



Mobility

Technical mesh for the future of the automobile

Woven metal mesh and filter solutions

Expertise

Mesh solutions from the technological leader

GKD: Innovations and cross-sector expertise

GKD is the global technological leader for cutting-edge industrial weave and filtration solutions produced from both metal and synthetic wires, as well as technical fibers – for all industrial applications. With innovative weaving technologies and the latest material simulation methods, we create efficient technical weaves, semi-finished products, components, and filter equipment – optimally matched to a wide range of mechanical process engineering requirements. GKD is an important development partner and series supplier to numerous vehicle manufacturers and suppliers, who benefit from tailor-made solutions, hands-on consulting, and world-wide service.

GKD continuously develops new fields of application through manufacturing technology and process expertise. Thanks to our ISO certifications, our customers can also rely on certified quality worldwide. GKD is currently in the IATF 16949 certification process and hopes to gain certification in 2023.





Mobility now and in the future: **Efficiency for all drive solutions**

The automotive industry develops vehicles that inspire people and fulfill their wish for individual mobility. Both manufacturers and suppliers operate in a highly dynamic sector. The major challenges facing the automotive industry are the further development of conventional drives in combination with alternative fuels, the expansion of electric mobility, and digitalization all the way up to autonomous driving. Particular focus is on efficiency, safety, sustainability, and carbon-neutral mobility here.

Our technical weave solutions are used in parts and components that further optimize vehicle engineering in a wide range of application areas. This not only secures greater efficiency and safety, but also compliance with strict environmental standards.

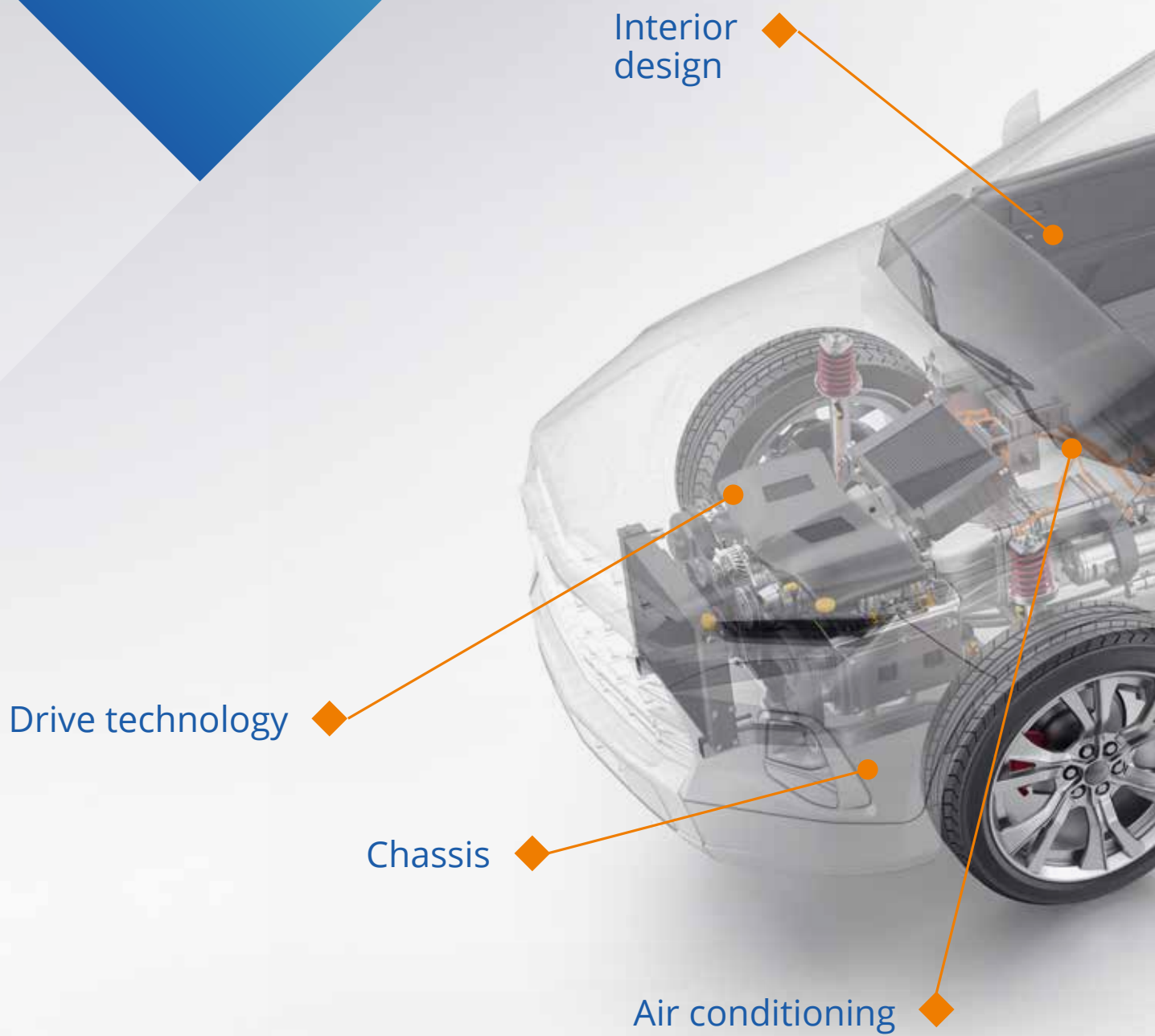
Even the smallest parts and components are critical to developing and marketing the best possible solutions. Technical weave from GKD is a good example

