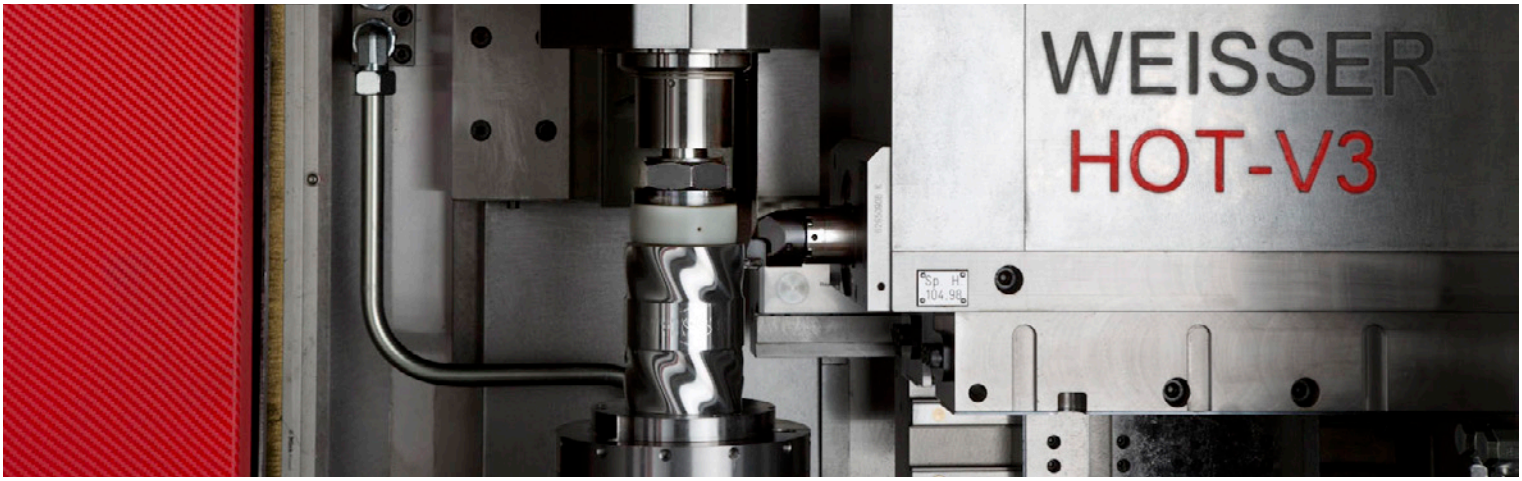
The Drive & Control Company

Rexroth
Bosch Group



J. G. Weisser: Increased efficiency in the manufacturing of non-circular work-pieces by means of a decentralized control solution from Bosch Rexroth

Doubled Performance Capacity

Non-circular components such as camshafts, pistons or eccentrics impose special requirements on manufacturing machines and production processes: J. G. Weisser Söhne Werkzeugmaschinenfabrik, based in St. Georgen, Germany, provides innovative lathe machines and multifunctional manufacturing centers for this sector. The single-spindle vertical lathe of the Vertor C series meets the highest demands for precision, efficiency and uptime thanks to a Bosch Rexroth CNC solution with decentralized system architecture.

In the production of workpieces with elliptical cross-sections, short cycle times and low costs are essential factors to successfully stay ahead of competitors. That is why J. G. Weisser Söhne Werkzeugmaschinenfabrik equips its single-spindle Vertor C series vertical lathe with its innovative HOT system (hyperspeed oval turning): In relation to the rotating axis, a highly dynamic oscillating drive generates the radial, oscillating movements of the tool blade. Weisser achieves the required control accuracy and processing speed by using Bosch Rexroth's IndraMotion MTX CNC control. Motion profiles for the decentralized drives are generated from the workpiece contour. The CNC control directly transmits up to 4,000 positions per second from the CAD system to the IndraDrive M servo-drives, which guarantee maximum productivity and path accuracy during the machining process with cycle times of 250 microseconds.

Decentralized architecture for efficient handling

The decentralized Rexroth system architecture offers distributed control and drive intelligence: With the ideal interaction between the CNC control, IndraDrive M servo-drives, and IndraDyn S motors, Weisser's HOT system enables significantly higher workpiece speeds than traditional solutions. Yet, Rexroth's control architecture offers even more advantages: The handling of the machines has become more comfortable and intuitive, with much faster set-up and changeover times. As the first all-electric high-precision lathe, the Vertor C consumes about 20 percent less energy. The software tool IndraMotion MTX ega (energy analyzer) which is integrated into the CNC control, allows for consistent energy monitoring – ideal for identifying the biggest consumers of energy and for optimizing processes as needed.

Tough application

Single-spindle vertical lathe for significantly higher work-piece speeds and maximum process dynamics.

Ingenious solution

Decentralized intelligent CNC control and drive solution for accelerated manufacturing processes and maximum precision.

Exactly

"The decentralized and open CNC solution from Bosch Rexroth facilitates higher step rates and traverse speeds and even has some performance reserves."
Thorsten Rettich, Weisser

Solved with

- CNC control IndaMotion MTX
- IndraDrive M drive system
- IndraDyn S motors
- Diagnostics and energy monitoring via IndraMotion MTX ega (energy analyzer)