

CASE

GALPERTI ENGINEERING AND FLOW CONTROL SPA

STUDY

ADDITIVELY MANUFACTURED ASME/API
CLAMP CONNECTIONS IN INCONEL 625



GALPERTI

A well-known company working in the engineering and production of a range of high integrity forged mechanical connectors, forged standard and special valves including products relating to fluid control, for onshore, offshore and submarine uses, supplied to international oil and gas industrial companies other than petrochemical and drilling companies. Its main products are: "G-LOK" mechanical joints, G-BLOK Double Block and Bleed Ball valves, (ball, needle, gate) produced in all rating and materials.



Figure 1:
Clamp connector in compliance with ASME VIII Div.2

NEW ASME/API CLAMP CONNECTORS WITH **SLM TECHNOLOGY**

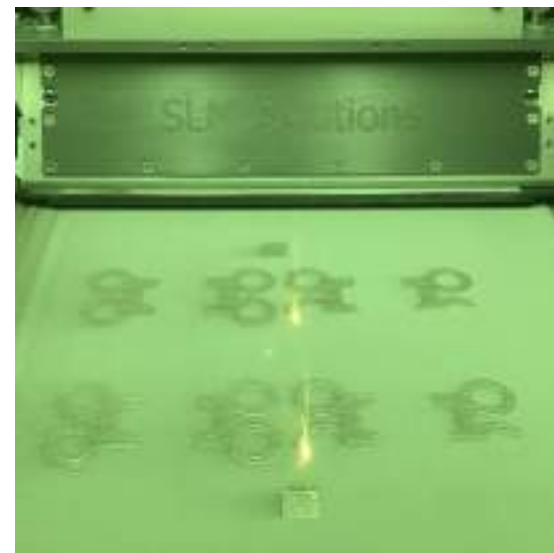
Galperti evaluated additive manufacturing (AM) as an option for clamp fabrication. The company chose SLM Solutions' metal 3D printing technology for a new product line of clamp connectors in UNS N06625 (Inconel 625) completely interchangeable with the legacy product. Galperti purchased a SLM®280 machine in 2020 and, with the support of the SLM application engineering team, evaluated several business cases to eventually qualify the first component, the ASME-compliant Clamp Connectors. By using SLM technology, there is a potential lead time reduction of 10-week compared to the forged option for special alloys parts with on-demand production and no stocking policy.



THE TECH
SLM®280

UNLOCKING **THE AM ADVANTAGE**

Using SLM Solutions' metal 3D printing technology, Galperti achieved several advantages compared to traditional manufacturing processes. The company offered IN625 as a deviation from the other current materials, providing customers with more options. Although the material cost was higher for a part made with AM, Galperti was able to significantly reduce lead time, lower the overall cost of ownership, and eliminate stocking policies for clamps in unique alloy materials. These benefits allowed Galperti to maintain its high-quality standards while reducing lead time with a full just-in-time production model, which is a major achievement in the oil and gas industry.

