

AUTOMOTIVE OEM | OES

**Eibach**<sup>®</sup>  
**FEDERN**





## ABOUT US

Founded in Germany in 1951, Heinrich Eibach laid the basis for the Eibach Group which is now active around the world. After Heinrich passed away in 1967, his son Wilfried took charge and grew the company to its current market-leading position. For several years, Wilfried's son Ralph and daughter Swantje have taken an active role in the daily business and success of the company. Wilfried, Ralph and Swantje are also the only shareholders of Eibach Holding AG.

Today, Eibach is represented in Germany, the USA, UK, Japan, Australia, South Africa and China with its own production plants and | or engineering- and distribution companies. In addition, we are represented in more than 80 countries worldwide by exclusive importers, distributors and local partners.

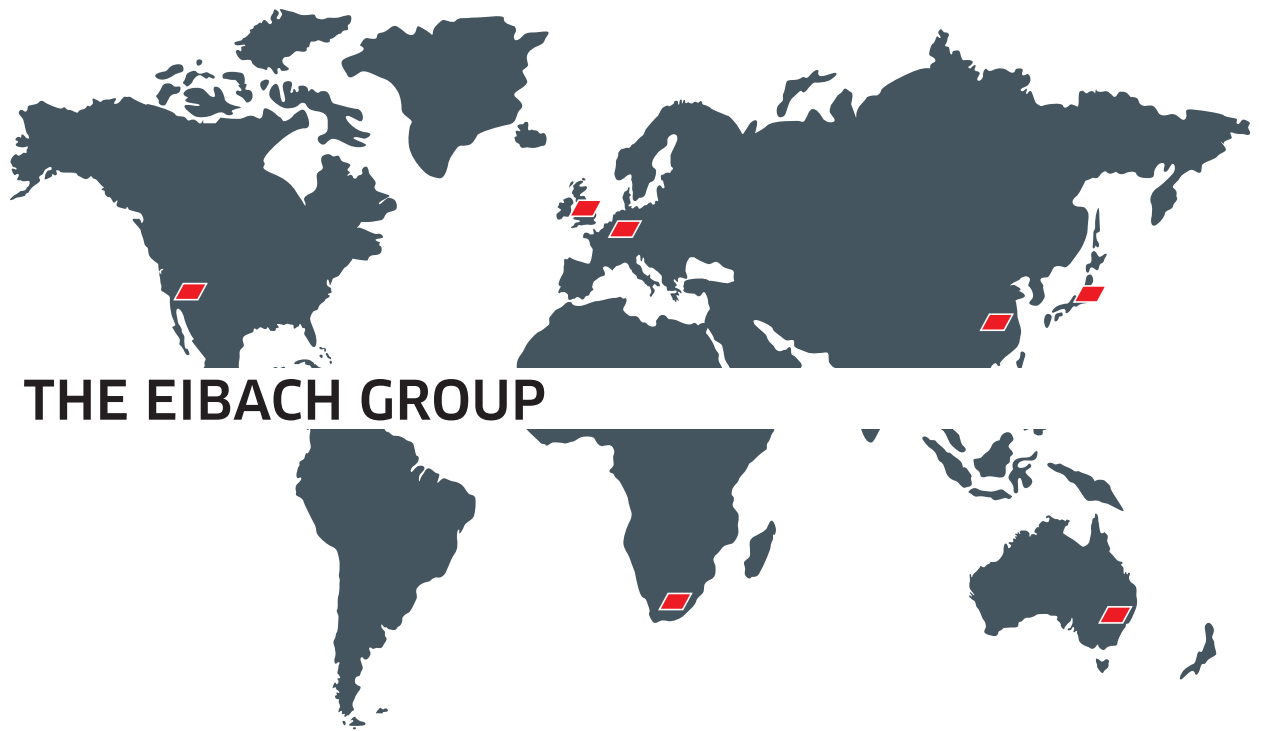
Eibach enjoys a worldwide reputation as a leading manufacturer of high-performance suspension springs, -components and -systems as well as hi-tech industrial springs – specially for demanding applications.

Eibach combines highest quality with the highest level of flexibility and efficiency, from small production batches to midsize series runs.

