

1509-5

Mark Nelson sand casts a bead frame using an electro melt furnace.

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Guest:



Mark Nelson



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Sand-Casting A Bead Frame

Using the Delft clay (sand) casting system, you can create one-of-a-kind bead frames. Use a wax, wood, or metal master to create the mold; it will have to be tough enough to stand up to vigorous packing of the clay around it in the mold. Follow instructions included in the Delft clay kit.

Steps:

1. Gather the scrap metal or casting grain you will use to cast with, making sure that it is clean and free from solder. The amount you need will be based on the model. If you use a wax model, you can multiply the weight of the wax by the specific gravity of the metal you're casting with. Be sure to add enough metal to allow for the pouring channel (button). You may simply have to estimate the amount you'll need for this.
2. Following the manufacturer's instructions, turn on the Rio melting furnace and start melting the metal (from room temperature, this will take about 45 minutes).
3. Select the master object that you will use in your mold. Remember that it must:
 - a) fit into the mold frame; for larger pieces, larger frames can be purchased or made by the artist.
 - b) be free of any undercuts (undercuts are hollowed-out places underneath the model where the clay can spread out horizontally onto interior surfaces; this makes it impossible to remove the model cleanly from the mold).
 - c) be rigid enough to withstand aggressive packing.
4. Clay needs to be separated and soft before packing; break up lumps so that the clay has fine, even crumbs. Pack the thinner frame with the clay, making sure the thinned edge/lip is uppermost. Overfill and compress the clay, using a flat-faced hammer to pack it firmly.
5. Trim access clay away with a knife.
6. Press master object into clay until it is about halfway in (be sure there are no undercuts).



⚠ CAUTION! Always wear eye protection when performing these processes.

7. Dust the clay and model with baby powder to form a separation line between the two halves. Use a brush to spread evenly and remove excess powder.
8. Place the thicker half of the frame on the thinner half, making sure the cut marks on each half are lined up. Pack the frame with clay, again overfilling and compressing with a hammer. Trim away excess clay with a knife.
9. Carefully pull both halves apart and gently remove the master.
10. Use a small stick or drill bit to cut a casting channel into the clay at least 4mm wide. Make vent holes on the opposite side of the casting channel.
11. Carve a funnel shaped pouring channel into to edge of the mold at the end of the casting channel using a craft/pen knife. Remove all loose clay, join the vent holes to the empty mold.

See next page for continuing instructions and supply list.

Continued instructions and supply list for Sand-Casting A Bead Frame

12. Place the two frame halves together, lining up the cut marks.
13. Pour your molten metal into the mold through the funnel-shaped pouring channel.
14. Cool the mold in water until it is cool to the touch and dry with a towel. Remove your cast piece. Clip away the metal left by the pouring/casting channel. Clean the clay residue from the casting and pickle if necessary. Polish as needed.
15. The burnt clay in the mold must be removed; the un-burned portion can be re-used.

Please Note: In many cases, the metal left over from the pour channel can be re-melted and re-cast.

Supplies:

Order #	Description
704-059	Rio Tilt-Pour melting furnace, 1kg
704-065	Crucible for 1kg furnace
704-067	Crucible tongs
705-136	Delft clay casting system
076-052/301	Swarovski ceramic crystal
706-051	Ancient Bronze casting grain
700-009/30	Matt™ Precision wax tablet, green
111-385	Poly blade knife
111-402	Soft Shaper™
502-052	Solderite™ board, 12" x 12"
704-115	Matt's casting flux
750-040	Heat-resistant gloves
201-052	Safety glasses
705-120	Stirring rod
113-146	Pin vise
112-407	Planishing hammer
—	Drills, 4mm dia. (approx.)
—	Paint brush
—	Baby powder (talc)
—	Cutting board
—	Cookie sheet