

Maximum Protection & Maximum Speed – Electronics Manufacturing with RAMPF

productronica 2023 – Electro casting resins and gap fillers / Automated production systems with integrated dispensing technology

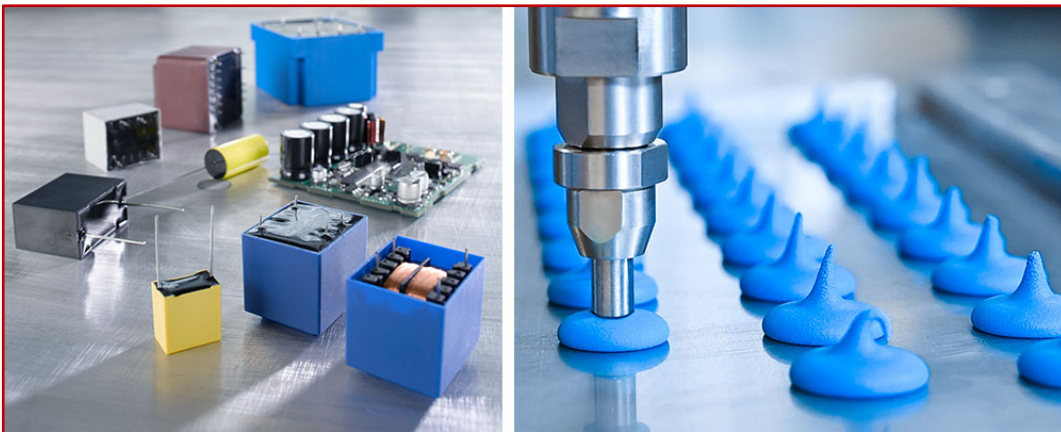
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Grafenberg, Germany, October 25, 2023. High-performance electro casting resins and gap fillers based on polyurethane, epoxy, and silicone as well as automated production systems with integrated dispensing technology will be presented by RAMPF at productronica 2023 from November 14 to 17 in Munich – Hall A3 / Booth 450.

Material, machine, and automation solutions from a single source – both material quality and material processing are crucial for the optimal functionality and maximum longevity of electrical / electronic components. With electro casting resins and gap fillers as well as automated production systems with integrated dispensing technology, the companies of the RAMPF Group stand for a holistic offering for electronics manufacturing.

RAMPF Polymer Solutions: High-performance electro casting resins and gap fillers



RAMPF Polymer Solutions develops and manufactures reactive casting resin systems based on polyurethane, epoxy, and silicone. The customized products guarantee the optimal solution for electrical / electronic applications in a wide range of industries.

Polyurethane electro casting resins

RAKU[®] PUR casting compounds reliably and efficiently protect sensitive components from chemical substances and environmental influences such as heat, cold, and moisture. The two-component systems can be used for a wide range of applications. The benefits:

- > Wide Shore hardness range (20A - 90D)
- > Easy adjustment of reactivity
- > Low shrinkage
- > Low exothermicity

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- > Fast processing
- > High shock resistance
- > Good adhesion to plastics

Typical applications: Casting of circuit boards, capacitors, inverters, sensors, inductors, EMC filters, and many more.

Epoxy electro casting resins

RAKU[®] POX casting compounds are the ideal choice for protecting highly stressed components with their high mechanical strength and good adhesion to metals. The one- and two-component systems exhibit

- > Very good chemical resistance
- > Very good impregnation
- > High abrasion resistance

Typical applications: Casting of capacitors, motors, transformers, circuit boards, control devices, and many more.

Silicone electro casting resins

RAKU[®] SIL casting compounds have very good temperature resistance and constant properties over the entire application temperature range. Further benefits of the one- and two-component systems:

- > Good aging resistance
- > High thermal conductivity
- > Good resistance to cracking
- > Very good chemical resistance
- > High UV and weather resistance
- > Minimal SVHC values

Typical applications: Casting of circuit boards, sensors, power electronics, chargers, control devices, sensors, batteries, and many more.

Silicone Gap Filler

RAKU[®] SIL Gap Fillers maximize the service life of sensitive components by protecting these from overheating. Due to the very high thermal conductivity, the highly filled, two-component thermal interface materials ensure efficient heat dissipation while maintaining a low thermal load. Further advantages:

- > High continuous temperature resistance
- > Good aging resistance

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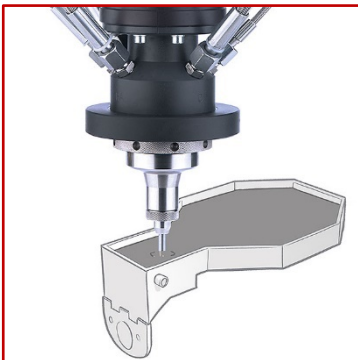
- > Low density
- > Good thixotropic properties for ideal processing
- > Low SVHC values

Typical applications: Power electronics, automotive electronic components, computers and peripherals, application between heat generating semiconductor devices and heat sinks.

RAMPF Production Systems: Automated production systems with integrated dispensing technology

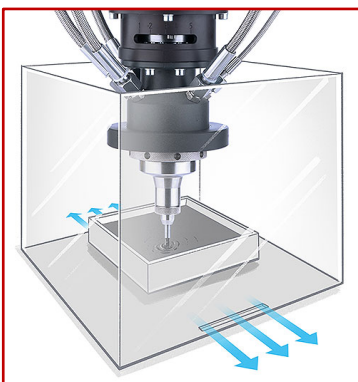
RAMPF Production Systems is a global supplier of high-performance, low-maintenance process technology for the effective mixing and precise dispensing of single-, two-, and multi-component reactive plastic systems – regardless of viscosity and density.

