



hyperMILL[®]
ADDITIVE Manufacturing

The Best of Both Worlds:
Additive manufacturing
with *hyperMILL[®]*

Additive Manufacturing – It's only truly perfect with CAD/CAM

hyperMILL® ADDITIVE Manufacturing is a powerful solution for additive manufacturing and helps to take full advantage of this new and growing technology. It allows you to perfectly and flexibly control additive processes, and on many machines to control both additive and subtractive processes. Two methods have become established in the field of additive manufacturing – for Powder Bed Fusion (PBF) OPEN MIND is the ideal solution provider with its CAD/CAM software which optimally integrates into the process chain of post-process printed parts.

Directed Energy Deposition

hyperMILL® ADDITIVE Manufacturing actively controls the material application of the Directed Energy Deposition (DED) process and thereby ensures optimal results. When additive and subtractive manufacturing are combined in a single machine tool, this is referred to as a hybrid manufacturing process. *hyperMILL*® enables users to perfectly program the cladding and the milling together. True-to-detail application and removal simulation as well as stock tracking between the individual machining steps guarantee the greatest possible process reliability.

■ Component Creation

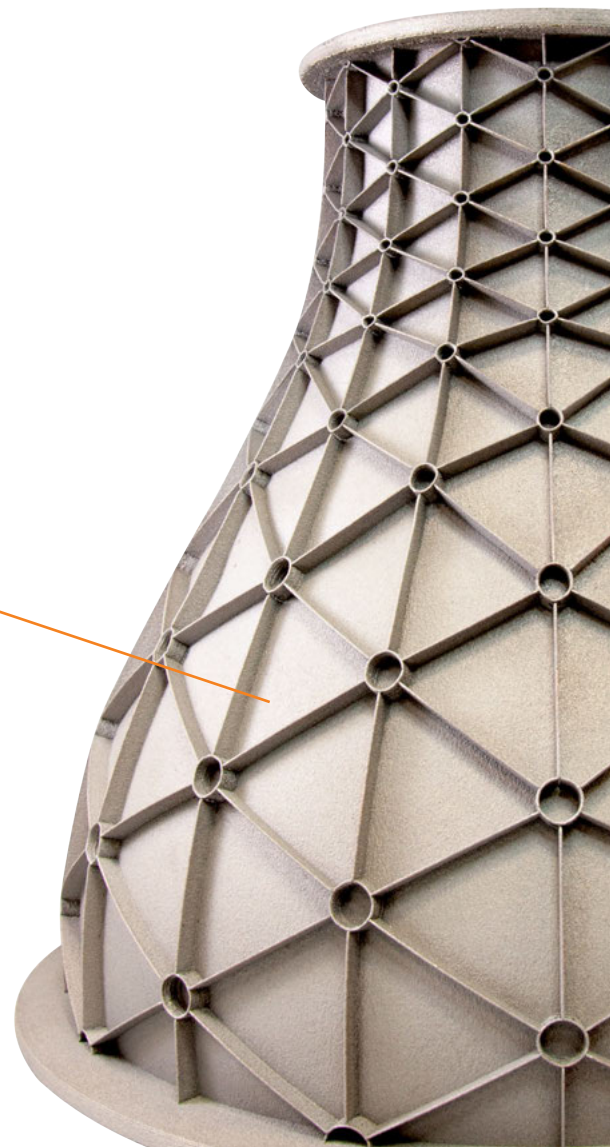
The build speed of the Direct Energy Deposition process is many times higher than the powder bed technology. The 5-axis simultaneous build process allows to manufacture complex parts even without support structures. The laser processing head is always optimally guided along the part.

Base structure
5-axis simultaneous
build-up process



Powder
Bed
3D Printing

Directed
Energy
Deposition
(DED)

