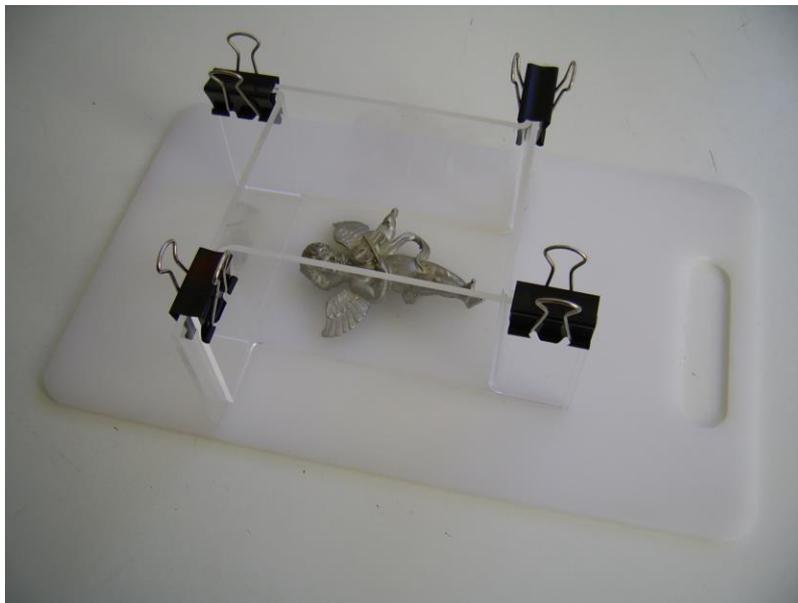


## MAKING A TWO PART SILICONE RUBBER BLOCK MOULD

1. Set a base board such as a plastic cutting board on a level surface and place the item to be moulded (the pattern) in the centre of the base board.

2. Mould box walls can be made from particle board joined with screws. This is particularly relevant for large mould boxes. These instructions are based on building a small box mould working with a Solid Solutions mould box kit.

Assemble the four mould box walls around the pattern as shown. Set the walls 6mm to 10mm away from the outer edges of the pattern and clip together as shown.



3. Using a marking pen trace the inside dimensions of the box onto the baseboard.

4. Lift off the wall assembly and place to one side.

5. Make a Klean Klay pad 1cm thick covering the size of the traced out mould box base.

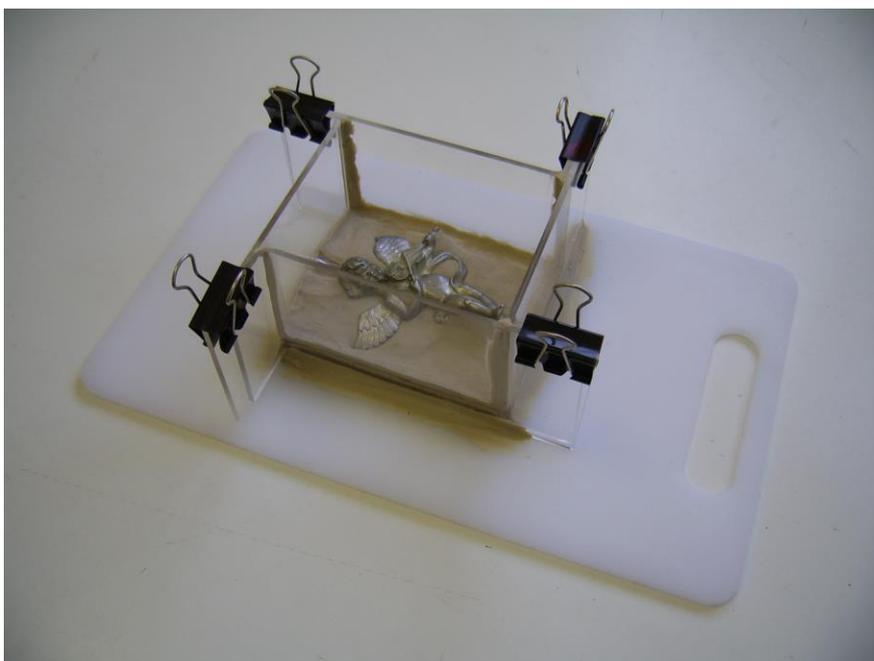
6. Sit the pattern in the centre of the modelling clay pad.