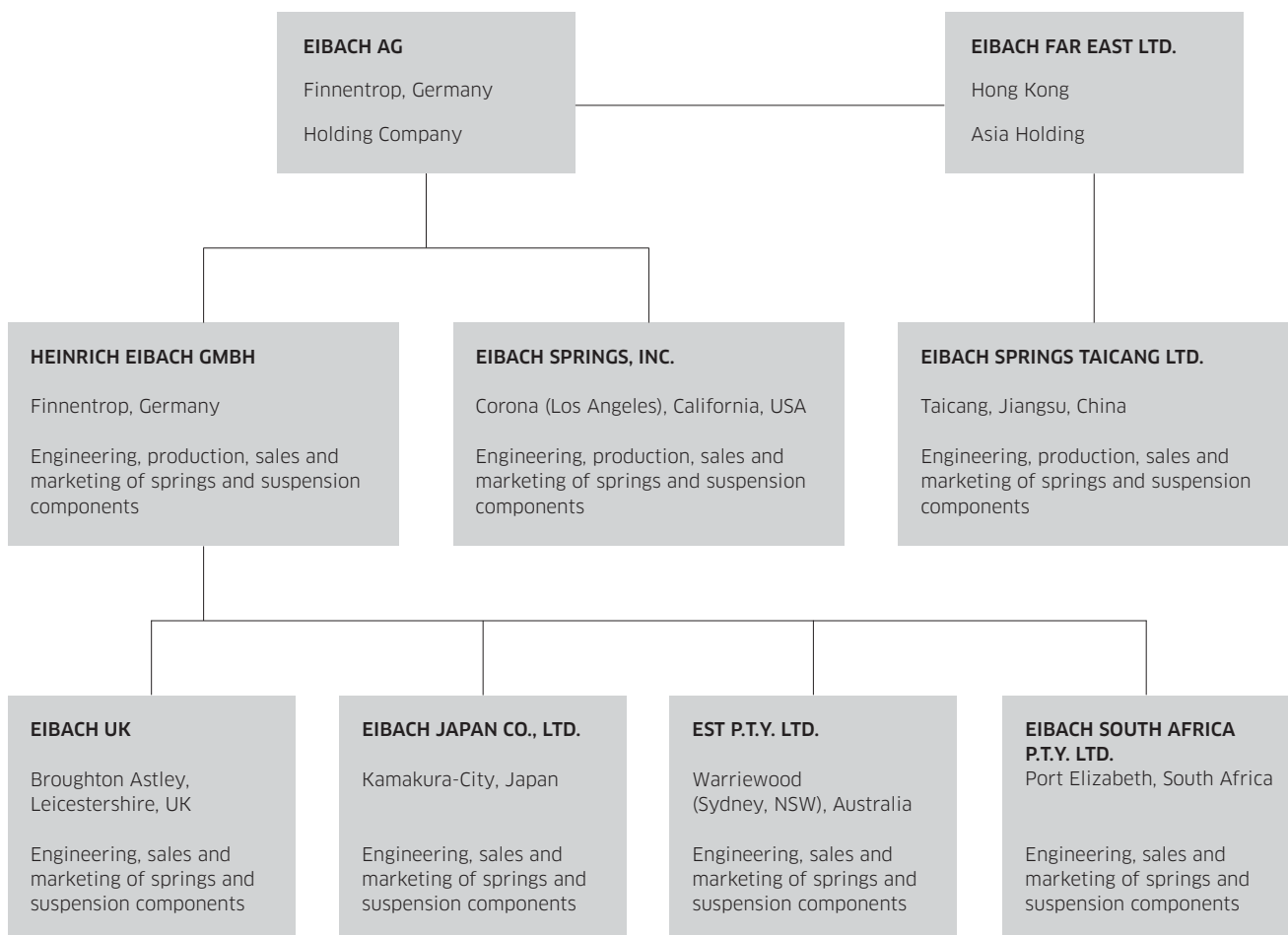


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## THE EIBACH GROUP



### Affiliated companies:

-  EPUS | Eibach Partnership US
-  EPI | Eibach Property Investment Australia
-  EOT | Eibach Oberflächentechnik 



## COMPANY PROFILE

- Medium size - with above 400 employees
- Above average equity ratio
- Targeted risk management through industrial diversity and process reliability in development and production
- Ahead of the curve with investment into state-of-the-art production technologies and infrastructure
- Decades of nationally accredited apprenticeship within a dual system
- Innovative engineering in developing groundbreaking production technologies
- State-of-the-art CAD systems (CATIA V 5, SolidWorks, AutoCad)
- Complete involvement in fundamental research | R&D
- Decades of an integrated QM system, certified according to international standards
- Over 60 years of experience
- Strong commitment and loyalty between staff, management and the owner family - "Team Eibach"





## HELICAL COMPRESSION SPRINGS

Springs are the heart of suspension systems and next to stabilizers our most important product line. Today's super high tensile spring materials provide new engineering possibilities, such as smaller cross-sections and reduced weights, resulting in minimized unsprung mass whilst maintaining requested suspension travel.

