

# A creative approach to waterjet machining

A recently established West Yorkshire subcontractor is already extending the scope of its fast-growing business through imaginative use of its newly acquired waterjet cutting installation.

After five years as managing director of Water Jet Sweden (UK), Chris Baker might have been forgiven for thinking that he has seen just about every task the process can be applied to. However, under the direction of owner-manager Richard Miles, start-up company Creative Water Jet in West Yorkshire is already proving otherwise by creating a host of totally fresh and sometimes quite innovative ways of applying the waterjet principle.

From profiling training knives for martial arts devotees to making carbon fibre nuts and working with materials as diverse as bamboo and iron balustrades, right on up to 200mm-thick titanium, this subcontractor's Waterjet Sweden NC 3015 profiler has proven to be an instant success.

In one application, a requirement for cutting out a small 3D panel in automotive roofs to permit the insertion of an optional extra for customers posed a problem. This was because it meant cutting through a radius and from one plane to another. In spite of not having the

benefit of WJS's latest 'Beveljet' 5-axis option on his profiler, Richard proved the reality of his company's 'Creative' claim by combining the use of the equipment's programmable nozzle height with a smart way of presenting the component to the waterjet, thus providing a perfect solution to the problem.

Often one of the first questions prospective customers ask of a waterjet subcontractor, especially those in the engineering sector, is: "What accuracy can you provide?" Richard Miles could readily quote the basic  $\pm 0.1$  mm offered by the Waterjet Sweden equipment, but prefers instead to simply offer to meet customer's requirements whatever they may be, since rarely do customers require accuracy to this level. He asks only that the customer lets him have the drawing for the part and a quotation will then be forthcoming.

In the event of a required tolerance being tighter than can be achieved solely by use of the waterjet profiler, Richard Miles will take responsibility for supplying the part to the specification regardless.

This is achieved by involving a suitable 'strategic partner' company to carry out any necessary machining or finishing operation and saves the customer from having to deal with more than one service provider. Another



innovative development has been to supply complete sets of parts, largely produced on the NC 3015, in bespoke tote bins, all neatly presented ready for instant assembly into the customer's product.

Full advantage has been taken of the waterjet's advanced control system capabilities by having two pairs of heads fitted, each pair comprising one pure waterjet and one abrasive head. Not only does this duality permit the production of parts on a two-up basis for routine higher productivity, but a switch from one mode to the other can be made instantly should the workload require introducing much greater operational flexibility.

With its use of a top-level (KMT) intensifier for the 3,600 bar operating pressure needed, plus a CNC control system acclaimed worldwide in Fanuc GE's 18i MB CNC, the WJS package provided the company with the best possible chance of success. "Nobody else can offer the accuracy and good all-round construction, plus a spares and service backup that is among the best in the world".

The machine can be left to run for eight hours in its 'lights-out' mode, thanks to a link to Richard Miles' mobile that enables him to check its status and to be alerted should anything require attention. "It's great to be able to relax in the evening knowing that the WJS machine is keeping itself busy earning us money," he says.

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**Richard Miles, owner-manager of Creative Waterjet, checks progress of a complex nested profiling program on his newly-acquired WJS NC 3015 profiler.**