SPARK 1200
A MULTITASKING COMPACT

Maximum static and dynamic stiffness of the electro-welded structures, high torques and rigidity at the rotary table and spindle, highly performing drives. These are the guidelines that Mandelli engineers have followed to design Spark 1200, a compact machining center featuring excellent performances which do their best in the aerospace industry where materials are extremely hard and difficult to machine.

To reach high static and dynamic rigidity, Spark 1200 features gantry drives and over-dimensioned roller slides instead of the traditional linear axes to keep the thrusts barycentric and increase the speed and acceleration, while the rotary axes are characterised by direct drives or double-pinion kinematics to annul the reverse backlash.

Spark 1200 presents the innovative fixed table structure with which Mandelli has recently equipped some of its machining centers to make the HMC dynamics independent from the weight of the workpiece being machined and thus favour the integration and flexibility of multi-process operations. Among these the turning operations, almost never applicable and applied in a single machine, that Mandelli successfully introduced some years ago on two bigger models of the Spark range which now find application in a compact structure.

Spark 1200 features steel structures which, at the same mass ratios, offers double stiffness compared to cast iron and have been designed further to a detailed FEM analysis to make a staggered slide-way solution characterised by a highly optimised mass/yield ratio compared to the standard values on the market.

Special attention has been paid to dumping machining vibrations by introducing HW and SW devices that reduce the energy and its negative effects on the HMC, keeping a high Material Removal Rate, a strategic aspect for industries like Aerospace and Energy where the raw workpiece dimensions are turned into decidedly smaller but much more complex geometries.