Additive Manufacturing

Seco Tools 3D Manufacturing Creates New Opportunities

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Additive manufacturing, or 3D printing, allows Seco Tools to create products that would otherwise be difficult or impossible to manufacture. The advantages include shorter lead times, improved tool life and increased sustainability.

The development and manufacturing of prototypes for metal-cutting machining via additive manufacturing (AM) is becoming increasingly commonplace in the operations of Seco Tools. AM allows Seco to make custom tools and solutions for their customers that are difficult to achieve through conventional manufacturing, especially when it comes to complex geometries.

Other customizations examples include making the tools lighter, which improves vibration-dampening properties, or providing better cooling options. “By directing the coolant to hit the core of the cutting edge, we can significantly extend tool life. With AM technology, coolant can be guided to locations that would otherwise have been impossible” explains Ingemar Bite, R&D Specialist at Seco Tools. He also believes that AM technology helps shorten lead times. “AM allows us to produce geometries that require less manufacturing steps, which often results in shorter lead times and therefore faster deliveries”.

Increased Sustainability

AM technology will open up the possibility of repairing broken tools in the future, by removing dysfunctional components and printing them anew. This could also involve re-using different types of machine-side connections. Overall, AM technology creates less waste of materials and any leftover powder can be re-used.

AM could be a time-efficient and cost-effective method for one-of-a-kind production and prototype development. However, it could also be an excellent way to manufacture standard products in large volumes. Seco Tools is already manufacturing cooling clamps for its Jetstream product line via 3D printing.

Finishing Hybrid AM Tool On HSK100

Continuous Improvements

Seco's R&D department strives to continuously improve the use of AM technology in the development and production of new and existing products. "We like to collaborate with our customers on these efforts and run tests with them", says Ingemar Bite, who also thinks that new materials could be developed. "The materials currently used in AM are the same as those used in conventional manufacturing and the technology works well with many different metals. In the future, we will add other materials, while regularly adapting our equipment and upgrading hardware and software as needed," he concludes.

Different methods can be used for AM. The one that Seco Tools uses is called SLM (Selective Laser Melting). In a SLM machine, a 20-60 µm layer of powder is spread and then processed by a laser. This process is repeated layer by layer. Once all the layers are done, the excess powder is removed and the product moved to post-processing for its final shape.

Previously Featured on Seco's website.