

Press Information

NEW BLAST FURNACE GETS METALOCK EXPERT TREATMENT IN CANADA

Metallock Engineering UK Ltd, based in Coventry, is an established global mechanical equipment repair company. Since the company was established in 1947 it has built up an outstanding reputation in the steel industry for quality work delivered on time and within budget. Projects have ranged from mill housing machining - windows and bases, modification to roll bending housings, boring of screwdown bores, gearbox line boring, shaft recovery using orbital turning techniques, drilling, tapping and screw-cutting large holes, machining flange joint faces and many others.

Recently, as part of a complete blast furnace rebuild programme for Dofasco Inc., a fully integrated steel producer from raw materials through to coated steel sheet, in Canada, Metallock machined fifteen hearth shell bores to accommodate tapered tuyere cooler holders. Metallock Engineering UK secured the contract on a competitive basis.

Metallock Engineering UK's task was to bore out the shell bosses to accept the tapered tuyere cooler holders which house the coolers themselves and the copper tuyeres used to inject hot blast air at over 2000°C into the furnace just above the hearth area.

The first operation for the Metallock team was to assemble a drill jig on the inside and outside faces of No 1 tuyere holder to drill and tap four equi-spaced holes 0.625 inch diameter x 1 inch deep on a 38.5 inch PCD (16mm by 25mm deep on a 978mm PCD). These holes were used to mount a boring bar assembly, with inner and outer bearing supports, to machine the tapered cooler holder bores. To position the boring bar assembly accurately, a telescope was fitted to the outer end and the bar aligned visually with the furnace central datum and a datum point on the opposite inner shell through a central hole in the bar. Being equi-spaced around the shell circumference at 24 degree intervals, the tuyeres were not diametrically opposite each other.

Two purpose-designed boring machines, built by Metallock, incorporated hydraulic drive gearboxes and a toolpost assembly that traversed along linear rails set at an angle of 7 degrees to produce the taper required through each of the fifteen 5.187 inch(132mm) thick tuyere bosses. Then the faces and the inner diameter of the bore was machined to 31.921 inches(811mm). The outer bore was stepped by a further 0.125 inches(3mm) to provide relief for the cooler holder and give a diameter of 33.980 inches(863mm).

Using two identical machines each working on adjacent cooler holders simultaneously, Metallock was able to substantially speed up the machining process. Work continued round the clock using three men per shift to complete the schedule on time.



Two Metallock purpose-designed boring machines were used simultaneously to speed up the boring of 15 hearth shell bores to accommodate tapered tuyere cooler holders at Dofasco Inc, Canada.

Metallock Engineering UK

Unit H 5
Pilgrims Walk
Prologis Park
Coventry
CV6 4QG
England
Phone: +44 (0) 24 7636 0084
Fax: +44 (0) 24 7636 0190
E-mail: sales@metallock.co.uk
www.metallock.co.uk