Our suspension spring division is characterized by outstanding quality and performance in combination with highest flexibility. In compliance with these requirements, we use the most sophisticated CNC winding machines followed by a flexible production approach. The entire operation is supported by a massive raw material inventory, with wire sizes in refined increments.

We manufacture all kind of spring shapes as well as types: linear, progressive, super progressive, conical, barrel-shape and special spring shapes for minimized side-loads.



## STABILIZERS | ANTI-ROLL-BARS

Stabilizers, next to springs and dampers, are important functional suspension components, also being part of the unsprung mass.

Following our company philosophy “highest flexibility” we have developed our proprietary stabilizer CNC production technology. This provides enormous advantages, especially in smaller to medium production lots for prototypes and pre-production series as well as OEM manufacturers in the premium or sports car segments. The benefits are efficient lead-times and reduced costs, as special tools (in most cases) are not necessary.

Production structures following the CNC bending are engineered to support our principle of flexibility and affordable costs. Therefore our end forming department is assisted by robotics. Our proprietary equipment for the adhering of rubber bearings – so called ‘Vulka-Bonding Technology’ – supplements our overall multiplicity in this product division. This flexibility is also supported by a comprehensive raw material inventory, in solid as well as tubular bars.



## SUSPENSION MODULES

The function of a suspension spring must be controlled, thus the damper (also known as shock absorber) is an essential component of each suspension system. Both components need to function in harmony.

Eibach, working in close collaboration with leading damper manufacturers, can provide a supply service combining both components in a sub-assembly. This also ensures that the damper setting is tuned to match the spring characteristic.

Engineering, including the fine-tuning of all components, will be completed with simultaneous engineering between Eibach, the customer and our damper partner.

With the assembly of spring and damper supplied by one source, Eibach takes the role as Tier 1 supplier. This can be upgraded to include stabilizers—also engineered to operate in harmony within the system.





## SECONDARY SPRINGS | BUMP STOPS

Also known as elastomer springs, secondary springs provide a steep progressive load-deflection characteristic, primarily towards the end of the suspension travel.

We carry a comprehensive line of secondary springs in various dimensions and characteristics in our extensive inventory. Together with our supply partner, we offer custom-made solutions, of course also in OE quality.



## OEM CAPABILITY

Eibach is an established supplier to the OE automotive industry, mainly focusing on market segments outside of mass volume. We can operate as Tier 2 as part of an OE system or as Tier 1 for single components (springs and | or stabilizers) as well as for pre-assembled suspension systems.

Our infrastructure allows complete synchronization to the various customer systems: development planning, production planning and | or control systems—including EDI-processing using our SAP-ERP platform. Therefore, we support processes such as PPAP and PPF.



## MOTORSPORTS AS PROVING GROUND

For decades Eibach has been a leading supplier and respected partner in the global motorsport industry. Motorsports is the ideal proving ground as requirements and requests for special characteristics and performance parameters are constant challenges and have driven us to explore superior materials and new cutting edge technologies.

Tighter tolerances, lighter weights, compact design with smaller cross-sections while maintaining the required travel—all combined with the highest reliability under the most grueling conditions. And this is paired with the request of extreme flexibility.

Many of these experiences have driven our OEM technology to the current levels.





## QUALITY MANAGEMENT

Our quality management system has been growing continuously with the requirements of the market. This stringent quality policy has resulted in many approvals and homologation by multiple industries and customers.

In addition to all our certifications, such as ISO | TS 16949, stands the permanent will, the drive in our team, to live this quality ideal—which is a very important part of our company philosophy.

