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McLaren 720S GT3

Exclusive early testing and development
details of Woking's GT racer



Factory fresh

It's not just McLaren getting in on the GT scene. Aston Martin has new GT3 and GT4 cars – tech secrets revealed inside!

Interviewed

Mike Carcamo

Nissan global motorsport director

Inside track

For the upcoming Season 5, Formula E has set out key changes. Team directors from Jaguar and Nissan respond to the electric racing series' all-new direction



Belotti's CNC machining center has been equipped with a particulate extraction system

COMPOSITE MACHINING SYSTEMS

Investment in a high-performance composite machining center ensures improved efficiency in the development of carbon-fiber components

More innovations and solutions exist than ever before, especially for companies involved in motorsport and F1. The unique properties of carbon fiber lend themselves perfectly to high-performance automotive applications and the growing demand for evermore advanced structures push the industry to keep raising efficiency.

The R&D of more efficient composite material processing techniques will inevitably result in significant line automation. With more talented individuals joining the composite industry workforce every year, it is in good standing to exceed expectations and in the upcoming years the composite industry growth will depend heavily on its ability to lower costs.

Advanced Composites and Engineering Technology (ACE), founded in 2004 and based in Cambridgeshire, UK, serves the motorsport industry – which represents about 30% of its manufacturing output – offering a full service from CAD design to pattern making, tool production, composite parts and assemblies.

Investing in new technologies and in a new facility, the company



The Belotti FLU 2617 CNC machining center enables greater production volume for British company ACE

continues to be at the forefront of advanced composite material processing. ACE realizes that efficiency gains often come from new equipment and that's why it has recently purchased a new CNC machining center, a Belotti FLU 2617, that complements its existing machinery to increase production volume.

Belotti SpA has been supplying component manufacturers with

reliable and efficient 3- and 5-axis machining centers since 1977 and the FLU unit supplied to ACE provides a tailor-made solution for machining epoxy block patterns and performing trimming operations on carbon fiber parts.

The Belotti FLU has 2,600mm x-axis, 1,700mm y-axis and 1,300mm z-axis strokes and is equipped with a full particulate extraction system, a perimeter protection with upper rolling shutter and a large table that makes it fully suitable for the machining of epoxy block and carbon, which are very different from metals and alloys. During production the resulting dust and particulates can be dangerous to operators, so a full extraction system is crucial for operator health and safety.

The FLU machining center performs the exacting operations for the production of carbon-fiber molds and patterns and the machine maintains a reliable and accurate point-to-point machining capability. Further equipment fitted to the machine consists of an 18-position tool changer, Siemens Sinumerik 840D solution line numerical

control system and a 15kW electro-spindle with maximum speed of 20,000rpm.

The ability of FLU gives ACE the versatility that its various production processes require. "After a number of meetings with Belotti and Cannon Shelley, the official UK distributor for Belotti, we finalized the specifications," explains Paul Skinner, director of Advanced Composites and Engineering Technology. "Belotti kept us fully informed during the build period through to delivery and installation. To date all aftersales enquiries have been handled promptly, service engineers have attended on the same day or the next day to assist with any issues we had during our initial learning period."

In the short period of time ACE has been running the FLU 2617, the system has been used to machine various materials including Tufnol, Rohacell, aluminum and e-glass. <

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