

ITALIAN MACHINE TOOLS, ROBOTICS & AUTOMATION INDUSTRY ~ NEWS

May 2024

PIATTAFORMA INDIA PROJECT

NEWSLETTER NO. 89



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SIEMENS



PRIMA ADDITIVE AND SIEMENS A PERFECT FUSION

Prima Additive is the specialized company of the **Prima Industrie Group** that develops, produces, sells, and distributes industrial systems for metal Additive Manufacturing applications.

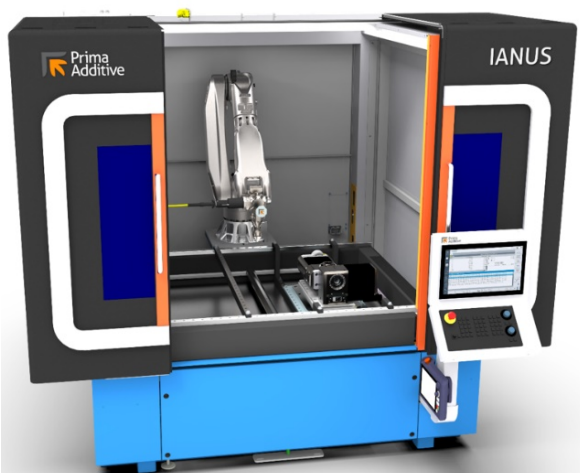
Benefiting from **Prima Industrie's** long-standing experience in the field of laser machinery and services, **Prima Additive** supports its customers in developing innovative applications driven by emerging needs and demand in major industrial sectors where Additive Manufacturing is rapidly evolving. **Prima Additive** is one of the few manufacturers and distributors in the world to offer the best laser technology for additive manufacturing:

Powder Bed Fusion (PBF) and **Direct Energy Deposition (DED)**.

Prima Additive's product portfolio includes the two largest laser technologies on the market for metal 3D printing applications and aspires to become one of the leading manufacturers in the additive manufacturing market through both strategic partnerships and innovative solutions.

Prima Additive has always been able to count on the cooperation of one of the leading automation and CNC supplier in machine tool field, **SIEMENS**.

SIEMENS is a leader company in all technology areas, first developing Software and Hardware and then testing in its own production sites, with a special and precise focus on sustainability.



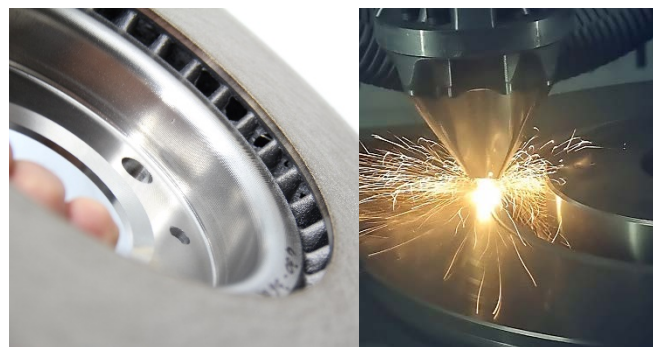
Prima Additive and **Siemens** have collaborated to develop the **IANUS robotic cell**, a versatile platform designed for various laser processes including direct energy deposition (with powder or wire), remote laser welding, and laser hardening. This partnership has produced a system that not only excels in traditional manufacturing techniques but also introduces the innovative application of Rapid Coating.

The **IANUS** cell is remarkable for its size and capability, with a total working volume of 1600 x 1200 x 700 mm, which allows for extensive customization to fit different manufacturing needs. The ability to quickly change heads makes it adaptable for multiple laser processes, a feature inspired by the duality of its namesake, the Roman god Ianus.

Siemens contribution to this collaboration extends to the integration of its advanced automation and digitalization technologies. The cell utilizes **Siemens Sinumerik Run MyRobot / Direct Control**, enabling operators to manage the robotic cell through a unified control console without the need for specialized programming knowledge. This integration simplifies the transition to automated processes, making it accessible even to those with limited robotic experience.

The use of **Siemens NX** platform and **Sinumerik One** complements the physical machinery with a powerful software backbone, enhancing the CAD-CAM-CNC chain. Additionally, **Siemens Insight Hub** ecosystem provides apps for production management and optimization, including remote monitoring capabilities, which are integral for modern, data-driven manufacturing environments.