- Eibach Germany certified according to ISO | TS 16949
- Eibach USA certified according to QS 9000
- Eibach UK certified according to ISO 9001:2000

## RESEARCH AND DEVELOPMENT

We design new and improve existing products by continual dialogue with our customers and suppliers, as well by collaborating with well-known universities and research institutions. We also develop state-of-the-art manufacturing technologies and optimized manufacturing processes, implement concepts for improved energy efficiency and contribute our share for the conservation of the environment.

Our research and development activities ensure our essential competitive edge in technology and form the basis for our qualified technical customer service program.

### Supportive Methods:

- Metallographic analysis
- Mechanical | technological material tests
- Durability tests with or without the influence of corrosion
- Transverse force- and load axle inspections
- Relaxation tests







## SUSPENSION HARMONIES

Eibach's comprehensive expertise in all areas of suspension design and precision engineering produces a suspension system that performs in perfect harmony. This makes Eibach your one-stop suspension partner.

- Springs and stabilizers - engineering and manufacturing in-house
- Dampers (shock absorbers), secondary springs and leaf-springs with engineering in-house, manufacturing outsourced to strategic partners, each leading in their field. For these outsourced components we usually keep a wide inventory of various calibrations and characteristics in stock.

Eibach coordinates all these components with competence to engineer a custom-made suspension assembly. This may also require intensive driving tests on specially assigned proving grounds.