**7.** Using modelling clay build up around the pattern until the lower half of the pattern is embedded in modelling clay. Next an entry passage for pouring into the mould needs to be created. Do this by cutting off a piece of plastic tube or doweling and put in place between the mould box wall and one end of the pattern. Push the tube down into the modelling clay until half submerged. Alternatively the tube method of creating a pouring passage can be skipped and a pouring spout can later be made in one half of the finished mould about 5mm deep by cutting in a channel using a sharp knife.

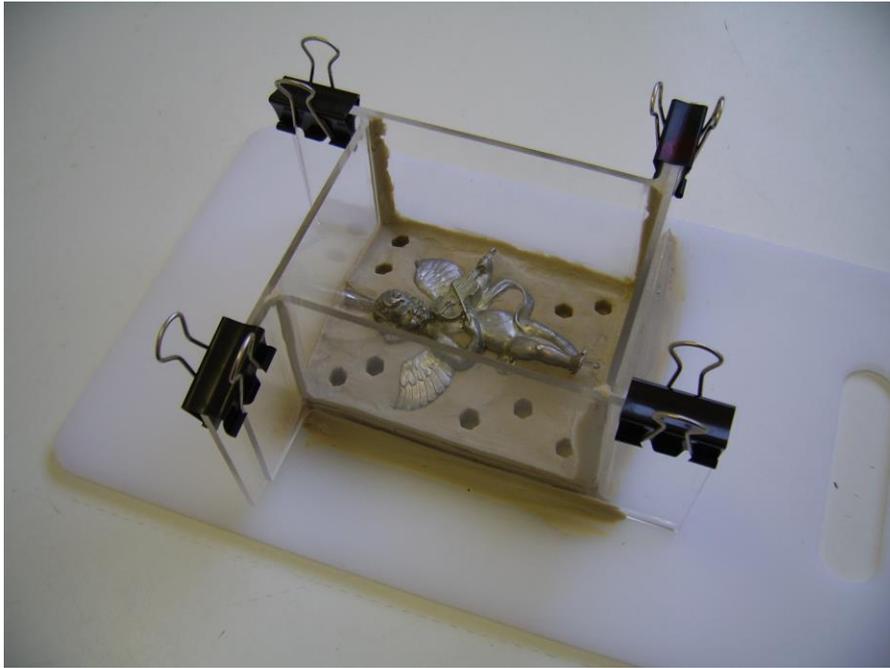


**8.** Put the mould box assembly in place around the bed of clay. Add or subtract clay to ensure the clay seals perfectly up against the mould box walls.

**9.** To ensure the mould box assembly stays in place use the paddle pop stick provided and run a fillet of modelling clay around the outside edge of the mould box. Run a similar fillet up the inside corners of the mould box, this will ensure that no leakage occurs.



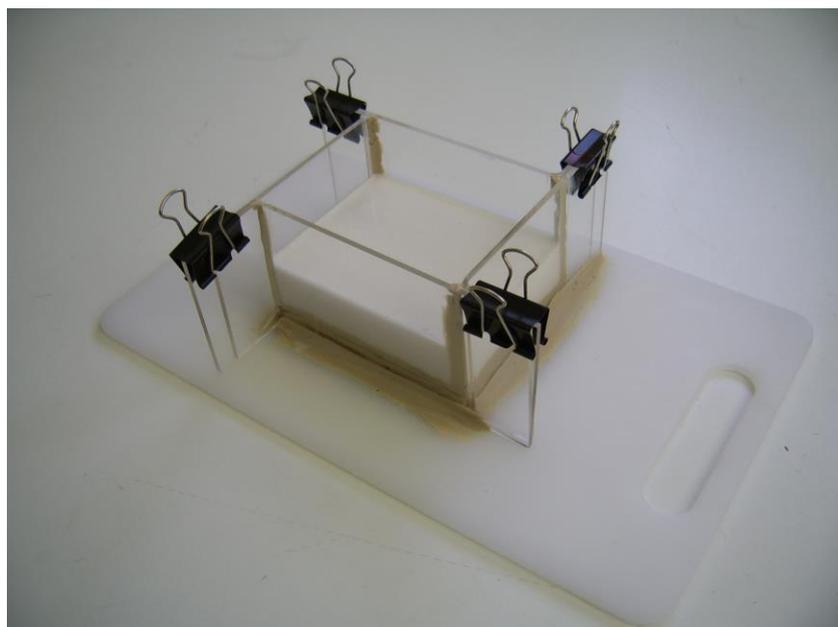
**10.** Make a number of locating lug holes in the blunt end of a biro to create depressions as shown in figure 4.



