES

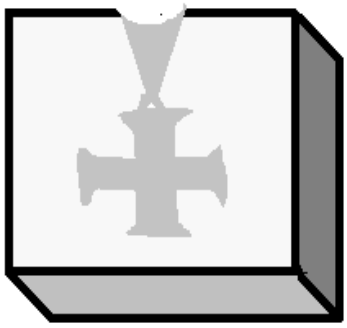
1. Everything is **HOT**, the stone, the pewter after casting, the ladle, the torch tip, etc. *"Treat all metal as hot metal" is something to remember.*
2. **ALWAYS** have a bucket of water, and all safety gear in working condition beforehand. (See section below on Safety gear.) *If burned immediately immerse hand or burn into bucket if appropriate. Remember this can be dangerous and is only suited to those with common sense*.
3. Be aware of others. Don't act like an arse bumping the table while others are carving or blowing the powdered soapstone into peoples space. Never blow your mold, instead pour it onto the grass, tapping it, or use a brush so others don't breath it in.
4. Use common sense.

Carving Molds

At home I wear a respirator/breathing mask and eye protection, with a smock to catch the dust. At outdoor medieval classes such as these in the open wind, I forgo said protections while carving keeping **RULE 3** in mind.

Tools

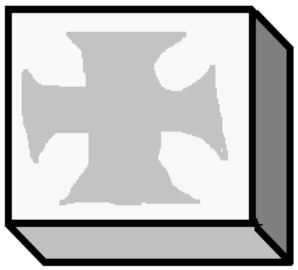
Any woodcarving tools will work, and those cheap $5-15 imported chisels on wood dowels are perfect for carving small soapstone. Small dental tools and cheap all steel carving tools work well too for lettering and detail work, and can be found in sets under $10 . X-acto knives are very helpful and inexpensive, as are proper soapstone chisels. ***One warning, almost everything made in China needs to be refiled to proper shape and sharpness.***



The Stone

The stone is 3x3 to 4x4 inches and an inch or about in thickness. Simply put, you draw with pencil the design you want in the center of the stone, leaving enough along the sides and room for a spout for the sprue. *(As seen with the simple illustration to the left side.)*

The example shows Cross is placed in the center with enough room for the sprue that will be cut off after casting. *The example on the right is unusable.*



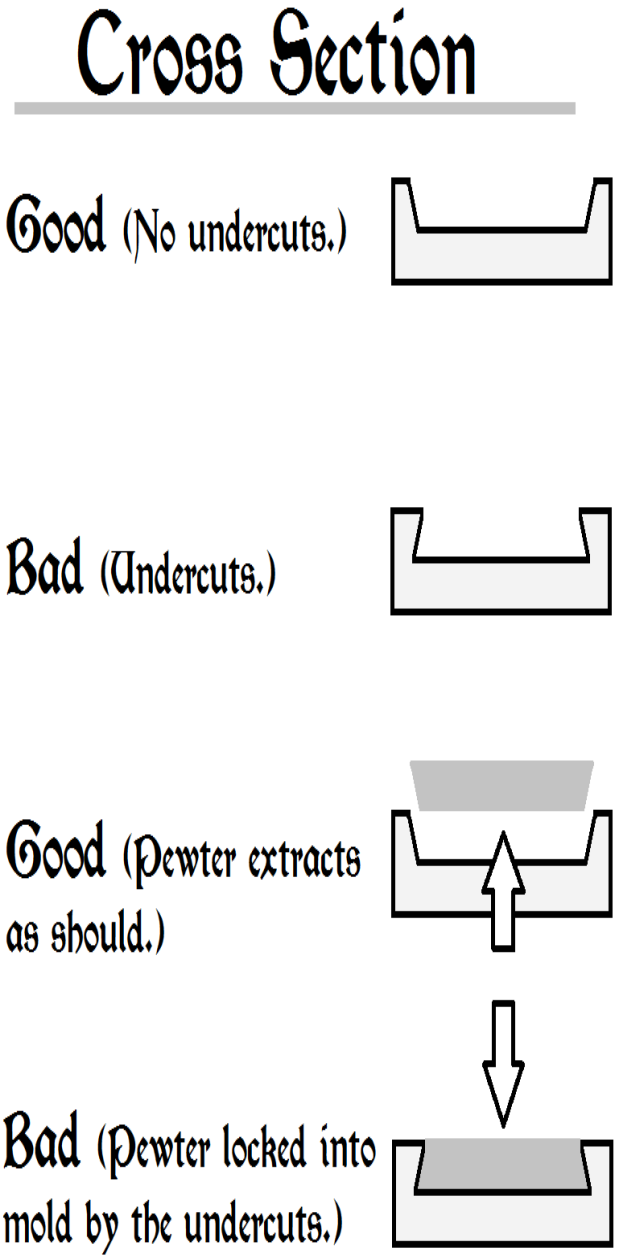
Wrong as it's unpourable.

The image will be reversed when cast so all lettering and the like must be done in reverse on your mold.

After drawing the outline to your image you can score the edges then start bringing your image to the proper depth. *Obviously you don't draw your details onto the stone until the mold has reached the proper depth as you would be erasing it as you get down to a flat base depth..*

Your depth of carving should be about as thin as a penny, and a penny can be used to check your depth.