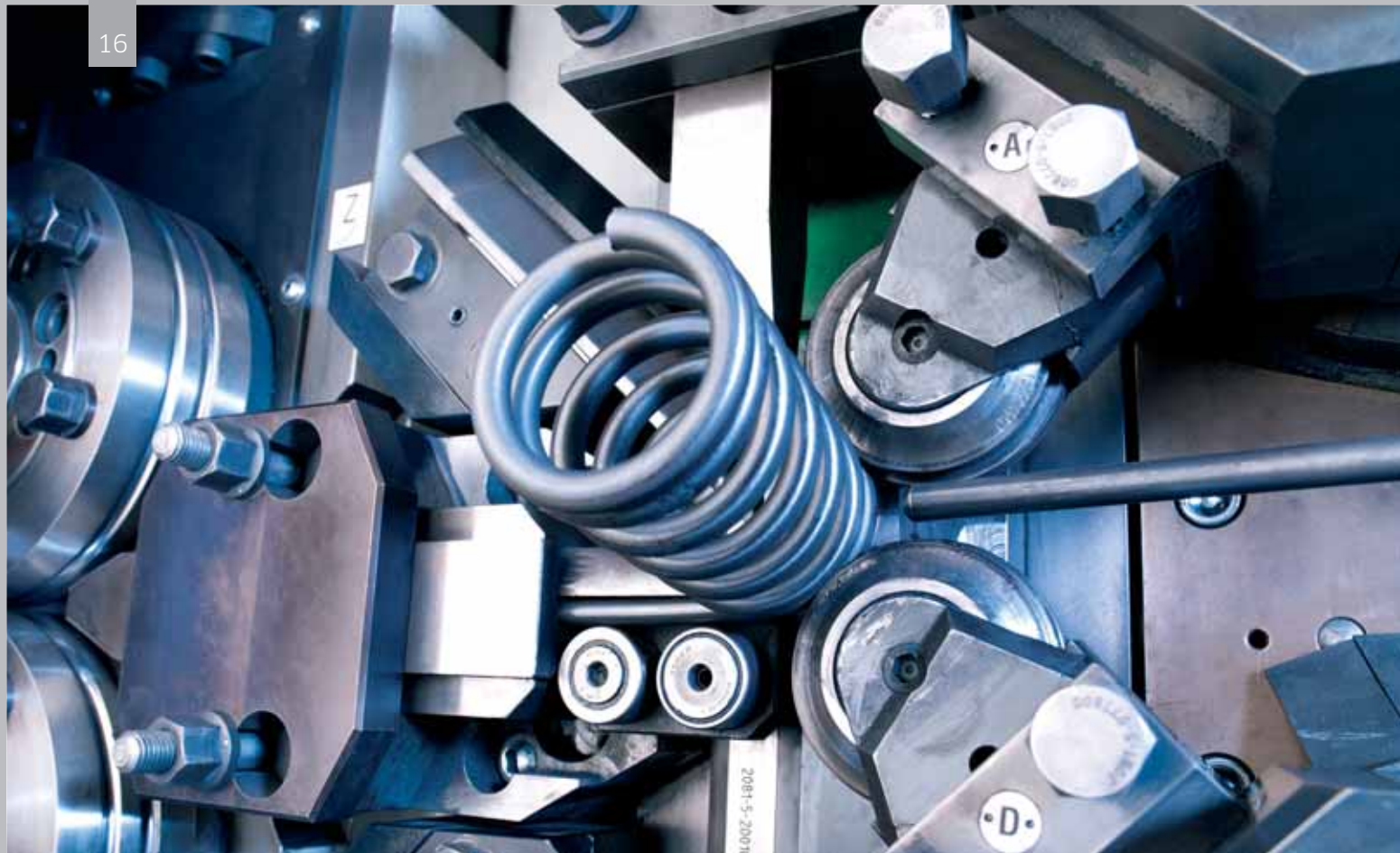
## FLEXIBILITY AND PROCESS RELIABILITY

Our production processes and -strategies are focused to combine the highest quality with the greatest level of flexibility and efficiency from small to medium production runs (including prototypes and pre-production).

Supported by our quality management system, our quality meets or exceeds the most stringent demands.

Flexibility & process reliability, from prototype-engineering to series-production readiness. This special company strategy qualifies us as a competent partner of the automotive industry, especially for smaller and medium production volumes, for example in the premium- and sports car segment.

This competence applies also for special and | or limited editions and the performance divisions of all OEM manufacturers.



## PRODUCTION

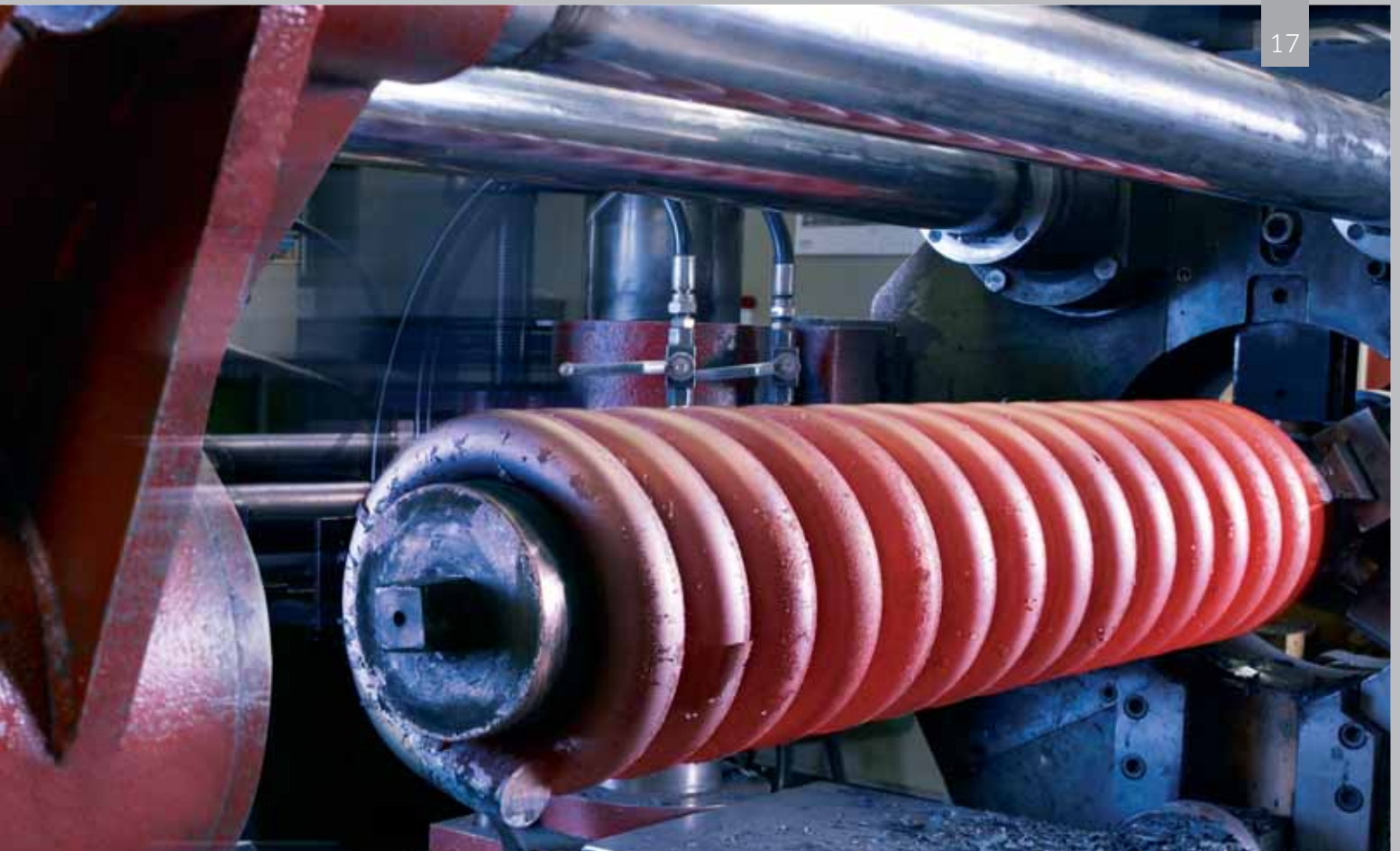
- Raw material availability: In our warehouses we stock coils and bars in approximately 4000 different types, differing in specifications, dimensions, surface grades and similar. This extensive stock of raw materials ensures a rapid turnaround for prototypes and single pieces as well as for small, medium and large production runs.
- Quality and flexibility: It is our top priority to combine highest quality with maximum flexibility.
- CNC manufacturing technology: the use of state-of-the-art CNC technology in the entire production process allows minimal set-up times, ensuring the highest precision, smallest tolerances and optimum surface quality.

