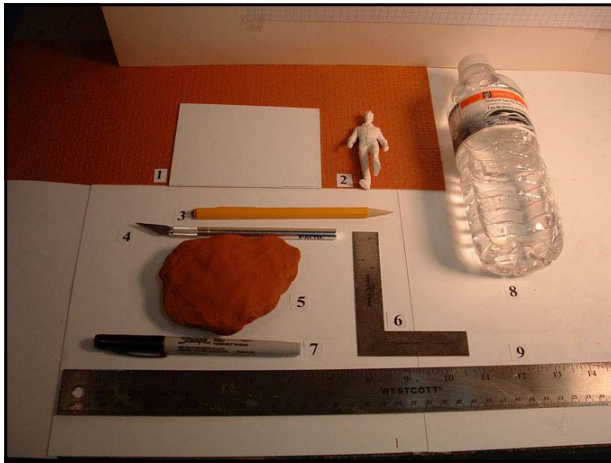


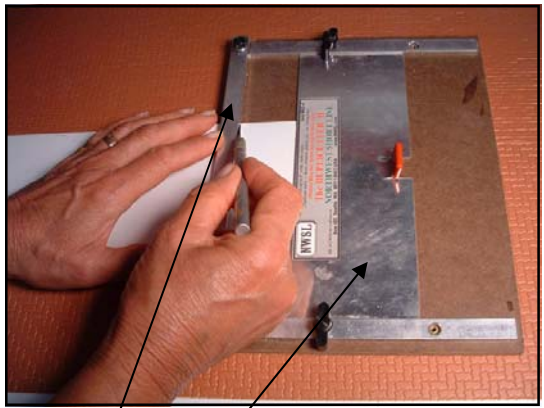
**How make a two part RTVrubber mold & cast a figurine in resin
(Includes list of materials to make silicone rubber molds and cast figurines
List of materials also includes everything needed to make window molds and cast win-
dows)**

I have done a separate article on how to make original windows and cast them in resin. The article appears on this web site.

The following photographs will show the items you should have to make a rubber mold, pour resin figurines or make original windows. A complete explanation of each item, it's approximate price (they are always subject to change) and where to purchase them follows the photographs



Toaster oven



This bar holds your styrene down so that it doesn't move while you cut.

This plate can be moved back and forth to determine width.

1-Styrene sheets available from Model Builders Supply 1-877-627-8627 toll free
Web site:www.modelbuilderssupply.com (there is a link to it on this web site)
2mm thick 24X36" order # STSW-180 price: 24.79 each (approx)
Or: 2mm thick 12X24" order # STSW-80 price 9.67 each (approx)

#2-Any original figurine you wish to duplicate in resin these are available at any good hobby train shop

#3- pencil to make your design

#4-exacto knife fitted with a # 11 blade available at any hobby shop about 6.00 each to cut styrene

#5-Kleen Klay available from Model Builders supply same as above to embed your figurine in
Approx. price: 5.50 for 1lb. This Klay never dries but should be kept in a plastic bag.

#6-small hobby square to make sure your window is square

#7-Sharpie fine point to mark your styrene

#8-water to clean up

#9-a cork backed ruler available at any office supply outlet

#10-a sheet of graph paper available at any office supply outlet to draw your window on and make sure it is square

11- The "ChopperII" available from www.spruebrothers.com price approx 38.99

#12- Vaseline to apply on to the first part of the completed mold

13- small plastic cups available from Model Builders Supply -same as above
Order # CUP1 20 pc. 2.50 each - to measure your re

14- accelerator for the Zap- A- Gap medium viscosity available from A.C. Trains 511
Plains Rd. E. Burlington call toll free 1-866-838-3441 Check their web site www.actrains.com
Price approx 7.00 There is a link on this web site

15- Zap-A- Gap 1 oz. available from A.C. Trains approx price:4.95 each about 1 oz.

#16- Straight pin to unclog the Zap-A Gap glue periodically, this glue is used to glue your mold box together or your styrene strips. It will glue almost anything instantly or very close to it.

17– Brush to brush on Vaseline on the first part of your RTV mold

#18– small metal spatula used to mix your RTV or resin. Any small item can be used as long as it is metal

#20– Alumilite RTV silicone rubber available from Model builders supply order # KIT-RTVHS2 hi temp # 2 — 1 lb. Approx 42.95

21– small metal spatula to mix resin You can use small artists spatulas available at “Michaels”

22– Alumilite resin order # KIT-ALUMILITE 14OZ.EA (a& b regulator) approx price:47.95

23– set of 7 chisels available from Model Builders Supply order # 81D40.1 approx price : 18.60 this is used to clean the Klay around your figurine when making a mold

24- dental picks, I asked my dentist for an old set or Model Builders Supply order # 86K95.02 Set of 4 approx 12.70 same use as above

25- plastic drinking cups available anywhere 6 oz. Approx

26– toothpicks to burst the bubble after you have mixed your RTV rubber

#27a – solid styrene microstrips packaged 10 to a pkg. ranging in prices from 4.00 pkg on up depending on the size ordered.

#27b Polly Filla available at any hardware store

#28– toaster oven available anywhere in dept store.

#29– leveling table, we made this one with a square piece of wood to which we mounted self leveling feet available from “Lee Valley Tools” order # 01S04.05 pkg. of 4 approx 7.40

#30– level available from any hardware store

#31- rubber bands to hold the 2 piece molds together

#32-stained glass available at any “Stained Glass Shop” Price varies approx 6.00 sq. ft. This glass works wonders in buildings, I use a stipple finish gold color glass, the windows will get a nice gold glow when the building is lit, but it will not show the insides because most of the time the buildings are empty. Use clear glass if you have inside sets.

