

SLM Solutions

Revolution in the depowdering of metal-based additive manufacturing

INDUSTRY

Additive manufacturing

PLACE

Lübeck, Germany

DURATION

March 2021 – February 2022

SOLUTION

Depowdering solution
DPS NXG

CUSTOMER

SLM Solutions is a listed company with headquarters in Germany and subsidiaries worldwide. The company is a leading global provider of integrated solutions for metal-based additive manufacturing. SLM Solutions offers the world's fastest machines for metal-based additive manufacturing, allowing a production rate of 1,000 ccm/h.



INITIAL SITUATION

SLM Solutions was looking for a partner to develop an automated depowdering solution for its NXG XII 600 3D printer for huge components (up to 2.3 tons). Their solution had to meet the essential requirements of their customers – reduce downtimes, workplace safety, and easy integration into the overall process. Also, it had to be ready for the market within a year.

Out of 17 potential suppliers, SLM Solutions finally chose the Grenzebach Group.

» We chose Grenzebach due to their many years of experience in development, automation, and handling of heavy components. We will continue our cooperation to develop better technologies to meet the growing needs of our customers. «

Sebastian Feist

Product Manager Factory Integration & Periphery



CHALLENGES

The company had to face several challenges during development and production. First, all the complex parts had to be automated from a technical point of view while keeping an eye on cost efficiency. This meant designing a machine that could handle a 2.3-ton build cylinder accurately while minimizing manual intervention.

Second, SLM Solutions sought a time-to-market of less than one

year for a fully tested and running machine. The present, failure-prone supply chains of key components on the world market also required a high degree of flexibility.

IMPLEMENTATION

SLM Solutions first drafted its requirements. Further ideas and solutions for a first concept draft were developed together with Grenzebach. After evaluating the concept and selecting the configuration, the Grenzebach team

started engineering and building the first prototype.

The prototype was shipped to Lübeck, Germany, in February 2022 and successfully commissioned. The entire project, from the inquiry to the delivery, took less than twelve months. After the commissioning, Grenzebach performed tests and further developments during their after-services.

BENEFITS

Safe

Using an inert gas environment and automated powder extraction, the operator does not need to interact with the powder.

Simple

The users are guided through each process step. The solutions enable handling various materials with the DPS NXG.

Efficient

The sucked powder can be fully re-used. Components can be printed on the entire substrate plate without wasting space.

CONCLUSION

The DPS NXG can be operated parallel to several NXG IIX 600 and with various materials. With the gravimetric flow, it can process cylinders weighing up to 2.3 tons and depowder over a ton of powder in two levels. The building job is also unpacked at the equipment, the cylinder can be prepared for the next job. DPS NXG offers the highest possible security and the best results.

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