Some significant production features:

- State-of-the-art CNC cold forming of springs, using very high tensile strength, alloyed, oil-tempered spring materials up to 19 mm wire diameter; above 19 mm and up to 25 mm wire diameter, using our pre-hardened patented cold-drawn wire
- CNC Cold forming of springs up to 32 mm wire diameter, using annealed materials (for example 50 CrV4) in coils, heat-treated after winding
- Hot forming of coil springs up to 55 mm bar diameter (bar length max. 8.30 m)
- State-of-the-art grinding- and production machinery through implementation of our own production knowledge
- Chamfering of spring ends (in- and outside) by robots and especially developed handling systems
- Internal tool- and gauge shop







## PRODUCTION

- Improvement of dynamic durability through state-of-the-art shot peening techniques including thermal and stress peening
- Relaxation minimization through controlled heat-setting processes
- Economic in-house developed CNC bending technologies for stabilizer bars, made of pre-hardened solid or tubular material for small batch sizes and series, mostly used without additional tools
- Stabilizer end processing, using in house developed robot-supported systems
- Vulca-bonding process: especially designed by our engineers for the fixation of rubber bushings on stabilizer bars

- Zinc phosphating with subsequent powder coating (polyester | epoxy resin) or EPD as alternative
- Extensive range of colors available including UV-resistant powders
- Product identification through pad-, ink-jet printing or laser marking

For just-in-time | just-in-sequence deliveries, compliance with call-off- and delivery plans as well as for the implementation of economical production batches, we offer an extensive, barcode-controlled warehouse for finished goods. This includes Eibach standard suspension- and industrial products as well as custom-made springs for call-off orders.







## TESTING AND CHECKING

Next to all the well-known test procedures for dimensions, load-deflection characteristic and more, Eibach commands leading state-of-the art testing facilities, many of which have been developed in-house:

- Testing under the influence of climate change
- Dynamic durability testing of coil springs, secondary springs and stabilizers under normal corrosion (wet)
- Sideload testing
- Relaxation tests
- Triple coordinates axis measuring equipment (max dimensions 1,600 x 1,600 x 1,600 mm)


- Dynamic testing of engine valve springs (Spintron, Bosch)
- Shock absorber dyno-testing
- Metallographic analysis

In collaboration with laboratories, test institutes and technical universities we also offer

- Residual stress analysis
- REM analysis (scanning electron microscopy)
- Finite Element Analysis

## CORROSION PROTECTION

- In-house electrostatic powder-coating (polyester | epoxy resin)
- Zinc phosphating as pre-treatment and to prevent infiltration of corrosion
- Extensive range of colors, including UV-resistant powders
- Durability tests (static | dynamic), also under corrosion influence

Via Eibach Oberflächentechnik GmbH  we provide the micro layer corrosion protection system "Microcor", based on components like Deltatone, Deltaseal and Magni.

