SCHAEFFLER

Together We Move the World

LuK INA FAG

Always moving.
Close to the customer.

Our world is moving. An airplane disappears into the clouds. A high-speed train glides past with barely a sound. A railway crossing gate opens, and the car engines start. Our products always play a part.

Schaeffler develops and manufactures precision products for everything that moves – in machines, equipment, and vehicles as well as in aviation and aerospace applications. For over 60 sectors worldwide.

We are an innovative technology company. Find out on the following pages what it is that keeps us moving: Achieving the highest possible level of customer satisfaction. Our global networking gives us close proximity to our customers worldwide with our three strong product brands: INA, FAG, and LuK. We use our power of innovation and our technological expertise to develop ground-breaking products, which we cost-effectively put into volume production. And we do all of this in close cooperation with our customers – for our customers.

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Inventive spirit and the will to succeed are an integral part of our corporate culture.
They are more than that, however: They are also the basis for Schaeffler's continuing success.
Our customers all over the world value our company's innovative strength and the high quality of our products. Every day, your trust strengthens our determination to become even better.

As a family-owned company, this trust also means great responsibility for us. Responsibility towards our customers, our suppliers, and our employees. That is why protecting the environment, saving resources, and acting in a sustainable manner are a matter of course for us – and are firmly anchored in our company worldwide. This is especially true in a world that seems to be turning faster and faster. In taking on new challenges, we recognize the opportunities they present and plan our long-term strategy accordingly.

We continually strive to further expand our leading role as a globally-active industrial company. Our employees, who make a decisive contribution to the company's success with their knowledge, creativity, and reliability, and who are committed to using their inventive spirit to fulfill our customers' requirements in a targeted manner worldwide, are the driving force behind this.
That is how we move the world – together.

» Taking new paths to develop ideas and think beyond barriers is just as important now as it was when the company was first established. «

Maria-Elisabeth Schaeffler

Georg F.W. Schaeffler

The customer is the central focus at Schaeffler: Every day and at every location. This is why we orient our organization towards customer requirements. We can offer our entire expertise and customized solutions matched to relevant local requirements via our global network with 180 locations worldwide. We apply the same high standards at every location because our zero defect philosophy is firmly anchored in our corporate culture.

The Schaeffler Group is characterized by operational stability and high performance. In-depth technical knowledge, advanced manufacturing technologies, quality and above all the power of innovation of our employees are the most important factors behind our success.

The continuous change in markets and technologies, changing boundary conditions and requirements are both an opportunity and a challenge for us. We analyze trends and develop products and system solutions today, which will be in demand tomorrow: Because we are actively shaping the future.

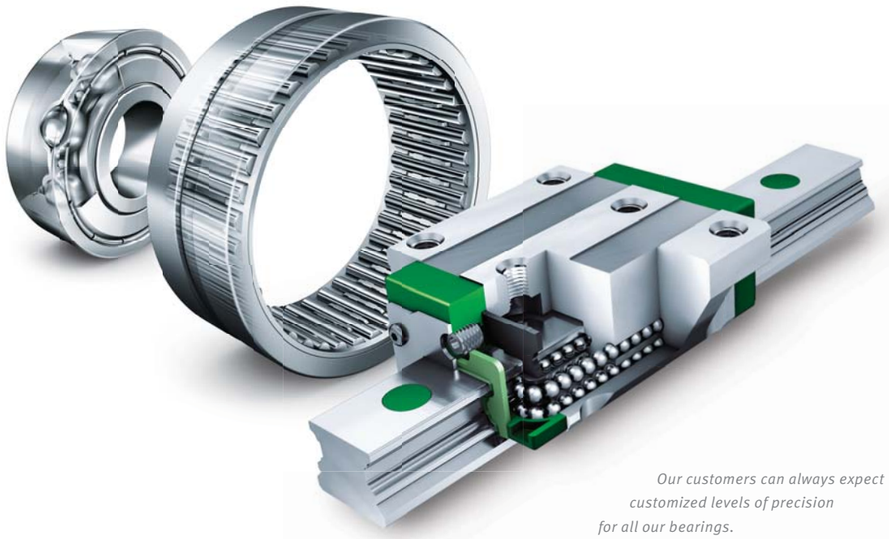
» Satisfied customers – are our goal. We work to achieve customer satisfaction by means of worldwide customer proximity, a promise to deliver quality, innovation and enthusiasm – every day. «

Klaus Rosenfeld

Quality is the result of high requirements. And excellent processes.

High process quality has always been a significant success factor of our company because it leads to high-quality products. Irrespective of whether we are manufacturing millions of parts for the automotive industry, individual bearings for buildings and structures, or special machinery – we are able to fulfill all our customers' requirements due to our comprehensive manufacturing expertise. We are also constantly analyzing our processes in order to make them even more efficient. Our objective is to ensure optimum interaction between technology, organization, and communication. We also place high demands on our suppliers. This is because a network of suppliers coordinated both locally and globally with optimized processes and the best-possible quality are important success factors.

Scan the QR code or visit www.schaeffler.com/quality to find out how we fulfill our promises on quality.



Our customers can always expect customized levels of precision for all our bearings.

In compliance worldwide

In order to supply our customers with precision products in the required quality, we use uniform standards in all areas worldwide: In research and development, training and advanced training, production, environmental protection, and occupational safety. Because of our “zero-defect principle” and our valid certifications, we always provide our customers with high-precision products at the desired level of quality.

» We always take care to ensure we comply with Schaeffler’s global standards. This also means ensuring consistent compliance with our “zero-defect” principle, which is the basis of all we do. «

Jiang Yong // Plant Manager in Taicang

» Our company’s objective is to offer customers the best quality. This can only be achieved if we all make a commitment to our zero-defect principle. This principle is our benchmark. «

Walter Sueß // Senior Vice President of Corporate Quality, Schaeffler Group

MANUFACTURING STANDARDS

Internationally at a high level

With our globally uniform and high manufacturing standards, we ensure that every customer receives the expected level of quality. For example, in China, a country with a booming industrial sector and one of the largest buyers of our products. We are developing this market step-by-step by establishing new locations – so that we’re located right where our customers are. In our Taicang plant, we manufacture precision components for transmission and chassis applications in addition to needle roller bearings for the industrial and automotive sectors. All products are manufactured under strict observance of our company-wide specifications. This applies for Taicang and every other location.

