

Press release

[Frenzelit manufactures aramid fiber bonded sealing pads for door hinges in cars](#)

Cavities sealed in the paint bath

Use cases are never the same and there are always unique requirements. An example of this is the application “gaskets for door hinges”, which Frenzelit is realizing for the automotive supplier ISH. Innomotive Systems Hainichen GmbH manufactures vehicle hinges and door checks for well-known carmakers. A small molded part from Frenzelit GmbH – the aramid fiber bonded novaform® soft gasket – plays an important role in hinges for side doors and liftgates in cars. It is integrated on the mounting surface between the hinge and the body and serves a very special purpose.

The mounting surface of the hinge is slightly hollow to ensure an optimal connection – if it were curved slightly outwards, the hinge would wobble. Liquid paint residues can collect in this cavity during further processing of the body on the car manufacturer’s painting line and boil out in the drying furnace, causing blisters and unsightly paint runs. In order to prevent this, Frenzelit sealing pads are used here between the hinge and the body. This stops the paint from entering into and collecting in the cavity.

High material requirements

The gasket material must meet application-specific requirements such as temperature resistance (up to approximately 200 degrees Celsius) and chemical resistance to the paint, but it must also be resistant to the pretreatment baths in which the body is cleaned and degreased. In addition, the material must have a certain static strength in order to withstand the preload forces of the screws. A pure elastomer seal or a simple rubber gasket is too compressible and would be too weak in terms of mechanical properties for the forces exerted here. The novaform® material is reinforced with aramid to ensure the required compressive strength.

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Custom shapes

Frenzelit produces these molded parts according to ISH's specifications. The punched parts for the liftgate hinges must be glued on, so Frenzelit additionally coats these with adhesive and supplies them in a roll of 5,000 or 10,000 pieces. The side door hinges generally have bolts that the sealing pad has to be slid over. Star-shaped holes are punched into the molded part for this purpose – the star shape with points prevents the pad from sliding down when the hinges are transported. These non-self-adhesive sealing pads come in bundles of 100 or 500.

Multifunctional gasket material

Frenzelit has been an established supplier of sealing pads for years and is committed to expanding its business in this area, especially since the product is used in vehicles independent of the drive system as Sebastian Katholing, Key Account Manager Mobility at Frenzelit, explains: "Door hinge decoupling will continue to be in demand in electric vehicles. Body concepts have not changed significantly. The gasket material can also fulfill other functions here such as providing ingress protection against moisture and dirt, corrosion prevention, wear reduction and even improvements in acoustics when opening and closing doors." For this reason the company recently invested in a new rotary punching line for even more efficient and flexible production – whether as bulk goods, roll goods, scaled as a bundle, with or without adhesive.

High level of vertical integration

What's more, Frenzelit offers the entire value chain from a single source – from fiber to finished part. This is not only cost-effective, the customer also benefits from the gasket specialist's material and development expertise, as Ulrich Krumbiegel, Head of Development at ISH, confirms: "Frenzelit can further develop materials, for example if customers require additional functions. In this case we get advice on feasibility and profitability. Frenzelit offers us clear added value and is more than just a supplier."

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Images:



Image 1 and 2: novaform® gaskets, attached to side door hinges. The star-shaped punched holes that prevent the seals from sliding during transport are clearly visible.

Image: © Innomotive Systems Hainichen GmbH



Image 3: A separation mechanism is positioned behind the labeled sheet metal cover which makes it possible to separate the door hinge at the push of a button, e.g. in case of an accident. Frenzelit

contributed to this with a special development: a gasket that shields the sheet metal cover with an extra circumferential sealing lip that can compensate for the smallest of cavities thanks to its volume.

Image: © Innomotive Systems Hainichen GmbH

About Frenzelit

Frenzelit GmbH develops, produces and sells gaskets and gasket materials, technical textiles for insulation, seals and filtration systems and expansion joints for plant engineering. The two strategic divisions “Industry” and “Mobility” are aligned to meet the unique needs of Frenzelit GmbH’s customers. Around 500 employees work at the Bad Berneck and Himmelkron plants. The family-owned company from Upper Franconia operates internationally with its own location in North Carolina, USA and has a global presence with additional subsidiaries and sales offices in the Czech Republic, China and India. Frenzelit has been successful in the marketplace since 1881 and is certified according to IATF 16949 and ISO 9001 (Quality Management), ISO 14001 (Environmental Management) and ISO 50001 (Energy Management).

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