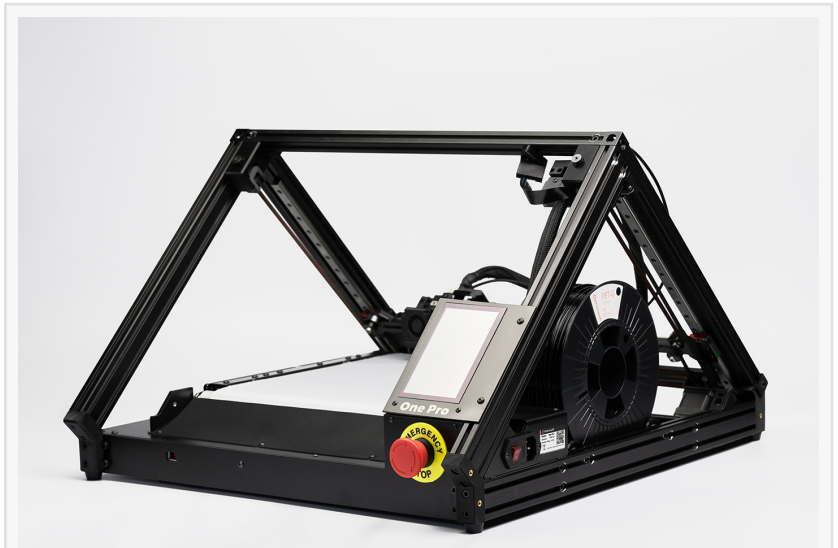


# 3D printing - Technological novelty for more agile manufacturing, even on a larger scale

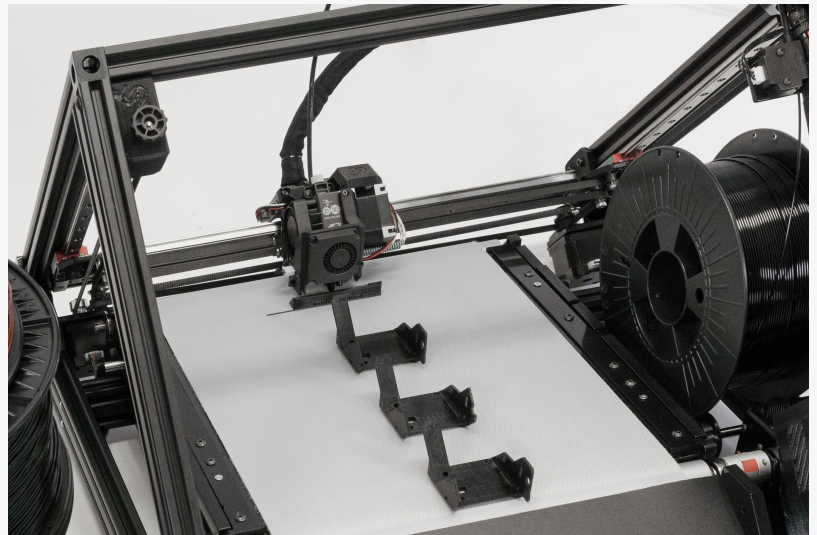
*Agile production powered by 3D belt printing: finally closing the gap between one-off and mass production*

DÜSSELDORF, DEUTSCHLAND, March 21, 2023 /EINPresswire.com/ -- The goal of agile production is to automate large parts or even the entire manufacturing process to utilize existing capacities optimally. At the same time, processes are simplified, communication chains are minimized and longer waiting times due to transport and hierarchies are avoided. In this context, additive manufacturing has become increasingly important in recent years, and technological advances have also made solutions in this area much more affordable today, making these solutions ideal for aspiring young companies in the start-up phase. The following article will take a closer look at how the technological adaptation of additive processes is leading to more automation, further advancing agile production, and how this type of production can revolutionize the small and medium volume sector.

