BERGER GRUPPE

CNC grinding machines with robot-controlled feeding systems in digital production

Deburring, grinding, sharpening, serrated grinding and polishing are core competencies of the Berger Gruppe. At GrindingHub 2024 in Stuttgart, the Wuppertal-based group of companies will present solutions for processing machine knives with robot technology and intelligent feed systems.

In the manufacture of machine knives, the most precise workpiece tolerances must be maintained in order to be able to guarantee good quality of the end product. Measuring systems in conjunction with robot technology are playing an increasingly important role in grinding processes.

At the GrindingHub in Stuttgart, the Berger Gruppe will be presenting various CNC-controlled grinding machines that process machine and/or circular knives in different grinding processes. Here, a surface grinding, an arc grinding as well as a scalloped and serrated grinding can be achieved on the workpiece.

CNC grinding machines grind, deburr, polish and serrate individual workpieces and steel strips. Integrated camera or laser measuring systems enable compliance with the most precise tolerance values.

Workpiece feeding as well as loading and unloading of the processing machine can be automated. Often the grinding machine is combined with a robot-controlled feeding system. The workpiece is either removed from a magazine by robots or fed as bulk material on a conveyor belt.

Workpieces provided as bulk material are separated by vibrators. A 2D camera recognition system detects the orientation and position of the individual part so that it can be picked up by the robot in the correct position. The workpiece is then positioned in the grinding machine by robots and, after processing, deposited in another magazine.

The processing machine can be equipped with sensors and thus becomes a data supplier. This includes operating states as well as status and process information. Measured values are recorded by intelligent sensors and passed on to the machine controller via IO-Link. This communicates with a decentralized higher-level control system. Here, decisions can be made to optimize productivity and the use of resources as well as an evaluation of the process.

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