- Application methods are dip-, dip-spin-, centrifuging- or spraying processes without the risk of hydrogen embrittlement.
- Best corrosion protection
- High temperature resistance
- Marginal coating strength
- Choice of different colors by using organic top coats as well as selectable friction characteristics, if PTFE is added
- Tests of corrosion resistance (Kesternich | salt spray | climate change) with or without premature damage for example through stone chip simulation

More information is available at [www.eot-gmbh.de](http://www.eot-gmbh.de).





## SPECIAL VEHICLES | ARMORED, LIGHT TACTICAL

Special duties vehicles require duty-spec suspension solutions - like border control vehicles, ambulances, limousines, police cars, armored, light tactical and military vehicles.

Each vehicle presents a unique challenge to the integrity of the suspension system.

For precision performance handling and control, it's essential to make sure that heavy vehicles don't bottom out in rugged terrain or under full load, while ensuring optimized handling for evasive driving. The pro-active preparation to avoid a potential perilous situation is the very best solution of all.

Over the decades Eibach has gained extensive knowledge and data about many existing platforms within the automotive industry.

For a one-stop strategy to our key customers, we have brought together a team of leading partner companies, which enables us to engineer and provide complete suspension systems, including coil-springs, stabilizers (tubular or solid), dampers (shock absorbers), coil-over systems, secondary springs, suspension bushings, leaf springs and axle geometries components.

We also offer intensive testing on special proving grounds.

Depending on the various market regions Eibach operates as Tier 1 supplier, or as a Tier 2 solution to a Tier 1 partner. In either case we can provide project management, custom-made product development, prototypes, testing on proving grounds, manufacturing and supply in the requested quantities - all from a single source.





## POWERSPORTS | MOTORCYCLES, ATVs, SNOWMOBILES

Motorsport - and especially Motocross - has always been and will always be the ideal proving ground for the performance parameters of Eibach springs. The weight balance of a motorcycle with the sensitive relation between the weight of the motorcycle and the weights of different riders is of ultimate importance.

Eibach's position as market leader presents a most comprehensive line of high performance springs for motocross. For the perfect balance between front fork- and rear shock springs, the set-up has to be fine-tuned to match the rider's weight, riding style, preferences, capabilities and track conditions.

This also applies to ATVs and snowmobiles.

The experience gained in motorsports is continuously implemented into the engineering and manufacturing. Thus, all our powersport products are distinguished with the following parameters:

- Linear or progressive characteristics (load | deflection curve), according to application or customer
- Minimal tolerances, especially important for characteristic and loads
- Optimized weights for reduced unsprung masses
- Maximum travel in combination with smallest block height
- Minimized cross-sections
- Precise plan parallelism of ground springs ends, unloaded as well as loaded (the latter being more important)
- Minimized side loads with optimized position of the load axis to the spring axis
- Highest dynamic durability in combination with pre-manufactured block resistance, resulting in extremely reliable performance
- Phosphate- and epoxy powder coated for excellent corrosion protection

All these attributes play an important role in the engineering and manufacturing front fork and rear shock springs for the OE motorcycle industry.



## HI-TECH INDUSTRIAL SPRINGS

Eibach has earned a worldwide reputation for premium suspension components | systems and hi-tech industrial springs, mostly for demanding and critical applications. The span of applications is multifaceted and encompasses nearly all the demanding segments of both industrial and automotive markets.

We engineer, co-engineer and manufacture at every level: from prototypes and single pieces, to smaller batches and up to medium or larger production series.

Our manufacturing capabilities range from 0.2 mm wire diameter to 55 mm bar diameter.

More specific information is available online and in our brochure "Hi-Tech Industrial Springs".



## TEAM EIBACH

People are our top priority - our customers, suppliers, business partners and above all our employees - this is what we call "Team Eibach". Enjoyment to work, motivation and excellent apprenticeship combined with experience and craftsmanship are the key factors for success and outstanding performance.

We put a lot of emphasis on a balanced team, which consists of young, well-trained junior staff as well as colleagues with years of experience. For decades we have successfully committed ourselves to educate young people. As a result, more than a third of the Eibach Team at our location in Finnentrop, Germany are either former or current trainees.