#33– stained glass cutter available at any “Stained Glass Shop” price approx 60.00 each
If you don’t want to cut the glass yourself simply take exact measurements of the glass you want cut and they will cut it for you at a price obviously.

#34– container and brush for baby powder used to powder your molds before you pour the resin in. This helps the unmolding

35-levelling legs available from Lee Valley Tools.com This is a close-up to show you what they look like and how you reinforce the corner to be able to mount them.

36– The Duplicator II # 62-4 is available from www.NWSL.com

I know the list is extensive, but if you want to do a good job, I would advise you to have these items on hand.

The cost is minimal in my estimation compared to the money you will save by being able to make anything you want.

Please note:

When you are making windows or boxes to hold the RTV silicone rubber you need to be working with styrene. I usually use 2mm styrene sheets. It is easy to cut styrene if you adhere to these rules. Always work with a cork back lined steel ruler. The cork helps to stabilize the ruler on the styrene. Styrene itself is mighty slippery so it pays to use the proper instruments, less chance for you to be wearing a band aid!

Always use an exacto knife with a new # 11 blade

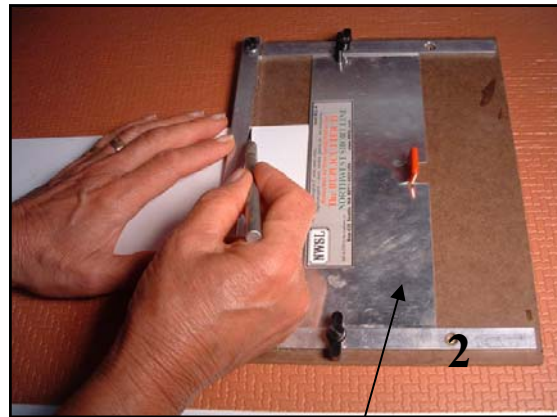
Styrene can be drilled, glued, sanded, and is easy to mark with a fine line “Sharpie”

It is a very versatile material, I have used it to make benches, furniture, signs, windows ,etc....

When making windows it is advisable to get the “Chopper” to cut 45degree angles on the styrene strips. It does a remarkable job . It also cuts other angles as well as straight cut. This tool will save you time and money because you won’t be wasting material. It is listed in the items to have on hand as # 11



The chopper



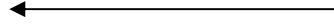
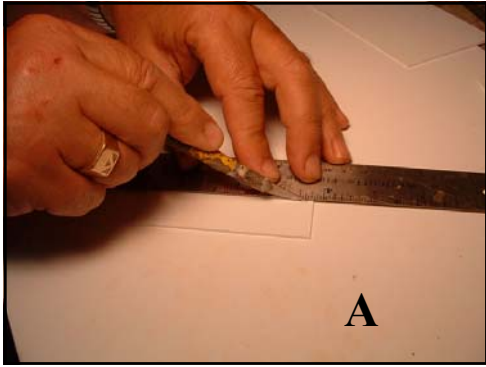
The Duplicator

The Duplicator allows you to cut styrene strips any width you want, if you are cutting several, you always get exactly the same width. No need to measure every time, a real time saver!

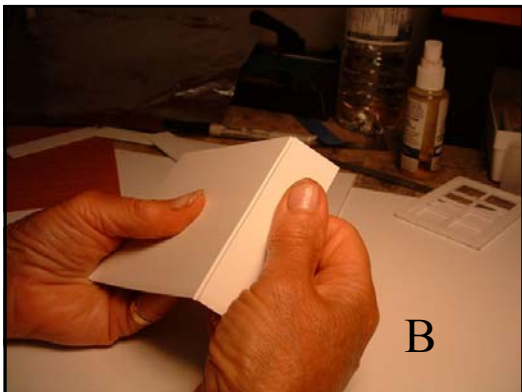
In my opinion these two tools will save you a lot of time and aggravation!

They are not expensive and well worth it.

The next few photos will show you how to score and break styrene.



To cut styrene:
Always score the styrene twice with an exacto blade fitted with a # 11 blade and a **cork** lined ruler to stabilize the ruler.



Once scored, bend the styrene as above but only until it is bent, not broken apart



Immediately bend in this direction to completely break the pieces apart

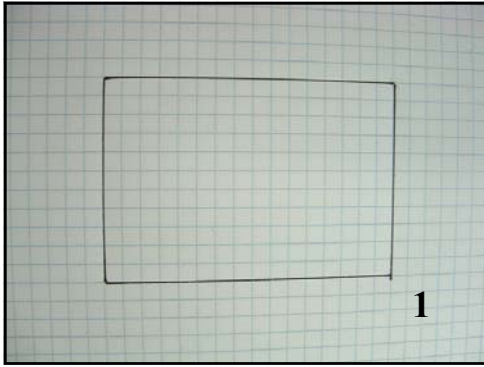
You are essentially pressing down, and immediately pressing up to break the styrene. This method will give you a nice clean edge, no flange!

Let's begin.....

Determine which figurine you want to make a mold of and make sure it is clean of any debris, and any imperfections because the RTV silicone can pick up the minutest imperfections....

