

## Horizontal Seat Adjuster

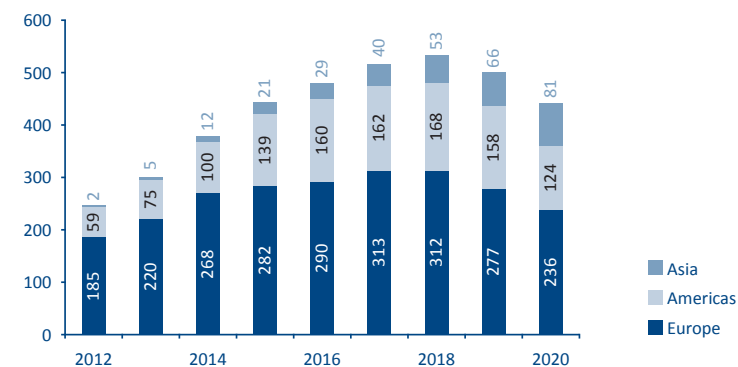
Electrically adjustable vehicle seats are gaining increasing prominence as comfort features. Horizontal seat adjuster constitute their technical basis. They impose demanding requirements on the continuous operating characteristics in terms of different temperatures, collision strength and wear behavior. In addition, there are other challenging conditions in terms of noise and acoustic characteristics due to their installation in the vehicle compartment.

Horizontal seat adjuster from IMS Gear satisfy these needs to an exceptionally high standard. Because their dimensions are compact, they can be installed on the majority of seat rails on the market, and enable comparatively long travel distance. Optimized gear meshing characteristics have a positive effect on noise levels.

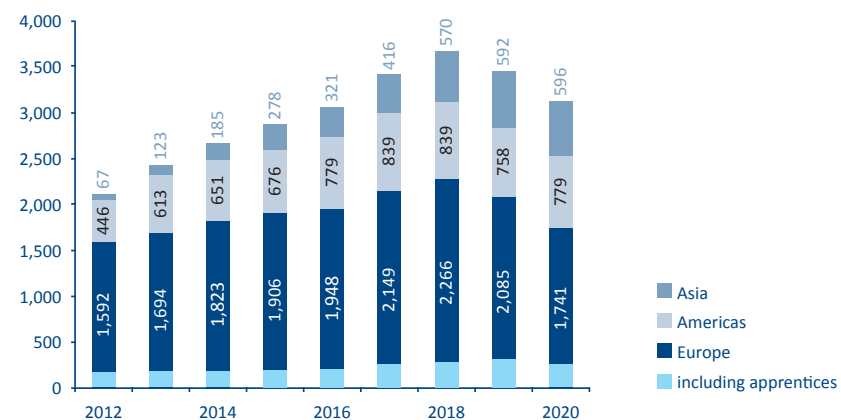
As a modular system, our solution for horizontal seat adjuster combines the benefits of standardization. These include the rapid availability of sophisticated technology for worldwide series production and an attractive price/performance ratio. In addition, our solution offers an outstanding individualization scope at the customer-specific interfaces.