Our high level of education is often confirmed by official awards assigned to apprentices of Eibach. We promote training on-the-job and further qualification as well as training in foreign languages and support our junior staff in their continual studies.

Hereby we create a cooperative relationship that ensures the future of our company as well as the future of our employees. At the same time we see our intensive and successful training program as an important service to the community.



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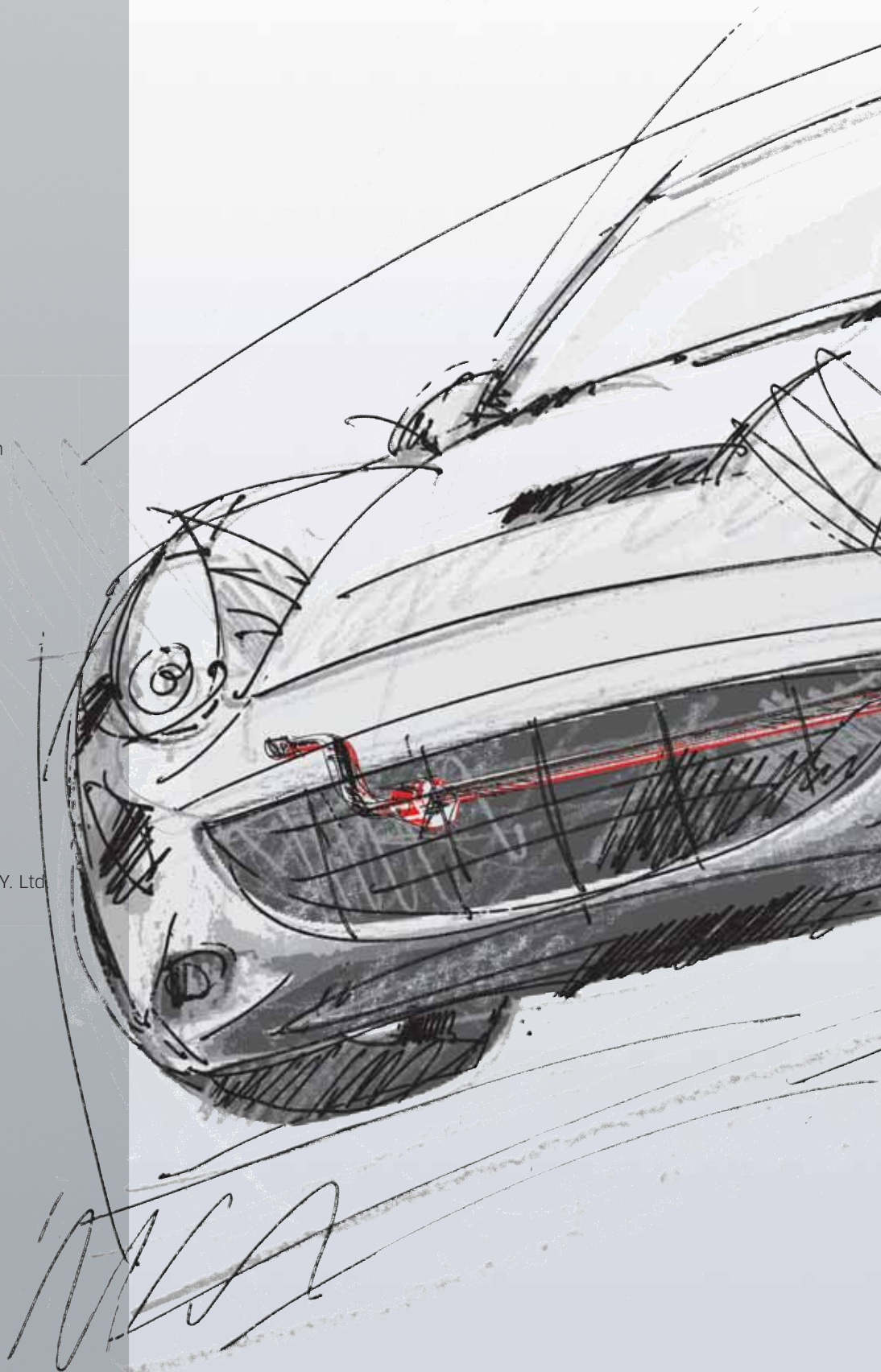
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Engagement für die Region.

sauerland**initiativ**