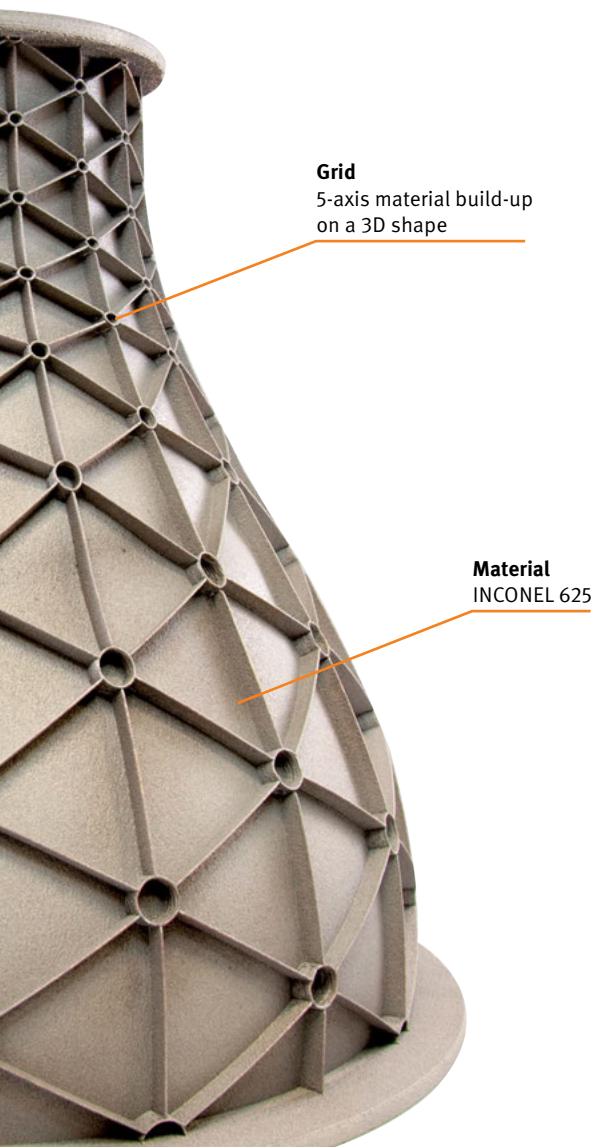


Features

- Flexible strategy for additive material application
- Variable filling strategies for planes as well as free-form shapes
- Filling strategies for 2D and 3D sections
- 5-axis simultaneous application with optimal tilt strategies
- Full simulation of additive and subtractive processes, including material deposition
- One postprocessor for milling and/or additive processes
- Hybrid stock tracking for all processes
- CAD interface to all common CAD systems
- High level of laser configurability via technology parameters in the tool database

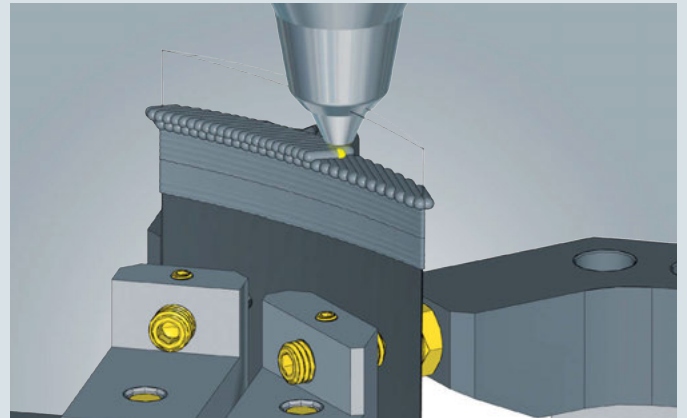
Industries

- Aerospace
- Mold & Die
- Automotive
- Energy



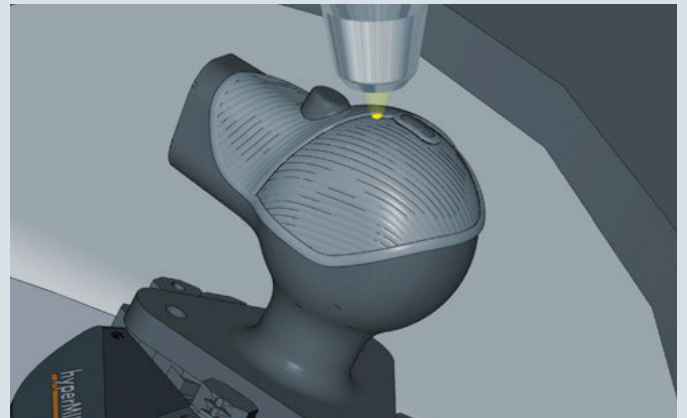
■ Turbine Blade Repair

Hybrid-machining of a damaged turbine blade. The defective area is milled off and then re-welded. In this process material is alternately added with a laser welding head and post-machined until the component geometry is completely restored.



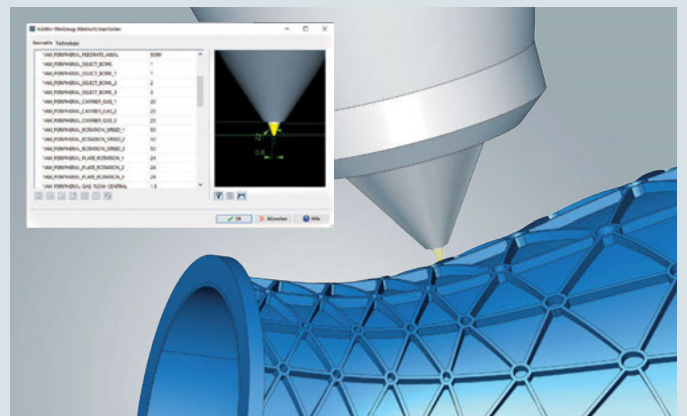
■ Additive Machining of an existing component

Material will be applied to change the component properties. In certain areas the thickness of the part is increased by laser deposition welding. Or in some cases a dissimilar material may be added for better engineering properties.



■ Collision Control and tool database

The laser processing head is reproduced in detail in *hyperMILL*® and included in the collision check. The technology parameters of the laser processing head can be managed via the tool database. During the post-processor run the corresponding NC-Code is then created along with all control commands.



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