Press Release

RAMPF – Innovative sealing, foaming, casting, and design solutions

High-quality polyurethane and silicone systems at Foam Expo 2017

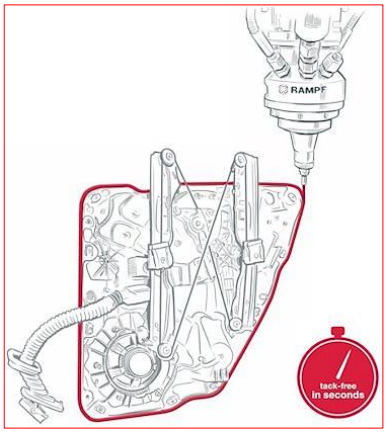
Wixom, Michigan, February 20, 2017. RAMPF Group, Inc. is presenting its portfolio of foam systems for the automotive, household appliance, electrical/electronic, packaging, energy technology, recreation equipment, and medical industries at Foam Expo 2017 in Novi, Michigan, February 28 to March 2 – Booth 623.

With more than 400 recipes on the market, a broad spectrum of material properties and a dedicated team of experts, RAMPF Group, Inc. is offering its customers unique solutions for sealing, foaming, casting, and designing.

The products of the RAKU-PUR (polyurethane) and RAKU-SIL (silicone) brands offer outstanding mechanical and chemical properties, stand for highest quality, and guarantee exceptionally easy handling.

The highlights at Foam Expo 2017:

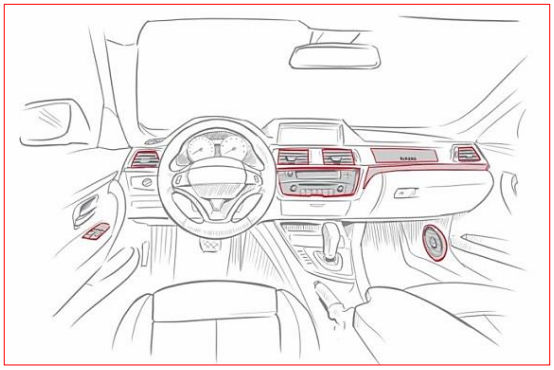
> RAKU-PUR® Speed soft integral foam – tack-free in minutes



For a number of industrial applications requiring complex production lines, e.g. in the automotive industry, the component must be handled immediately after the gasket has been applied. Here, RAKU-PUR Speed technology provides an unbeatable advantage: a small curing queue and one operator are sufficient to apply the polyurethane foam gasket and ensure the components are ready for use. Multiple operators, cost-intensive curing ovens and storage systems are things of the past.

Other features of RAKU-PUR® Speed include low water absorption and high mechanical strength for adhesion to various materials in assembly operations (from polypropylene to painted steel). The material offers long-term temperature resistance in a range from -30°C to +100°C and can be exposed to temperatures ranging from -40°C to +140°C for short periods.

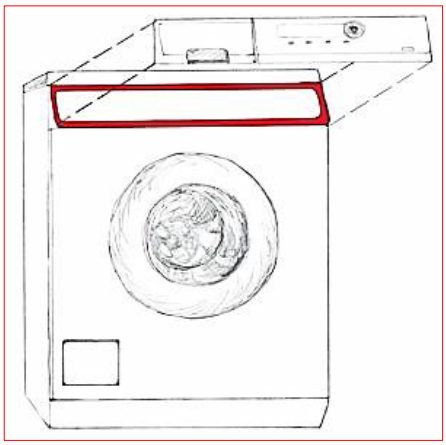
> RAKU-PUR® 32-3264 and RAKU-PUR® 32-3278 low-emission foam gaskets



RAKU-PUR® 32-3264 and RAKU-PUR® 32-3278 polyurethane foam gaskets are impressive in terms of their low emissions and VOC values, high mechanical strength, low water absorption, excellent bonding on metal, and high temperature resistance. The gaskets are used for sound abatement to reduce NVH, BSR, and ensure the reliable, efficient, and low-emission sealing of complex, three-dimensional component contours in closed environments.

RAKU-PUR® 32-3264 and RAKU-PUR® 32-3278 have been tested to VDA 270, 275, and 278 and meet all physical-mechanical and emissions requirements, including DBL (5452.13), BMW (TL 8350 151.6), FCA (MS AY 560), GM (3628M), and VW (TL 848). Their high viscosity ensures these foams can be applied on vertical surfaces and form seals of consistent size. The outstanding tear resistance of the RAKU-PUR gaskets is more than able to resist the shear forces that can occur during installation.

> RAKU-PUR® and RAKU-SIL for safe and silent household appliances

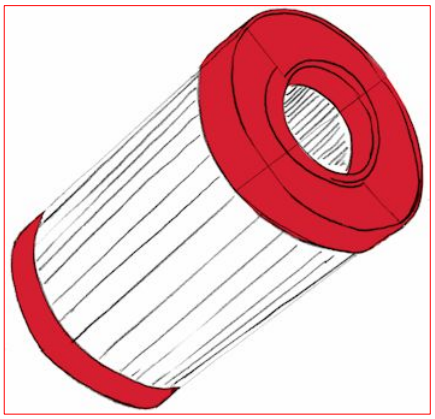


The flawless operation of household appliances is a crucial element of comfort and safety in the home. Automated sealing systems from RAMPF Group, Inc. play an important role in the long-term functionality of these appliances by providing reliable and efficient protection from excessive noise, moisture, chemicals, and various environmental influences.

The RAKU-PUR® and RAKU-SIL portfolios of automated gasketing include systems with flame-retardant properties to UL 94 (HF-1, HF-2, HBF) and enhanced UV stability. These technologies also offer IP (Ingress Protection) ratings to safeguard equipment from incidental splashing to high-pressure spray and submersion in water and chemicals as well as other fluids.

The sound suppression and vibration-damping properties of RAMPF's sealing systems contribute significantly to the stable and silent operation of household appliances. They cover a temperature range from -60 to +250°C and are used, amongst others, in components for refrigerators, freezers, dryers, dishwashers, washing machines as well as sealing sinks and hot water heaters.

> RAKU-PUR® 34 rigid foams



Rigid foams are construction materials with a low density and closed-cell structure. They are processed using high or low pressure with suitable molds. RAKU-PUR 34 rigid foams are particularly suited for lightweight moldings which have to comply with certain static requirements. Fields of application include appliance and machine parts as well as components for vehicles and sports equipment.

Special advantages include:

> short reaction and demolding times to increase productivity
> high mechanical strength for reliable performance
> excellent vibration damping, noise reduction, and thermal insulation
> reduced material cost to improve profitability
> lower part weight for improved performance and cheaper packaging options

RAMPF – material and machinery from a single source

RAMPF Group, Inc. offers a unique proposition on the market, as it develops and produces both the sealing systems as well as the static / dynamic mixing and dispensing systems for their reliable processing. The company also offers contract manufacturing for liquid gaskets, sealing, and casting.

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

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 more than 700 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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