**11.** The first half of the mould is now ready for pouring. To assist in accessing the amount of silicone rubber required to fill the mould box this dry measure procedure can be followed. Fill the mould box to the top using rice, sugar or similar dry material. Next pour the material into a measuring jug and read the volume it measures. Add 10% to the measure and mix that quantity of silicone rubber by weight or volume as per the silicone instructions.

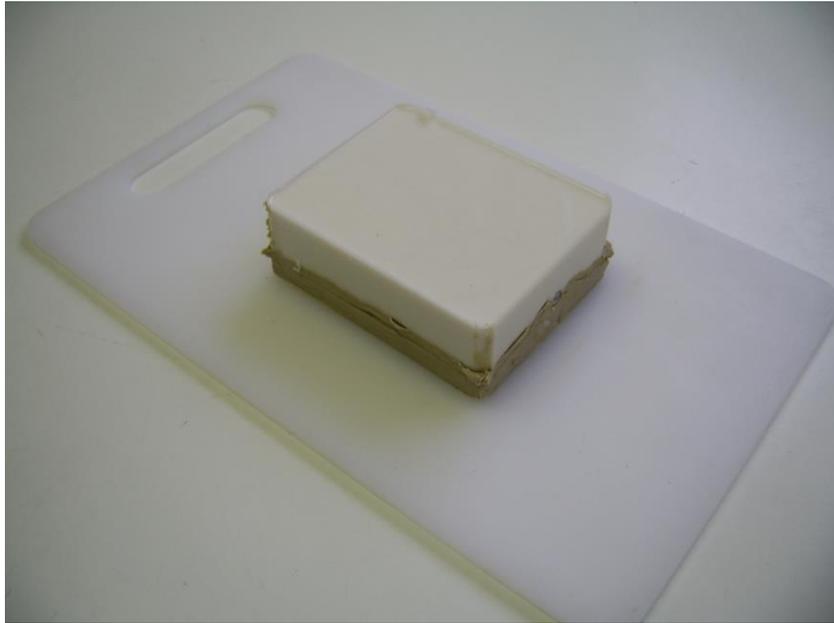
**12.** Slowly pour the mixed silicone rubber into one corner of the mould box, this is best achieved by pouring from a height of at least 10 cm in a long thin stream which helps eliminate air bubbles entrapped in the silicone during mixing.

Pour sufficient silicone rubber to cover the highest point of the pattern by 5 to 10mm. The surface detail is extremely detailed and air entrapment is a concern then pouring the balance of silicone rubber into the mould box. Next gently tap the mould box up and down on the work bench to help float the bubbles to the surface away from the pattern.



**13.** Let sit to cure as per the silicone rubber instructions.

**14.** Unclip the mould box walls and slowly remove the walls to reveal a block of silicone rubber on a base block of modelling clay.

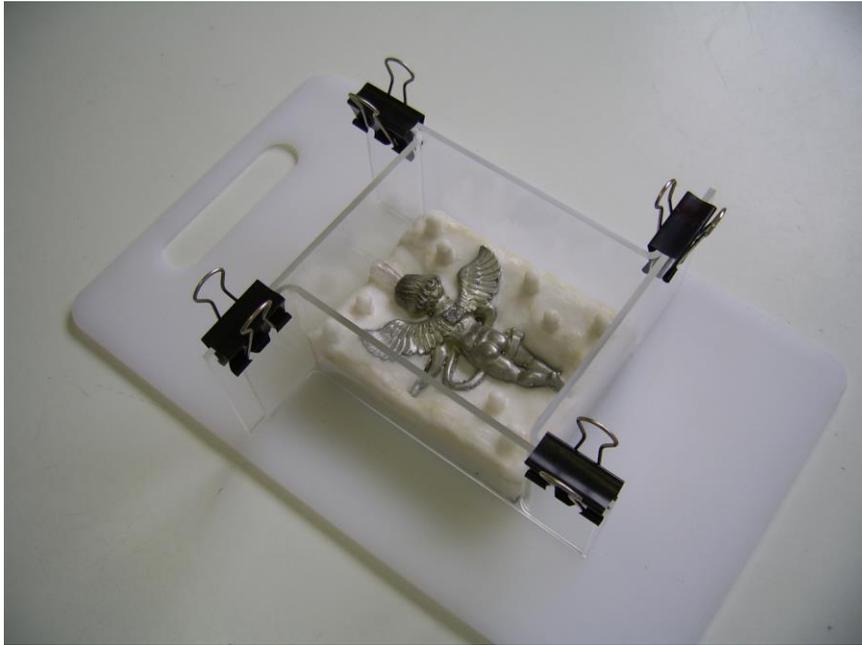


**15.** Slide a flat blade under the modelling clay and remove the entire block of clay and silicone rubber from the base board.

