



Case Study:

# JCB CAB SYSTEMS

## LANTEK SAVES MATERIAL AT JCB CAB SYSTEMS



For eight years, Rugeley based JCB Cab Systems Limited have been building cabs for the JCB product range, supplying the UK based plants in Rocoester, Uttoxeter and Cheadle.

**The company produces around 140 cabs per day, ranging in size from 1 metre wide for micro machines to 2.5 metres wide for the largest diggers. Each cab is fabricated and assembled to suit the individual build requirements of each JCB plant.**



## | Case Study

**Stephen Dunion, Materials Manager for JCB Cab Systems:**

**“The evaluation took place at our Cheadle Earthmovers site - we choose Lantek Expert for its ease of use and dynamic nesting capabilities.”**



At JCB Cab Systems, the world steel shortage focused attention on the efficient use of material. It uses sheet steel ranging in thickness from 1.2 mm to 15 mm. During its seven day week, four shift pattern, it consumes around 7,000 sheets, producing more than 40,000 piece parts every week.

The sheet material is cut on JCB Cab Systems four laser profiling machines which range in power from 1.8KW up to 3.2 KW and are fitted with 3m x 1.5m beds with automatic loading equipment. Initially, the sheet nesting was static, making it easy to fulfil weekly requirements with fixed nests that corresponded to known groups of products. Whilst this simplified the logistics of controlling parts flow, the disadvantage for JCB Cab Systems was that these static nests did not maximise the material usage.

The potential savings in material costs from dynamic nesting of the weekly product mix drove the company to evaluate different software solutions. The company has four weeks advance visibility of requirements from the other UK based JCB plants, nesting each week's production at the end of the preceding week. He elaborated, "There are about 50 top level assemblies, each of which can contain up to 150 different parts. Our SAP system identifies the individual components required and uses a Microsoft Excel file to pass the data into our two Lantek Expert systems where nesting takes place."



The ability to nest the week's requirements is made possible by the transfer of this information. Once the nesting is complete, the Lantek system is able to feed information back to SAP about material utilisation and machine run times. Stephen Dunion explained, "The nesting is quite complex. There are groups of parts which will not nest well together, and additionally there are different thicknesses and grades of material to be considered." On completion of each nest the Lantek system automatically generates NC code to drive the laser profiling machines.

Two manufacturing engineers work (one on a part-time basis) on the Lantek systems. One enters CAD geometry to keep up with the ongoing programme of design improvements at JCB, while the second concentrates on the nesting process. Nesting is carried out using Lantek's algorithms, supplemented by manual nesting, to fully optimise the results for a full sheet. Stephen Dunion said, "Savings have been achieved through improved material utilisation of the dynamically nested proportion of parts, although this has introduced different problems for JCB Cab Systems." Each nest is unique, so it is difficult to identify individual parts and their subsequent route around the shop floor once they come off the laser profiling machine, making the control of the flow of parts much more complex. To solve this, each component is etched with a code during laser cutting, which indicates the product group and next operation. Whilst this results in a reduction in laser productivity, this is offset by an improvement in material utilization.

Currently Lantek are working with JCB Cab Systems' SAP developers to further automate the integration between the systems and move to the next level of material utilisation with more advanced nesting techniques. Stephen Dunion concluded, "The system has yet to completely fulfil our expectations, but has become a strategic element of our parts manufacturing process."







## FACT SHEET

COMPANY NAME	JCB Cab Systems Ltd.
ACTIVITY/INDUSTRIAL SECTOR	Excavators
LANTEK SOLUTION	CAD/CAM 2D Manufacturing Management Operator Job Control and Validation
LICENSES	2 Lantek Expert 2 Lantek Manager 1 Lantek Wos
MACHINES	TRUMPF L3030