Press Release 1 / August 2006

At least twice as fast

Mönchengladbach

Situated near Belfast, MOYOLA Precision Engineering (MOYOLA) in Castledawson, Magherafelt, Northern Ireland, is the first customer in the world to take delivery of an ECOSPEED F equipped with both the new integral C-axis and angular milling head. This additional axis, together with the integrated angled head, enables full five-axis face machining of complex aerospace components using a single setting. This is the first machining center to use an "integral C-axis" in combination with parallel kinematics for multi-axes machining.

The ECOSPEED F from Dörries Scharmann Technologie GmbH (DST) has been selected by MOYOLA to give the company a distinct aerospace competitive advantage. Based on the investment made, MOYOLA expects productivity levels to increase by at least 150%. In evaluation of solutions for machining large complex aerospace components, Moyola specified a machine capable of increasing both productivity and competitive advantage.

For MOYOLA, the importance of high quality, productivity and flexibility in the ECOSPEED F are of prime importance. Compared with their existing machining centers, the ECOSPEED F is capable of machining large aerospace complex components 2.5 times faster. Along with this outstanding advantage, the quality produced is at the highest levels of cutting performance. Precision and surface quality is so high that manual hand-finishing, which would normally be required, is almost completely unnecessary and adds significant lean manufacturing value.

As part of MOYOLA´s machine purchase strategy they evaluated several technologies in the USA, Japan, and Europe for a high calibre machining center with the capability for up-grade to enhance their sustainable competitiveness for a seven to ten year period with a further productivity increase of at least 30%.

At least as twice as fast as other CNC machining centers: ECOSPEED F

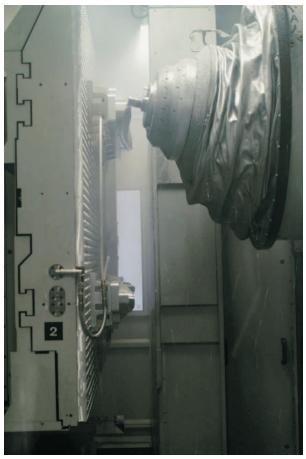
DS Technologie
Dörries Droop + Rein Scharmann Berthiez

Performance had also to meet the current technical specifications of customers from the aerospace industry. MOYOLA´s evaluation concluded that the advanced features of the ECOSPEED F and the combination of DST's and MOYOLA's engineering capabilities were capable of delivering to their requirements.

The extraordinary performance advantages offered by the ECOSPEED F are partly attributable to the Sprint Z3 head and integrated motor spindle. The 8,000 cubic centimeters per minute machining volumes achieved with these features still holds the world record and has set the benchmark for machining of aerospace aluminium. Until now, there had been only one limitation on machining with the Sprint Z3. The parallel kinematics enabled high performance movement within an arc of +/- 40°. This limitation has been overcome with the combination of the C-axis and angled milling head providing full 90° applications. The C-axis has been designed as a fully functional NC-axis with a torque motor providing the drive. This is directly integrated into the Sprint Z3 head and provides a very compact layout without restricting contouring range. The precision of the C-axis is provided by an integrated direct measuring system.

The C-axis tilt angle is +/- 40°. This theoretically increases the figure with the new angle head to +/- 130°.

A significant feature is the permanent, i.e., fixed, function of the C-axis as a 100% machining axis. The machining center has six translatory axes, which enable five-axis face machining of workpieces without restriction. Now, for example, machining can be undertaken at practically any conceivable or required angle. The main motor spindle unit provides the drive for the angled milling head directly and has an output of 20 kW at a max. 15.000 rpm and 46 Nm of torque next to the 80 kW and 30.000 rpm without the angle head. A machining process with horizontal spindle and vertical pallet arrangement ensures efficient swarf removal, which is a major issue at 8,000 cm³/min.



Innovative head: Sprint Z3

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