

NEXT LEVEL IN ADDITIVE MANUFACTURING

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Complete additive process chain for high-end precision parts

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Principle

toolcraft manufactures high-end precision parts using powder bed fusion (L-PBF) and laser metal deposition (LMD) technologies. The company covers the complete process chain under one roof: from design to manufacturing and finishing. Through the integration of robotics, toolcraft has developed an automation solution for combined subtractive and additive machining. The AMBitious division provides training and consultation in AM. The virtual AM training enables hands-on, self-paced learning of the additive process chain.



Advantages

- Functional integration and manufacturing of complex parts
- Shorter development times
- Weight and cost reduction
- Hybrid manufacturing and repairs
- On-demand manufacturing and customization

Disadvantages

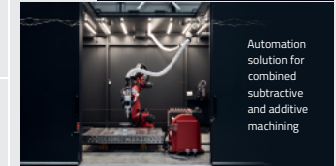
- High initial investments when implementing the technology
- Special design skills required
- Not every part is suitable for additive manufacturing

Production constraints and limits

- Surface finish and resolution constraints
- Design guidelines
- Build size limitations
- Post-processing requirements

Examples

High-end precision part for ASML using powder bed fusion (L-PBF)



Automation solution for combined subtractive and additive machining



Virtual AM training enables hands-on, self-paced learning of the additive process chain

Cost

The costs depend on:

- Material
- Part size
- Special requirements in terms of part classes
- Post-processing steps



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