ZERO-DEFECT PRINCIPLE

Put into practice every day

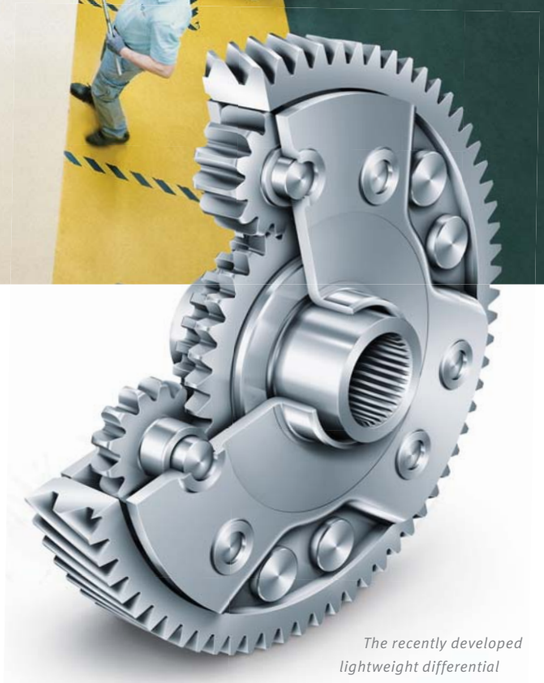
High quality is not a “one-off”, but a continuous task. Our zero-defect principle thus applies at all our manufacturing locations. It is understood by our employees and serves to identify and eliminate weaknesses early on – and therefore prevent errors in the first place. Schaeffler’s quality policy is based on internationally-applicable guidelines and standards. The objective is to ensure the highest process reliability and product quality throughout all phases – from design and manufacturing right up to service. This policy has gained the trust of our customers.

CERTIFICATIONS

According to international standards worldwide

Quality assurance is directly integrated into the manufacturing process at Schaeffler and is supported by regular audits. In addition, we have defined worldwide standards for occupational safety and environmentally-friendly manufacturing. Schaeffler has once again proved it plays a pioneering role by ensuring compliance with the strict European guidelines for environmental protection (EMAS) in all its plants worldwide at an early stage.

Our company-wide MOVE program ensures significantly more efficient processes in production.



The recently developed lightweight differential with planetary gear system requires less space.

From a good idea to the perfect solution

Boundary conditions are now changing quicker than ever before. This is why we combine our quality requirements, our ideas, and our manufacturing expertise in order to manufacture innovative products that will provide our customers with reliable service in the future. These include robust, low-maintenance large-size bearings for wind power applications and complex, economical valve control systems for motor vehicles.

Fitted as standard: The valve control system UniAir is used in the Alfa Romeo MiTo.

QUALITY REQUIREMENTS

Wind power standard for bearings

Wind turbines have developed into multi-megawatt power plants. This results in higher forces and moments, which particularly subject the bearings to ever-increasing loads. At the same time, any downtimes and maintenance work generate increasing costs – especially in the case of offshore plants. Therefore, robust, low-maintenance rolling bearings play a key role for the economical operation of these plants in the future. It is for this reason that Schaeffler has introduced a new wind power standard (WPOS) for its wind power bearings. WPOS defines strict quality specifications that apply to all development and design teams as well as for all manufacturing locations worldwide that design and manufacture bearings for wind turbines. With WPOS, we are ensuring outstanding reliability in wind power and are also offering the same high levels of quality that we have already successfully established in the automotive and aerospace industries.

MANUFACTURING TECHNOLOGY

Development and volume production of UniAir

We are able to successfully put even complex developments into production due to our comprehensive manufacturing expertise. A current example is the world's first fully-variable electrohydraulic valve control system UniAir, which was developed in conjunction with Fiat Powertrain. This system optimizes internal combustion engines by not only allowing variations in valve lift but also the multiple opening and closing of valves during a cycle. In conjunction with a downsizing of the engine, our customer gains from a reduction in fuel consumption and CO_2 emissions of up to 25%.

PROCESS OPTIMIZATION

MOVE – continuous improvement in all areas

At Schaeffler, the central focus is on customer satisfaction. That is why we have established MOVE, a worldwide program that involves all our employees and is aimed at achieving continuous improvement in all areas of the company, at the heart of our organization. MOVE is therefore part of the Schaeffler culture and shapes the way in which we think and act.

Idea factory – consistent implementation of idea management

Every day, our employees have a large number of suggestions about optimizing work processes and products for the benefit of our customers. To make effective use of this input, we have created "idea factory", an idea management platform which makes it easy for our employees – irrespective of function – to submit suggestions for improvement. Suggestions are systematically checked for their feasibility and a premium is awarded for suggestions that are successfully implemented.

Our **internal Special Machinery Department** provides **support with the development of assembly and production lines**. This department designs and builds subsystems and entire machines.

Our ideas move the world.
And drive progress forward.

Questioning existing solutions, taking unusual paths, and looking at things from another point of view, thinking ahead to the future: These are the prerequisites for making new ideas a reality. Thinking outside the box is not a “detour” for us. Quite the opposite in fact, since it often paves new ways. This is why it’s deeply rooted in our corporate culture. We turn good ideas into volume-production products for our customers that are geared towards the future. Schaeffler thus contributes to improving the safety and environmental friendliness of transportation, increasing the efficiency of machines, and making plants that produce renewable energy more powerful.

Scan the QR code or visit www.schaeffler.com/innovation to discover how Schaeffler turns ideas into innovations.