Cut pieces for the styrene box that will hold your klay but do not glue parts together! **Method follows;**

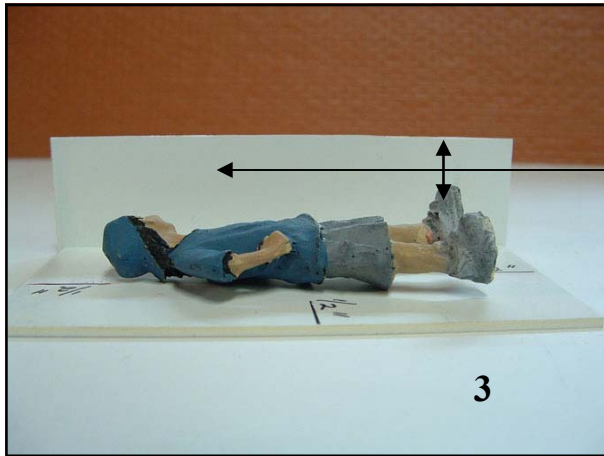
On a piece of graph paper lay your figurine down and mark a rectangle around your figurine making sure you have about 1/2" all around as shown in photo # 1



Rectangle is marked on piece of graph paper



Cut a piece of styrene which will become the bottom of your box



Cut the two long sides of your box (the right length) making sure the height of the piece has at least 1/2" clearance above the highest point of your figurine as shown in # 3

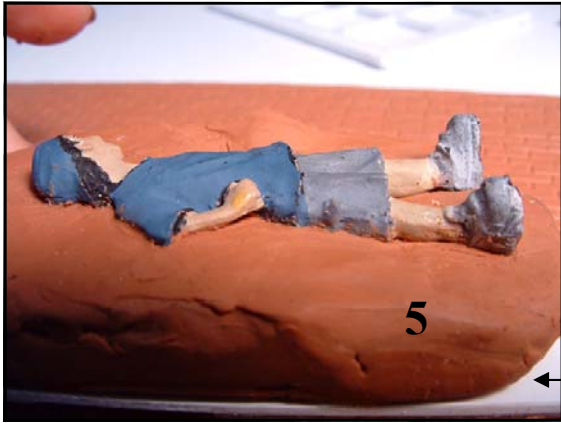
Cut the two ends (the right length) and the same height as the sides

DO NOT GLUE BOX TOGETHER YET !



Take an amount of Kleen Klay big enough to fit in the box you will eventually make . This photo is only to show you how big the Klay must be.

You will assemble the box later!

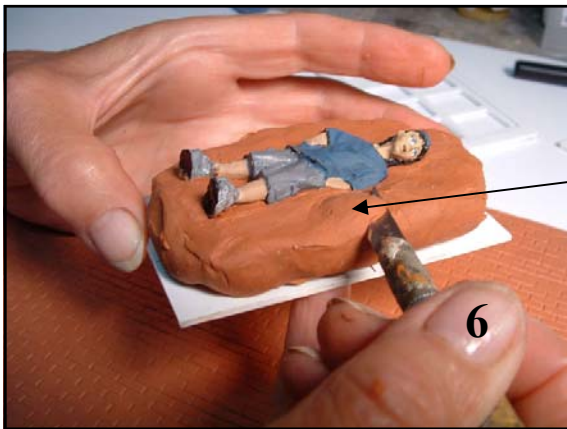


Lay your Klay down on the bottom of the box and....

Push your figurine in the Klay about 1/4 " into it. As shown in # 5

While doing the next step be careful how you hold the klay, that's why I prefer using the box bottom to hold it. There is less chance you might change the shape of the klay. You must have a rectangle to put in the box later , even a rough rectangle is acceptable.

← Styrene bottom of the box



The idea here is to have a perfect line where figurine meets Klay

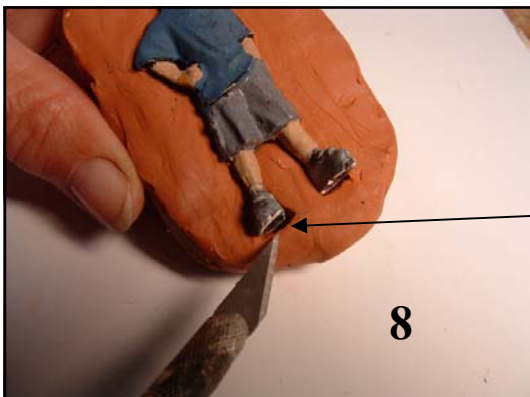
This next step is tedious , but you must be very precise. The idea is to take away the excess Klay to start with . You should have a fairly even surface on the Klay.

Then you must make sure there are no gaps between the figurine and the Klay. If there are, the rubber will leak under the figurine and you will have an imperfect mold.

Take your time, Use pics, toothpicks, your fingers, dental tools, whatever you can to make sure the Klay around the figurine is smooth and fairly even.



Remove any Klay that is anywhere on the figurine above the dividing line between Klay and figurine.



This gap is not acceptable!

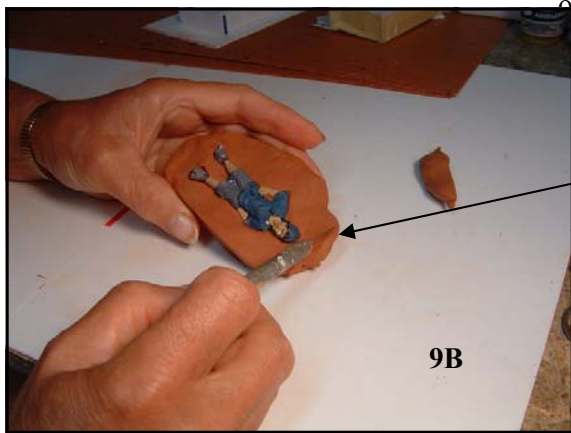
Push the Klay into the figurine again and smooth everything out.



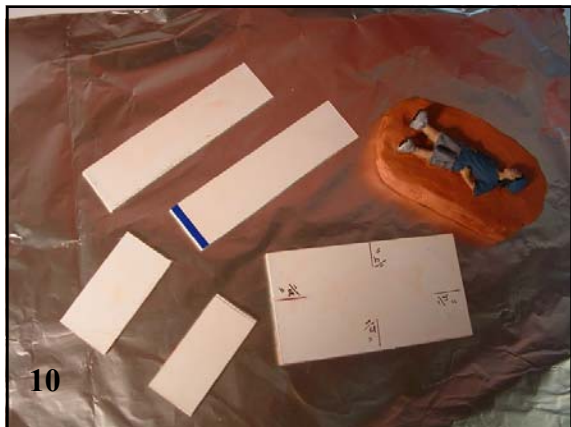
This photograph shows you another way of trimming your Klay before you put your item to be reproduced into the box.

