

RAMPF: Ultra-Fast Control Cabinet Production with Innovative Real-Time Offset Dispensing

DR-CNC dispensing robot with laser sensor technology ensures high-precision and seamless application of reactive sealing systems

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Zimmern ob Rottweil, Germany, April 1, 2025. The DR-CNC dispensing robot from RAMPF Production Systems, equipped with advanced laser sensors, guarantees precise and seamless application of reactive sealing systems in control cabinet production. It detects and compensates for unevenness in real time, even on challenging surfaces.

Key Facts

1. RAMPF Production Systems utilizes pioneering real-time offset dispensing for the ultra-fast application of reactive sealing systems in control cabinet production.
2. The company's DR-CNC dispensing robot, equipped with laser displacement sensors, corrects surface irregularities in real time without slowing down the dispensing cycle.
3. Thanks to innovative software and positioning solutions, the dispensing system developed by RAMPF for a leading international control cabinet manufacturer requires only two measuring heads instead of the usual four.

Precise surface detection and real-time adjustment to irregularities are crucial for highly automated dispensing processes. While complex clamping devices were once necessary for compensation, innovative technologies now automatically correct even the smallest surface deviations.

Real-time offset dispensing integrates sensor technology and real-time data processing to ensure precise material application and efficient production. Laser sensors continuously monitor surface height, enabling the system to instantly adjust the dispensing position for consistent, accurate material application.

High-performance and cost-efficient solution for international market leader

RAMPF Production Systems is raising the bar in control cabinet production by utilizing the advantages of offset dispensing. Developed for a leading control cabinet manufacturer, RAMPF's system guarantees the ultra-fast, highly precise application of RAKU[®] PUR 32-3294, a two-component polyurethane sealing foam from RAMPF Advanced Polymers.

For this, the RAMPF DR-CNC dispensing robot is equipped with laser displacement measurement sensors. By separating the chassis and material preparation, the robot offers maximum flexibility for dynam-

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ic sealing, bonding, and casting. Variable X-Y-Z strokes facilitate three-dimensional material application. The DR-CNC combines state-of-the-art control technology with a high-performance mixing and dispensing system and maintenance-free CNC linear axes, resulting in optimal interaction between the dispensing process and motion sequences.

Thomas Weber, Director of Research & Development at RAMPF Production Systems – “Thanks to innovative software and positioning solutions, our system requires only two measuring heads instead of the usual four, significantly reducing costs for the customer. Additionally, we use commercially available sensors for easy calibration and maintenance.”

RAMPF Production Systems sees significant potential for real-time offset dispensing beyond foam applications. “This principle is ideal for any dispensing process demanding precise compensation for surface tolerances,” emphasizes Weber. “This includes bonding and casting applications, such as battery trays and battery packs in electromobility.”

Video of the RAMPF real-time offset dispensing process:



Even on an unpainted, high-gloss surface, the polyurethane sealing foam is applied seamlessly. In addition to the two-component mixing head with distance control, the system is equipped with a fully automatic primer application nozzle with integrated suction.

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RAMPF Production Systems GmbH & Co. KG is one of the world's leading suppliers of innovative systems for processing single-, dual-, and multi-component reactive plastic systems.

In addition to its core competence of mixing and dispensing technology, the company based in Zimmern ob Rottweil, Germany, provides product-specific automation concepts with integrated parts transport and heat treatment, assembly and joining technology, as well as logistic and quality assurance solutions.

The customer-specific solutions include integrating both surface activation processes as well as testing and measuring technology to safeguard production processes.

Prototypes and small series for customers are produced in the application-engineering center.

This wide-ranging expertise enables RAMPF Production Systems to provide its customers with complete solutions for their production facilities.

RAMPF Production Systems is a company of the international RAMPF Group based in Grafenberg, Germany.

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