How we shape the course of progress

Reacting to megatrends such as mobility and urbanization, a constantly growing world population, and our growing energy requirements is definitely one of our most exciting challenges. We analyze these trends and use the results to devise the needs and requirements of our customers. Our engineers create customized product solutions in close collaboration with our customers and develop these solutions to volume production readiness. Electric mobility is just one of the important issues we are are confronted with as an innovative engineering partner. We established our eMobility Systems Division to further strengthen our expertise in this area.

Schaeffler's concept vehicles: CO_2ncept-10%, Schaeffler ACTIVeDRIVE, and the Schaeffler Hybrid with wheel hub drive.

» Our concept vehicles also serve as platforms for testing various components and systems under realistic conditions. «

Dr. Raphael Fischer // Director of the E-Wheel Drive and Mechatronics Product Group

» Applications for the electric axle with variable torque distribution range from premium vehicles with excellent driving dynamics through to agricultural machinery. «

Dr. Tomas Smetana // Director Product Group Electric Axle Systems

ELECTRIC MOBILITY

Bundled expertise in the eMobility Systems Division

The eMobility Systems Division bundles all the activities of our Automotive and Industrial divisions in electric mobility. The purpose of the division is to pool individual components in one sector, to make use of synergies, and to open up the market on the systems level. We already offer a comprehensive product range in this area. The range extends from sensor bottom brackets for pedelec bicycles, start-stop solutions and hybrid clutches right up to electric drives. Our approach is holistic and includes generating energy from renewable energy sources, since Schaeffler supplies bearing solutions for wind turbines, solar power plants, wave, tidal, and ocean current power plants.

CONCEPT VEHICLES

Priority for ideas

Less fuel consumption, lower emissions. More power, comfort, and safety. Our concept vehicles are full of innovative technology for internal combustion engines, hybrid vehicles, and electric mobility. We put together our in-depth knowledge of components and our comprehensive understanding of systems to create the ideal combination of our products. This means we always offer the best package of services. Our demonstration vehicles show the wide variety of solutions focused on the best results with which Schaeffler supports its customers. After all, there are a great many possibilities for future mobility.
Our CO_2ncept-10% concept vehicle, for example, combines a variety of detailed solutions for optimizing vehicles with internal combustion engines. This involves electromechanical camshaft phasing units as well as an optimized belt drive or bearing solutions with optimized friction characteristics. The CO_2ncept-10% thus impressively proves how further improvements can also be made to modern vehicles using the interplay of innovative technologies.

Experiencing electric driving
With its ground-breaking electric wheel hub motors on the rear axle, the Schaeffler Hybrid is also a vehicle full of ideas. The driver can switch between serial and parallel hybrid mode at the touch of a button.
The Schaeffler ACTIVeDRIVE, in which two electric drive axles are used, uses electric power only. These each combine two electric motors, one differential, and a transmission. This enables the drive power to be controlled separately for each wheel, which opens up new possibilities in terms of driving dynamics and safety.

A system for thinking outside the box

Great inventions change the world. When Dr. Georg Schaeffler invented the cage-guided needle roller bearing more than 60 years ago, he gave the industry an entirely new impetus. The needle roller bearing has been constantly further optimized for a wide range of applications since then. Today, we manufacture around 15,000 needle roller bearing variants, for example for automobiles, two-wheel vehicles, construction machinery, and agricultural machinery.

The cage-guided needle roller bearing is a striking example of Schaeffler's strength of innovation. At the same time, it is only one of several of these examples. Our culture of innovation, which combines creative freedom with clearly-structured processes, forms the basis for this strength. We call this our "system for thinking outside the box". This principle enables us to repeatedly generate new ideas for our customers and to improve existing ones.

In the fast lane, even at low speeds: The dual mass flywheel with pendulum-type absorber reduces fuel consumption and simultaneously increases traveling comfort.

DUAL MASS FLYWHEEL

A success story continues

In 1985, LuK set new standards in the automotive sector with its dual mass flywheel. It replaced the clutch disks with torsion dampers used at the time, which were unable to meet the growing requirements in terms of damping between the engine and the transmission. The dual mass flywheel enabled the torsional vibrations in the drive train to be reduced and vibrations to be damped. Today, our flywheel is an integral part of the drive train of all modern vehicles – not least because we have been continuously improving and developing it over the years. On the basis of our experience and customer requirements, we have developed this solution by adding a centrifugal pendulum-type absorber. This product innovation enables problems caused by vibrations during low speeds to be overcome. It therefore makes a decisive contribution to cutting speeds and thus lowering fuel consumption and emissions.

SURFACE TECHNOLOGY

Coating technologies for every requirement

Bearings must also operate reliably even under extreme operating conditions. Bearing supports in solar power plants – for example in deserts or desert-like regions – are exposed to large temperature differences as well as extreme aridness and very fine sand. Bearings in hydraulic construction, on the other hand, are subject to especially high risk of corrosion. The importance of coating technology for bearings and components is therefore continuously growing in these sectors as well as in other areas of industry and automotive engineering. We have responded to this by setting up our own surface technology center. Here, we develop solutions that further reduce and prevent corrosion, wear, friction, and the passage of current. This enables us to precisely match surfaces to the specific requirements of our customers and the local operating conditions.

COLLABORATION

Joint research projects with scientific institutions

The combination of practical expertise and scientific research is an important basis for our power of innovation. This is why we research and cooperate with universities and institutes all over the world. Our cooperation with the Henan University of Science and Technology (HUST) in China is an excellent example of this. Or our Endowed Chair at Tongji University in Shanghai. In Germany, we are also exchanging scientific knowledge and ideas with the Machine Tool Laboratory at the RWTH Aachen University. And we have established a very productive collaborative research project with the Karlsruhe Institute of Technology, which focuses above all on hybrid and fully-electric drives.

More than **18,500** **patents and patent applications** demonstrate **Schaeffler's power of innovation**. We have been among the **top five most innovative companies** in Germany for several years and thus also play a leading role on an international level.

