with the LaserSmart 501 for laser precision machining

Unlimited solution with LaserSuite - easy programming and 3D simulation

Before laser cutting, the tool and all its machining processes can be visualized offline in a preliminary 3D simulation program. This allows offline inspection of the laser beam trajectory and optimizes the cycle time before manufacturing. The loading and unloading sequence is fully integrated into the programming software and therefore improves productivity with reduced set-up times.

Programming has been designed with ease-of-operation in mind. After importing a 2D drawing of the tool, the operator simply inputs material details as well as surface finish quality requirement, and the software algorithms will complete the program file. The Rollomatic JobManager program allows various types of tools to be loaded and processed automatically.

Furthermore, the software evolution has reduced cycle time for chip breakers by 50%, giving the user substantial gains in productivity.

As an enhancement, the RMonitor which is the new intelligent software for machine monitoring, can be used to monitor the productivity of the machine.
smart laser solution

Set new standards for laser machining PCD and CVD cutting tools

The LaserSmart 501 features simultaneous 5-axis interpolation for high precision laser machining of ultra hard materials such as PCD, CVD, MCD and natural diamond. As per the previous version, the LaserSmart 501 processes multiple operations such as cutting edge generation, chip breaker machining and cylindrical land machining in one complete set-up.

Following the same high-precision philosophy as our grinding machines and due to its innovative kinematics, the LaserSmart 501 has been optimized to ensure the fastest and most accurate axis movements as required for this type of machining. In addition, the linear motors and torque motor on the rotary axis offer very efficient servo tuning (and very high performance) and reduced maintenance.

Performance automation solutions

The 6-axis robot which has up to 18 HSK63 stations is integrated into the compact machine enclosure. This allows highly adaptable use of the robot and the machining areas. Visibility of the robot movements from the Fanuc control board is assisted by multiple cameras.

In addition to the HSK63 capability, the robot can also handle round-shank tools up to 1,000 pieces, depending on the diameter. Additionally, a 3D probe ensures the exact positioning of the PCD blade and recalculates all trajectories to precisely follow the profile of the cutting edge.

Innovative functionalities, all available in one machine with the LaserSmart 501

- Our laser process creates razor-sharp cutting edges with a radius of less than 1µm.
- The programming of negative chamfers (K-land) extends the applications panel. Furthermore and unique on the market, programmable defined cutting edge preparations offer total freedom and flexibility to fine-tune your cutting tools with unmatched efficiency and long life time.
- The technology of chip breaker machining applied on the LaserSmart 501 ensures surface finish quality well above industry standards and offers very competitive cycle times.
- The machining process is offset-independent and is unrelated of the amount of offset on the brazed PCD raw material. There is no variation in cycle time and no additional blank preparation is necessary.
- The combination of Rollomatic's long-standing and high-end machine building capability, repeated innovation in laser technology and continued developments of machining methods offer multiple advantages, such as machining of cylindrical margins.
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