Just use your exacto knife to cut the Klay in the form your box

Cutting line



After cutting, your figurine is now ready to be put in the box.



All pieces of the box have been cut and ready do assemble.

Working on a piece of foil shiny side down, glue one of the sides to the bottom of the box

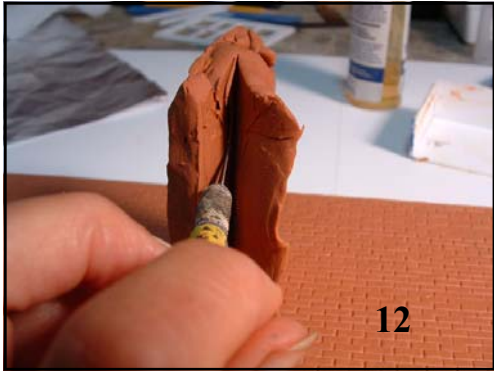
Zap-a-Gap has a hard time gluing to foil, so if there is any glue that comes in contact with the foil , it will not glue your box to the foil.....much! Use the accelerator to hasten glue setting.



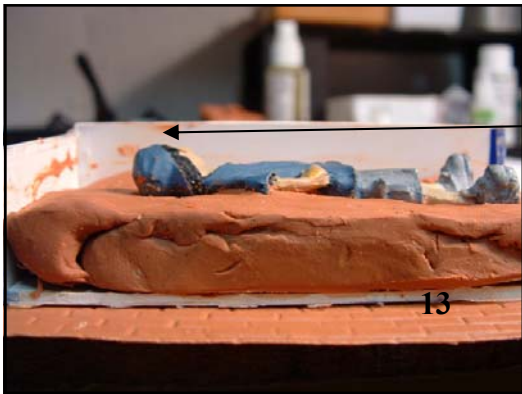
Place your klay holding the figurine in the box. Check to see if you have 1/2" clearance from the top of the highest point of our figurine to the top of the box.

As you can see here I do not have the 1/2"

So on to the next step.....

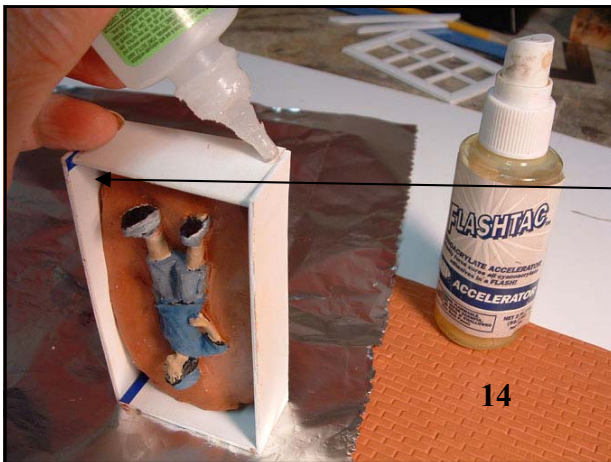


Remove the amount of Klay required to get 1/2" clearance between the highest point of the figurine and the top of the box as shown in photo 11



Put the Klay imbedded figurine in the box and check for clearance. You should have 1/2" between the highest point of the figurine and the top of the box

You now have the clearance needed



Go ahead and glue remaining sides using Zap-A- Gap glue and accelerator

You will have large gaps in the corners of the box.



Simply add small amounts of Klay in the corners and smooth everything again so you have a nice corner **even** with the rest of the Klay.

A final check should be made to inspect the figurine. Is there any excess Klay on the figurine to be removed?

Is the Klay around the figurine as smooth as can be?

Are there any gaps between figurine and Klay?

Are there any gaps between klay and the sides of the box

Once you are completely satisfied, it is time to put in “Keys” to assure alignment of the opposite matching half of the mold .



I use wooden skewers. (used to make ka-bobs in cooking) I simply cut pieces about 3/8” long and imbed them in the Klay half way. **Remember to be careful your “keys” are not too high.** Everything must be covered in RTV rubber if you want a nice mold. The keys must have at least 1/4” rubber above the highest point.



The completed box with imbedded figurine and “keys” is ready to accept the RTV silicone rubber.

At this point it is not necessary to add a release agent. Silicone RTV rubber only adheres to itself!



Using the 2 (1oz) measuring cups provided in the RTV Rubber kit fill them to the 1oz mark with the RTV rubber base.



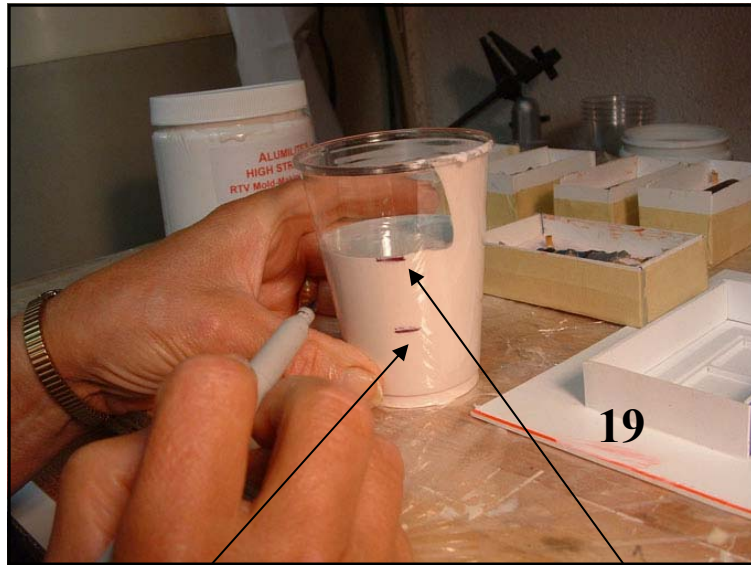
Pour the two (1 oz) cups into a clear plastic drinking cup and mark as indicated. Determine if you have enough rubber to fill your window mold