## Facts and Figures

Sales Total in EUR million/year



Associates Total/year

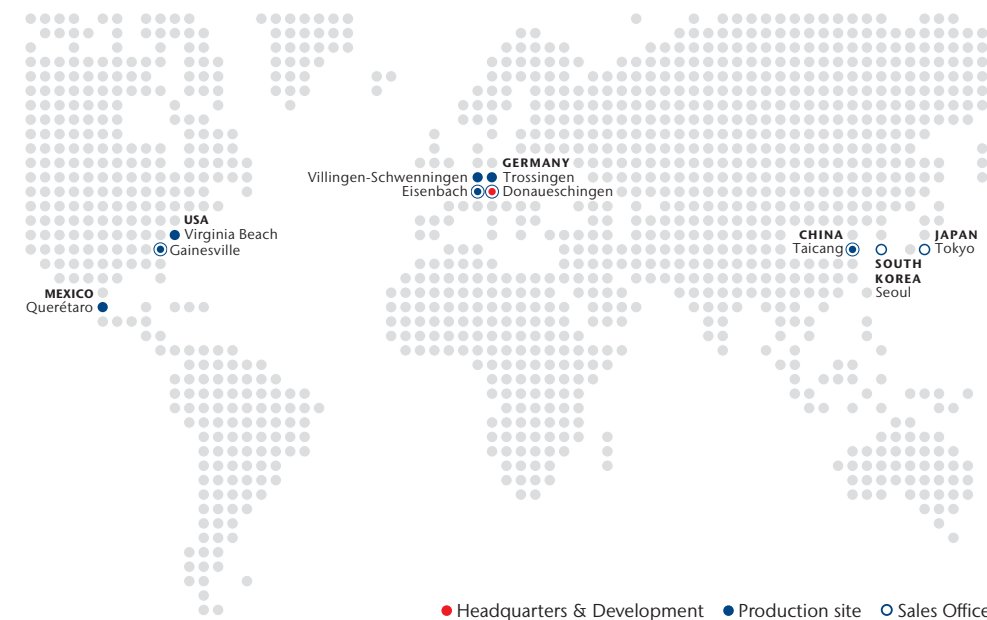


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Gear Technology. Worldwide.

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## The Driving Force

IMS Gear is among the leading gear engineering companies. Providing innovation, we constantly interact with Customers over our global footprint. From solutions for single gears to optimized modules and gear systems, we have become firmly established in the automotive industry.

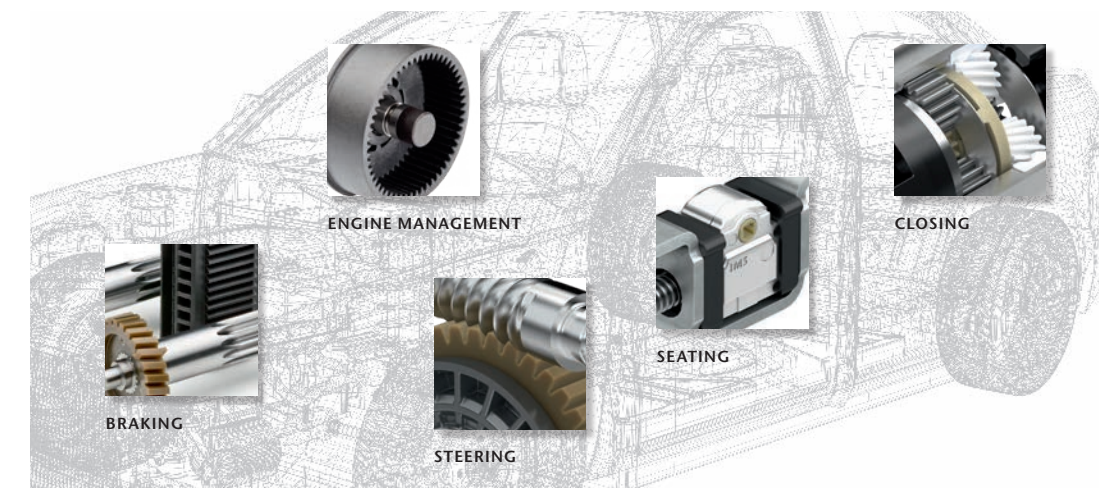
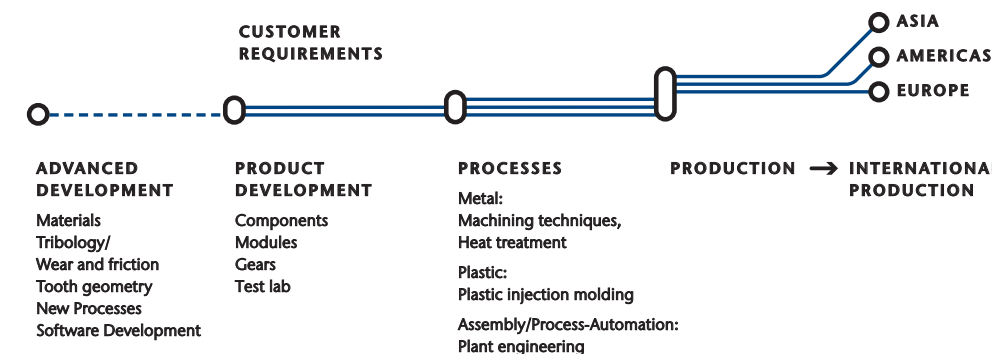
We stand out due to our deep development know-how, broad spectrum of manufacturing capability, high process competence and automotive relevant internationalization. Adding to that is our value-based corporate culture which emphasizes team-work throughout all levels.

