

INGOT CASTING

SIEMENS DEPT.THE DARLINGTON FORGE 1960

Siemens department consisted of 4 casting pits, all brick lined. The ingot moulds which were placed in the top 2 pits, consisted of a base plate upon which the body mould was lowered. On top of the body mould a top plate was placed, which was basically a tapered disc to reduce the width of the ingot mould to the size of the head mould, the head mould being placed on last. The joints of head, top plate and ingot moulds were all sealed with fire clay and then clamped together to prevent movement. All work on the moulds by the pit men necessitated them leaping from one to another with the huge drop below awaiting the careless stumble, slip or missed hand hold. The inside of the moulds were fully coated with black lead to prevent the molten steel from sticking to the inside. At some time during the early 60s a new anti-stick product was tried which was manufactured from the residue of commercial custard powder production. Sadly this was not as effective as black lead and did not take off, which was a great pity because when ingots were being cast the smell was absolutely divine.

Ingots were nearly always cast via a refractory lined trough which had a baffle plate at each end to trap floating slag which would have contaminated the ingots. The slag was periodically removed by one of the pit-side men. Using a trough made it possible to cast 2 ingots at the same time. The 2 remaining pits were shallow and narrow where up-hill casting took place. On a circular base plate several small, open top moulds were lowered onto brick lined channels radiating from the centre to the outer edges. The molten steel was poured into a central brick lined funnel which fed through these tubes and up through the holes in the bottom of the moulds. Up to 8 small ingots could be cast from bottom to top, up-hill in this manner.

Stripping of the ingots took place once they were deemed cool enough to approach and consisted of hammering off the clamps which necessitated someone standing on the still hot mould, and then slinging the head and top plate mould onto the crane which would lift them clear revealing the still very hot ingot. A giant pincer was used beneath the crane which nipped the head of the ingot much like a finger and thumb, hopefully, gripping it tight and lifting it clear where it would be laid onto a sand bed to continue the cooling process. The stripping did not always go smoothly, and because of the still great heat in the ingot and the effort needed to manipulate the heavy equipment, frazzled tempers were not uncommon.

Malcolm Mowbray 2015