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## **Newcastle Tool & Gauge chooses XYZ for five-axis capability**

Since its formation in 1979 Newcastle Tool & Gauge (N.T.G.) has adapted to change, originally a toolroom manufacturing press tools for local industry it has evolved into a precision engineering machine shop. Along the way it has gained an enviable reputation as a preferred supplier to customers across a wide range of industry sectors, including oil & gas, power generation, subsea and thermoforming. As its customer profile continues to change, so does its requirements for machine tools and during 2018 it identified a requirement for full-simultaneous five-axis machining.

“We have a varied mix of CNC machining centres, turning centres, grinding and wire erosion machines, but we knew that five-axis had to be an integral part of that mix. A group of us visited MACH 2018 with the brief to look at every five-axis option. We all came back from that trip of the same opinion, that the XYZ UMC-5X was the right option for us,” says Mark Withycombe, Operations Manager. Among the key features that drew the team to this conclusion were the use of a trunnion table that provided the weight carrying capacity needed as well as the ease of access for loading. Overall build quality also impressed, especially when matched to the highly competitive price.

The next step was to see the machine in action being demonstrated on parts that reflected the materials machined at N.T.G., such as Inconel, stainless steels and other exotics. The demonstration held at XYZ Machine Tools Burlescombe showroom were carried out on a UMC-5X equipped with Heidenhain iTNC 640 HSCI control, as this was familiar to the engineers at N.T.G. However, side by side was another UMC-5X equipped with the Siemens 840DSL Shopmill control. Seeing this in action was a ‘lightbulb moment’ “We have



broad experience of a number of control systems but having seen how easy the Siemens was to program and the overall user-friendliness of the control the entire team pushed for that. All that was left was to specify the rest of the machine to suit our needs that included a 60-position toolchanger and the 15,000 revs/min in-line spindle.”

With the machine now installed the initial expectations of the team at N.T.G. are being fully met, with the build quality and accuracy of the machine helping to reduce cycle times. One particular job that would normally have taken six operations to complete, is now down to two and cycle time has been halved. “The move to five-axis simultaneous machining with the XYZ UMC-5X is a first for us and it has definitely opened up new opportunities, with the capability of the machine allowing us to machine parts that we couldn’t have considered before,” says Bryan Larvin, Works Manager. “This is the first machine we have had from XYZ Machine Tools and from what we have experienced in terms of support we would certainly consider more when the time is right to invest.”

The XYZ UMC-5X is a simultaneous five-axis, gantry style machine that provides unrivalled performance at a highly competitive price point. Standard features include a Direct Drive 90 rpm C-axis table configuration, combined with +/- 120 degrees on the tilting A-axis, with 2.5 sec for full movement. With the table tilted 90 degrees towards the rear (component facing forward), there remains 500 mm of Y axis travel forward of the table surface, allowing larger workpieces to be machined. Axis feedrates are 36 m/min in X, Y and Z with travels of 600 mm in X and Y (500 mm in Z) to maximise use of the 600 mm diameter table. Standard spindles are in-line direct drives with 35 kW of power and either 12,000/15,000 revs/min, an option to go to a 25 kW, 18,000/24,000 revs/min motorised spindle is also available.

The XYZ UMC-5X also features Traori/Kinematic functions during five-axis simultaneous machining for improved accuracy, high accuracy Heidenhain linear scales on the X, Y and Z axes and similar super high specification rotary scales on rotating B and C axes. Additionally, the machine features built-in thermal growth compensation and integrated systems for improved productivity, including Tool-Tip positioning control, Spindle Vibration Supervision, Dynamic Collision Monitoring and Smart Machining Technology.

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Above: The XYZ UMC-5X is allowing Newcastle Tool & Gauge to reduce cycle times and open new opportunities.

Left: The Siemens 840DSL ShopMill control simplifies programming thanks to its ease of use.

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