

Aerospace

HiPACS for Aerospace Fastener Hole Drilling and Countersinking in One Step

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High precision tool achieves tight tolerances in one operation and significantly reduces cost per hole in aerospace applications

Kennametal has introduced the HiPACS drilling and countersinking system for aerospace fastener holes. Designed to drill and chamfer holes in one operation, the high-precision tool meets the aerospace industry's stringent accuracy requirements, while delivering increased tool life in machining composite, titanium and aluminum aircraft skins.

"Most fastener hole tools used today are complex, made-to-order tools with long lead times," says Georg Roth, Product Manager, Kennametal. "HiPACS uses standard, off-the-shelf components for quick delivery and low cost per hole, by allowing the drill and chamfer insert to be indexed independently from one another. What's more, it's the only indexable drilling and countersinking system on the market that can hold the aerospace industry's required fastener hole chamfer tolerances of ± 1.0 degree in just one operation."



Kennametal's HiPACS is a cost-effective and easy-to-assemble system comprised of three components: a reducer sleeve, countersinking insert and solid carbide drill. The system works with any standard hydraulic chuck.

Three simple components eliminate the need for custom tooling

Designed to be clamped in a standard hydraulic chuck, the HiPACS modular system consists of three components that are fast and easy to assemble:

- A reducer sleeve with a built-in high-precision pocket seat. In conjunction with a standard hydraulic chuck, this component provides ultra-secure clamping and a runout of no more than $3\mu\text{m}$, significantly increasing tool life and hole quality.
- A PCD countersinking insert. This eliminates the need for expensive custom solution step drills,

reducing manufacturing costs while meeting the industry's accuracy requirements of +/- 1.0 degree.

- The two series of solid carbide drills —both diamond-coated and PCD-tipped—covering all material combinations found in a typical aerospace assembly. In addition, the straight shanked tools allow for length adjustments in increments of 10mm.

The new HiPACS drilling and countersinking system can be utilized on all machines typically used for aerospace applications. In less stable conditions such as robot end effectors, the diamond-coated carbide drills offer excellent tool life and hole quality. PCD-tipped drills, on the other hand, excel in stable conditions such as gantry machines.

With an industry standard interface, HiPACS can be utilized on any CNC machine, and is suitable for a variety of drilling and countersinking applications.

Watch the short video above to see a demonstration of the features of the new HiPACS system.

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