of this. Thanks to its exceptional characteristics, it has a permanent place in the field of automotive engineering and is an integral part of numerous technical innovations, such as drive technology, battery and safety systems, as well as vehicle interiors.

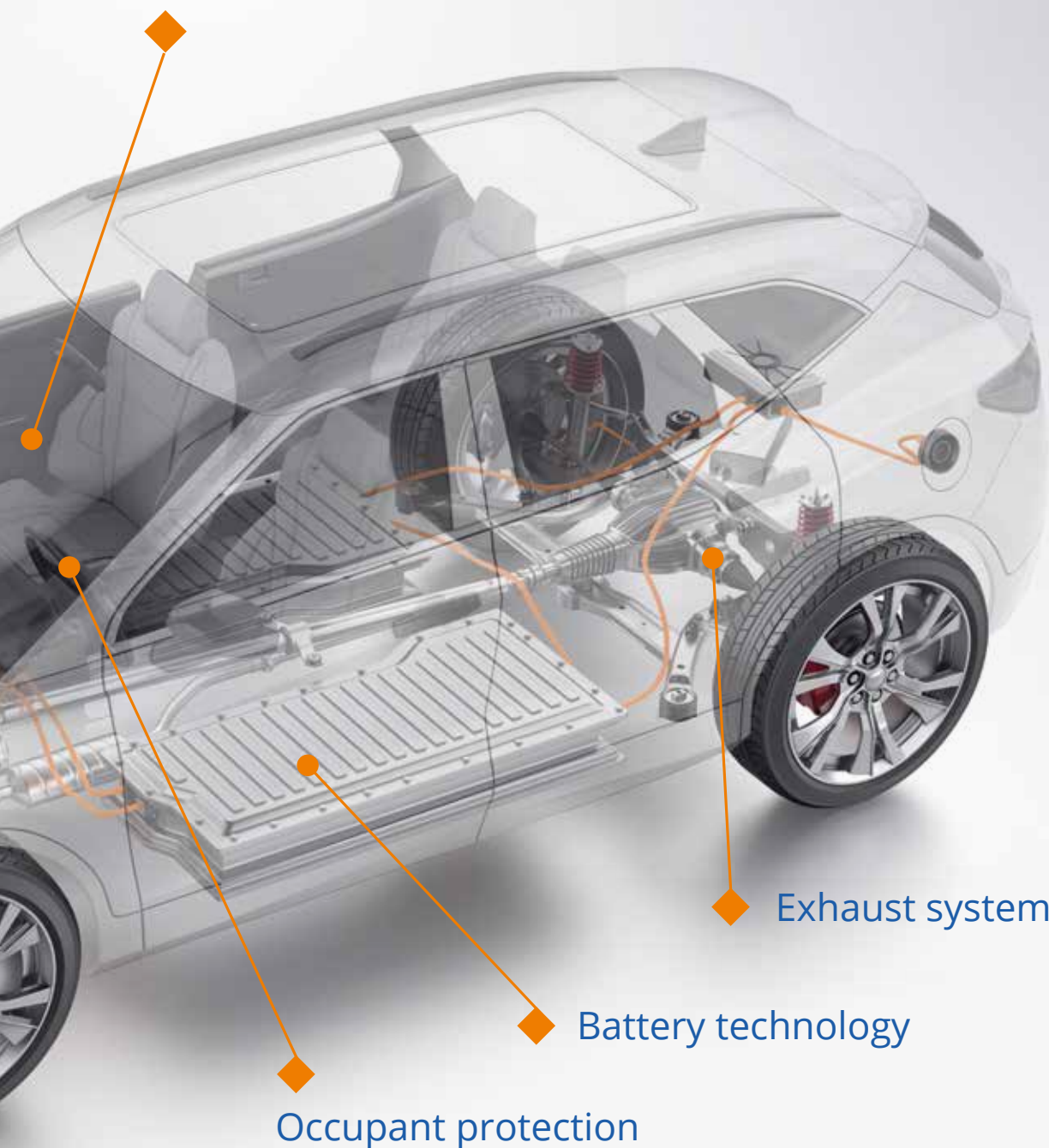
As global market leader for solutions produced from metal, hybrid, and synthetic mesh, as well as spirals, GKD is supporting the sustainable change in mobility with its expertise. Technical weave from GKD can be found wherever the focus is on making our world healthier, cleaner, and safer.

