



Innovative, efficient solutions for White Appliance and Insulation

Engineering Passion

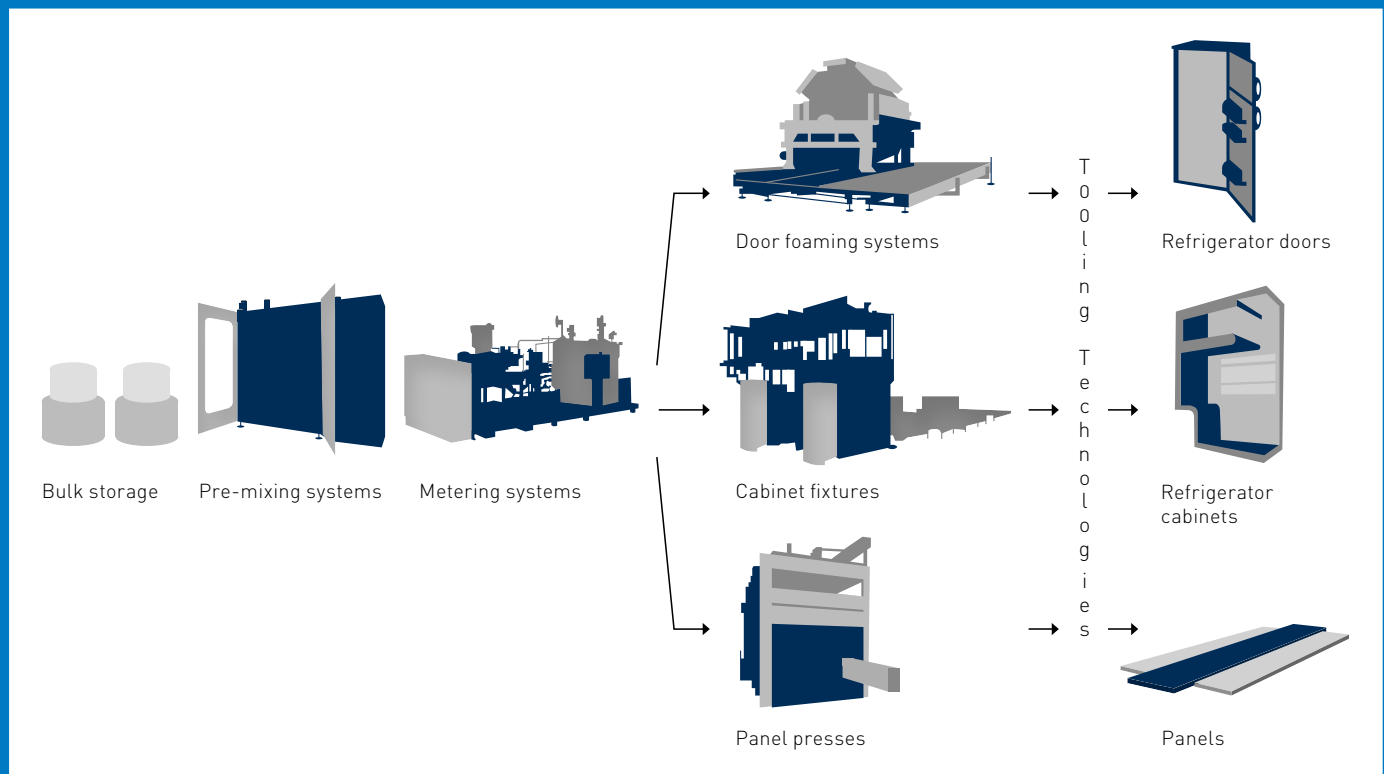
Krauss Maffei

Customized processing solutions for you

Within the worldwide KraussMaffei network KraussMaffei Italiana acts as the competence center for White Appliances and Insulation technology.

As the specialist in these markets, we focus on cutting-edge solutions and installations for the production of PU rigid foams for insulating purposes.

Overview of our expertise in White Appliance and Insulation



Innovative, efficient solutions for White Appliance and Insulation

Our expertise and technologies in the White Appliance and Insulation sector are your advantage. In order to ensure customer satisfaction, we stand for proven engineering capability and dedicated customer support.

In our product portfolio, you will find a wide range of cabinet foaming plants, door foaming plants, commercial refrigerators and display cabinets, as well as cabinet and door foaming molds.