A standout application of the **IANUS** cell is in Rapid Coating, particularly in the automotive industry for **brake disc coating**. **Rapid Coating**, or **High-Speed Laser Cladding**, is a process where a laser beam deposits material onto a substrate, creating a durable coating that enhances the mechanical properties of the workpiece, such as hardness, corrosion resistance, and wear resistance. This application is crucial for reducing particulate emissions from brake discs, aligning with upcoming stringent environmental regulations like the



Euro 7 norms. In fact, data shows that **21% of particulate emissions from combustion vehicles come from brakes**. Each time a vehicle brakes, in fact, part of the brake disc material wears off and is released into the atmosphere in polluting particles. When the Euro 7 regulation comes into force, all disc brakes installed on cars in Europe will have to be coated with a stronger material, using this process. While the immediate demand for hard coated brake discs is predominantly within the European market, the trend is quickly catching on globally. **Many car and brake manufacturers are already exploring solutions to implement this process in India**, aiming to coat brake discs for vehicles destined for the European market. This proactive approach reflects a broader anticipation that such environmental regulations will expand worldwide in the coming years, eventually becoming a global standard.

Prima Additive stands at the forefront of this technological advance. It is one of the few companies worldwide that has already sold systems capable of performing this **comprehensive coating process** to automotive manufacturers. Prima Additive's unique and innovative solution encompasses the entire procedure, enabling clients to start with a standard brake disc and seamlessly transition through the coating and subsequent precision grinding stages. This process is **fully automated**, enhancing efficiency and ensuring high-quality outputs.



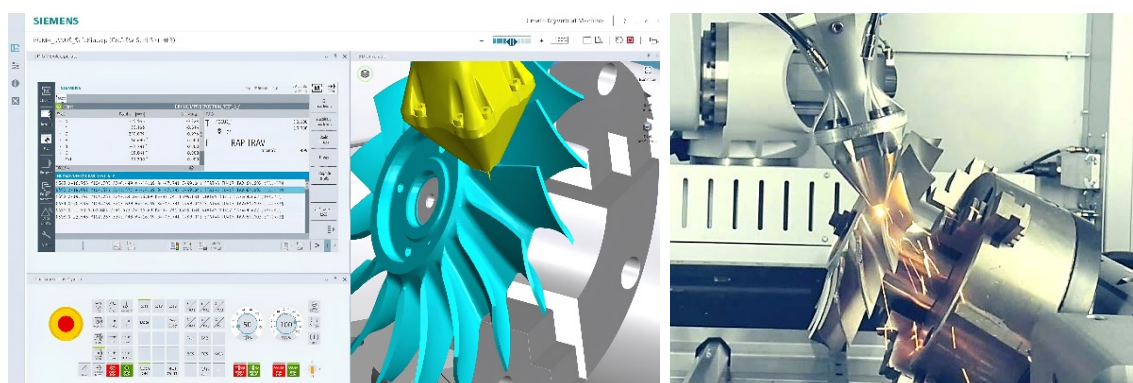
The machine is equipped with **CNC Siemens Sinumerik ONE**, the latest **CNC** that enables seamless interaction between virtual and real world for significantly increased productivity in the production and use of machine tools. **SINUMERIK ONE** offers 8 different levels of digital twin, 4 for machine builders through software application **Create myVirtual Machine** and 4 for the end users through **Run myVirtual Machine** software.

SINUMERIK ONE and its native digital twin, enable machine tool builders and end users to be more sustainable, to contribute in decarbonization, to reduce energy consumption, time and waste of resources by using dedicated software

to create the digital twin of the machine tool.

The digital benefits of the machine builders are a lot, in addition to engineering the machine remotely, the OEM can develop and tests PLC, the Safety's program machine data, cycles, operative surface and simulation. All operations can carry out in parallel by all engineers simultaneously, forgetting the old serial approach, which involved finishing one process and starting the next.

On the end-user's side, digital benefits are equally important; such as testing part program in the office before checking the eventual collisions between tool and workpiece, getting information on the work schedule to know the complete tool list required for the part program of the machine, 3D drawing and all the information needed to safely complete the machining, as everything has been tested in the technical office on the machine's digital twin on the shop floor.



In conclusion, the integration of **Prima Additive's** expertise in additive manufacturing with **Siemens'** technological prowess has resulted in a product that epitomizes the potential of Industry 5.0. This collaboration not only enhances the capabilities of both companies but also sets new standards in the manufacturing sector, paving the way for innovations that combine efficiency, quality, and environmental consciousness in manufacturing processes. The **IANUS** robotic cell is a testament to the power of collaborative innovation in driving forward the future of industrial manufacturing.

For further information: <https://www.primaadditive.com/> <https://www.siemens.com/>

The project Piattaforma India has been promoted by UCIMU – Association of Italian Machine Tools Manufacturers and AMAPLAST – Italian Plastics and Rubber Processing Machinery and Moulds Manufacturers Association. The two associations agreed on the idea that promoting a network of associations and entrepreneurs who have developed knowledge and experience on the Indian market, can be useful in favoring of new paths of development for business. The Indian companies who are interested to form JV, cooperation, technical tie up, purchase machinery etc from/with Italian companies can contact below mentioned address for any assistance:

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