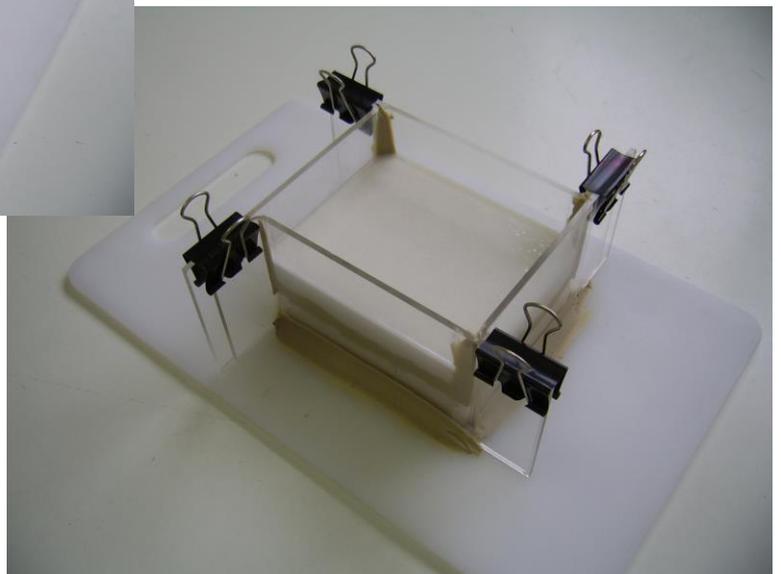
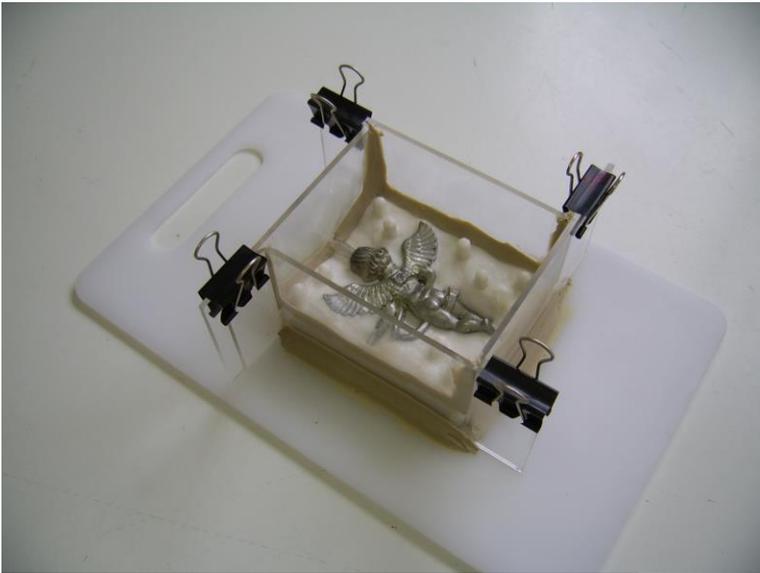
**16.** Gently peel away the modelling clay leaving the pattern and entry tube in place in the block of silicone rubber.