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Overview of application areas



In-car entertainment



Exhaust system

Battery technology

Occupant protection

Would you like to learn more about our solutions?

Call us or send an email:

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Solutions

Electric drives





EMI shielding and explosion protection for battery compartments



Multi-layered fabric for explosion protection in the switch housing

Trailblazer in new mobility

The future of mobility is electric. Hybrids, as well as battery-powered and fuel-cell drives, are presenting the automotive sector with new challenges. Ever shorter charging times and technologies for contactless charging require increased protection against electromagnetic radiation for both occupants and components.

High-tech wire mesh once again demonstrates its outstanding properties here. EMI shielding produced from conductive and easily shapeable wire mesh helps secure safety, everyday usability, and efficiency – also for the centerpiece of electrical drive systems, the modern high-performance batteries.

Versatile and highly effective

Technical weave from GKD is used in a wide range of configurations and applications. It offers highly effective explosion protection for switch housings and the battery system. Manufacturers and development partners also benefit from the versatility of technical weave in meeting complex functional requirements, such as thermal management of the battery system.

Applications

- ◆ Protection for switch housings
- ◆ Explosion protection for battery systems
- ◆ E-drive protection
- ◆ Occupant protection
- ◆ Thermal management

Mesh used

- ◆ Square weave
- ◆ TELA mesh
- ◆ Gekuplate
- ◆ Thermally conductive mat

Benefits

- ◆ Transparency
- ◆ Compressibility
- ◆ Formability
- ◆ Media-resistant materials
- ◆ Conductive materials



Solutions

Conventional drives and exhaust systems



EGR filters and transmission oil filters

Greater efficiency, lower emissions

Despite the availability of alternative drive systems, the overwhelming majority of vehicles are still powered by internal combustion engines. Effective and innovative technologies that help reduce both resource consumption and exhaust emissions are therefore all the more important. Durable liquid filters support numerous functions and processes in modern combustion engine vehicles. The key for manufacturers and suppliers is to secure a wide range of filter media that are tailored specifically to the respective applications and deliver the best results. The finest filtration and high throughputs, even when working with reduced filtration areas, open up optimization potential for oil and coolant circuits, injection systems, transmissions, hydraulic systems, and more.

For optimal emissions control

In the field of exhaust gas treatment, the automotive industry relies on highly effective filter media in order to comply with strict regulations, such as the Euro 7 emissions standard. But how can the fuel consumption and CO₂ emissions of motor vehicles be further reduced without compromising performance? GKD's answer is Volumetric mesh, which the company developed in-house for exhaust gas aftertreatment (EGR filters/POC) and which protects downstream components from damage. In addition, GKD filter media are used in combustion chambers and gas tanks, where they offer protection from particulate matter.

Applications

- ◆ Injection systems
- ◆ Valve train (valve protection)
- ◆ Transmission oil filters and oil suction filters
- ◆ Solenoid valve protection
- ◆ Piezo filter electrodes
- ◆ Exhaust gas recirculation and filtration

Mesh used

- ◆ Square weave
- ◆ Oblong and broad weave
- ◆ TELA mesh
- ◆ Optimized dutch weave
- ◆ Plain dutch weave
- ◆ Volumetric mesh

Benefits

- ◆ High dirt-holding capacity
- ◆ High throughput rate
- ◆ Low pressure loss
- ◆ Precise filtration rates
- ◆ Temperature-resistant, corrosion-resistant and media-resistant materials
- ◆ Reduced space requirement



Solutions

Chassis and brake system



Filters for hydraulic and brake systems

Greater safety due to highly effective mesh

Pneumatic suspension

Chassis with air suspension offer unparalleled comfort. In these systems, air is compressed by an on-board compressor and stored in a tank. The compressed air is then channeled into air springs, which are textile-reinforced rubber vessels. The secure, durable, and low-maintenance operation of these systems largely depends on ensuring good compressed air quality. This is achieved with pneumatic wire mesh filters from GKD that effectively keep out contaminants. GKD filters are matched individually to the requirements of manufacturers.

Brake systems

Safety-relevant systems such as brakes need to be extremely resilient and robust. Our filtration mesh ensures that brakes remain efficient throughout their life. When brakes are applied, fine dust particles are produced, which the brake dust particle filters from GKD then reliably retain. This supports a consistently high braking effect with minimal dust generation. GKD has developed a special nonwoven for this purpose. GKD filters are also used in liquid filtration for brake systems. In brake fluid reservoirs, GKD wire mesh filters reliably retain particulate, ensuring that it cannot make its way to the brake master cylinder, where it could potentially cause brake failure.

