DMG MORI

LASERTEC SLM SERIES - SELECTIVE LASER MELTING

CUSTOMIZED ADDITIVE MANUFACTURING FOR PARTS UP TO 325 X 325 X 400 mm

ADDITIVE MANUFACTURING - SELECTIVE LASER MELTING

DNG NORI

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Principle

In Selective Laser Melting, components are manufactured by building up material in layers.

 The layers correspond to the horizontal "sections" of a 3D CAD image of the body to be manufactured.

 A control program is then calculated from these layers, which directs a laser beam with high precision over these cuts in order to fuse the material over their entire surface.

 The area adheres to the previous layer and solidifies as the material cools, once the layer has melted, a new layer is applied.

Advantages

New design freedom for highly complex geometrical shapes.
Functional integration, e. g. by inner cooling channels.
Weight optimization due to light weight structures.
Mass customization for highly customizable products.
Production of non-assembly modules.

Production boundaries and limits

Examples





Disadvantages

Relatively long process times for big parts.
Risk of residual stresses without heat treatment.
Limited accuracy compared to CNC machining.

Heat Exchanger



Functional prototypes made of common materials.
Accelerated innovation cycles - Simultaneous build up of different designs.
Optimal efficiency for small and medium sized production.
Significant reductions in production costs through tool-less production.
To reach the accuracy of traditional manufacturing methods post-processing is needed.

Cost

 Varying entry costs depending on individual machine specifications.







LASERTEC 30 SLM 3rd Gen.

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HEAT EXCHANGER

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