**17.** Place the silicone rubber back on the base board in the marked area and repeat steps 2 and 9. Next, to prevent the second pour of silicone rubber sticking to the cured block, brush a thin layer of warmed Vaseline over the silicone rubber around the exposed pattern half, avoid getting the Vaseline on the pattern as this will reduce the detail



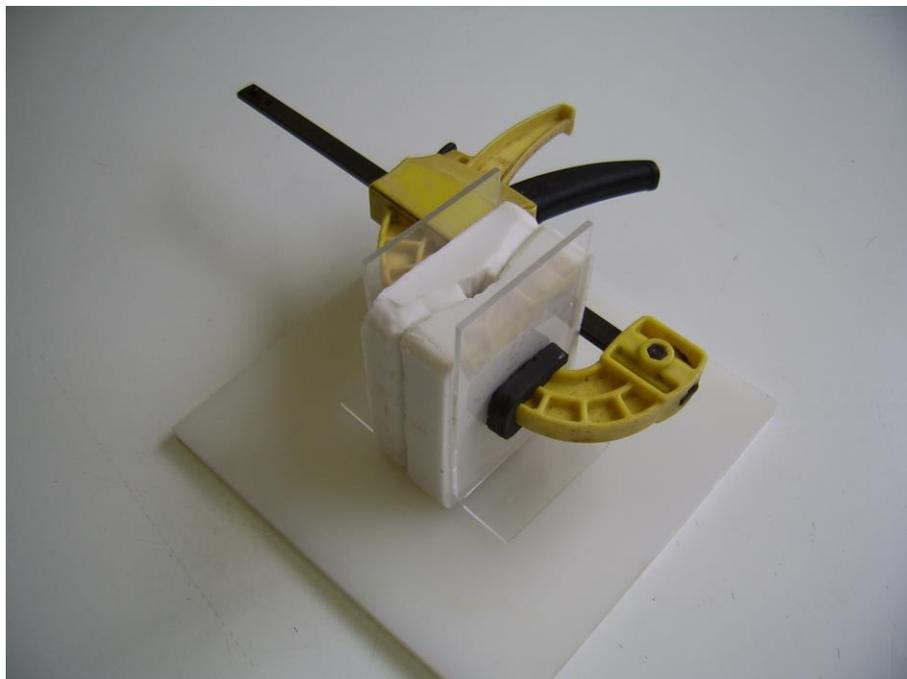
**18.** Repeat steps 12 and 13.



**19.** Unclip the mould box walls and slowly peel away the upper block of silicone rubber from the lower block to reveal the pattern. Gently remove the pattern. The pattern will still be held in the lower block of silicone rubber. Next gently peel back the lower block of silicone rubber to release the pattern



**20.** Place the two halves of silicone rubber together and sit the mould upright on a flat surface. Place the long sides of the acrylic mould box either side of the mould like book ends holding up the mould. Next firmly clamp the entire assembly together using G clamps or tightly bind with rubber bands in both directions to prevent the casting material leaking out. Stand the mould on a flat surface with the pouring hole facing upwards and the mould is now ready for use.



**21.** Pour the casting mix into the mould opening. Pour at a slow rate in a thin stream to allow any entrapped air bubbles in the mix to break open as they pass down the thin stream entering the mould. Fill the mould right to the top.

**22.** Gently tap the mould block up and down on the work bench a few times to further assist any remaining air to rise up out of the mould.

**23.** Let the casting material set fully as described in the instructions, preferably at a temperature around 20C.

**24.** Now the fun part. Remove the rubber bands from the mould assembly then working gently and progressively slowly peel away the upper half of the mould. All going well you should have half the casting revealed still embedded in the lower half of the mould.

**25.** Working gently and progressively around the mould, fully separate the casting from the second half of the mould. Thin sections of the casting should be held between your fingers while the mould is peeled away with the other hand. Should the thin parts show a tendency to bend it's a sign these sections need longer curing time, so allow more curing time before you proceed to further de-mould the casting

**26.** Next check the casting for completeness ensuring no air has been trapped in the mould causing the casting to be incomplete. This usually occurs at the end of high thin sections such as an arm and hand in a waving position, or as in this case a wing has not formed fully. During the casting process air can be trapped up at the end of an arm passage preventing the casting material from fully filling up the hand void in the mould. The outcome would be a figure without a hand.



**27.** When there is a problem with air entrapment in certain areas, the problem can be remedied by using a sharp blade to scribe out very small V channels around 1mm deep on one half of the mould. The channels are cut from the air entrapment point right up to the top of the mould block creating “chimney” passages for air to escape. During the next casting a small amount of casting material should appear at the top of these chimneys.



**28.** Reassemble the mould and try another casting. The cured casting when removed from the mould will have solid chimney pieces which will have to be trimmed off along with the pouring head.

**29.** Finally check the part for any “flash” which is material that has slightly leaked out beyond the joint line of the casting. Remove this material by cutting or scraping off with a sharp knife.

**30.** Your casting should be finished and perfect. Well done!