Scan the QR code or visit www.schaeffler.com/surface to learn more about our innovative coating processes.

We always see the big picture.
Even with the smallest component.

Schaeffler products make a significant contribution to ensuring that aircraft take off and land safely, or that vehicles have increasingly lower fuel consumption and wind turbines are increasingly efficient. High-precision components from Schaeffler are reliable team players. They can be perfectly integrated into an existing system in order to improve it. This is why our engineers, for all their uncompromising attention to detail, always focus on the big picture even during product development. For the success of our customers.

Do you want to know which sectors we operate in? Simply scan the QR code or visit www.schaeffler.com/sectors.

Special bearing supports from Schaeffler for aerospace applications are manufactured under clean room conditions.

Developing the optimum solution with the customer

Only a supplier who precisely understands the requirements of his customers is able to offer customized solutions. A comprehensive understanding of systems, future-oriented products, technological expertise, and consistent customer focus make Schaeffler an esteemed development partner for renowned customers from the automotive and industrial sectors.

» *Our customers expect us to have both comprehensive detailed knowledge and an understanding of the complete system. This is not a routine task because ultimately we are talking about customer-specific products, in which we are actively involved in development.* «

Daniel Schmidt // Sales Engineer
Dr. Peter Gloeckner // Key Account Manager Aerospace

EXPERTISE IN AEROSPACE

Above and beyond – with expertise

Schaeffler develops energy-efficient bearing systems for all the new environmentally-friendly engine concepts in the aerospace sector. This innovative force has a long tradition. We have been supplying advanced products to aerospace companies for many decades. For example, Charles Lindbergh completed his spectacular transatlantic flight in 1927 in an aircraft equipped with bearings from our company. Today, special bearing systems and high-precision components from Schaeffler are used in almost all aerospace applications – from the turbines of a Boeing or Airbus right up to the propulsion system of the Ariane rocket.

Customized solutions for extreme conditions
The aerospace sector places very special requirements on rolling bearing solutions: Every component must withstand extreme fluctuations in temperature and high acceleration forces – and operate absolutely faultlessly. This only works if every part fits into the big picture, which is ensured by our engineers who understand both the technical details and the complex complete system. The high-precision bearing systems must be precisely matched to the engine type and environmental conditions.

COMPREHENSIVE EXPERTISE

Synergy effects for customers in all sectors

Schaeffler specifically uses its knowledge of aerospace engineering to develop innovations in other sectors. For example, a bearing solution that was originally developed for helicopters was recently used in medical technology: The extremely low-noise and light thin section bearing is used in computer tomography applications.

From airplanes into passenger cars
Bearings for the aviation sector are subjected to extreme loads such as high speeds and temperatures of up to 500 °C. Innovative materials such as special steels and ceramic rolling elements ensure long operating life even under these difficult conditions. Schaeffler utilizes the expertise in materials gained in this way for automotive applications, for example in the manufacture of ball bearings for exhaust turbochargers that lower the fuel consumption of internal combustion engines.

A new dimension: Astraios tests rotor bearing supports of the multi-megawatt class.

Expertise in over 60 sectors

We know the technical requirements, development prospects, innovation cycles, and value added chains of each of the sectors in which we operate. These number more than 60. And by networking our expertise, we obtain creative potential that we use for transferring ideas to other sectors. This means we can always offer our customers the best solution.

Solutions for machine tools: Direct drives and bearing supports are perfectly matched to one another for the world's most high-performance rotary axis.

WIND POWER

Testing large-size bearings under realistic conditions

Schaeffler operates Astraios, the world's largest and most powerful large-size bearing test rig. This is where we test rotor bearing supports for wind turbines in the multi-megawatt class weighing up to 15 tons and measuring up to 3.5 meters under realistic conditions. The test rig results lead to further improvements in the understanding of systems as a whole, influencing factors, and the interrelations in the drive trains of wind turbines. The tests also provide important information about wind turbine operation and maintenance. Astraios is therefore an example of our technological expertise and philosophy of systematic improvement.

PRODUCTION MACHINERY

Optimizing the entire system

Schaeffler has been an innovative systems partner for the development of production machinery for several decades. This applies to machine tools and machinery for the textile, printing, food, and packaging industries as well as for electronics manufacturing. In order to increase efficiency and performance, however, it is becoming ever more important not simply to support the subsystems but to integrate important functions such as measurement, sealing, lubrication, braking, etc. into the components themselves. Another trend is the use of direct drives and mechatronic units in production machinery. With its rolling bearing, linear technology, and direct drive solutions, Schaeffler offers its customers comprehensive technological and application engineering expertise for complete systems from one source that are precisely matched to one another.

RAILWAY

On the track to success

Schaeffler has more than 100 years of experience in railway engineering. We develop and produce solutions for every bearing application in rail vehicles in close partnership with manufacturers and operators. For example, we are a development partner and sole supplier of axlebox bearing supports for a large number of high-speed projects. We also further develop our mechanical components to create mechatronic modules. Schaeffler's new axlebox generator is capable of providing an energy supply for freight wagons, which will enable the monitoring of wagons and freight traffic in the future. Schaeffler is currently developing a bogie monitoring system specially for locomotives, motive power units, and passenger vehicles for monitoring temperature, acceleration, and speed.

MECHATRONICS

New perspectives for bearing solutions

Mechatronics are becoming increasingly important for the development of innovative rolling bearing solutions and thus the productivity, cost-effectiveness, and reliability of machines. Our newly-developed rolling bearings with integrated sensors and an integrated or adjacent power supply offer new solutions for numerous industrial sectors. For example in medical technology, where Schaeffler has developed a particularly compact and lightweight unit for positioning and moving ceiling stands in operating rooms securely and smoothly where the bearing support has an integrated electromechanical brake. The unit enables several medical devices to be moved to the optimum ergonomic position reliably, and individually.

We’re located right where our customers are.
All over the world.