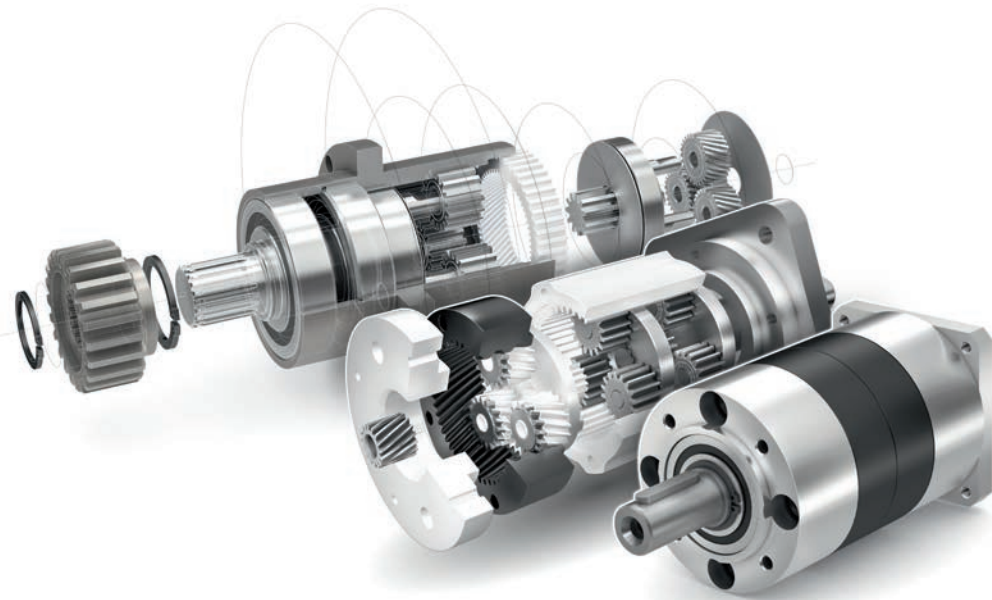
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## Our competencies

Around 3,100 highly motivated people work worldwide to enhance our customers' competitiveness. We realize both standard components and complete gear solutions at the highest level -

from the design stage to development, production and logistics. We keep on setting new standards, not only in the automotive industry.





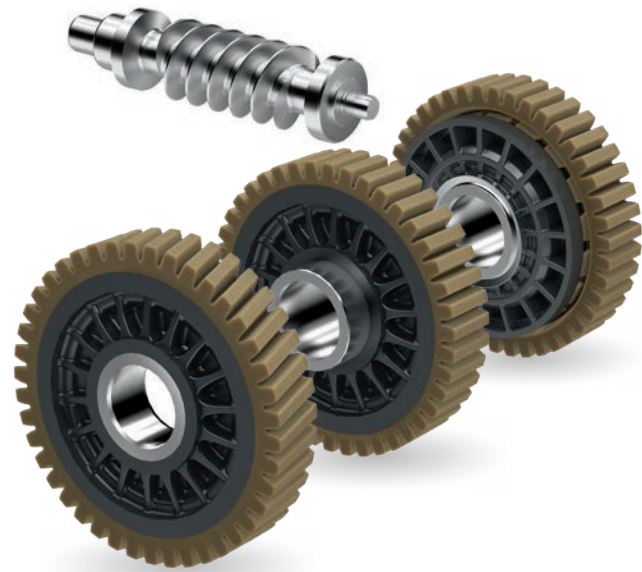
## Planetary Gears (PLG)

IMS Gear also offers a standard solution for planetary gears in form of a highly modular system. There are three different product lines:

**IMS.baseline** for customized applications and first fast samples. These PLGs constitute a fast and adaptable solution from a modular design concept, beginning with validation of the first idea all the way through to principle tests and function samples. The results can then be implemented in a short production run or a specification document or the creation of near-production sample components.

**IMS.techline** for large production runs planetary gears from IMS.techline are the solution for high-volume production runs. Well over 10,000 configuration options as well as tool-saving adapter components for motor connection and output end deliver an immense wealth of possible combinations for virtually every field of application.

