Play safe with intelligent control

Super Lock and Clamp-by-Wire locking system - A strong team
Röhm and Mapal are working together closely to unify the combination of the innovative locking unit “Super Lock” with a brand new electrical control system “Clamp-by-Wire” in one product. The main features of the new product are the self-locking clamping set and the linear motor. This means that the spring assemblies and hydraulic units that were previously required are now unnecessary. The components for the electrical drive have been developed by Röhm and Mapal in cooperation with the company Aradex.

“Clamp by wire“ - hydraulic free construction in the machine

Due to the analysis of forces when clamping the tool holder in the HSK interface, impurities and shavings in a micrometer range are safely identified together with tolerances of tool holders e.g. due to a lack of lubrication in the clamping system. This means that inaccuracies can be identified and avoided before processing.

With the almost unrivalled speed of the linear motor, tools can be clamped or released within just 50 milliseconds. Due to the omission of the spring packages, the lifespan of the system is increased and becomes more flexible due to the progressively controllable clamping and drawing force. The self-locking clamping set, the Super-Lock, works with a rotationally symmetric collet and functions completely without springs. It is generally constructed more compactly than the standard, classic “spring-mounted” HSK clamping systems and offers higher force quality, more static and dynamic stiffness and proven, safe clamping; including for heavy machining.
*Product Advantages*

- Identification of impurities and shavings on the HSK product surface in a µm range
- Identification of tolerance differences for tool holders
- Identification of faults, due to a lack of lubrication in the clamping system for example
- Almost unrivalled speed of the system: clamped and released in just 50 milliseconds
- Progressively controllable clamping or drawing force
- Significantly less heat input in the spindle
- Reduction of procurement and operating costs by forgoing hydraulic aggregate
- Safe process, environmentally friendly and energy efficient clamping system of the future
RÖHM Super Lock for HSK

The Function of the self locking mechanism Super Lock

The locking system Super Lock acts as a revolutionary connecting link between the HSK clamping unit and the actuation bar. Even with large HSK tolerances, the unit safely transfers the actuating force and guarantees the connection through mechanical self-locking.

For the first time ever, the RÖHM Super Lock needs no springs and no additional retention force, due to a symmetrical collet. The coupled HSK clamping unit is simply moved to the clamping position, and the system locks itself, self-locking on the conical surfaces of the draw bolt and clamping sleeve.

For releasing, the actuating force of less than 2000 N (example for HSK-A 63) unlocks the draw bolt, pushes the drawbar and therefore the push head of the HSK clamping unit forward. The HSK tool is ejected with less force than with spring systems, since there is no need to overcome the spring force.

Product advantages

- Clamping without springs and additional retention force
- Anduring, secure and self-locking clamping
- Space saving due to compact design
- Front mounting in short spindles
- Highest balancing quality
- Optimised for use with high speeds
- High stiffness combined with the RÖHM HSK clamping unit
- Highly suitable for heavy-duty metal cutting
- Secure clamping even with large HSK tolerances
- Applicable to all HSK sizes