Proximity to our customers is important to us in everything we do. This applies to agricultural engineering just as it does to every other sector in which we operate. Only by identifying and understanding the challenges the customer is facing is it possible to develop solutions that are tailored to meet the customer’s requirements. And only through proximity to the customer’s location is it possible to respond quickly. With over 180 locations worldwide and with research and development centers, a close-knit sales and service network, and training facilities, Schaeffler is always in close customer proximity: In the region – for the region.

Schaeffler is at home throughout the world.
To find out more, simply scan the QR code or visit
www.schaeffler.com/regions

Schaeffler builds approximately 400,000 tractor clutches per year and is thus one of the segment's leading manufacturers.

» Personal contact with our customers is our top priority – so we can understand exactly what their goals are. These – and these alone – are the starting point for our actions. «

Dr. Udo Markowski // Vice President Key Account Management Industrial

Global orientation. Local presence.

As a reliable supplier and development partner, our aim is to be on hand to support our customers in every way. That is why we are located right where our customers are and provide them with comprehensive support – from consultation, engineering, and manufacturing through to sales and service. Our Global Technology Network brings together Schaeffler's entire range of expertise from over 60 industrial sectors worldwide and allows us to make it available locally – at every location.

AGRICULTURAL ENGINEERING

First-hand expertise

Agricultural engineering is a very innovative sector, and one that places very high demands on its technology. More efficient solutions that will make the agricultural industry even more energy-efficient and productive in the future have to be found, not least because of the world's rapidly growing population and the food-related issues that this situation raises. Whether they need standardized bearing systems or individually manufactured seed disk bearings for particularly heavy clay soil, we know our customers' requirements. That is why we offer them a comprehensive range of products that we constantly continue to develop.
Our products are easy to install and maintain, thus saving time and money throughout the entire product life cycle, which brings us significantly closer to our most important goal: The highest possible level of customer satisfaction.

Professional individual support
Each of our customers is provided with a local sales engineer who is on hand to assist with all enquiries. He can be on site quickly to take note of requests, speak to application engineers, and ensure that the optimum solution is found in cooperation with the customer. This procedure ensures that our customers benefit from the highest level of efficiency in their applications. In addition, we provide support to large international customers with key account managers.

GLOBAL TECHNOLOGY NETWORK

Worldwide network of company knowledge

To always find the best solution for our customers, we have bundled our technological expertise and experience from over 60 industrial sectors together in the Schaeffler Global Technology Network. The idea behind this is to combine our local expertise with all of the expert knowledge and innovative strength of our globally-active company under one umbrella. One contact acts as the interface between the customer and the Global Technology Network, which is represented by local centers of expertise – the "Schaeffler Technology Centers", where our experts exchange knowledge and information across the different technological disciplines and regional borders. In this way, we ensure that our customers everywhere can make use of Schaeffler's collective expertise and receive solutions quickly.

Weatherproof, maintenance-free, and economical: The plow disc bearing support with a highly-effective cassette seal.

Locally, anywhere in the world

Wherever our customers need us, we are there – and we provide the service required to ensure that their operation runs smoothly. Our range of services is as comprehensive as our range of products. Our Automotive Aftermarket and Industrial Aftermarket business divisions provide sector-specific service and supply replacement parts according to schedule, thereby ensuring outstanding security and availability worldwide.

Of course, our specialists are on hand locally and support our customers with any problems that might occur.

PARTNERSHIPS

At home in Brazil

We maintain close contacts and partnerships with our automotive and industrial customers. Some of these worldwide partnerships have a long history. In South America, for example, we have maintained close contacts with our customers from the automobile sector for more than 50 years. To do this, we founded Rolamentos Schaeffler do Brasil Ltda. in 1958, at a time when numerous automobile companies were establishing their own plants in Brazil. This laid the foundation for a cooperation that remains successful to this day.
We also accompanied an Asian motorcycle manufacturer, for whom we develop products in different teams worldwide, during the establishment of its Brazilian subsidiary. Schaeffler Brazil works together with this customer and with Schaeffler development teams in Germany and Asia. Our global synergies make a decisive contribution to our customers' success. In this way, numerous specific solutions for engine, transmission, chassis, and special applications are developed in close cooperation with them.

AUTOMOTIVE AFTERMARKET

Global presence, global service

Whether it's a matter of rapidly delivering original replacement parts for passenger cars, trucks, or tractors, or of supporting workshops, our Automotive Aftermarket business division is responsible for replacement parts business and service in the automotive industry worldwide. Our Aftermarket specialists deliver innovative repair solutions, initiate service concepts, and provide optimum benefits through the transfer of expertise and practical training for workshops and distributors. We are opening up new paths in the transfer of knowledge – from our repair hotline and our RepXpert online workshop portal to the development of special tools. And we know what our customers' information and service requirements are. With numerous sales offices and subsidiaries as well as several thousand sales partners worldwide, we are always in close proximity to market development and a contact for workshops and distributors – direct and local.

Our numerous subsidiaries and sales partners ensure that original replacement parts are quickly available all over the world.

INDUSTRIAL AFTERMARKET

We're on site quickly – anywhere in the world

Rolling bearings and plain bearings have one main task: To function reliably. Every single day, our customers face the challenge of optimizing the availability of their machines, preventing unplanned downtimes, and reducing overall costs – whether in mines, steelworks, paper plants, wind turbines, power plants, or refineries. In this context, factors that contribute to energy efficiency and resource savings are becoming more and more decisive. In Industrial Aftermarket, we therefore offer our customers a comprehensive range of bearings and services that is precisely matched to the relevant applications. This comprises both replacement parts for 60 different industrial sectors and the corresponding service and maintenance products.

In order to increase machine availability, we also offer a wide range of systems for condition monitoring and also perform remote monitoring for our customers. This means that the risk of breakdowns can be minimized for machines that are difficult to access or critical in the event of a failure, such as cruise ships and oil platforms. Our primary objective here is to reduce overall costs for our customers and thus increase their competitiveness.

