

Rollomatic Spotlights New Options for LaserSmart® LS510 for Ultra-Hard Materials at IMTS 2022

Rollomatic is exhibiting at the IMTS 2022 (International Manufacturing Technology Show) in September 2022 in Chicago, IL.

Rollomatic maintains its global leadership position in the field of laser cutting ultra-hard materials by announcing several significant new options some of which will be shown during the IMTS show.

- Unlimited 3-D machining possibilities
- Highly intuitive and user-friendly software
- Sharpening process for CVD and diamond coated carbide cutting tools
- Femto-second laser source
 - Achieves surface finishes as low as 40 nanometers
 - Also suitable for ceramics, carbide, sapphire, glass or other ultra-hard materials.
 - Produces crisper and sharper cutting edges
 - 30% increase in feedrates compared to high-velocity laser source



LaserSmart® LS510 for high-speed/high-quality laser cutting (on display at IMTS 2022)

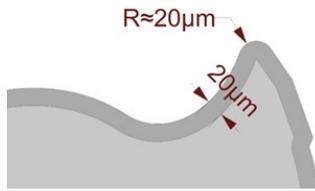


New LaserSmart® LS510 with femto-second laser source for 3D machining of micro tools

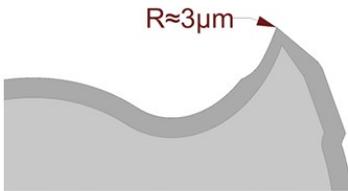
- The current model LaserSmart® LS510 is capable of feedrates up to 4 times faster than conventional laser cutting machines.
- The new Femto model presents feedrates that are even faster up to 30%.

These high-speed feedrates do not compromise the cutting edge quality and surface finish. The laser cutting process on these machines produces the sharpest corner radius in the PCD industry with a maximum radius on the cutting edge below 0.5 micron. In addition, a defined radius of 3, 6 and 9 microns can also be produced consistently. Tools with HSK63 shanks can now also be accommodated on this machine. Rollomatic will showcase the LaserSmart® LS510 laser cutting/ablation machine in full cutting mode during the IMTS. The strategy for this machine is to offer a more cost-effective way and higher quality in the production of high-performance PCD polycrystalline diamond, CBN cubic boron nitride and CVD chemical vapor deposited cutting tools which traditionally require to be produced by a double process of spark erosion and polish grinding.

- **Laser sharpening the cutting edge of CVD or diamond coated carbide cutting tools after tool coating:**



After diamond coating



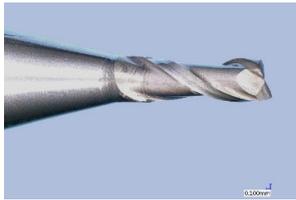
After sharpening on a Rollomatic LaserSmart using a proprietary laser cutting process to sharpen the diamond coating

Diamond coated carbide cutting tools are a great option when machining highly abrasive materials, as the coating properties help to significantly increase tool life relative to uncoated carbide tools. The drawback of diamond coating is the fact that thick-film coating makes the cutting edge dull and thin-film coatings often wear prematurely.

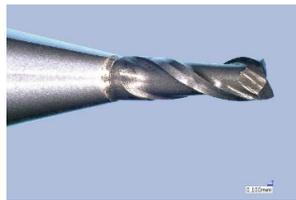
Rollomatic has developed a process that allows sharpening of thick-film diamond coated cutting tools. The Rollomatic CNC Laser Cutting Machine LaserSmart incorporates technologies that facilitate the probing the surface of the coated cutting edge to detect the exact shape and position. Then the laser cutting process will remove just enough diamond coating to make the cutting edge sharp. Only a predetermined amount of the coating, just around the cutting edge, is removed by the laser process.

In-field tests have demonstrated that the tool life can increase significantly with a sharpened thick-film coated tool compared to a conventional diamond coated cutting tool. Such cutting tools are a cost-effective alternative to the far more expensive PCD tools.

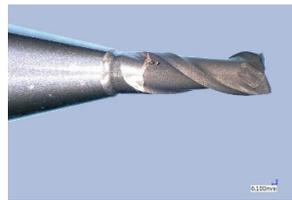
- **High-precision 3-D machining with femto-second laser source:**



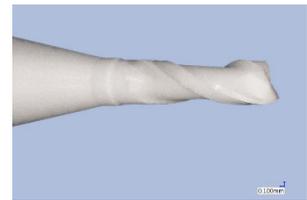
Tungsten carbide endmill



PCD endmill



PCD endmill



Ceramic endmill

Rollomatic Inc., located in Mundelein, Illinois, is a subsidiary of Rollomatic SA, a privately-owned Swiss company established since 1989 in Le Landeron, Switzerland. The US Headquarter was launched in 1994 to provide local customer service and support throughout the U.S., Mexico and Canada.

This location features a 29,000 sq. ft. building with a showroom and training area as well as warehouse and engineering offices. Our showroom provides an ideal atmosphere for machine demos, software training and test grinding, while offering an opportunity to explore the latest Rollomatic offerings.

Rollomatic is looking to the future with its partners such as the EPFL (Swiss Technical University in research, teaching and innovation) so it can be right at the center of the innovations and in-depth discussions shaping the Fourth Industrial Revolution. True to its Swiss origins, the company operates at the highest level of precision and offers 100% Swiss-built products and services. Rollomatic is in constant pursuit of excellence in quality and accuracy.

Contact

Rollomatic Inc.

Media Relations

1295 Armour Boulevard

Mundelein, IL 60060, USA

Phone : +1 847 281 8550

E-Mail : solutions@rollomaticusa.com

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