Here are the highlights of our expertise in White Appliance and Insulation at a glance:

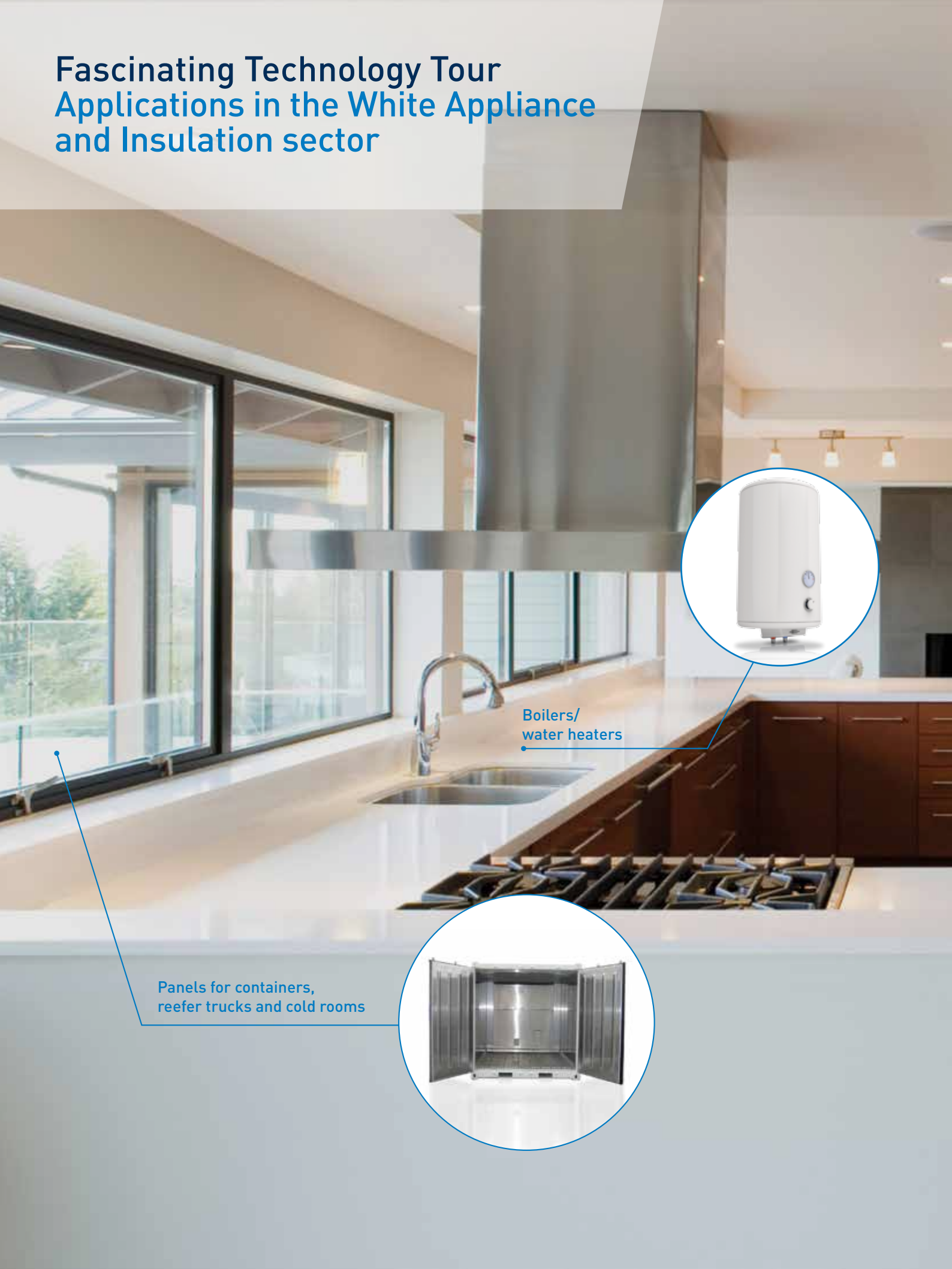
Innovative thanks to

- Extensive PU knowhow along the whole production chain
- Wide-ranging product portfolio of plants, foaming molds and commercial solutions
- Latest technologies

Efficient thanks to

- Dedicated customer support
- Tailor made, cost effective solutions
- High process stability

Fascinating Technology Tour Applications in the White Appliance and Insulation sector



Panels for containers,
reefer trucks and cold rooms

Boilers/
water heaters





Commercial Refrigerators



Domestic Refrigerators



Cabinet foaming plant capable of simultaneously foaming two cabinets in one fixture

Cabinet Foaming Plants

High-quality equipment results in better processing systems

Our network of highly qualified employees and established sub-suppliers has extensive day-to-day experience in the development of PU processing plants for White Appliance and Insulation technologies. We are your partner along the whole production chain – we plan, build and install PU equipment and plants.

Plant design and construction play a key role in the production of PU processing solutions for White Appliance applications. KraussMaffei Italiana has extensive expertise in precision-engineered PU processing installations designed to meet specific product requirements and exceed customer expectations.

During the planning stages of the project, our engineers place emphasis on optimizing processing sequences, use of available space and automation, as well as the design of high-quality processing equipment.

