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Nikon equips Nikon AM Technology Center Japan with Solukon depowdering system

End of February, Nikon Corporation (Nikon) has opened the research, development and service center for the highest AM requirements in Gyoda, Saitama Prefecture. For automated depowdering, Nikon once again relies on Solukon's market-leading technology and integrates an SFM-AT1000-S into the center.

The Nikon AM Technology Center Japan (NAMTC Japan) with a total area of 922 m^2 is open to customers and interested parties from Japan and Asia and offers not only the premium printer NXG XII 600 from Nikon SLM Solutions AG but also a selection of leading postprocessing systems and measuring equipment. In the field of automated depowdering, Nikon relies on the market-leading technology from Solukon.

The SFM-AT1000-S as a perfect fit for the NXG XII 600

The SFM-AT1000-S from Solukon is an automated powder removal system for large and heavy components weighing up to 800 kg. The SFM-AT1000-S version with a short swivel arm for a better center of gravity of the component was developed specifically for the NXG XII 600 large format printer from Nikon SLM Solutions (part dimensions max.: 600 x 600 x 600 mm). The Solukon depowdering system therefore fits perfectly into the machine setup at the NAMTC Japan in Gyoda. The SFM-AT1000-S also integrates seamlessly into the NAMTC Japan's digital setup: The system is equipped with the Digital-Factory-Tool, a sensor and interface kit. It records all relevant data on the cleaning process and thus ensures maximum transparency. This data can be integrated into the higher-level digital dashboard of the printer landscape via OPC UA.

Efficient and repeatable depowdering

Nikon will produce complex components for the highest requirements in the NAMTC Japan. As the complexity of the parts increases (e.g. winded, internal channels), so do the requirements for automated depowdering. The SFM-AT1000-S was designed precisely for such challenges: it enables fully automated, programmable cleaning of complex structures and channels. In addition to the standard rotation and vibration, the SFM-AT1000-S at the NAMTC Japan is equipped with a specially developed high-frequency knocker. This loosens powder clogs in component channels through targeted knocking without damaging the component. The SPR-Pathfinder® software makes it easy to calculate how the 3D-printed part needs to be moved in the Solukon system. It analyzes the CAD file of the component and calculates the ideal movement pattern. This calculation can take place as soon as the CAD file of the component has been created. Users can therefore simulate depowdering during the design process and see whether their geometry can be depowdered.

Why Nikon has opted for Solukon Technology

These intelligent features make the Solukon SFM-AT1000-S the perfect postprocessing system at the NAMTC Japan. “Our aim is to offer our customers and interested parties the highest quality equipment in the NAMTC Japan. Solukon systems stand for the highest quality and reliability, so it is only logical that we chose a Solukon system for automated postprocessing,” says Hiroyuki Nagasaka, Assistant General Manager Advanced Manufacturing Business Unit at Nikon.

Figures

Figure 1: Hiroyuki Nagasaka (Assistant General Manager Advanced Manufacturing Business Unit), Yuichi Shibazaki (General Manager Advanced Manufacturing Business Unit and Director & Co-President & Co-CEO of Nikon Advanced Manufacturing Inc., Officer in charge of Riblet Solution Development Department) and Yuki Furuya (Staff, Advanced Engineering Section, Business Planning Department Advanced Manufacturing Business Unit) in front of the new Solukon depowdering system SFM-AT1000-S at the NAMTC Japan.

Figure 2: The SFM-AT1000-S depowdering system at the NAMTC in Japan.

About Solukon

Solukon Maschinenbau GmbH is a German high-quality supplier of powder removal and processing systems for metal and polymer additive manufacturing. In 2015, Solukon presented the world's first system for automated depowdering. Founded by Andreas Hartmann and Dominik Schmid, the Augsburg-based company has extensive experience in the development of AM systems and related peripheral equipment, and offers a full range of industrial powder processing systems. Since 2022, Solukon has also been offering the world's first and unique intelligent software for automated simulation and (pre-)calculation of the depowdering of laser-melted metal parts, the SPR-Pathfinder®. Solukon products meet the highest functionality and safety standards and are approved for safe and reliable removal of tough-to-handle and reactive materials such as titanium and aluminum. Solukon has established itself as the market leader in the field of industrial powder removal with its powder removal systems for metal.