



**BOGE RUBBER & PLASTICS**

Perfection in Motion.

»For Us,  
the Customer  
always comes  
First.«

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## BOGE Rubber & Plastics Our Strengths:

- We are a top player among the leading worldwide automotive suppliers in the field of rubber-metal and plastics technology
- Global presence in all major automotive markets
- We offer innovative products and complete solutions in vibration control technology and lightweight components
- We provide individual advice and a high level of technical expertise in problem-solving
- We have more than 80 years of experience in the automotive industry



# Innovation by Experience.

**BOGE Rubber & Plastics stands for excellence in vibration control technology and lightweight components for the automotive industry. As a longstanding partner of leading international car manufacturers, we develop innovative solutions for the markets of tomorrow.**

We are passionate perfectionists – and have been since 1931. We combine the core technologies of vibration control and lightweight design to develop integrated solutions for our customers – enhancing performance, and at the same time reducing weight and costs. Thus, innovative design solutions such as lightweight pedal modules and transmission cross members have been created.

We are represented internationally with approximately 4,200 employees and eleven locations. Today, we rank among the worldwide leading top three manufacturers in the field of rubber-metal technology.

For BOGE Rubber & Plastics the strategic alliance with TMT constitutes another milestone on the way to the future. TMT is the world's leading supplier of vibration technology and polymer composite materials in the railway field. TMT in turn is part of the CRRC Group, the world's largest manufacturer of railroad vehicles. By combining the expertise and know-how of both companies, we will further strengthen our technological leadership in close cooperation with TMT and expand our global presence.



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4.200\*

employees

11

locations

836 Mio.€\*

sales (consolidated)

\* Figures refer to the financial year 2018 (rounded sum)

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## OUR EXPERTISE:



### Rubber-Metal Technology NVH Chassis Passenger Car

BOGE Rubber & Plastics is the world's largest manufacturer of hydraulic damping chassis suspension mounts. Our high-quality and long-life chassis mounts reduce vibration that can occur during cornering, braking maneuvers or on rough roads. These components have to meet rigorous vibration damping and noise insulation standards for each type of vehicle and play a key role in improving ride safety and stability as well as vehicle dynamics and comfort.



### Rubber-Metal Technology NVH Powertrain Passenger Cars

Our engine and transmission mounts prevent road noise and vibration from entering the passenger compartment via the drivetrain, thus improving acoustic performance and driving comfort. Switchable or active engine mounts assist in fuel savings particularly when implemented with a downsized engine, cylinder cutoff or start-stop function. At the same time, due to the increasing use of lightweight materials, vehicle weight and in turn fuel consumption are reduced.

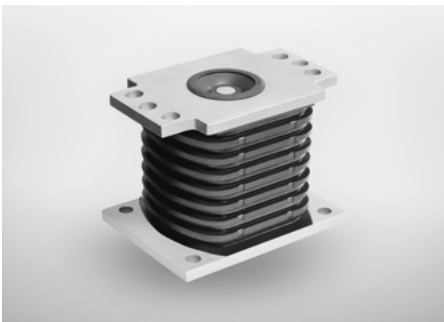


# Excellence in Design and Function.

**For us, the perfect solution is not only a promise, but rather the result of careful, precise and dedicated work. From our experience we know how important it is to provide a full range of products and services from the tailor-made production to the individual technical support by our experts.**

BOGE Rubber & Plastics offers all-in-one solutions for the automotive industry. Our vibration control and noise attenuation products increase the driving dynamics of the vehicle thereby enhancing safety and comfort. Our expertise in plastics has made us experts in lightweight construction solutions.

The networking of expertise across our product lines ensures that we are constantly finding new solutions to combine materials to reduce weight, costs and emissions.



## Rubber-Metal Technology

### NVH Commercial Vehicles

We offer tailor-made and market-oriented flexible suspension solutions for chassis and powertrain of modern commercial vehicles. As key components which help to perfectly tune the NVH criteria in the entire vehicle, our innovative cabin suspension mounts round off the product range – to make mobility in transport and trade even safer, more comfortable and more economical in the future.



## Rubber-Metal Technology

### Flexible Coupling

Our fabric-reinforced elastomeric couplings make a decisive contribution to the reduction and decoupling of impact loads and vibrations in industrial drives. As a result, sound paths can be interrupted and resonances effectively shifted. These components are designed to be used flexibly in many different application areas, such as ships, railways, combined heat and power plants, engine or gearbox connections and wind turbines.



