Press Release

RAMPF – Curing-on-Demand Technology for Automotive Bonding Processes

Assembly Show 2019, October 22 - 24, Rosemont, IL – Booth 2017

Wixom, MI, USA, September 4, 2019. The integration of Curing-on-Demand (CoD) technology into joining tools facilitates the fast and reliable bonding of plastic components. RAMPF Group, Inc. has developed a fully automated production cell with CoD technology for the bonding of car parts.

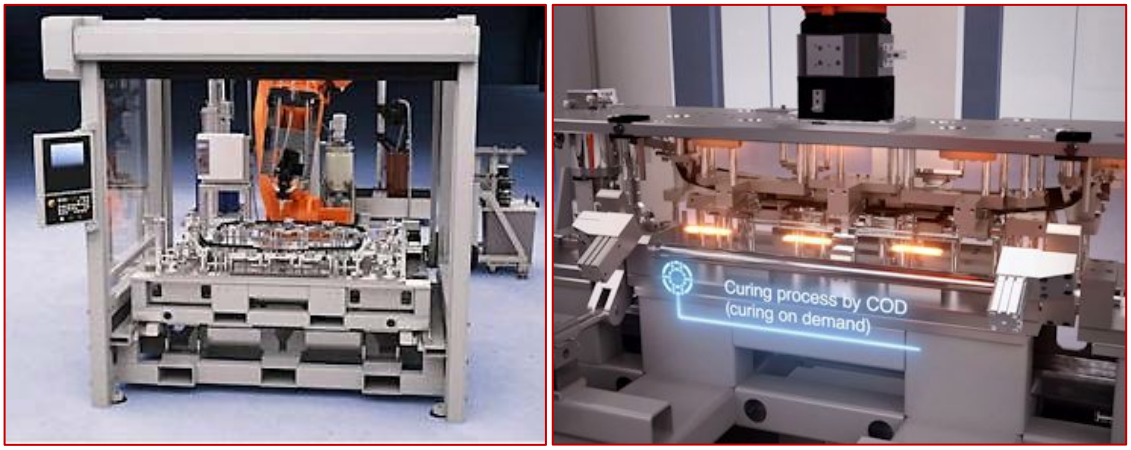
High-performance automotive adhesives are designed for high final strength and elasticity. For an effective application process, they must be flowable and precisely metered. To achieve the required adhesion and internal strength, the adhesives require relatively long curing times. Curing-on-Demand (CoD) technology was developed to reduce both the dwell time in the tool and the number of – mostly very expensive – precision bonding tools. The adhesive is punctually heated from the inside to the outside, making the bond strong enough for the components to be removed from the tool without affecting the quality of the bond.

RAMPF Group, Inc. is a leading specialist for integrated production systems with automated bonding processes. The company based in Wixom, MI, has developed a fully automated production cell for the high-volume bonding of car parts. By combining cutting-edge mixing & dispensing technology, innovative tool-technologies, automation and process control as well as robotics, both the precision and speed as well as the flexibility of the manufacturing process are significantly increased.

At the heart of the production system lies the RAMPF dispensing system C-DS. The compact system insures the precise conditioning and application of the adhesives that bond the parts. The C-DS manages material conditioning, a metering and mixing unit, PLC controls, and integrated process monitoring. Its modular design offers a high degree of flexibility, as metering pumps and mixing system are easy to integrate into existing handling units.

In the automotive industry, RAMPF's bonding cell is used, amongst others, for spoilers, lift gates, engine hoods, roof elements on SUVs and minivans, and bumper assemblies for trucks.

Mike Erby, Division Manager Production Systems at RAMPF Group, Inc. – "When bonding components, the curing process is crucial for the quality of the assembled product and also a major cost factor. The CoD technology provides a fast and reliable sequence of processes that facilitate the economical and precise bonding of plastic components, which is especially important in automotive series production. One of the major advantages of CoD is that the bonding process is significantly accelerated so that the components are secured in position for further handling. This reduces cycle time, costs, and space caused by the former technology of multiple parts in curing tools waiting to cure."



Fast, precise, highly flexible – RAMPF's automated production cell for the bonding of car parts (left) uses integrates CoD technology (right).

Visit RAMPF Group, Inc. at Assembly Show 2019 from October 22 - 24 in Rosemont, IL – Booth 2017.

www.rampf-group.com

RAMPF Group, Inc., based in Wixom, Michigan, is the North American subsidiary of the international RAMPF Group.

The product portfolio of RAMPF Group, Inc. is comprised of:

> mixing and dispensing systems for the reliable processing of polymers
> two-component polymer (or synthetic) systems based on polyurethane, epoxy, and silicone
> modeling and mold engineering materials, in particular for the automotive, marine, and aviation industries
> machine bases, machine frames, and other structural components made from mineral casting (polymer concrete)

The international RAMPF Group stands for engineering and chemical solutions and caters to the economic and ecological needs of industry. The Group secures its presence on the international markets with approx. 900 employees and 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.

> **RAMPF Production Systems** based in Zimmern o. R., Germany, develops and produces mixing and dispensing systems for bonding, sealing, foaming, and casting a wide variety of materials. The company also offers a wide range of automation skills 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 and medical industries. The company offers a complete suite of services including composite part design and engineering, metal-to-composite conversion engineering, and composite manufacturing to very tight tolerances.

> **RAMPF Eco Solutions** based in Pirmasens, Germany, develops chemical solutions for the manufacture of high-quality alternative polyols from PU and PET waste materials. This expertise is also put to use in the planning and construction of customer-specific facilities for manufacturing 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 subsidiaries in Germany, the U.S., Canada, Japan, and China.

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

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