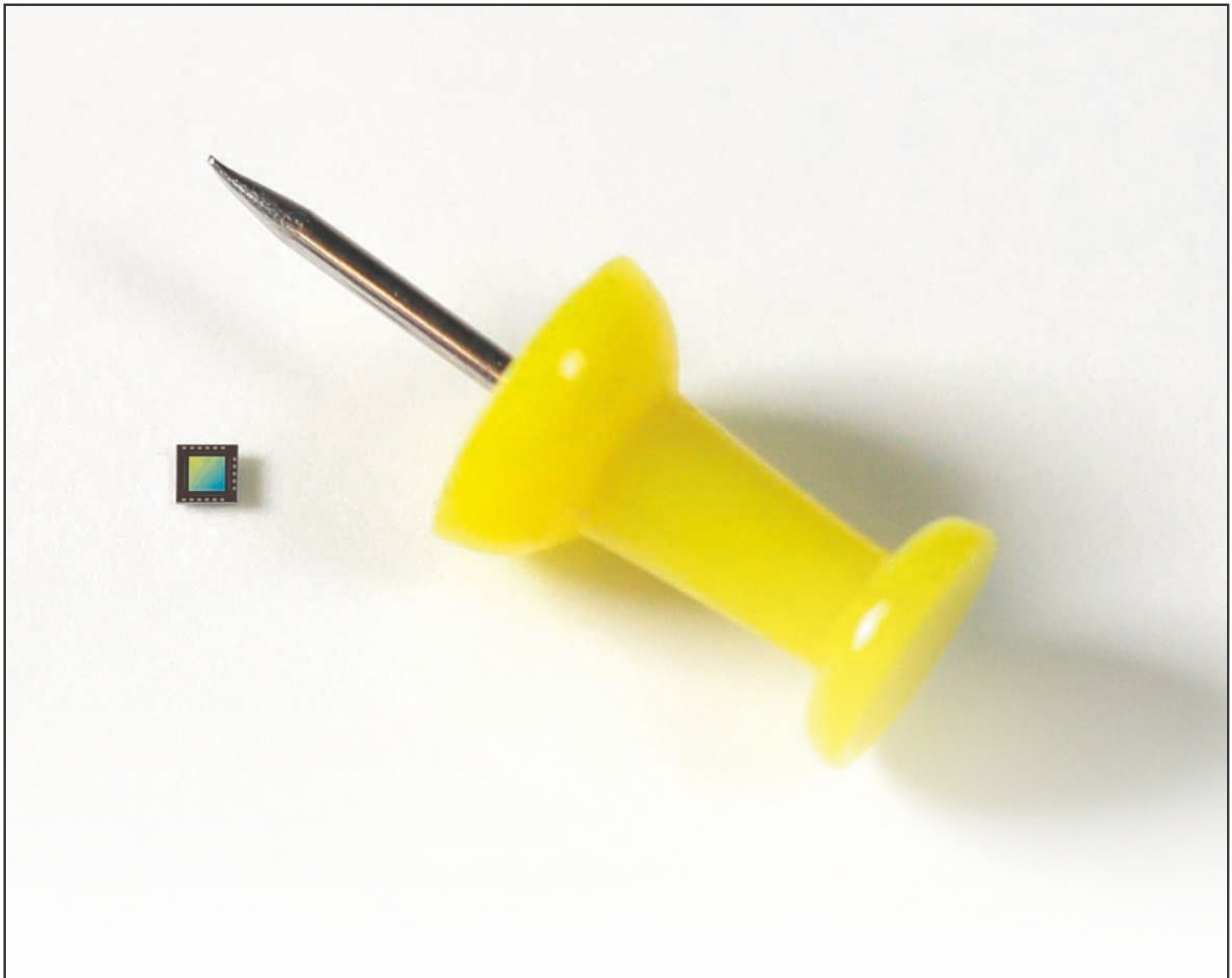
CMM INTERNATIONAL

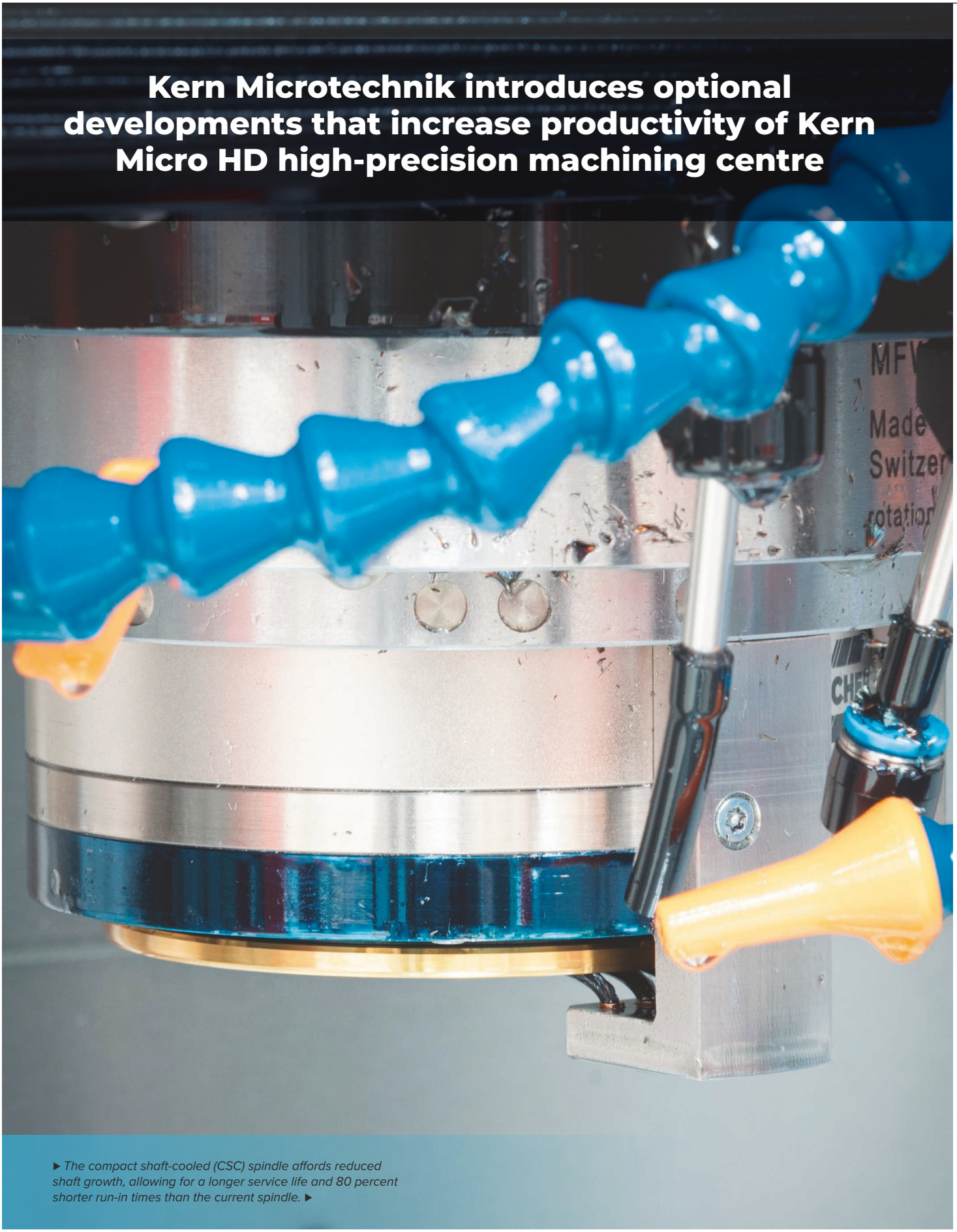
COMMERCIAL MICRO MANUFACTURING



IN THIS ISSUE

10
22

Kern Microtechnik introduces optional developments that increase productivity of Kern Micro HD high-precision machining centre



▶ The compact shaft-cooled (CSC) spindle affords reduced shaft growth, allowing for a longer service life and 80 percent shorter run-in times than the current spindle. ▶

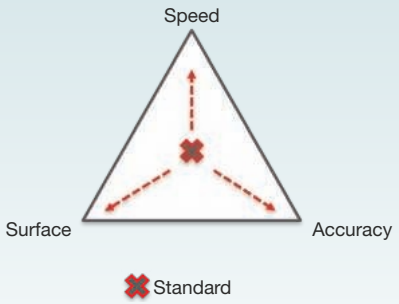
Germany-based Kern Microtechnik has introduced four optional developments that increase productivity of the Kern Micro HD 5-axis, high-precision machining centre, namely a compact shaft-cooled (CSC) spindle, an Advanced Setting software feature, automatically adjusting coolant nozzles and coordinate grinding.

The CSC spindle, equipped with the HSK 40 tool holder, affords reduced shaft growth, which allows for a longer service life and 80 percent shorter run-in times than the current spindle, thus increasing the overall performance of the Kern Micro HD.