## Plastics Technology

### Lightweight Construction

With more than 45 years of experience in plastics technology, we are experts in lightweight constructions. Our best-in-class thermoplastic precision components and modules clearly demonstrate that conventional materials can be substituted by alternatives. The advantages are clear: reduced cost, lower weight and maximum reliability. We also apply our expertise to the development of lightweight components such as airbag housings. This is how we contribute to vehicle- and road safety.

# Experts since 1931. Pioneers for a Lifetime.

You have to think ahead to be successful. As a technology leader and key player in the automotive sector for many years, we develop customized innovative products and technical solutions. We consistently forge new paths in order to continue setting standards in the future.

Mobility requirements are changing. At the same time, technological and vehicle requirements are also changing. With more local presence on the international markets, we will not only expand our local production facilities, but also further strengthen decentralized competencies.

Thanks to our global network and standardized processes, we will grow responsibly and thus continue to set standards worldwide.

Material consumption per year:

80.000t  
of steel

27.000t  
of aluminium

11.200t  
of plastics

5.800t  
of natural rubber



## BOGE Rubber & Plastics – What We Stand for Now and in the Future:

### OUR VISION

We are the preferred global partner for Rubber & Plastics solutions in the automotive and associated industries.

### OUR MISSION

- We supply innovative, competitive and sustainable rubber-metal and plastic products worldwide, thus, making mobility safe, comfortable and environmentally friendly.
- Based on our unique expertise in combining different materials, we are able to provide maximum customer value throughout the entire product life cycle.
- Our worldwide footprint enables us to meet customer expectations in an increasingly globalized and dynamic market.
- Highly skilled and motivated employees are key to our success.
- Exceeding financial performance targets is a core value.

1931

Foundation of Boge und Sohn KG in Bad Godesberg on the Rhine. Development and production of shock-absorbers and rubber-metal parts

1967  
Wheel-guiding damper (McPherson struts)

1949  
Bonded rubber-metal parts (vulcanization)

1934  
Boge-Silentbloccs

1967

Foundation of the company Elastmetall Damme/Oldenburg GmbH. Development and production of rubber-metal parts and plastic parts

1971

Elastmetall Damme/Oldenburg GmbH merges with Lemförder Metallwaren AG

1984  
Plastic oil reservoirs

1981  
Control arm bushes for commercial vehicles

1976  
Hydraulic engine mounts

1973  
Bumper impact dampers

1984

ZF Friedrichshafen AG takes over the majority of Lemförder Metallwaren AG

1991

Mannesmann AG takes over the majority of Boge AG

1986  
Hydraulic chassis mounts

1996  
Steering rods

1995  
Plastic gearshift components and passenger seat airbag housings made of plastic



# Our Values.

**INNOVATION** **We are ahead.** We continue to find new ways to be the partner of choice for our customers. We are driven by our customers' concerns. We always strive for technological innovations and excellent solutions that pay off economically. Innovation means both, products as well as processes and material innovation.

**INTERNATIONAL DIVERSITY** **We think and act globally.** Our international presence enables us to recognize changes in the markets at a very early stage and know what our customers need. We value diversity with a wide variety of cultures, which we appreciate and respect.

**QUALITY** **We stand for quality.** From our experience, we know about the importance of precision-manufactured and reliable products. We do not only develop products, we set standards.

**PARTNERSHIP** **We are partners to our internal and external stakeholders.** We work as a team. Our networked expertise and long-term partnerships enable us to find always the right solution. Integrity, fairness and respect are the foundation for how we work with each other, our employees and business partners. We are committed to comply with applicable law in accordance with our Compliance principles.

**SUSTAINABILITY** **We take responsibility.** We handle our resources carefully. In an economical, ecological and social way. For us, sustainable management is an integral part of the entire value chain. Our products, technologies and processes meet the highest standards.

2002

ZF Friedrichshafen AG takes over the company and business activities known as Boge Vibration Control GmbH

2003

ZF Boge GmbH and ZF Lemförder Elastmetall GmbH merge and become ZF Boge Elastmetall GmbH and establish the business unit rubber-metal technology of ZF Friedrichshafen AG

2010

Integration of ZF Boge Elastmetall GmbH in ZF Lemförder GmbH

2010  
Plastic pedal modules

2007  
Electronically switchable engine mounts

2004  
Plastic-coated metal parts

2011

Merger of ZF Lemförder GmbH with ZF Friedrichshafen AG

2014

Strategic alliance of the ZF business unit Rubber & Plastics with TMT and merger of the automotive activities under the umbrella brand BOGE Rubber & Plastics

