

WALTER TOOL GRINDING-EROSION TECHNOLOGY **POWERS UP PRODUCTION FOR CAJERO**

The installation of a Walter Helitronic Power Diamond two-in-one CNC tool grinder/erosion machine has enabled Cajero, a company that designs, develops and manufactures tooling for composites and aerospace components, to reduce the time traditionally taken to produce PCD-tipped tooling by as much as to 35 per cent.

And the machine's robot loader—which can utilize a storage system of up to 1,500 workpieces—is also producing savings in machine operator costs by enabling the company to produce the complex tooling in a lights-out mode.

“Compared with our former route of using separate machines and setups to machine the tools' carbide bodies/flutes etc. then PCD tips, the Power Diamond is key to enabling the end-to-end manufacture of special tool designs to be reduced by up to three weeks,” says Alex Harding, operations manager at Cajero.

He continues: “The continued growth in the use of composites and carbon fibers has been matched by our pioneering development of groundbreaking bespoke tooling—the company's managing director, Phil Harding, can track his involvement in the machining of composites back to the late 1970s—and this has gained us 'preferred supplier' status with some of the world's leading aerospace and defence companies, as well as F1 and specialist sports car builders.

“Our PCD tooling offers users greater tool life and performance for companies that machine or process composites—Cajero sets out to enable customers to 'Power Up Production' by significantly reducing the cost per hole or foot machined, and these savings are emphasised when the tools are supplied with our full re-service package.

“A program of continual investment in manufacturing equipment has complemented this ethos and this, of course, means we are constantly aware of what the latest technologies could mean to us and, when appropriate, we invest accordingly.”

Hence the in-depth analysis of the capabilities of the Helitronic Power Diamond, which utilizes a combination of grinding wheels/electrodes for the production of HSS, solid carbide and PCD/CBN-tipped tools in a single setup.

“Our thorough investigation of the machine included trips to Walter's HQ in Germany for cutting trials of a number of 'special' (rather than run of the mill) tools to really test the machine,” Mr. Harding says. “We push the boundaries in terms of tool design, so it was essential we invested in a machine that would not only meet our current needs but also any potential future demands.”

“It was clear that in addition to impressive savings in tool manufacturing lead times, the Power Diamond would also provide our PCD tooling team with a greater degree

of control and process security, as well as production autonomy without impacting existing tool manufacturing routines,” he says.

Supplied by Walter Machines UK of Honiley near Kenilworth, the Helitronic Power Diamond is capable of processing tools ranging to 320 mm in diameter and 350 mm long. It is equipped with a 12-kW direct-drive spindle that produces grinding speeds ranging to 10,000 m/min. The machine incorporates Tool Studio software, which enables operators to create tool machining and movement sequences by, for example, harnessing Wizard functionality to add all appropriate machining parameters then to utilize 3D-simulation to check and, if necessary, optimize grinding operations.

Tool Studio also seamlessly integrates the robot load/unload facility—a FANUC six-axis LR Mate 200iC/5L robot loader that works in conjunction with a three-pallet storage system that can hold as many as 1,500 workpieces, dependent on diameter. Increased capacity is available upon request.

Mr Harding adds that machine stability and high-precision positioning and repeatability were other key factors in the choice of the machine, along with the record of service and support that Walter Machines UK has provided over the long-term.

The new machine joined a range of manufacturing technology at 40-employee Cajero’s Isle of Sheppey (Kent) site, including an Ewag Ewamatic insert/tool grinder and a trio of Walter Helitronic Power tool grinders—one fitted with a disc loader pallet system that can accept as many as 90 tools for processing in a fully automatic cycle—plus a Walter Helicheck four-axis, non-contact measuring center. This checks tool rake and helix angles, lead and relief angle, and automatically scans the tool profile.