You can follow trends.
Or you can set them.

Megacities, megatrends – as globalization increases, so too do the demands being made of technology. New solutions have to be environmentally friendly and sustainable but also economically efficient. As a company geared towards the future, we analyze relevant trends at an early stage so we can play a part in shaping their further development through innovative research and development work. This allows us to open up new market opportunities and ensure long-term competitiveness for our company and our customers.

To find out how Schaeffler is turning tomorrow's challenges into opportunities, simply scan the QR code or visit www.schaeffler.com/megatrends.

Future-oriented technologies for e-bikes and vehicles with all drive variants.

Shaping the future today

Knowing what our customers need and responding in a targeted way is at the core of our day-to-day work. Using systematic trend analyses, we identify these requirements in advance and invest in the future through the development of groundbreaking technologies. Only in this way is it possible to respond to new customer requirements with innovations.

TREND ANALYSIS

Innovation with a system

Because we systematically monitor and analyze social and technological trends on a global level, we already have the answers to tomorrow's questions today. How will these trends affect us and our development? What will the market need in the future? What will our customers expect of us? The evaluation of the analysis forms the basis of our development work and is therefore indispensible when it comes to translating innovations into marketable products.

Sensor bottom bracket for e-bikes
Customers expect an e-bike to provide electrical assistance that is optimally matched to the rider's requirements. Our response to this challenge: A bottom bracket with an integrated torque sensor that quickly and precisely records the current pedal load being applied by the rider and provides exactly the right amount of assistance.

On the road to lower emissions
Even in the future, the majority of vehicles will be driven by internal combustion engines. We are working on the components and systems that are needed to fulfill the requirements for lower emissions and fuel consumption, including the thermal management module, engine start-stop systems, and the all-wheel drive disconnect clutch.

RESEARCH AND DEVELOPMENT

Leading through future orientation

Our inventive spirit and our technical expertise are a significant contributing factor in the competitiveness of our customers. That is why our specialists are constantly working on future-oriented technologies in modern research and development centers all over the world. With numerous patent applications, Schaeffler has therefore been among Germany's five most innovative companies for many years. New solutions and products of the highest quality are thus continuously being developed and produced in close cooperation with our customers from the automotive and industrial sectors, including aerospace engineering.

» A company's technological leadership begins in the minds of its employees. «

Prof. Dr.-Ing. Peter Gutzmer // CTO

A forward-thinking approach means sustainable action

As a company and employer, we are fully aware of our social and ecological responsibility. We have made a commitment to this in our corporate code of conduct, which is valid worldwide. We are also dedicated to protecting the wellbeing of our employees and provide them with clear guidance. The same high standards also apply for our vocational training and our advanced training courses at the Schaeffler Academy.

SCHAEFFLER ACADEMY

Training for the future

Employees with first-class qualifications are a decisive success factor in global competition – now more than ever before. After all, the rapid progress of technology and increasingly short innovation cycles mean that today's current knowledge is already out of date tomorrow. For this reason, we have bundled the wide range of options we provide for the systematic development and expansion of knowledge under a single umbrella: The Schaeffler Academy. This is geared towards all employees and provides targeted training and advanced training measures for apprentices, employees, and management personnel in equal measure.

TRAINING STANDARDS

A high level worldwide with Schaeffler

Getting your career off to a good start is important, and that applies all over the world – whether it's in Germany, Mexico, or Romania. Schaeffler places great importance on soundly-based training for its employees. For this reason, the same high standards apply throughout our company worldwide. This is exemplified by the leading role that Schaeffler played in the opening of a vocational school in the Romanian city of Brasov. This is the first vocational school in the country to offer an integrated training program according to the German model.

Training center in Irapuato, Mexico: Schaeffler recognizes the value of a high level of training and focuses on uniform standards worldwide.

