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Efficient coating solution powers complex crane production

Japanese crane manufacturer Tadano upgrades its liquid coating process with electrostatic technology by WAGNER to reduce paint consumption.

Tadano Ltd., headquartered in Takamatsu in Japan, is a pioneering manufacturer of construction cranes, vehicle-mounted cranes, and elevating vehicles, with a rich history dating back to the development of Japan's first hydraulic crane in 1955. The company is particularly well-known for its mobile cranes, which are used in construction, infrastructure, and industrial projects.

Tadano's challenge: Less waste, higher efficiency

Tadano faced multiple challenges with their liquid coating processes, primarily due to the complex nature of their crane bodies and the harsh environments in which they operate. Cranes require durable, scratch-resistant coatings, yet the increasing demand for visual appeal and high-quality finishes added a new layer of complexity. Tadano's vehicles are custom-painted in unique colors, with over 300 color variations applied annually, leading to a reliance on manual labor by skilled workers.

Additionally, many vehicles are painted post-assembly, requiring efficient and even coverage on complex, deep, or hard-to-reach surfaces. With their previous liquid coating equipment, Tadano had applied excessive layer thickness to ensure coating quality, which resulted in high paint consumption. Tadano's goal was to update the coating process in order to enhance efficiency and reduce material waste.

New liquid coating system boosts Tadano's performance

WAGNER proposed the installation of 39 Puma 28-40 high-pressure piston pumps paired with 39 GM 5000EAC manual electrostatic guns, using the ACF 5000SP nozzle for excellent atomization. This solution proved to be most efficient, after Tadano had also made performance comparison tests with other competing manufacturers.

The GM 5000EAC gun is very flexible and easy to operate: The user can quickly switch between three voltage settings - high, medium, and low - directly on the gun, without interrupting the coating process. The automatic voltage adjustment function that adjusts the voltage according to the distance from the workpiece was also attractive for Tadano.



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For smaller parts, the voltage can be set steplessly (5-80 kV), which prevents excessive layer thickness and enables Tadano to coat workpieces of all shapes and sizes in a highly efficient way. “The reduced overspray and better coating quality have minimized rework and allow us to coat complex areas more efficiently”, says Masaaki Sueura, Production Assistant Manager at Tadano.

Since the installation of the WAGNER liquid coating equipment, Tadano was able to reduce the required layer thickness and paint consumption by approximately 20% while significantly improving coating quality. Another benefit of the electrostatic gun is its serviceability, i.e. the extremely small number of parts, which means that Tadano can replace parts on site, minimizing delays in production.

The Puma 28-40 high-pressure piston pumps contribute to the efficiency of the system: The air motor with the special IceBreaker technology prevents ice formation and ensures consistently high performance in all working conditions. The pumps operate with particularly low pulsation even at low working pressures.

In addition to the technical advantages, WAGNER’s overall service has been a standout feature for Tadano, with prompt responses and seamless support throughout the implementation and operational phases. “From the lab test to the introduction of the system, we felt that WAGNER was very accommodating and worked with us to solve the problems, which made the process go smoothly. We were able to quickly resolve issues that arose during the study process by communicating with the head office in Germany”, states Kai Shimizu, Production Engineer at Tadano. “The after-sales service is also as responsive as we had hoped for, and we can use the equipment with peace of mind thanks to the prompt on-site visits.”

The new liquid coating system has brought measurable improvements to Tadano's production process: Enhanced coating efficiency while also reducing paint consumption and waste. The flexibility and reduced need for rework have streamlined the company’s processes and ensure high-quality results even on complex crane bodies.



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Images



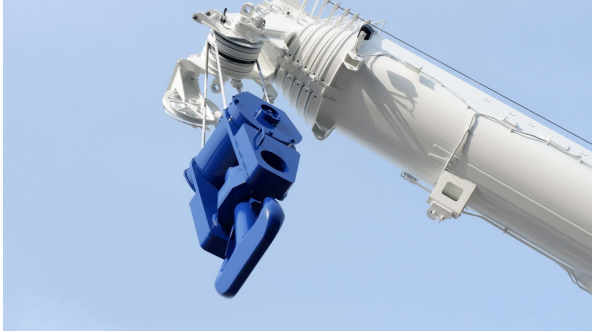
Electrostatic coating of crane components with the GM 5000EAC manual gun





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Components of crane bodies of Japanese company Tadano



In use at Tadano: Electrostatic manual gun GM 5000EAC for AirCoat applications



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About WAGNER

J. Wagner GmbH, Markdorf (Germany), is part of the WAGNER group of companies under the umbrella of Wagner International AG, based in Altstätten (Switzerland). WAGNER is one of the world's leading manufacturers of equipment and systems for surface finishing with powder coatings, liquid coatings, paints and other liquid materials. The origins of the company go back to the year 1947. Since then, WAGNER has been setting quality standards and offering industrial companiesmen, tradesmen and DIY enthusiasts economical, reliable and user-friendly solutions characterized by high quality and pioneering technologies. The WAGNER Group is represented worldwide by around 2000 employees in 20 operating companies and around 400 agencies. WAGNER is owned by the Josef Wagner Foundations, which pursue exclusively non-profit, charitable goals.

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