If you have enough RTV in your drinking cup, add the 1 scoop of catalyst to it. As you can see it is pink in color. The reason is: When you mix the catalyst in the RTV Rubber you will mix until the mixture is a light pink throughout! You have plenty of time to do this so don't rush. **When you mix, mix slowly trying not to incorporate too much air in the mixture. The air will cause bubbles and you want as few bubbles as possible. They will show up when your mold is filled. The bubbles will rise to the top**



As you can see the mixture is now a solid pink color with no striations so you are ready to pour in your mold. Pour slowly, again not to incorporate too much air. **If there are any bubbles that rise to the top burst them with a toothpick. This may occur for 15 min. after you have finished pouring. Take the time, and watch for 15 minutes.**

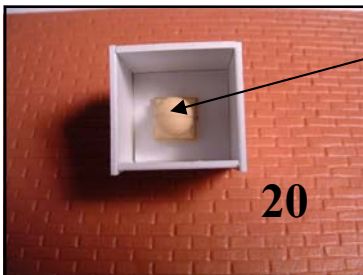


2 oz mark

4 oz mark

NOTE

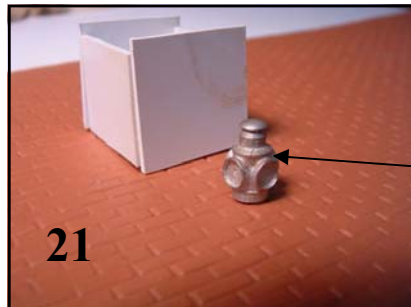
If you are pouring several molds at once, you can double up on the Rubber but **put the correct amount of catalyst for doubling the batch** . Make sure you remember the quantities you are measuring . The proportions have to be right! **2 oz rubber to 1 scoop of catalyst.**



20

This is a post cap , can be used as decoration on a house. Always make sure the scale is right. Just make a box to encompass the item with enough space around it as shown. Put a small dab of glue and press it down in the middle of the box.

RTV Rubber is expensive so you must always have some extra molds ready just in case you mix more than is required for the mold you are working on..... That is the reason why you make one piece molds



21

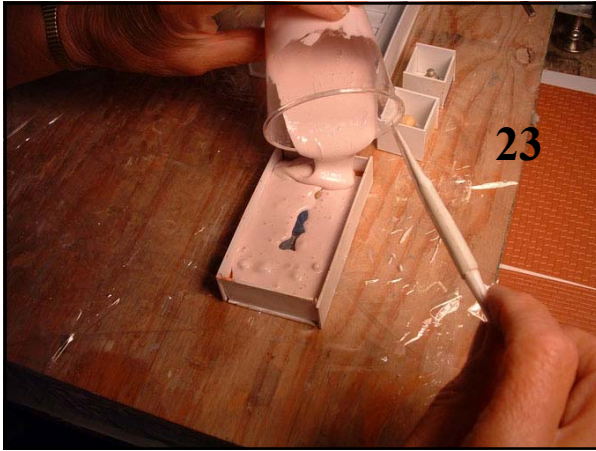
You can buy a lantern (right scale) and duplicate it several times with a mold after casting one out of resin,

Make sure you have 1/2" clearance from the top of the item to the top of the box!



22

Paint the lantern black.... You can then go to Michaels and buy flat glass beads red and green (the appropriate size and glue them on. Then at Michaels again get a pkg of jump rings 7mm , drill a small hole at the top to put the ring in (do this with a "Dremel" tool) Voila ! you can put a lantern in someone's hand!



Pour mix in making sure you add enough to cover 1/2" above the figurine. Make sure your keys are covered also. If one key is not completely covered **you will have a hole in your mold and resin will seep out when you cast your figurine**



For the next 10 min. you may have bubbles that come up to the surface. Take your exacto knife or a toothpick and burst these bubbles.

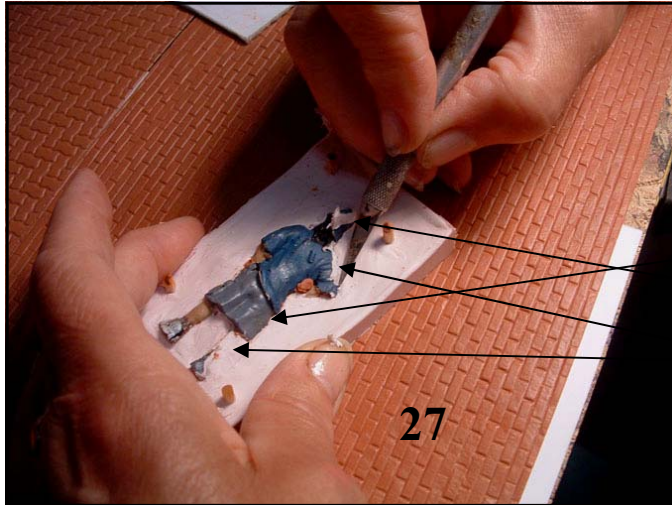
Be Patient wait the full 10 min before you leave your mold to cure for at least 14 hours.



Take the box apart



Remove Klay from the mold carefully.