KraussMaffei will plan, build, and install your foam molding plant to meet your production requirements. We utilize the latest 3D design techniques and exercise great care in managing your project.

Your advantages:

- Extensive PU knowhow along the whole production chain
 - Clear understanding of customer wishes and needs
 - Latest technologies
-



RotoCore cabinet foaming technology with zero-time mold change capability

Whether you are foaming cabinets with the door facing up or down, or if you are using single or multiple injection points, KraussMaffei can provide you with a customized solution to meet all of your processing requirements. Foaming plants can include:

- Cabinet handling and conveyor systems
- Pre-heat ovens
- Foaming fixtures and mobile plants
- Molds and molds storage
- Metering and mixing head technologies
- Bulk storage and pre-mixing systems

KraussMaffei is a turnkey supplier. Our cabinet foaming plants include cabinet handling systems, pre-heating ovens, foaming fixtures, molds, and mold storage systems



Stationary foaming fixture

Door Foaming Plants

Minimizing floor space requirements, maximizing production output

KraussMaffei's RotoStar door foaming plant is one of the most frequently used processing solutions to foam doors throughout the world.

The design principle behind the rotating RotoStar minimizes floor space requirements. These highly automated plants consist of 4 to 8 molds fixed on a frame which rotates around a horizontal axis. The hydraulically and electrically driven RotoStar ensures fast, accurate, and reliable movements. The automated mixing head manipulator is capable of facilitating open-mold pouring, as well as closed-mold injections. The foam-filled doors can be manually or automatically unloaded. The proven design of the RotoStar system provides an extra level of confidence for rigid PU foam processors.

Your advantages:

- Minimal floor space requirements
 - Maximum output
 - Highly automated plants
 - Fast and extremely precise movements
 - Absolute process stability
-



8-station drum technology for closed-mold foaming of doors



Stationary door press: closed-mold pouring of refrigerator doors



Drum unit equipped with two robotically manipulated mixing heads to enable quick filling of doors for increased productivity.

Benefit from minimal floor space requirements and the maximum output of our door foaming plants



All-inclusive solutions for turnkey plants

The key to extraordinary performance

You want to raise your performance decisively? We are your competent partner when it comes to all-inclusive solutions for turnkey plants.

Our turnkey plants for the production of commercial refrigerators and display cases consist of:

- Pre-assembly bays
- Mold handling systems to transport the preassembled cabinet into the foaming fixture
- Shuttling foaming fixtures and molds to contain the pressures generated during PU foaming
- Cabinet unloading equipment to move the product to the final assembly area

We can provide customized foaming fixtures with either a triangular or rectangular design, with the option to shuttle the molds in and out of the foaming fixture.

The fixtures can be driven either electrically or hydraulically, with parallel side-wall movements, to ensure the product meets minimum-tolerance flatness requirements. Temperature-controlled sidewalls help the PU to react and distribute throughout the long, wide cabinets.

Your advantages:

- Tailor made solutions
 - Extraordinary performance
 - All inclusive packages
-



Rectangular fixture for the production of commercial refrigerators



Triangular fixture for the production of commercial refrigerators



Mixing and metering machines for PU processing RimStar Nano, Compact and Modular

KraussMaffei's RimStar is a family of mixing and metering systems for polyurethane processing. With its three versions – Nano, Compact and Modular – the RimStar family has the right solution for almost every PU application.

RimStar machines perform brilliantly in every production situation. The major advantages are: short, rheologically optimized supply lines between machine components result in lower pressure losses, more precise temperature control and optimized control technology. The benefits for processors are more stable processes and improved product quality. Modular engineering and flexibility when it comes to configuration mean that these machines can be adapted to satisfy customer-specific requirements. Other features of the RimStar family are operator and service-friendliness and excellent accessibility.

We offer equipment with a broad range of blowing agents (e.g. Cyclopentane, Isobutane, 245fa and Argon).

Your advantages:

- Stable process and higher product quality
 - Short line lengths for lower pressure losses
 - Compact design
 - More precise temperature control
 - Optimized control technology
 - Customer specific solutions
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The RimStar series of mixing and metering machines has the optimal solution for all types of PU applications.

Special mixing heads for White Appliances and processing rigid foam

KraussMaffei high-pressure mixing heads are the perfect answer to your production challenges. They promise a high return on investment, peak reliability and lower costs, and are optimized for specific production processes. Particularly for the White Appliance industry we have engineered two specific types. In addition we offer vario nozzles for the mixing heads.

Mixing heads for White Appliances

With our combination of best-practice processes and mold technologies, KraussMaffei mixing heads operating on the 'B' principle are considered the first choice for foaming out refrigerator appliances (especially for refrigerator doors). For thermal insulation of refrigerator doors, a high-performance PU insulating layer is applied in an open pour technique.

