

## **Applying new approaches to familiar engine manufacturing challenges**

It's surprising how many traditional manufacturing processes are still applied in one of the most dynamic industries in the world. In the aerospace industry, new opportunities are emerging alongside fresh challenges around cost of materials, supply chain issues and other concerns. Yet, despite the ongoing pressures and possibilities, the industry still frequently uses more traditional manufacturing approaches which gives rise to a number of issues. Seeing these issues continually affect their customers was what drove cutting tools innovator, KYOCERA-SGS to develop their capability to produce high performance complex form tools which are growing in popularity for use in the aerospace engine industry.

Being truly innovative not only answers a specific problem but also enhances long-term performance. KYOCERA-SGS's new blade slot manufacturing approach takes all aspects of the process to a higher standard to boost the productivity and cost effectiveness of engine manufacturing. It achieves this by reducing cycle times by up to 50% (depending on the process), while also reducing the cost of consumable tooling by up to 75% and increasing tool life by up to 12 times on the finishing operation when compared with other solutions. It also provides high accuracy with the ability to produce form tools well within the typical form tolerance required of +/- 0.010mm. The constant drive for an ever superior finish on aerospace engine components is what drove Kyocera-SGS to develop their unique form tool geometry and this coupled with dimensional accuracy is helping to drive Aerospace engine manufacturers towards their goal of 100% conforming parts. The innovative process and tool design are patent pending.

As Antony Theaker, UK Sales Manager, says:

“In engine manufacturing, there is never just one problem to solve. It's never only about reducing cycle times or solely about enhancing finish or just about boosting productivity. For KYOCERA-SGS's new blade slot manufacturing process, as with everything we do, the focus is on creating innovative solutions that address all of the issues that affect aerospace manufacturers.”

In manufacturing, only a small portion of the machining cost is represented by the tooling. When the right tooling is combined with tool path and machining strategy optimisation and the right tool holding and fixturing device, it can deeply impact the bigger portion of the machining equation. Identifying innovative and practical solutions in manufacturing is not simply about a part or a process but about how the two work together. With their new blade slot manufacturing approach, KYOCERA-SGS are proving that a more effective combination of part and process can make a greater impact on a company's long-term success.