

## KraussMaffei presents new mixing head: streamlined with more performance

- Grammer tests precisionMixhead 8/12-2K-40 in series production
- Flow simulation results confirmed in reality
- Wide production window provided by optimized blending parameters
- Mixing chamber, outlet chamber and control piston completely interchangeable

**(Parsdorf, Germany, September 28, 2023) When you want honest feedback, you ask a friend. The new mixing head from KraussMaffei is therefore undergoing its first series application at longstanding partner Grammer—with excellent results. The precisionMixhead 8/12-2K-40 is smaller, lighter and offers even better homogeneity when dispensing polyurethane foam.**

You can see them on tractors, forklifts and in large trucks. When you see the hallmark design, it is clear that the seat comes from market leader Grammer. At its plant in Haselmühl near Amberg, Germany, the company processes polyurethane foams with enormous efficiency—and an extremely low reject rate on the entire process. The plant creates around 600,000 seats per year. A very good address, therefore, to test the newly developed transfer mixing head from KraussMaffei. Both companies have been working together successfully for decades.

Smaller, lighter, and with even better mixing quality: these were the objectives when the redesign project began at the end of 2020. The team headed by Ralf Moser (Head of Mixing Head Development) thus took on board the wishes of customers for whom convenient handling in everyday production is important. In most cases, the mixing heads are attached to

**KraussMaffei Technologies GmbH**  
Corporate Communications & Marketing  
Krauss-Maffei-Strasse 1  
85599 Parsdorf, Germany

Phone +49 89 8899 2792  
[www.kraussmaffei.com](http://www.kraussmaffei.com)

robots that transport them at high speed from mold to mold, where foam discharge takes place. A weight reduction from 13 to 10.4 kilograms is definitely noticeable here. The geometry has also been streamlined: the L-legs of the precisionMixhead 8/12-2K-40 have been reduced to 65 and 92 percent of the original values, respectively.

The mixing head is the heart of the polyurethane foaming system because this is where it is decided whether the polyol and isocyanate components will be homogenized thoroughly and in the desired ratio. If this does not happen, sticky spots appear on the cured foam or it is too hard or too soft. Both raw materials flow through nozzles (throttled by needles) into the mixing chamber, where they are atomized and mixed at 100 to 200 bar. If material is to be discharged, the control piston opens the path to the mixing chamber until the shot weight is reached. For use in open molds, a transfer mixing head is required, in which the resulting foam is deflected at a 90-degree angle into the outlet chamber and completely ejected by a cleaning piston. KraussMaffei has held numerous patents for this technology since the 1980s and the mixing heads are known in the industry for their high performance.

Grammer, the world's leading supplier of seating solutions for commercial vehicles, operates two rotary table systems at its Haselmühl plant (also from KraussMaffei and in operation since 2001), each with over 20 molds for tractor, construction machinery and forklift seats.

A mixing head demonstrates its capabilities with the lowest possible material discharge. Grammer runs at 220 to 250 grams per second in series production. With the new mixing head, the team led by Heinrich Hammer (Head of Process Engineering, Grammer Deutschland GmbH) tested the limits. "We went down to 60 grams and homogeneity and uniformity were still top-notch. The production window has become enormously wide as a result." Another benefit of the new generation of mixing heads is that certain components have been simplified and made interchangeable, increasing the ease of maintenance. For the first time, the mixing chamber, outlet chamber

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and control piston can be completely replaced if worn. The latter two are now single-piece (previously multi-piece), which in turn saves space and weight.

This is one of the reasons why Hammer concludes: "We are highly satisfied with the results and the tests of the mixing head on our plant."

Photos:

KM\_RPM20230928\_precisionMixhead 8/12-2K-40.jpg  
precisionMixhead 8/12-2K-40 in series production for even better homogeneity when discharging polyurethane foam.

KM\_RPM20230928\_rotary table system.jpg  
KraussMaffei rotary table system with over 20 molds for tractor, construction machinery and forklift seats.

KM\_RPM20230928\_team.jpg

A proven team:

Heinrich Hammer, Head of Process Engineering, Grammer Deutschland GmbH

Wolfgang Rößler, Area Sales Manager, KraussMaffei Technologies GmbH

Ralf Moser, Head of Mixing Head Development, KraussMaffei Technologies GmbH

**KraussMaffei Technologies GmbH**  
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Press contact:

Michaela Huber

Marketing Manager Reaction Process Machinery

Phone: +49 89 8899 2792

Email: [Michaela.Huber@kraussmaffei.com](mailto:Michaela.Huber@kraussmaffei.com)

Uli Pecher

Head of Corporate Communications

Phone: +49 89 8899 10 80

E-mail: [Uli.Pecher@kraussmaffei.com](mailto:Uli.Pecher@kraussmaffei.com)

## **KraussMaffei – Pioneering Plastics**

KraussMaffei is among the world's leading manufacturers of machinery and systems for the production and processing of plastics and rubber. Our brand stands for cutting-edge technologies – for more than 185 years. Our range of services covers all areas of injection molding machinery, extrusion technology and reaction process machinery. In 2022 we added additive manufacturing to our portfolio. This broad range of technologies gives KraussMaffei a unique selling point in the industry. With the high innovative power of our standardized and individual product, process, digital and service solutions, we can guarantee customers sustained additional value over the entire value-adding chain. Our range of products and services allow us to serve customers in many sectors including the automotive, packaging, medical and construction industries, as well as manufacturers of electrical and electronic products and household appliances. KraussMaffei employs around 4.700 people all over the world. With more than 30 subsidiaries and over 10 production plants, as well as about 570 commercial and service partners, we are represented internationally close to our customers. The company was founded in 1838 in Munich.

In April 2016, China National Chemical Corporation Ltd. (“ChemChina”) became the majority shareholder of KraussMaffei Group. In December 2018, ChemChina listed the KraussMaffei Group as KraussMaffei Company Limited in Shanghai. The listing opened up access to the Chinese capital market and local investors. Now ChemChina is part of Sinochem Holdings Corporation Ltd., one of the world's leading chemical conglomerates with over 220,000 employees.

For more information: [www.kraussmaffei.com](http://www.kraussmaffei.com)

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