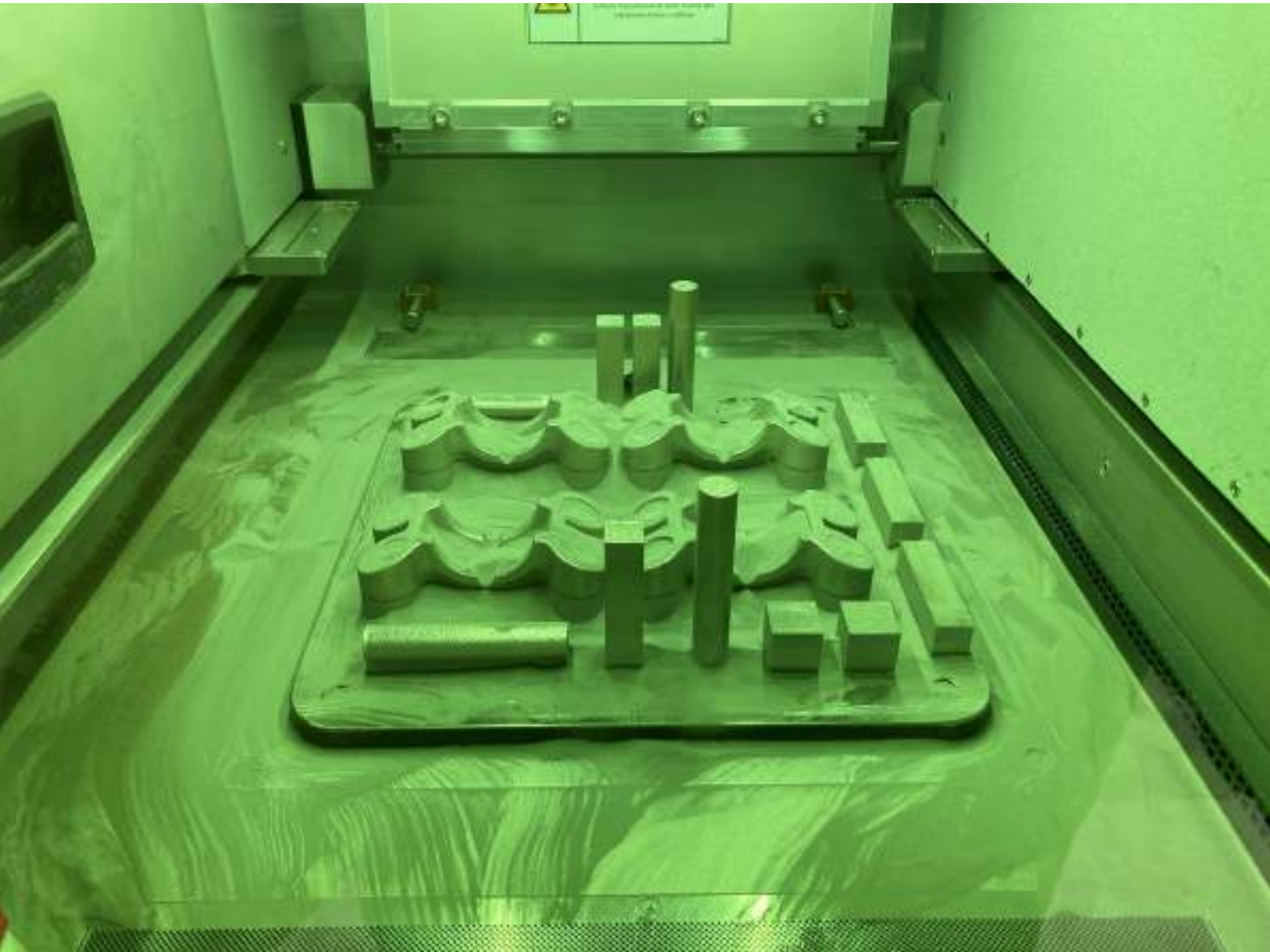


THE AM SOLUTION

"We are delighted with the results of our collaboration with SLM Solutions," said Ivan Arata, R&D Manager of Galperti Engineering and Flow Control SPA. "By using SLM Solutions' metal 3D printing technology, we are proudly following the request of the O&G majors to take a step forwards: we are no longer speaking about only prototyping, but really making a commitment to launch new product lines and be ready with the digital inventory."

In conclusion, the AM solution with SLM technology allowed Galperti Engineering and Flow Control SPA to overcome the challenges of traditional manufacturing processes, and reduce lead time while maintaining high-quality standards as API 20S.

The company's ability to provide its customers additional options with reduced lead times and lower costs, is a significant achievement for the oil and gas industry. Galperti expectation is to replicate same achievement for other components in their manufacturing process. The successful collaboration between Galperti and SLM Solutions has shown the advantages of AM technology, and how it can be used to revolutionize the manufacturing industry.



ABOUT **GALPERTI GROUP**

Galperti Group, with its Italian and abroad companies, is dedicated to engineering, manufacturing and distribution of high quality products for the energy and industrial markets. Products manufactured are flanges, fittings, valves, gears, bearing, pipes, special forged products. The Galperti Group has cutting-edge engineering and production lines, it is vertically integrated in the production process, from forging to complex machining and assembly to meet and exceed today's market expectations and responds to on demand design solutions through customization.

Our forging know-how experience gives the Group's flexibility to design projects and have excellence configurations. The Galperti full service capabilities provides the customer and the end user the most streamlined and cost effective supply chain solutions for today's demanding global market place. The Group is structured in several operational entities, which operate on a worldwide scale, from North to South America, Europe, Middle East and Asia. The Companies dislocated worldwide are fully committed to support the Customers locally with the products and services provided. This enables to serve the customers and end user with competitive pricing, high quality products and fast delivery lead time. Responsiveness and rapidity is offered for the highest demanding projects and applications. Galperti Group is key to the small volume fast delivery up to the large complicated project requirements. The companies belonging to Galperti Group stand out by their ability to work as a key partner with clients and suppliers in order to exceed market expectations. The Group also offers after sales assistance and welding services. The Galperti Group is a ONE-STOP-SHOP, providing complete solutions for any project.

ABOUT **SLM SOLUTIONS**

SLM Solutions is an integrated solutions provider and metal additive manufacturing partner. The company is vested in customers' long-term success with metal additive manufacturing. Robust Selective Laser Melting machines optimize fast, reliable, and cost-efficient part production and SLM Solutions' experts work with customers at each stage of the process to provide the support that elevates the use of the technology and ensures their return on investment is maximized. A publicly traded company, SLM Solutions Group AG is headquartered in Germany, with offices in Canada, China, France, India, Italy, Japan, Singapore, South Korea, and the United States.