

**ALTAIR® INSPIRE™ EMPOWERS
M&H CNC TECHNIK TO OPTIMIZE SYNEX'S INNOVATIVE
FIRE EXTINGUISHER DRILL-X**



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Altair Inspire, especially in combination with the selectable manufacturing restrictions, enables us to specifically design components for 3D printing and thus make optimal use of the advantages of additive manufacturing.

Philipp Schwemberger,
head of additive manufacturing, M&H CNC Technik

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Challenge

SYNEX needed to optimize a component of its innovative fire extinguishing device for 3D printing to meet the manufacturing requirements and reduce material usage and print time.

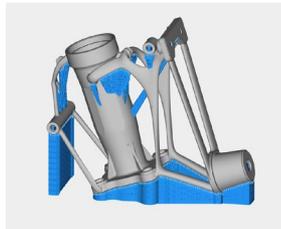
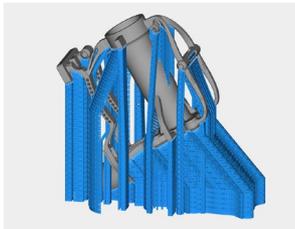
Solution

SYNEX turned to M&H CNC Technik, who, together with Altair, optimized the component's topology using Altair® Inspire™. The goal for was to reduce the number of support structures, which are both expensive to build and involve costly post-processing. Inspire empowered SYNEX to achieve a carrier design that required far fewer support structures – reducing printing volume by 45%. Thanks to this reduction, SYNEX cut down both the printing time, and the support areas to manually post-process by more than 50%.

- Altair® Inspire™: topology optimization

Value

- **Reduce Printing Time by 35%**
- **Reduce Printing Volume by 45%**
- **Reduced Postprocessing by 50%**
- **Reduced Hydraulic Resistance Loss by 270%**
- **Altair optimization made the design possible for serial manufacturing**



With Inspire, the team was able to define the component's ideal position on the building plate, which is important for the number of support structures and the overall design volume. Images © M&H CNC Technik

The new carrier design required far fewer support structures – reducing printing volume by 45% while lowering the post-manufacturing effort.

