



CARRS STAINLESS STEELS

A Division of ELG Haniel Metals Ltd., Wadsley Bridge, Sheffield S6 1LL

The Process

Step 1 - Welcome



Carrs is a unique well-established **Producer and Stockholder** of Quality Special Steels in **Sheffield** supplying the highest quality Austenitic Stainless and Duplex Steels in all forms of product. Typically ingots are available in 17 different sizes ranging from 150kgs 6" square up to 10,000kgs 06 octagonal ingots. Ingots manufactured are suitable for all the customer needs i.e. Hammer, GFM and Ring Forging, Rolling, Electrodes for ESR Melting and slab ingots for Plate Rolling.

Step 2 - Raw Material



Carrs have the competitive advantage of being supplied by their **international** parent company **ELG Haniel Metals Ltd** with thoroughly inspected high-quality blended scrap - radiation checked, guaranteed to melt out at the required analysis as defined by customer specifications, right first time and with negligible alloy addition.

Step 3 - Melting



Carrs operate a modern 2.5 Megawatt 5 Tonne Variable Induction Power, High Frequency Melting Furnace with the ability to produce a 10 Tonne cast ingot fully homogenised. The VIP Furnace has automatic full power response, continually self-adjusting to give full power regardless of the changing furnace conditions.

Step 4 - Refining



Carrs melting is coupled with a secondary ladle treatment operation consisting of a Vacuum Oxygen Decarburisation and Vacuum Degassing facility. High Quality Ladle Metallurgy, including Argon purging, means that Carbon levels as low as 0.020% can be achieved. This technology, along with the very latest "Clean Steel" practices, achieves a high level of material cleanliness. Hydrogen is controlled to a very low level, typically 2ppm.

Step 5 - Inspection



Carrs are BS EN ISO9001:2000 certified, with approvals and accreditation to TUV, PED, Statoil, Germanischer Lloyd, FBFC, Westinghouse, Dembiermont, Exxon Mobil etc... **Quality is Priority:** process analysis sampling and inspection is undertaken at every stage of operation from molten bath, ladle refining and ingot teeming through to product inspection by our own laboratory chemists and by our fully-qualified technicians (ASTM Level 2), using various on-site laboratory facilities and machines.

Step 6 - Grinding



Carrs are approved experienced suppliers of quality assured **Forging Ingots** in the As Cast, Annealed or Hot Transfer condition. All cold ingots are thoroughly inspected and ground as required. Further grinding on Forged or Rolled material Bar, Billet etc. is done on-site using our semi-automatic Billet Grinder and Swing Grinders. Additional options of Precision Bright Grinding or Peeling are also available if required.

Step 7 - Turning



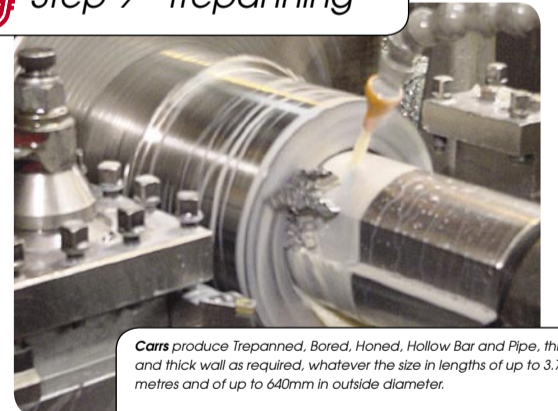
Carrs produce bright turned bar from the black forged and rolled state as required on our numerous straight bed lathes. Turning capability allows bars 10,000kgs in weight and 685mm black forged diameter to be machined in-house down to turned finished sizes in various lengths of up to 8 metres.

Step 8 - Milling



Carrs precision-mill Forged Bar, Billet, Manifolds, Blocks, Slab and Castings on our in-house milling machines to strict tolerances as per customer requirements.

Step 9 - Trepanning



Carrs produce Trepanned, Bored, Honed, Hollow Bar and Pipe, thin and thick wall as required, whatever the size in lengths of up to 3.7 metres and of up to 640mm in outside diameter.

Step 10 - Sawing



Carrs produce bar sawn blanks, rings and tubes etc as required on our numerous fully automated bandsaws, the very latest addition being a new Kasto Tec A7 730mm diameter bandsaw.

Step 11 - Despatch



Carrs not only offer excellent delivery on time by our own transport department but also supply fully **Radiation Checked** and certified material. Products manufactured on our site are supplied across the globe from **America to China**, and to all industries e.g. Nuclear Fuel, Offshore Oil, Aerospace, Ministry of Defence, Brewery, Automotive, Engineering and Electronics.

Carrs Stainless Steels

Carrs have a long tradition of producing Stainless Steels in **Sheffield** since 1902.

The Company became a division of **ELG Haniel Metals Ltd** in February 1992, focussing its activities around the manufacture of Austenitic Stainless, Duplex, Super Duplex and Alloy Special Steel grades. Carrs offer one of the finest small-scale manufacturing services in the world, providing **Contract Ingots, Bar, Billet, Forgings, Sawn Blanks, Rings and Tube** on a fast-track basis.

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