2013  
Engine mounts made of plastics

2018

2018  
World's first tape laying system for composite brake pedals

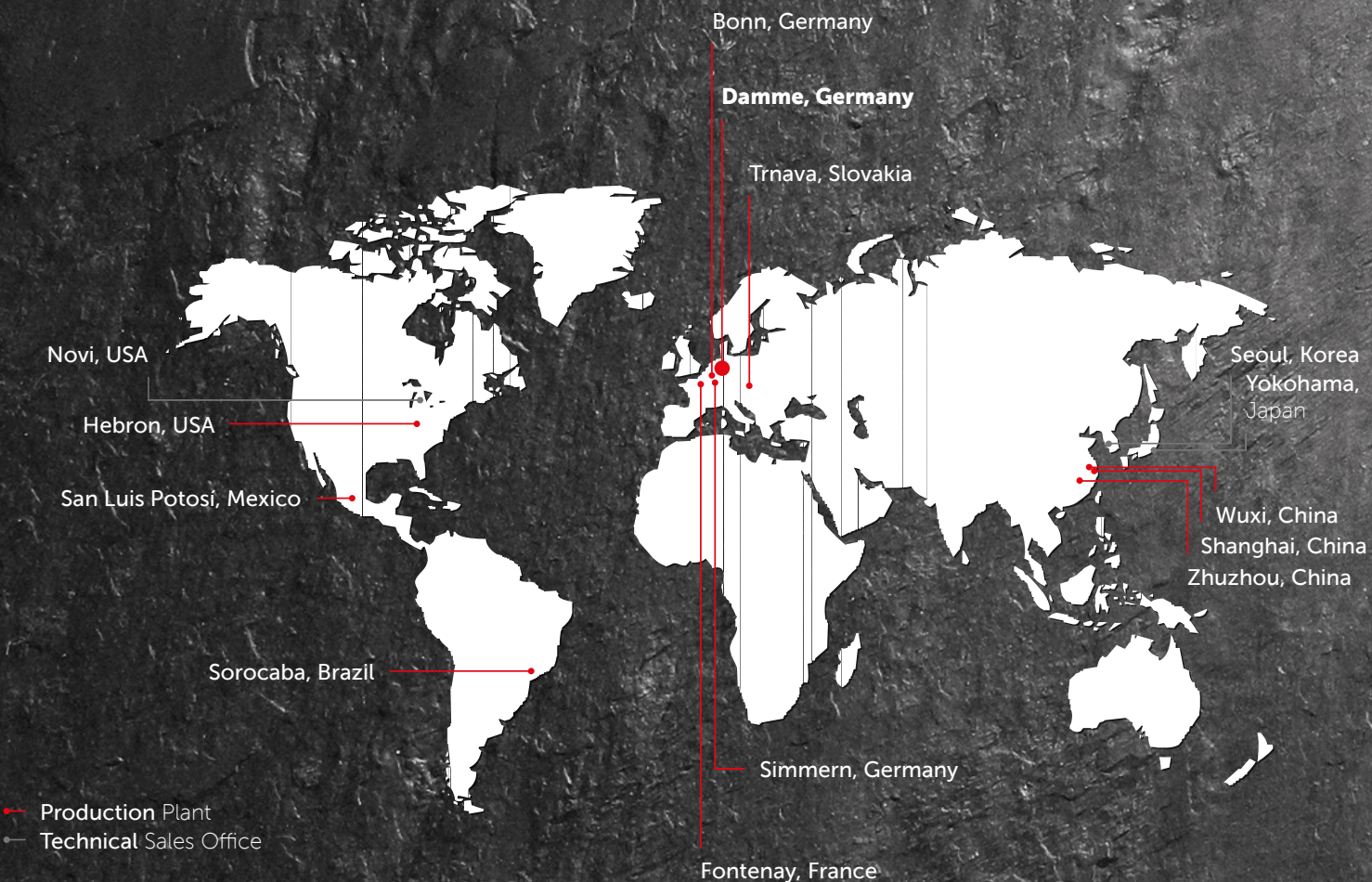
2016  
Organo Sheet Brake Pedal

2015  
SOP of first active engine mounts

Flexcon Germany GmbH becomes part of BOGE Rubber & Plastics, thus complementing the product portfolio by flexible couplings

# Based in Damme. Worldwide in Motion.

We have been firmly rooted in Germany for more than 80 years. Our business is growing around the world. Our global presence allows us to quickly respond to market changes. Local presence and integration with customer facilities enable us to provide customized solutions.



BOGE Rubber & Plastics is part of the CRRC Group

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