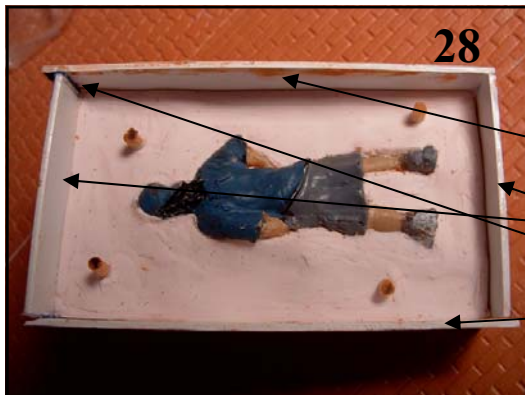
Note: the figurine is now face down in the mold.

Clean off any RTV Rubber anywhere on the figurine that is **above** the dividing line between figurine and RTV Rubber

This should be cleaned off and this & this. (the back of his right leg has rubber on it therefore the rubber on the leg should be removed) Make sure when you are cutting close to the rubber that you cut horizontally to make a nice clean line , **enlarge the photo so you can see how I am holding the exacto knife**

Again this next step is crucial! Make sure your mold (first half of it) is free of any Klay residue and that the figurine has been cleaned off of all superfluous rubber.

The cleaner your mold is the better second half you will get!



Clean off any glue residue on the pieces of your box with your exacto knife.

Start putting your box back together with one short side and one long side, glue one corner. Next, put your mold in and put the next long piece in for fit. Is the mold fitting in tightly? If it is glue the next piece in.

The idea here is there should be no space between the mold and the box. If there is the rubber will leak outside the box.

At this point I make sure there won't be any leakage by covering the box all around with masking tape.

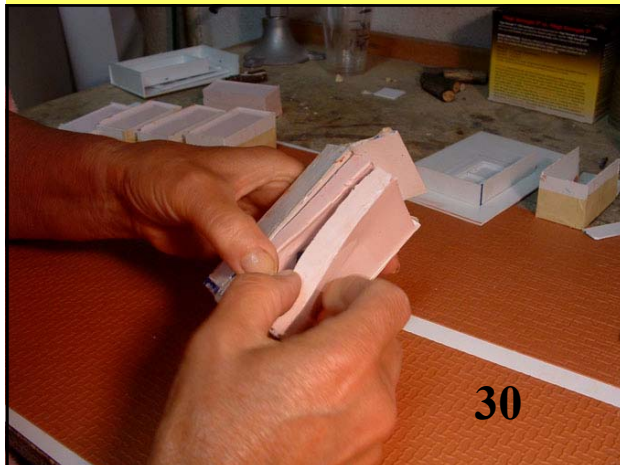


Brush every part of the rubber with a **light** coating of Vaseline . Do this with a fairly stiff flat brush. It is not necessary to brush the figurine or the keys. **Rubber will only adhere to itself.**

Make sure every part is covered, if you are doubtful do it again!

This step makes sure that you can take the mold apart! So be careful!

**MIX RUBBER FOLLOWING STEPS 15-16-17-23-24 EXPLAINED PREVIOUSLY.
LET YOUR MOLD CURE FOR AT LEAST 14 HOURS**



Remove the mold from the box, separate the two pieces. Remove the figurine.

Congratulations! You have now completed your first mold!

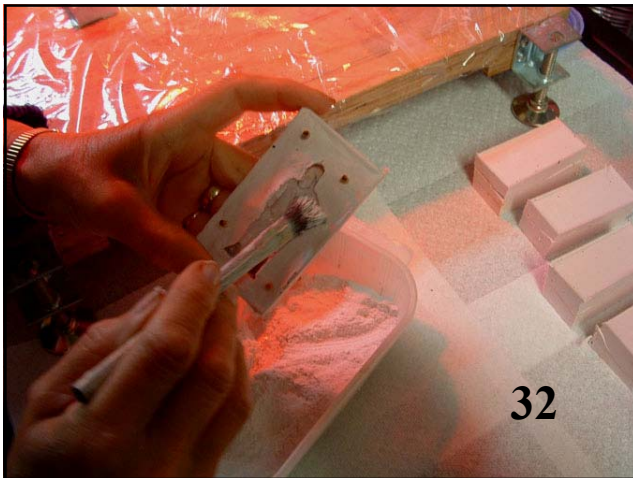
When you cast the mold with resin in the next step you will find out how good a job you did on your first mold. If you are not satisfied, remember you learn from the first attempt! Just try again... That's how I learned!



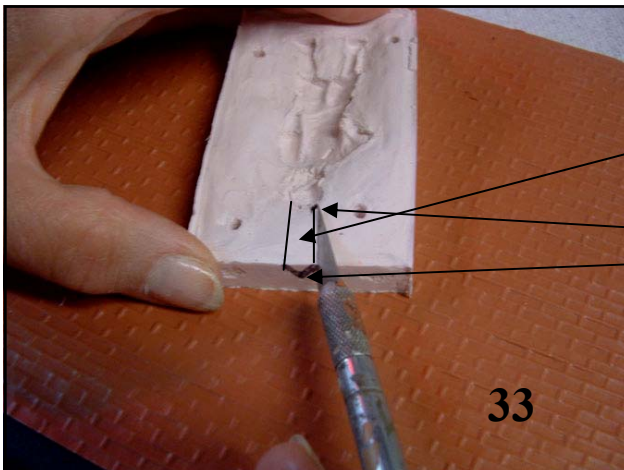
Casting in Resin

Prepare your work site. You must pour on a level table. You can make a small one by cutting a piece of wood 1 1/2 by 1 1/2 foot. Reinforce the corner as shown in photo 35 and add the leveling feet. Adjust the level.

You must warm your molds before you are ready to pour. They should be warmed in a toaster oven set at 140 degrees for 15 minutes. This helps the resin cure faster. Put your molds in the oven with both parts open to the inside see photo 31



Brush the inside of your mold with baby powder, this helps to preserve your mold when using it several times. Resin works on a heat premise, so the more you cast the same mold the hotter it will get.