SOCIAL RESPONSIBILITY

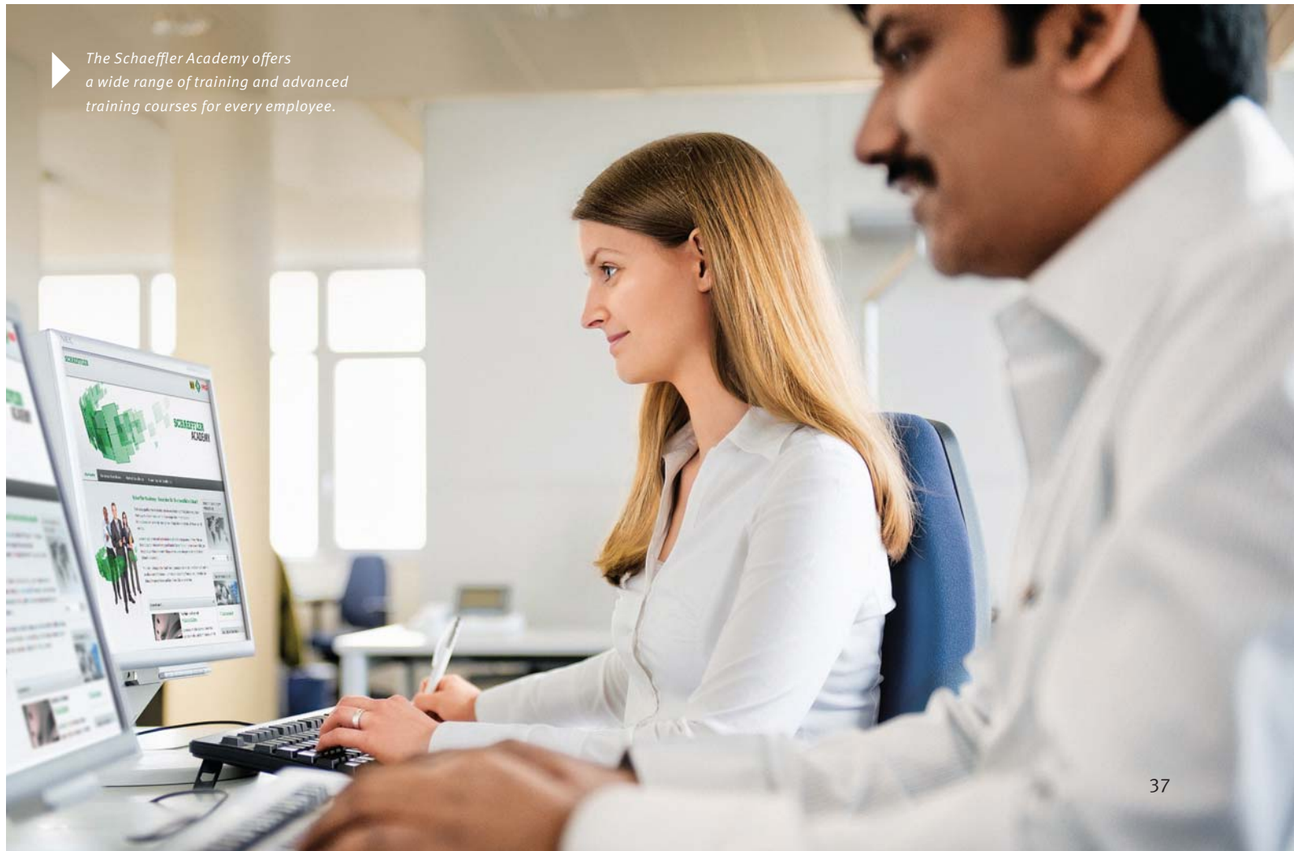
Hope School, China

We play a responsible role in society – especially for children and young people. Schaeffler China has already received numerous awards for its commitment in this area. The Schaeffler Hope School Project, which makes support and a good standard of training available to the local children, is an example of this commitment that is particularly important to us.

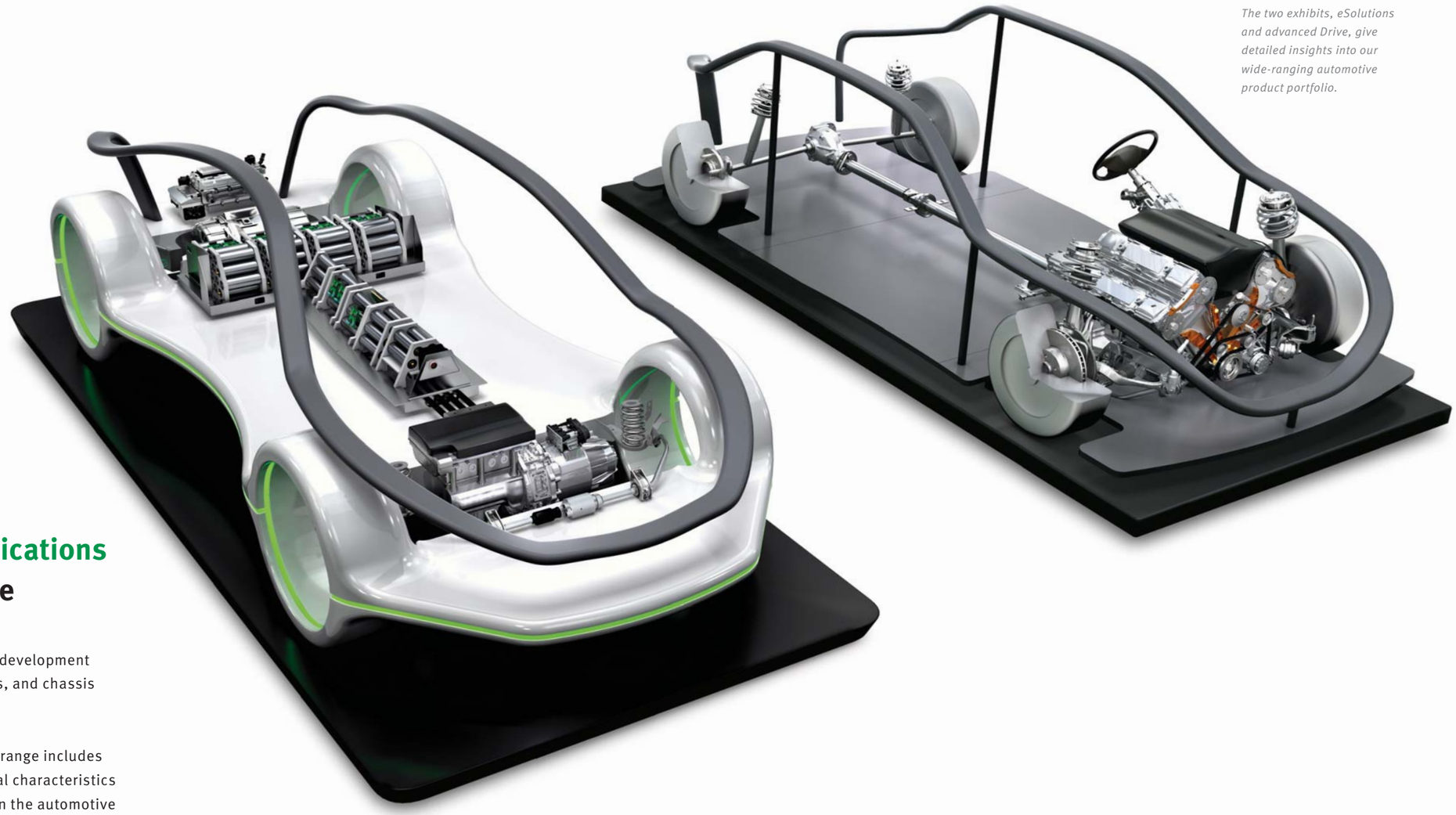
ENVIRONMENTAL MANAGEMENT

Environmental protection as a company target

Whether it's in product development, purchasing, manufacturing, or waste disposal, actively protecting the environment is firmly anchored in all areas of our company. Uniform environmental policy across all locations worldwide forms the basis of our successful environmental management program. Operations at all of our locations worldwide are certified in accordance with environmental standards, including strict validation according to the European EMAS environmental guideline.



