



METAL TOOLS

FANUC for Patterson & Rothwell

Task With a toolroom that commissions over 80 injection mould tools every year, the UK-based company Patterson & Rothwell Ltd manufactures extremely complex tools for a variety of industry sectors. To improve its productivity, reduce labour input and cut the amount of set-ups for complex components, the company was in the market for a new automated solution

Solution After investigating the potential solutions, the company arrived at the conclusion that the FANUC ROBOCUT Alpha-C600iA was the best-fit solution for the business. The key factor in selecting the ROBOCUT Alpha-C600iA was its 6-axis capability and the ability to machine complex helical geometry for a new project

Result The benefit of the 6-axis capability enables the toolmaker to complete complex projects in a single hit, which reduces the amount of production stages and set-ups that can prove labour intensive. Furthermore, by completing complex jobs on the FANUC, Patterson & Rothwell is freeing up valuable capacity from numerous other machines on the shop-floor

FANUC ROBOCUT revolutionises business for UK toolmaker

As one of the leading injection and plastic moulders in the North West, Patterson & Rothwell Ltd has just invested in a new 6-axis wire cut erosion machine from FANUC UK. With a toolroom that commissions over 80 injection mould tools every year, the Oldham Company manufactures extremely complex tools for a variety of industry sectors.

To improve its productivity, reduce labour input and cut the amount of set-ups for complex components, Patterson & Rothwell investigated the potential solutions and arrived at the conclusion that the FANUC ROBOCUT Alpha-C600iA was the best fit solution for the business. A key factor in selecting the ROBOCUT Alpha-C600iA was its 6-axis capability that provides flexibility and capability benefits that were previously beyond the reach of the subcontractor.

The 6 axis FANUC Wire Cut Erosion Machine incorporates the latest FANUC CCR rotary table technology that accepts larger workpieces within a small footprint machine.

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The deciding factor in the FANUC investment was the ability to machine complex helical geometry for a new project. For Patterson & Rothwell, this project required



secondary machining and significant hand finishing to meet the precision and surface finish demands of the customer.

Commenting upon the project Patterson & Rothwell Toolmaker, Mr Bill Helliwell says: "The new FANUC machine has been a revolution for our business. We have reduced the manufacturing time for this extremely complex project from 1 day to 1 hour. Furthermore, we can also achieve an accuracy of 10 microns. This means we no longer have to polish our inaccuracies. It was the secondary machining and hand finishing that was absorbing our time and this has all been eliminated by the new FANUC ROBOCUT Alpha-C600iA".



“This new machine has opened up new markets to us. We are still learning, but so far can’t believe the savings we have made.”

Only installed in December 2014, the staff at Patterson & Rothwell are currently going through a learning curve with the new ROBOCUT Alpha-C600iA. However, to achieve such staggering results in a short period of time is testament to the capabilities and ease of use of the new 6-axis addition.

The automation of the FANUC ROBOCUT Alpha-C600iA also proved a selling point for the company that has a motto of ‘Attention to detail at every stage’. Running a machine shop 24/7 with lights out capability, automated unmanned production is a must. To support lights-out processing, the high speed advanced automatic wire feed system on the ROBOCUT enables safe unmanned operation.

With regard to the compact machine footprint, the ROBOCUT Alpha-C600iA offers a spacious 600 by 400mm table travel in X and Y axis whilst the U and V axis travel is 200 by 200mm. The Z axis travel of 310mm and the specification of the new CCR rotary table (A-axis) enables Patterson & Rothwell to optimise the capabilities of the machine. The innovative rotary table incorporates a fully-closed feedback loop system using FANUC servo motor and rotary encoder, making it the ideal addition to this FANUC EDM machine. As the CCR table is designed and manufactured solely for the ROBOCUT EDM machine, it costs up to 50% less than a standard table whilst offering considerably more functionality and accessibility.

This accessibility is demonstrated by the compact area of

155 by 170 by 130mm (LXWXH) that enables the operator to retain the spacious work envelope and gain easy access to the machine. The precision of the CCR is demonstrated by an indexing accuracy of 12 seconds and a repetition accuracy of +/-2 seconds. Despite its lightweight and highly accurate frame, the CCR permits a maximum workpiece weight of 40kg, which is ideal for the size of components at Patterson & Rothwell.