Casting under atmosphere



Sensitive electronic assemblies are protected from contact, moisture, and damage through a single-stage or multi-stage casting process, whereby two-component casting materials based on polyurethane, silicone, or epoxy resin are used to reliably embed the components. A highly effective material preparation unit for air degassing ensures a bubble-free casting process.

Casting in vacuum

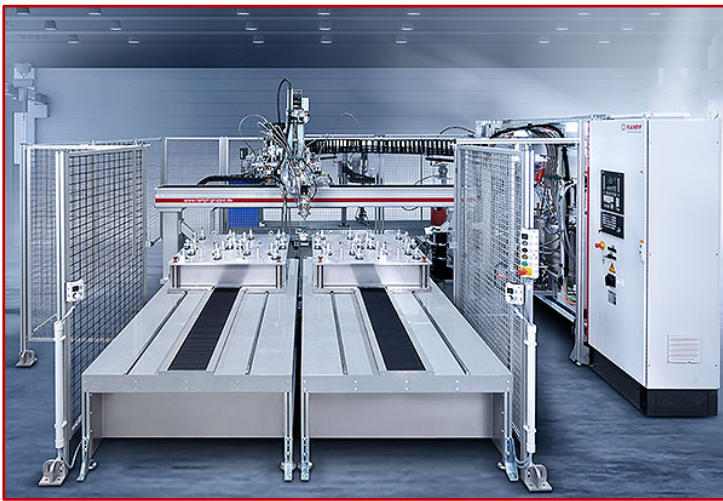


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Electronic components with windings, narrow gaps, or shapes that are difficult to vent are cast free of air bubbles in a vacuum. The components meet the highest insulation requirements and continue to deliver maximum performance under extreme conditions. The vacuum technology is also used for producing optically transparent connections (e.g. for the manufacture of displays).

Product-specific automation concepts



In addition to its core competence of mixing and dispensing technology, the company 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 also include integrating both surface activation processes as well as testing and measuring technology to safeguard production processes.

With this wide-ranging expertise RAMPF Production Systems provides its customers with complete solutions for their production facilities.

Compact, flexible, cost-effective – and brand new: the Multipurpose Cell MC-EASY



The MC-EASY Multipurpose Cell from RAMPF Production Systems is a flexible, compact, and cost-effective concept for gap filler and casting applications in the automotive, electrical/electronics, power engineering, and white goods industries.

It is available as a stand-alone solution but can also be effortlessly integrated into existing production lines. Thanks to its practical plug & play concept the MC-EASY allows for significant time savings both during set-up and commissioning.

In addition, the standard MC model has been upgraded and now offers even greater versatility. It combines dispensing, joining, and testing technology in a single compact cell. Customers have a choice of several cell sizes with different widths and depths for the fully or semi-automated integration of specific sealing,

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casting, and bonding technology. The basic structure of the cell has been redesigned with a welding frame, which has significantly increased the flexibility of a wide range of built-in solutions and secondary processes. These include a 3-axis system, 6-axis robots, plasma pretreatment, belt systems, and assembly applications.

Visit RAMPF Polymer Solutions and RAMPF Production Systems at productronica 2023 from November 14. to 17. in Munich – Hall A3 / Booth 450!

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www.rampf-group.com



The RAMPF Group stands for **engineering & chemical solutions** and caters to the economic and ecological needs of industry with six core competencies:

- > **RAMPF Machine Systems** based in Wangen (Göppingen), Germany, develops and produces multi-axis positioning and moving systems, trunk machines, and basic machines based on high-precision machine beds and machine bed components made from alternative materials such as mineral casting, ultra-high performance concrete, and hard stone.
- > **RAMPF Production Systems** based in Zimmern o. R., Germany, develops and produces production systems with integrated dispensing technology for bonding, sealing, foaming, and casting a wide variety of materials. The company also offers an encompassing range of automation solutions relating to all aspects of process engineering.
- > **RAMPF Composite Solutions** based in Burlington, Ontario, Canada, is a holistic composites supplier to companies in the aerospace, defense, transportation, medical, and green technology industries. The company offers a complete suite of services including composite part design and engineering, and metal-to-composite conversion engineering.
- > **RAMPF Eco Solutions** based in Pirmasens, Germany, develops chemical solutions for the manufacture of high-quality recycled polyols from polyurethane and PET waste materials. This company also designs and builds customized multi-functional plants for customers for the manufacture recycled polyols.
- > **RAMPF Polymer Solutions** based in Grafenberg, Germany, develops and produces reactive resin systems based on polyurethane, epoxy, and silicone. Its product portfolio includes liquid and thixotropic sealing systems, electro and engineering casting resins, edge and filter casting resins, and adhesives.
- > **RAMPF Tooling Solutions** based in Grafenberg, Germany, develops and produces board and liquid materials for cutting-edge modeling and mold engineering. The range of skills includes made-to-measure services and products such as pastes, large-volume and full-size castings for Close Contour models, and prototyping systems.

RAMPF has more than 850 employees and subsidiaries in Germany, the United States, Canada, Japan, China, and Korea.

All RAMPF companies are united under a holding company – RAMPF Holding GmbH & Co. KG – based in Grafenberg, Germany.

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