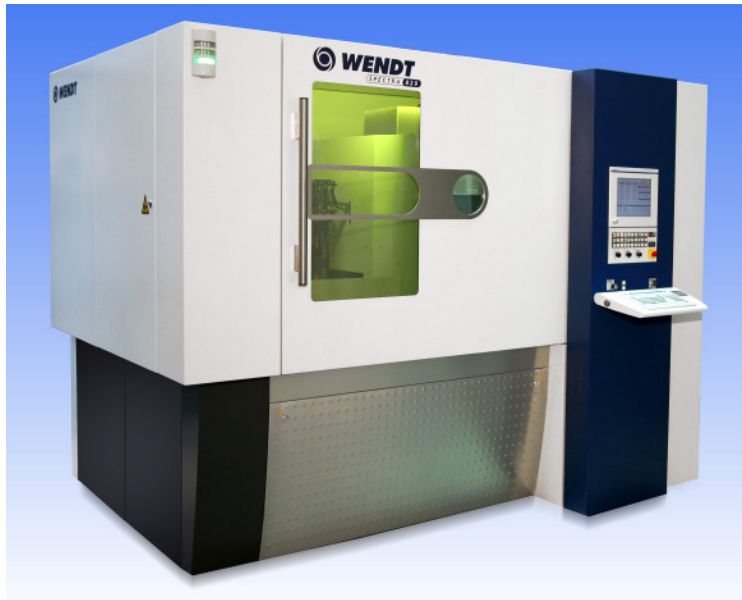


New Laser Machine SPECTRA 820 Generates Complex 3D Contours on Tungsten Carbide Cutting Inserts

As the only system supplier worldwide in the field of hard material cutting Wendt GmbH, Meerbusch, develops, manufactures and sells grinding machines and grinding tools from the same supplier. With the SPECTRA 820 Wendt presents a completely new development. This machine is not based on existing product lines but represents a new application in a widely known product field of our customers: The laser processing machine generates complex three-dimensional chip breakers not only on cutting inserts made of hard materials like PCD and CBN but also on workpieces made of tungsten carbide, Cermet and ceramic. This machine complements the Wendt product line of periphery and surface grinding machines by the new application field of laser machining.

The new machine has a modular axis concept with three linear axes which are used for machining as well as for measuring and handling tasks. The workpiece oscillates in form of a meander, i.e. it moves under the fixed laser beam. The axes of the workpiece cross-table, equipped with linear direct motors, feature extremely high accelerations:



The X-axis, for example, reaches 1.5 g (g = acceleration due to gravity); the Y-axis even 3 g. The integrated solid-state, diode-pumped laser operates with a wave length of 1.064 nm ($1.064 \cdot 10^{-9}$ m) and extremely short pulse lengths leading to a cool machining operation without heat influence on the workpiece. The combination of highest laser beam quality and precise focusing allows the generation of workpieces with high accuracies and surface qualities. A good serviceability is achieved by the long lifetime of the laser power elements which are easy to exchange in the field.

A key to high precision is the massive granite stand in portal design. The high weight of 3.5 t and the favourable damping characteristics of the granite lead to a good dynamic behaviour of the machine even at high axis accelerations. Another feature is the integrated 3D measuring probe which is used for centering the workpiece and for process control.

The machine is equipped with proven industrial control and drive technology. Optimal operating ergonomics is provided by the integrated 3D-CAD/CAM postprocessor. From the 3D workpiece model of the customer it generates the machining code. In combination with the ergonomic graphical operating surface it is thus possible to quickly generate programs also for complex contours.

The SPECTRA 820 can be easily integrated in the material flow of grinding and boxing machines. Different handling solutions allow the reliable loading and unloading of workpieces from pallets. A modular clamping system for the workpieces leads to short set-up times.