After reaching proper depth, you can then add your details but make sure your sides have no undercuts that will lock your pewter into the mold. The last thing you want is it to function like a dovetail joint as the only way to get it out will be to melt it out from the mold.



Pewter Casting

Pewter casting is dangerous and basic safety needs to be addressed.

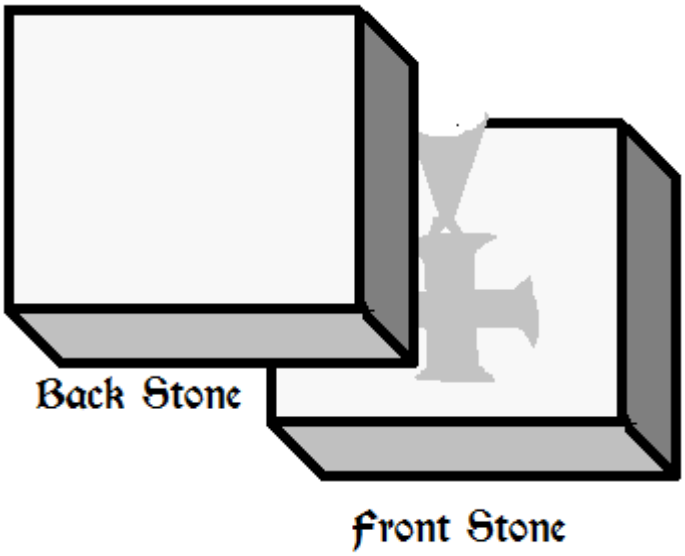
First remember the 4 rules, It's hot, use the safety gear, be aware of others and use common sense.

Materials needed.

1. **Fuel**, Propane or MAPP gas if those are your torches. Electricity if you are using and electric burner. (I prefer to use MAPP gas as it's the hottest and most effective gas for pewter work.)
2. **A ladle**. You can use anything from a cheap ladle for casting lead sinkers to a quality bullet pouring ladle made of cast iron. (I prefer a premium bullet casting ladle with a pouring hole.)
3. **A tile** at least 12x12 inches, preferably of marble to protect the table your pouring on and to catch any over-poured metal.
4. **Britannia Pewter**, any non-lead based tin alloy.

Safety gear

5. **Leather welding gloves** to protect your hand while pouring.
6. **A FULL face shield** to protect you in case of a "shotgunning" incident where water vapor causes metal to shoot upwards...
7. **A five gallon bucket** of water in case of burns, and to clean up after class.
8. **Optional** (provided by yourself), a simple filter mask, eye protection when carving, leather finger guards while carving, use your judgment.

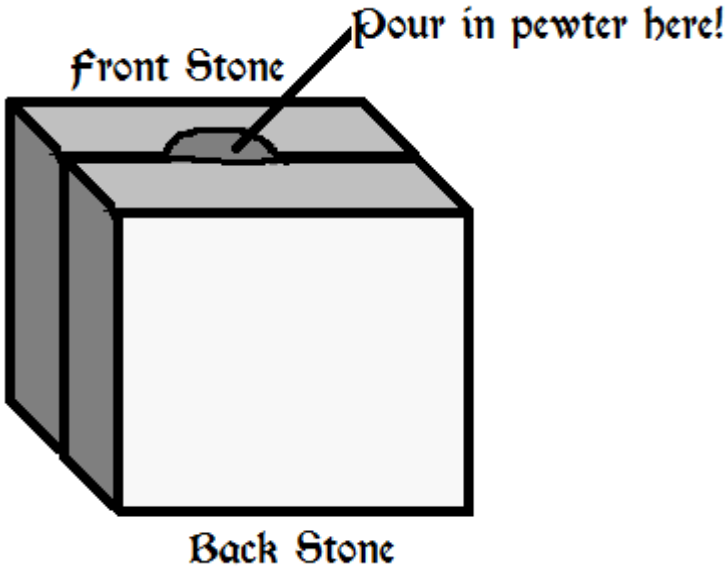


Pouring Pewter

1. The ladles in the class are bullet casting ladles and can hold enough pewter for up to a few castings so load them up with pewter.

2. Now take your mold and using a gloved hand lay it onto the marble tile and start evenly applying heat to both the front stone you carved, and the backing stone to the mold. *This will immediately show a difference to the stones surface as the stone dries and the water vapor starts exiting the stone.*

This is important as trapped water vapor can create steam causing a dangerous shotgunning effect of melted metal spraying upwards. Simple precautions like heating the stones prevent this from occurring, and a full face mask is worn as an extra precaution.



3. After the stones are dried and heated, take your ladle and apply heat to it until the pewter takes on a liquid state. You may also wish to heat the mold some more as you heat your pewter, as a hotter mold will cast better. Heat the **tip** of the ladle to maximize the effectiveness of your pour as it's where all the pewter runs through.
4. Put the front and backing stone together using your gloved hand, as the stone is hot, and hold it firmly over the marble tile.
5. With your face mask down, pour the pewter in one easy motion into the hole you carved while holding the mold together with your gloved hand. Hold it until you see the sprue tip on the holes edge cloud over showing it's hardened. (This can be from 5 seconds to 30 seconds depending on mold size.)
6. Using gloves as mold is hot, open mold and the pewter token should fall out when held upside down. Allow to cool.
7. When cool, cut off sprue. You can age, polish, paint, or finish your pieces as preferred.

Extract pewter and let cool

Cut off sprue and your done!