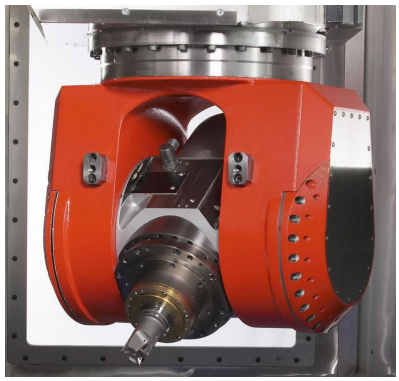
£5m wing spar cell cuts machining times by 30%

- **Two Handtmann PBZ-HD high-speed five-axis portal machining centre's linked by a fully integrated overhead flexible manufacturing system (FMS).**
- **100kW Fischer spindles**
- **Metal removal rates of up to 12 litres a minute**.

A £5 million flexible manufacturing cell for the machining of aircraft wing spars is expected to cut machining times by around 30% compared to previous methods. At the heart of the investment, which was supported by a grant from the Welsh Development Agency, are two Handtmann PBZ-HD high-speed five-axis portal machining centre's linked by a fully integrated overhead flexible manufacturing system (FMS).

Supplied by Handtmann CNC UK, part of the Engineering Technology Group, the cell can produce parts up to 10m long by 1.5m wide. The machines are fitted with the latest 100kW Fischer spindles, which can achieve metal removal rates of up to 12 litres a minute. The cell will be producing around 2,200 wing spars a year, up to 10m long and 1m wide, including inner and mid spars for the single-aisle Airbus A320 as well inner rear spars for the A330 and A340 family of aircraft. The wing spar production was secured as part of a multi million Dollar contract, agreed as part of the Airbus Power 8 initiative, that won increased volumes and new packets of work for Magellan in exchange for cost reductions.

Magellan's Director of Commercial and Business Development, Haydn Martin commented: "The Handtmann machines we are installing represent state-of-the- art production technology and will provide a step change in the way this type of component is manufactured. This gives us a world-class manufacturing competence and the ability to be extremely competitive in the global aerospace market." The combination of five-axis machining, high-power spindles and integrated FMS will allow Magellan to manufacture wing components at unprecedented production rates. Full five-axis machining with 100kW spindles gives extremely high metal removal rates combined with quality of finish. It also allows Magellan to machine the 3D skin surfaces and complex pockets with closed angles called for on the spars. The portal structure of the Handtmann PBZ-HD machine gives more rigidity and allows higher feed rates than a gantry machine – ensuring the 100kW spindles are used to their full capability. The fully-integrated FMS minimizes non-productive time spent in loading and unloading – often a major factor when machining components of this size. It holds five pallets that can be set up offline while the machines are running and then loaded into either of the PBZ-HD machines. There is no downtime other than for lifting the pallet onto the machine.



Magellan's Adrian Young, Operations Manager for the Wrexham facility concludes: "This was the fastest way we could find to machine these components - we think that we have achieved maybe a 30% reduction in cycle time compared to previous methods."