The spindle is temperature stable after a very short time, even with large speed jumps, and therefore enables extremely high accuracy values to be achieved on the workpiece almost immediately. This, in turn, significantly improves valuable machining time. In addition, the probing processes for workpiece inspection can be made much more efficient.

A further but lesser advantage of the CSC spindle is an increased speed of 45,000 $^{min-1}$. This is about 3000 $^{min-1}$ above the default value, resulting in an additional, small increase in productivity during the machining process.

The improvements afforded by the spindle are realised thanks to its integrated cooling process. Specifically, the bearing-less rotary joint of the spindle's shaft cooling system is extremely compact and therefore its dimensions remain almost unchanged compared with the standard spindle.



▶ *The Advanced Setting software feature allows the operator to move the focus easily and quickly between three machining parameters, namely accuracy, speed and surface quality.* ▶

The CSC spindle can be installed in both new and existing Kern Micro HD machining centres.

The advanced setting software feature allows operators to move the focus easily and quickly between three machining parameters, namely accuracy, speed and surface quality. These parameters are equally balanced in standard setting mode but can be adjusted as required in advanced setting mode. For example, if the operator wishes to optimise roughing, prioritising the processing speed helps. This allows roughing processes to be accelerated by up to 30 percent compared with standard operation.

If the finish depends on maximum shape efficiency or on surface quality in the nano range, the operator can select the appropriate focus. The selection can be made during programming; a mouse click with a change of parameter is sufficient to enable the desired cycle to be implemented.

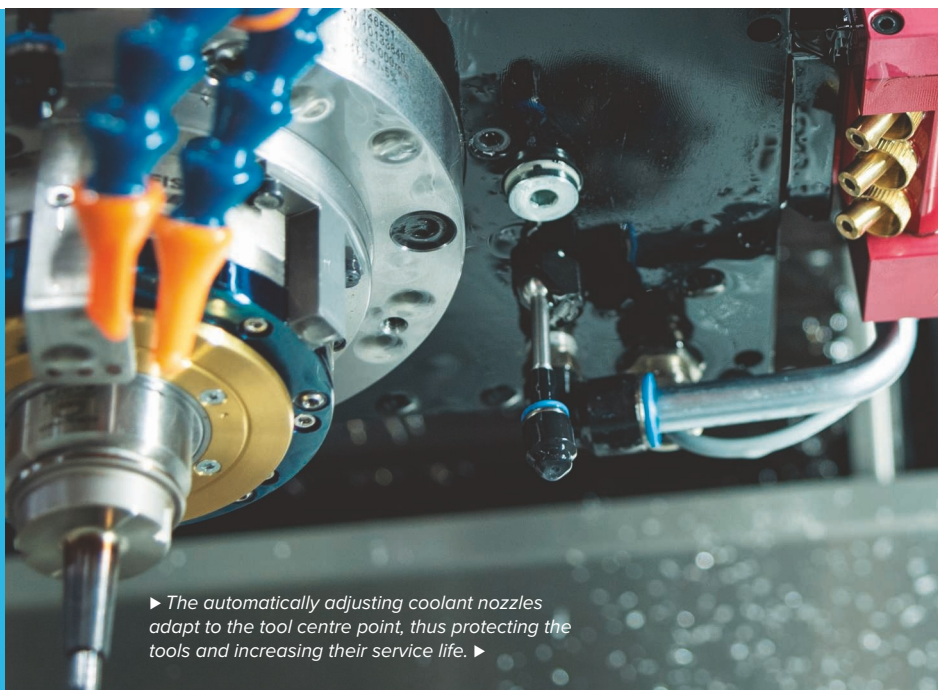
The automatically adjusting coolant nozzles eliminate the need for manual readjustment to the tool tip. They correspond to the stored tool database and the tool length entered there. This way, the coolant (whether oil or coolant) always does its job exactly where it is done best, namely at the tool centre point. The nozzles also incorporate a blow-out function that ensures their reliability in the long term. As a result, tools are spared and their service lives increased.

Lastly, a jig grinding package (or option) can be retrofitted on new Kern Micro HD machining centres. This was not possible before now because of several differently structured components. ●

Kern Microtechnik
https://en.kern-microtechnik.com

Kern Micro HD optional developments

- Shaft-cooled (CSC) spindle—allows extremely high accuracy values to be achieved on the workpiece.
- Advanced setting software feature—allows roughing processes to be accelerated by up to 30 percent compared with standard operation.
- Automatically adjusting coolant nozzles—eliminate the need for manual readjustment to the tool tip.



▶ *The automatically adjusting coolant nozzles adapt to the tool centre point, thus protecting the tools and increasing their service life.* ▶