Some possible automotive applications with planetary gears could be: Electrical tailgate drive, Spoiler adjustment, Electrical door opening and Exhaust gas recirculation.

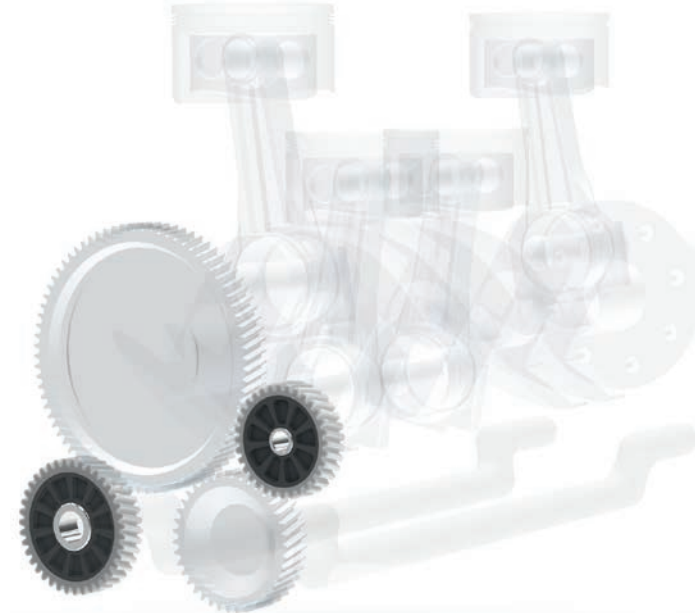


## Electric Power Steering (EPS)

Cars can no longer be imagined without EPS systems. The different variations of EPS can be distinguished based on the location where they are installed. In the case of compact cars, it is attached to the steering column. In middle and upper-middle class cars, the servo unit is typically mounted to the pinion or dual pinion. A position which is axis-parallel is used for upper-class cars, SUVs and vans. IMS Gear develops and produces components and assemblies meeting the specific requirements of all three types of EPS systems.

IMS Gear develops and manufactures plastic worm wheels for column and dual pinion applications in dampened and rigid versions. In an injection molding process, we produce high-precision gears that require no subsequent processing of

the gear teeth. EPS steering systems place high requirements on worm gears in terms of durability, efficiency, and wear properties. We have developed a special plastic material (IMSamid®, an unreinforced polyamide) that meets the special challenges for gear teeth in EPS systems. Our in-house development expertise also allows us to provide optimized gear mesh design and functionality between the worm shafts and worm wheels.



## Engine Management

The technological change to electric and hybrid drives, the increasingly stringent emission requirements and the resulting trend towards downsizing of internal combustion engines lead to constantly increasing demands on the performance of gear drives and actuators in the powertrain sector.

IMS Gear has been developing and producing gearing parts and complete transmissions for a wide variety of applications within engine management for many years. For example, our solutions for throttle valve adjustments, exhaust gas recirculation, secondary air pumps or variable valve adjustments have proven themselves millions of times over.

Lightweight, temperature-resistant and high-strength plastic gears for the wheel drive of balance shafts are the latest development from IMS Gear. They can noticeably help to improve the efficiency, dynamics and smoothness of engine downsizing. Plastic gears are far superior to conventional metal solutions in terms of weight and mass inertia, while significantly improved noise performance and noticeably reduced costs.



## Braking

The Electrical Parking Brake (EPB) and the Electromechanical Brake-Booster are two examples of highly developed, trendsetting solutions that showcase the technological expertise of IMS Gear.

The EPB was developed by IMS Gear together with our customers based on their specific technical requirements, from concept phase, through maturity phase, all the way to serial production. It was able to achieve the necessary clamping force within a minimal footprint by utilizing perfect material combinations of plastic and metal, as well as specialized gear design.

IMS Gear produces and assembles these components at its factories worldwide. Since the EPB is a safety part, a 100% end of line testing is utilized to test and

document the performance of each assembled unit.

For the Brake-Booster, IMS Gear developed various plastic and metal components in close cooperation with its customer and industrialized those internationally. IMS Gear was able to meet the strict requirements towards control accuracy and noise behavior within a challenging temperature environment.