Agile production using "additive manufacturing" (AM) is based on the use of so-called rapid technologies. This means that all manufactured objects are created from scratch



The One Pro 3D belt printer combines the advantages of additive manufacturing and serial production



With the 3D belt technology, you produce your parts especially long or in series. The conveyor belt as print bed minimizes the required interaction between man and machine. The printing queue function also allows sequences of individual objects.

without the need to remove material or use negatives. The objects are applied directly and require only the material used and the devices popularly known as 3D printers as tools. In most cases, these work on a layering principle in which the digital model is detailly built with thermoplastic material. The material is often synthetic, which runs like a thread from the spool, is heated, and then hardens in the shape it was



One Pro 3D belt printer producing orthopedic insole with structured infill for individual density

formed into. There are no limits to creativity with 3D models, and the printing parameters can be easily set on the PC or directly on the device. At the beginning of the 3D printing era, it was mainly used to create complicated models and prototypes before moving into final production with other manufacturing methods. After that, 3D printing became more popular with individuals, who could use it to bring their favorite characters from literature or movies, or handy little things, into their homes. But now additive manufacturing also offers new opportunities for large-scale production of products for end users. However, acquiring suitable AM industrial machines was very expensive and required a lot of space. However, a lot has happened since then.

A real innovation in this field is 3D belt printers, such as those from the [German company iFactory3D](#). Thanks to their design and refined technology, these are suitable for uninterrupted production in an "endless loop" for weeks at a time. This means that production does not come to a standstill even when all other machines have to be shut down over the weekend due to a lack of supervision. Thermoplastic filaments are also used as the material here. In technical jargon, this process is therefore called Fused Filament Fabrication (FFF). Martin Huber, co-founder and Chief Technology Officer (CTO) of the company, is responsible for the development of the [One Pro](#) conveyor belt 3D printer from iFactory3D. His main concern was to create an all-in-one solution that is also affordable. The One Pro's compact size and high return on investment make it an ideal entry into in-house manufacturing for SMEs.

As a 3D belt printer, the One Pro is ideal for agile production and offers numerous advantages for producing complex workpieces as one-offs or in small batches. For example, the 45-degree angle of the print head prints cavities and overhangs without needing support material. In this way, additional material can be saved in this already economical process. And in 3D printing, that also means time savings. So you get higher productivity at lower costs - and the sustainability aspect should not be overlooked either.

In addition, printing at a 45-degree angle creates smooth surfaces and no hard edges. In practice, this is highly valued for [producing orthopedic shoe insoles](#). To stay with this example: All sizes of shoe insoles can be achieved with the infinite length of the print bed. In addition, there is a significant material saving of up to 80 percent in this area compared with conventional

production methods, since, for instance, no negative molds are required. Until now, many commercially available 3D printers have failed either because of quality, build space, or speed. However, with conveyor belt printing, none of these otherwise inhibiting problems exist.

The following example from supply chain management illustrates the additional potential offered by the all-in-one solution. Here, experience shows that supply chains must always be kept in view in order to avoid delivery bottlenecks. Especially in recent years, shaken by the global pandemic and political tensions, the dependencies on suppliers have become clear and have awakened the desire of many to be able to act more autonomously. With the help of iFactory3D, numerous companies have already significantly reduced their costs in this area while achieving greater independence. The experience of a specialist company for traffic control systems from Leverkusen shows that it is possible to produce components with the One Pro in an uncomplicated way - and save money at the same time. The flexible device also helped to speed up design processes, as they can now run in-house. When production was temporarily halted due to a lack of parts from other suppliers, the printer could still be used for R&D on new products. And once the green light was given regarding delayed goods, the printer would run for a few days and the overall production could resume immediately. The purchase of the belt printer had more than paid for itself for the company in less than 2 months, and the one-time cost of the device had been amortized.

Designed to meet the demands of agile production, the One Pro provides excellent print quality without the need to invest a lot of time in quality management, let alone monitoring production processes. This gives founders and start-ups, as well as the self-employed and SMEs, the opportunity to set up serial production with low initial costs or to further expand and automate their existing production and become less dependent on supply chains. The 3D belt printer from iFactory3D thus ensures in the end quite the best "Return on Investment" (ROI).

Artur Steffen

iFactory3D GmbH

+49 211 15856575

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