Applications

- ◆ Hydraulic systems
- ◆ Brake systems

Mesh used

- ◆ Optimized dutch weave
- ◆ Porometric mesh
- ◆ Square weave
- ◆ TELA mesh

Benefits

- ◆ High dirt-holding capacity
- ◆ Low pressure loss
- ◆ Precise filtration rates
- ◆ Temperature-resistant materials
- ◆ Media-resistant materials
- ◆ Reduced space requirement
- ◆ Corrosion-resistant materials



Solutions

Bodywork and interior



Where function meets design

Two aspects come together in vehicle interiors: appealing design and the maximum possible protection for occupants. The key aspects with airbags are that they must inflate within a fraction of a second and then quickly deflate after impact, so that the occupants can move again. This is where mesh from GKD comes in. When an airbag is triggered, gas flows through filtration mesh and into the airbag, with any particulate being removed while the gas is cooled at the same time. GKD high-performance mesh is also used in the filters of HVAC units fitted in vehicles. These filter the air, removing both pollen and dust.

Ensuring good sound and an elegant look

Wire mesh from GKD ensures good sound as a component of in-car entertainment systems. As electronic components, they improve sound distribution and also protect loudspeakers from external influences. Wire mesh can also be used for a wide range of interior design applications. Flexible, moldable metal wire and hybrid mesh types lend cockpits elegant lines and an exceptional structure.

Applications

- ◆ Airbag filters
- ◆ Burner screens for auxiliary heating systems
- ◆ Rectifiers for heat distribution in heating systems
- ◆ Interior applications
- ◆ In-car entertainment
- ◆ Interior design

Mesh used

- ◆ Square weave
- ◆ Volumetric mesh
- ◆ Hybrid mesh
- ◆ TELA mesh

Benefits

- ◆ High dirt-holding capacity
- ◆ Low pressure loss
- ◆ Heat-resistant materials



Production

Manufacture: Highest standards

vices. This eye for detail, many years of development excellence and process expertise, as well as our consistent cost-benefit orientation are what make GKD a sought-after partner around the world.

What's more, products from GKD are produced to the highest standards – all the way up to production for clean room standards.

Manufacturing: From weaving to finishing

Weaving, cutting, cleaning, rolling, punching, finishing, and much more – GKD produces the full range of industrial mesh and systems from metal, synthetics, and technical fibers using the latest looms and manufacturing equipment. Always leading with the individual requirements of customers in mind. Adopting a step-by-step approach, we first analyze the demands on the material and the type of application, and then optimize processes and ser-

Our services

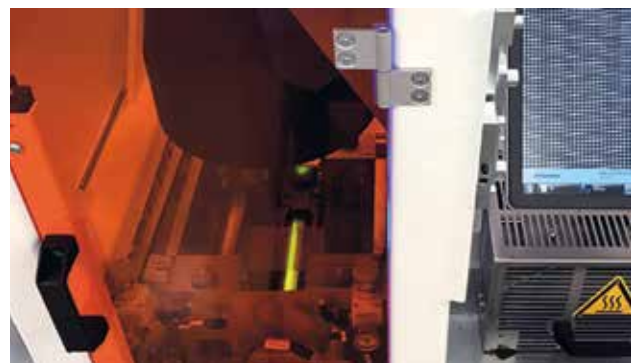
- ◆ Process and requirements analyses with material simulation tools (GeoDict/OpenFOAM)
 - ◆ Consultation on the choice of material
 - ◆ Application optimization and customized component design
 - ◆ Continuous analysis and further development
 - ◆ The latest manufacturing methods and leading production standards
 - ◆ Certified know-how and decades of expertise
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Guaranteed: Certified quality

GKD excels at more than just production. We also have our own laboratory, where we thoroughly inspect all of our meshes and associated components. It's vital that quality products from GKD meet the customer's desired specifications precisely. That's why our physical and technical laboratory conducts tests in the following areas:

- ◆ **Product development**
- ◆ **First sample inspection**
- ◆ **Inspection in the event of damage**
- ◆ **Inspection in the event of a complaint**
- ◆ **Customer-specific tests**
- ◆ **Quality assurance during the production process**



The focus of all testing scenarios is on securing benefits for the customer. Our employees boast the best material and testing expertise, work with the latest laboratory technology, and maintain relationships with professionals from the fields of inspection technology and research. Our laboratory experts monitor the entire lifecycle of GKD products.

Inspection procedures (selection)

- ◆ **Mechanical and physical testing**
 - ◆ **Chemical testing**
 - ◆ **Quality-assurance mesh testing**
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