



Tubes, hoses and cables are securely fastened with additive manufactured custom designed special clamps.

*Images: Stauff*

### Stauff 3D-printed clamps

# Calculated in seconds and quickly delivered

Stauff now offers a new product service: additive manufactured clamps for the secure fastening of tubes, hoses, cables, and other components. In practice, this means that fully load-bearing special parts, small quantities of catalogue items or prototypes can be produced quickly and delivered at short notice.

**L**ong delivery times are usually the order of the day when small quantities of prototypes or clamps with special product features are required in the production of mobile or stationary hydraulic systems. The key question is usually: is it worthwhile investing in injection-moulding tools for small series or even at the development phase of a fastening body? Its calculation, as well as its production, is time-consuming. However, most of the time it needs to be fast, especially when the demand arises in the midst of an ongoing production process.

Stauff is now able to supply clamps to fasten hydraulic and other lines produced in a matter of days in a 3D

printing process. The process is very simple: the customer uploads the CAD data of the component they require onto the online platform set up by Stauff, receives a quotation for the requested quantity in seconds, varies the order if required, and then orders the component. Production takes a maximum of three days within Germany, including the delivery time.

### Digital with expertise

The short-term availability of small quantities of special catalogue items, individually designed custom designed special clamps or prototypes is just one of the benefits that Stauff offers manufacturers of hydraulic systems,

thanks to its cooperation with one of the market leaders in industrial 3D printing. "It is also convenient and time-saving that the cost and delivery times for the required component are immediately displayed when a customer orders online at [stauff.com](http://stauff.com)," explains Mark Wever, Global Chief Digital Officer at Stauff.

"Instant quoting minimises the time involved in calculation, eliminating the waiting time for a quotation." A survey conducted by Stauff in cooperation with RWTH Aachen University showed that OEM customers gain a clear competitive edge from this new product service. Mark Wever: "Demand is strong, and Stauff is one of the first full-line providers of hydraulic line system components to offer 3D printing in this form."

From the manufacturer's point of view, it is specifically the procurement of all components, from prototypes to series products, from a single supplier and the personal support from Stauff experts that sets Stauff apart. There is a great need for advice when the fastening conditions are challenging: tight installation spaces, different diameters of tubes, hoses and cables, or the combination of clamps with other components. Stauff consultants are available well before the CAD data is uploaded to assist with the optimum design of the faste-

ning components. If customers cannot or do not want to take over the design themselves, the CAD models can be created on request, the end products checked and, if necessary, optimised.

"We supervise the entire process of rapid prototyping or rapid production of small quantities and are then also on hand as a manufacturing partner for larger series of the components," explains Wever.

#### Load-bearing and durable

Polyamide plastics are used as standard in the additive manufacturing of fasteners for tubes, hoses, cables and other components in line with the manufacture of Stauff clamps, large volumes of which are usually injection-moulded. Tests in the Stauff test centre show that components produced by selective laser sintering can withstand similar loads to components produced 'traditionally'. This statement is also confirmed by manufacturer-independent tests.

Custom designed special clamps have always been part of the Stauff range. They might be clamps for several lines of different diameters, which are not part of the standard range nor part of the recently extended range of multiple clamps. In the past, these special products were also mechanically manufactured, using CNC machining centres to shape the plastic sheet material into the required form. This method is comparatively complex and time-consuming, as the machines need to be individually programmed and set up. Mechanical manufacturing is therefore more of an option for medium-sized quantities. But this machining process naturally produces 'waste'. Mark Wever: "3D printing is the ideal solution for the economical production of small quantities." *rso* ■

1 The components can withstand similar loads to components produced "traditionally"

2 Additive manufacturing is ideal for the production of smaller quantities of custom designed special clamps.



#### At a glance

- Delivery of smaller quantities, prototypes or custom designed special clamps at short notice
- Convenient calculation through instant quoting
- Fully functioning polyamide plastic products
- Production using the ultra-precise SLS process
- No mechanical ageing of the components
- Maximum design freedom