The Schaeffler Academy offers a wide range of training and advanced training courses for every employee.



The two exhibits, eSolutions and advanced Drive, give detailed insights into our wide-ranging automotive product portfolio.

Precision products for engines, transmissions, and chassis applications

Experience the automotive future

As a partner to the automotive industry, we are leaders in the development and production of system solutions for engines, transmissions, and chassis applications.

With our three product brands INA, LuK, and FAG, our product range includes solutions that are sophisticated both in terms of their technical characteristics and cost-effectiveness for the most varied requirements within the automotive sector. We offer components and systems from one source for vehicles with internal combustion engine drive trains as well as hybrid vehicles and electric vehicles. We work with our customers to offer them exactly the right technologies – from the development phase right up to volume production. Innovative ideas, creative and targeted engineering, and comprehensive manufacturing expertise are our basis for the success of our customers.

Engine systems
Rolling bearing solutions, products for belt and chain drives, valve train components, and systems for variable valve trains

Transmission systems
Torsion and vibration dampers, clutches and double clutch systems, torque converters, CVT components, lightweight differentials, bearing solutions, synchronizing and gearshift components

Chassis systems
Wheel bearings, bearing solutions, steering components, and electromechanical actuators for roll stabilizers and power-assisted steering systems

eMobility Systems Division
Our various activities in the field of electric mobility are bundled in the eMobility Systems Division.

Scan the QR code and learn about our contribution to environmentally-friendly mobility. You will also find more information at: www.schaeffler.com/automotive.

Miniature bearing

Drawn cup needle roller bearing

Stud type track roller

Machined needle roller bearing

Ball bearing

Plain bush

Spherical plain bearing

Cylindrical roller bearing

Spherical roller bearing

Tapered roller bearing

Our product range for the industrial sector

For almost every challenge

Our customers come from more than 60 industrial sectors worldwide. They all rely on rolling and plain bearings, linear guidance systems, and direct drives from the product brands INA and FAG.

We offer a very wide product range with around 225,000 products. The spectrum ranges from super-precision bearings only a few millimeters in size for dentists' drills and rolling bearings and linear guidance systems for machine tools to "heavyweights" for tunnel driving machines or wind turbines. Our customer proximity and application and manufacturing expertise mean that we are a renowned and reliable partner to industry all over the world.

Linear technology
Ball and roller bearing and guideway assemblies, hydrostatic linear guidance systems, and complete systems

Direct drives
Rotary and linear direct drives, including electronic subassemblies

Maintenance
Products and services for mounting, maintenance, and condition monitoring

Mechatronics
Bearings with integrated additional functions, e.g. using sensors or generators

Discover the exciting range of applications covered by our bearing solutions for the industrial sector. Scan the QR code or visit www.schaeffler.com/industry to find out more.

Spherical roller bearing

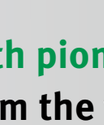
Slewing ring

With pioneering spirit towards the future.
From the very beginning.

Ground-breaking innovations, global customer orientation, and strategic corporate decisions have always shaped Schaeffler as a company.

The invention of the ball grinding machine by Friedrich Fischer laid the foundation for FAG and the entire modern rolling bearing industry. Dr.-Ing. E.h. Georg Schaeffler developed the cage-guided needle roller bearing in 1949. This new bearing type increased the performance of several industrial applications. This was the beginning of INA's success story. The introduction of the first diaphragm spring clutch in Europe marked the beginning of the LuK brand's history in 1965. Today, Schaeffler with its three product brands is one of the leading manufacturers of bearings for over 60 sectors, as well as a supplier and system partner to the automotive industry.

1883
Friedrich Fischer invents the ball grinding machine in Schweinfurt, Germany



1946
Establishment of Industrie GmbH in Herzogenaurach, today Schaeffler AG

1949
Development of the cage-guided needle roller bearing by Dr.-Ing. E.h. Georg Schaeffler

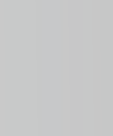
1955
The first linear guidance system – the foundation of the new Linear Technology business unit

1956
The first INA plant outside Germany is set up in Haguenau, France

1958
INA's first plant on the American continent in Sao Paulo, Brazil

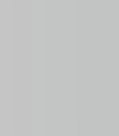
1965
LuK introduces the diaphragm spring clutch in Europe

1965
Establishment of LuK Lamellen und Kupplungsbau GmbH in Bühl, Germany (in cooperation with INA)



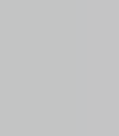
1971
Bucket tappet: INA supplies volume-produced hydraulic valve lash adjustment elements

1976
Establishment of LuK Autoteile-Service GmbH in Langen, Germany, today Schaeffler Automotive Aftermarket



1985
The LuK dual mass flywheel sets new standards in the insulation of drive train noise

1992
The first INA plant in Asia is set up in Korea



1999
Acquisition of all LuK shares

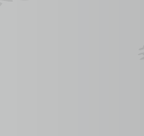
2001
Acquisition of FAG Kugelfischer Georg Schäfer AG located in Schweinfurt, Germany

2002
FAG launches the E1 spherical roller bearing

2003
INA, LuK, and FAG form the "Schaeffler Group"

2007
New plants in India, China, and Hungary, as well as an R&D center in China

2008
Dry double clutch from LuK is put into volume production at Volkswagen



2009
UniAir – the world's first fully-variable hydraulic valve control system

2011
Transformation of Schaefler GmbH into Schaeffler AG

Schaeffler bundles all its activities relating to electric mobility in its "eMobility Systems Division"

2011
Start of volume production for the FAG sensor bottom bracket for e-bikes

2012
Schaeffler receives 32 awards for excellent quality – more than ever before

For current data and facts, scan the QR code or visit www.schaeffler-group.com/irreports

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