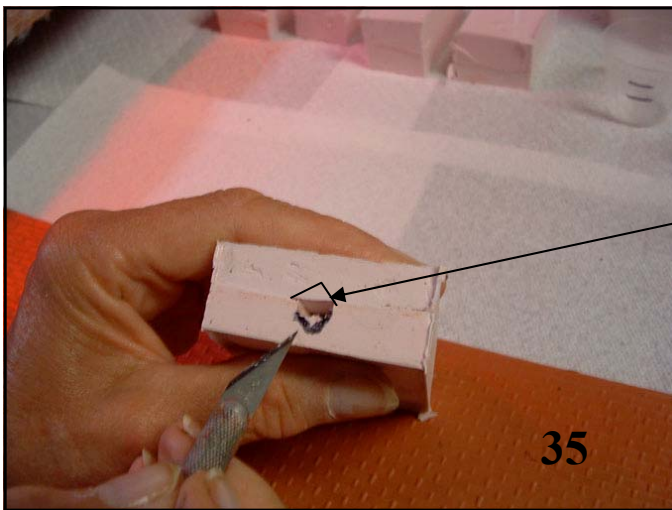
At this point you must cut a V here in your mold to be able to pour resin in

Make a V mark as shown with your Sharpie pen.

You must cut from here to here in the form of a V see **photo 34**



Your V is cut in the first part of your mold.

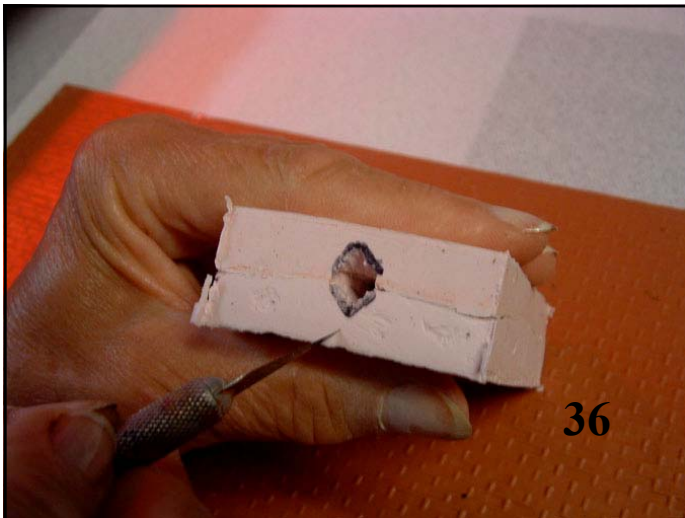


Put your mold back together.

This will show you where to mark your mold to get a matching V in the other part of the mold.

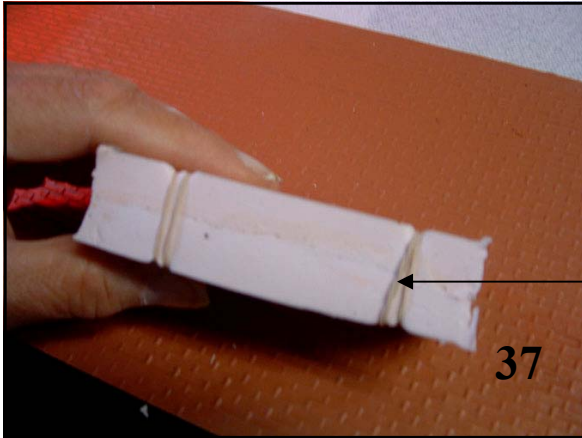
Mark with your Sharpie.

Go ahead and cut the V out as previous.



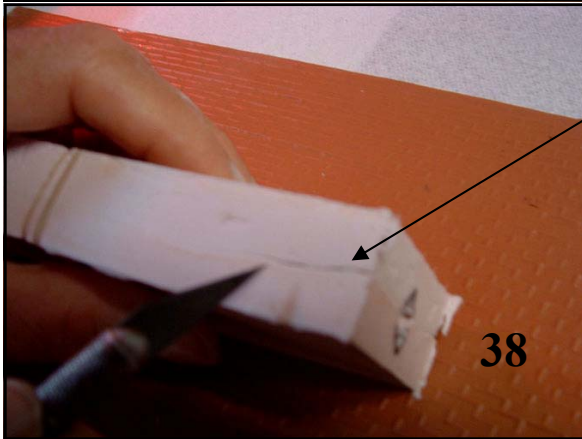
V has been cut in both halves of the mold.

You are now ready to secure it together.



There are two ways to secure the two halves together, duct tape which is not guaranteed and you can't make sure everything is tight because you can't see through the duct tape..... Or I think better still, use elastic bands, put two (one on the left side and the other on the right) from top of the mold to the bottom first, then put several around the mold as shown here

Never store your molds for long periods of time with rubber bands around them. It will distort the mold in time.



Check to see there are no cracks, as you can see here this is not acceptable, **the resin will leak out!** Put an elastic band here to tighten this area.

Check all around the mold making sure there are no cracks.

You are now ready to pour.

By the way the faster you do these steps the less your mold will loose it's heat.

You might be a little nervous doing the next step but remember if you fail the first time, don't worry you will not destroy your mold. If you pour the resin in, let it set and if your cast figure is not perfect, just clean off any resin in your mold. Dust the mold with baby powder again and put it back together with elastic bands. Try again!



Note

Sometimes, when pouring resin in a mold for a figurine you might have trouble getting the resin in some areas such as hands or feet, simply cut a very small V in the rubber at the spot where the trouble is. By doing this, if you tap the mold on the table gently as you are pouring, the resin will seep into the V. This will make sure the hand or foot is filled with resin, the overflow will fill the V.

After your figurine is cast and removed from the mold, simply cut the extra off with your exacto knife or your "Dremmel"

Mixing Resin

The kit comes with Part A and Part B In plastic bottles. These chemicals are very susceptible to dampness so keep the tops on them when not using them. Two measuring cups are also supplied.

