

Casting Award Trophies for Power of the Past

The Power of the Past trophies were designed and first fabricated by David Bradley. Keith Powell then took over the casting job in 1998 and then Andrew Scott with the help of James and David Scott in 2004. The wooden frames were made by Des Kotz before Ray Mossop took over.



Aluminium pistons or cylinder heads are heated in a large crucible, (a crucible is a pot which is used to hold the molten metal in a furnace) until they reach liquid form. Dross is removed (metal oxides and other scum on the surface of molten metal) and then the molten metal is poured into a mould in the form of an ingot. The ingots are easier to store and use as required.

The ingots are cut in half (for the smaller crucible) and placed around the top of the furnace to preheat and remove any moisture. Two or three ingots are put into the crucible in the furnace, once it melts another one is added carefully until the crucible is full. All

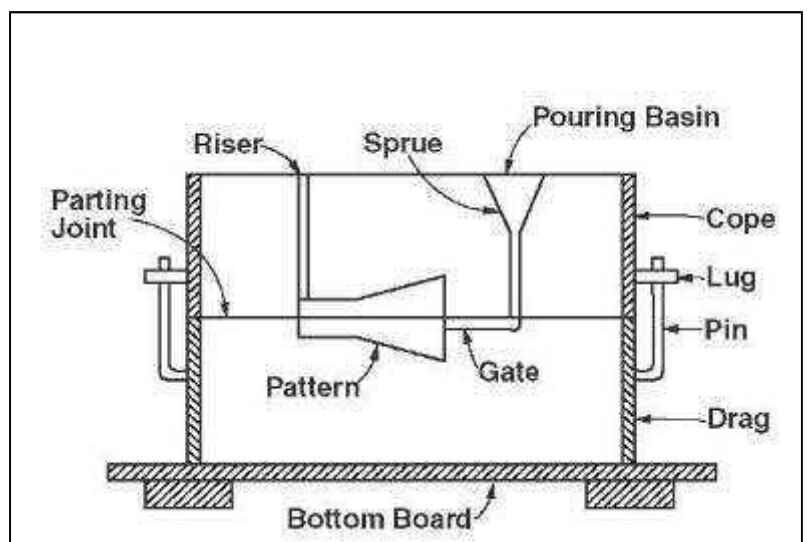


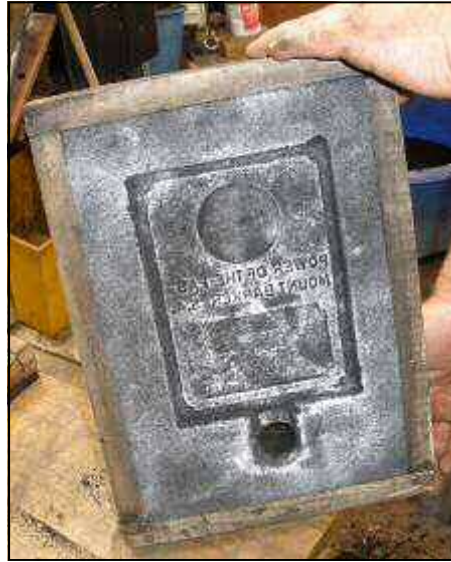
dross is removed again and the crucible is removed from the furnace and placed in a holder tool on a special furnace brick. Then the molten aluminium in the crucible is poured into the sand casting boxes.

The molten metal is poured into a mould cavity formed out of sand. The



sand cavity is formed by placing the pattern which is mounted on a wooden board between the two halves of the moulding box then the sand is rammed up around the pattern. Once the sand is rammed in tight it will hold its shape and the pattern can be removed, then the two halves are carefully placed together to form the complete shape. The upper part of the sand mould box is called "cope" and the lower part is called "drag". Up to six of these boxes can be placed together for one crucible pour. There is a hole cut through the sand of all boxes except the bottom one, this hole is called a sprue where the molten metal is poured and is also used as the riser, which is the reservoir of liquid metal to supply the casting when it is contracting and cooling, it is used to prevent internal or external voids due to shrinkage.





When making larger objects an additional hole, a riser, is cut to provide more metal for the cooling process. These trophies are thin enough that this is not required. Castings are allowed to cool before they are removed from the sand. This is done by tapping the boxes apart. The sand is used over and over again, so it is sprayed with water to return moisture and sieved ready for next time. The sprue and risers are removed from the rough castings. The sand casting leaves a rough surface which is then machined and finished smooth before being painted, they are finished and painted several times. Holes are counter sunk ready for the wooden backs and the trophies are painted in the colour of the feature tractor or engine for the year.