Your advantages:

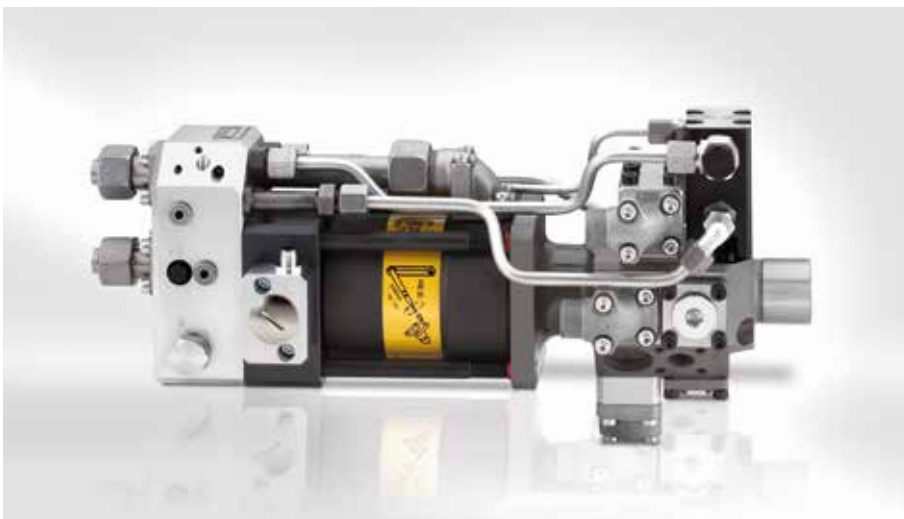
- Absolutely laminar and splash-free pour
- Good PU distribution in the open mold
- Extremely uniform and void-free foam structure
- Complete foam filling free of voids and thermal bridges

PU rigid foam: high output and long discharge tube for cabinet insulation

KraussMaffei developed the ULP-2KW-G-I mixing head to meet the special challenges of applying rigid insulating foam to refrigerator cabinets.

Your advantages:

- High output
- Stable and reliable process with PU components kept separate from hydraulic systems
- Optional nitrogen purging can be integrated



Mixing head MKE-3B



MK - ULP-2KVV-G-I

Further information which might also interest you



Are you looking for more information about our reaction process machinery solutions? Or do you need suitable mixing heads or foam molds for your White Appliance and Insulation applications?

You can read more in the following brochures:

- High-pressure mixing heads
- RIM Star Nano, Compact, Modular
- Powerful systems for cutting complex plastic components
- Foam Molds
- Fiber Composite Solutions for high spec, light parts



You can find our brochures and flyers on other topics online at: www.kraussmaffei.com. On request, we will also be pleased to send you the information and technical data for our products free of charge.

KraussMaffei

A strong brand in a unique global group

Cross-technology system and process solutions

Whether in Injection Molding, Reaction Process Machinery or Automation – the KraussMaffei brand stands for pioneering and cross-technology system and process solutions in plastics processing worldwide. For decades, our expertise, innovative ability and passionate commitment to plastics engineering have been your competitive edge. As a cross-industry system provider, we offer you modular and standardized systems as well as solutions customized to your needs.

There for you around the world

With our worldwide sales and service network, we offer our international customers an excellent basis for a successful business relationship. Due to the close proximity to our customers, we are able to answer your individual inquiries very quickly. We work out the best possible technical and economical solution for your product and production requirements together with you. Test our machine technology for your applications and let our experts put together an individualized service package for you.

Individualized service

Our employees from customer service, application technology and service help you with your questions and needs on every topic dealing with machines, systems and processes – around the globe, quickly and with a high level of expertise. We have developed an extensive customized service spectrum with our lifecycle design, which accompanies you throughout the entire lifecycle of your machines and systems. Take advantage of the personal interaction and flexibility we offer in our practically oriented seminars. We carry out customer-specific trainings either at your location or at our sales and service locations.

You can find additional information about KraussMaffei at: www.kraussmaffeigroup.com

KraussMaffei Group

Comprehensive expertise

Unique selling proposition Technology³

The KraussMaffei Group is the only provider in the world to possess the essential machine technologies for plastics and rubber processing with its KraussMaffei, KraussMaffei Berstorff and Netstal brands: Injection Molding Machinery, Automation, Reaction Process Machinery and Extrusion Technology.

The group is represented internationally with more than 30 subsidiaries and over ten production plants as well as about 570 commercial and service partners. This is what makes us your highly skilled and integrated partner. Use our comprehensive and unique expertise in the industry.

You can find additional information at: www.kraussmaffeigroup.com



The KraussMaffei Group has a global presence. Countries with subsidiaries are marked in dark blue. In the white-colored regions, the Group is represented by over 570 sales and service partners.

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