The chemicals have a shelf life of one year. It is always advisable to use them as quickly as possible

Mixing ratio is 1 to 1

You **only have 90 seconds** from start of mixing before resin starts to harden!

SO.....everything must be ready! Have paper towels on hand....

Your molds should have elastics around them. They should be sitting on a **level table**. (I would advise you to cover your table with saran wrap to catch any drips of resin)

Having a level table is crucial when making windows.

You should have both part A & part B open and ready to pour.

2 measuring cups close at hand

A small metal spatula at hand

Clear plastic drinking cups at hand

And the first time pouring....

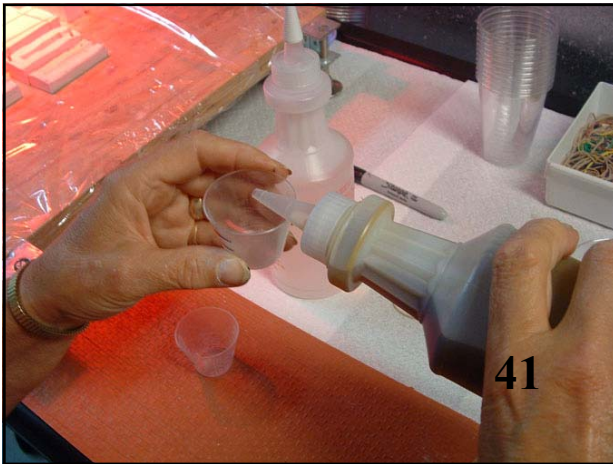
NERVES OF STEEL! Just kidding!

Mark your measuring cups at the 15ML. Line. with a Sharpie pen. This helps you to see exactly when to stop pouring.

I always mix just 15 ML.

If you haven't mixed enough product to fill all the molds you were intending to fill, you can always mix another batch and add to the mold. **You only have 90 seconds from the start of mixing before the resin starts to harden.** Remember it takes time to pour, so mixing smaller amounts is always advisable in my opinion, especially when you are pouring figurines and windows.

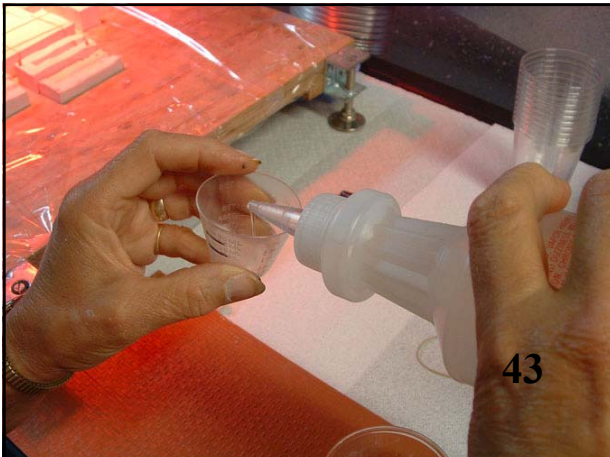
Always have extra molds ready just in case you mix too much resin.



Shake part B a few times. Pour part B in your measuring cup to the 15M line.



Pour measuring cup with Part B in a clear plastic drinking cup.



Pour Part A in Measuring cup to 15ML line.



Pour measuring cup containing part A in the clear plastic cup.

With your metal spatula start mixing Count 25 seconds as you mix....



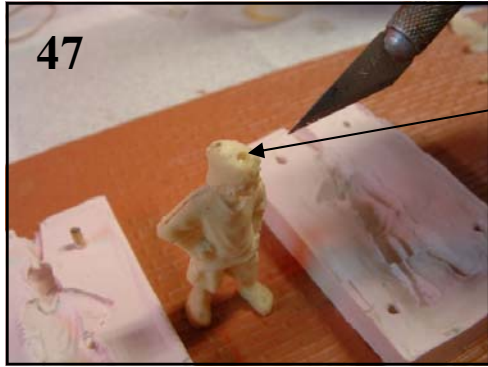
Immediately start pouring in a steady pour, filling your mold, Tap the mold gently to facilitate resin getting all the way to the bottom of the mold . Stop pouring when you see the resin at the top of the mold. Pour any extra resin in your “ Extra molds”.

Let your filled molds sit for about 5 to 6 minutes.



Remove rubber bands, remove the figurine.

Most of the time your first figurine will not be perfect but it can be saved.....



As you can see, there is a small bubble in the top of his head.... The result of pouring just a little too fast, fix it by pouring just a drop of resin the next time you pour a mold. Just make sure that the item is at the correct angle to accept the resin and not flow everywhere it shouldn't be! Do this this easy, just take a piece of Klay and imbed the figurine at the correct angle. It will stay there quite nicely and you will be able to add the drop necessary to fill the bubble.

The next step is the easiest of all. Simply use your exacto knife to remove any flashing around the figurine. Remove anything that shouldn't be there. In other words clean it up ready for painting.

Tips on painting a figurine

I always spray my figurines completely black. Then I use a dry brush method.

I load a paintbrush (small and a little stiffer than usual) with a small amount of paint. I always use water based railroad colors "Polly Scale" is my choice of paint.

I always start by painting all the flesh color.

I then go ahead and paint the clothes, etc...

METHOD:

Try to brush light coats and always on the highest part of the item you are painting such as the coat for example. By concentrating on the highest points you will leave behind the recessed parts and those will look like shadows bringing your figurine to life.

This technique takes practice, once you get used to it, you can really do a good job. Take your time!

Of course there's always the 10' rule. If it looks good from 10 feet away then it's good enough!

FINAL NOTE

Making molds and figurines is worth learning, it's fun to do, but remember that the first ones may not be perfect, but the second or third one will be!

