



125 years of Bosch – Invented for life Bosch technology for nearly every area of life Innovative products that enhance daily life

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- ▶ Practical solutions that enhance quality of life
- ▶ Products of consistently high quality, performance, and safety enable Bosch to maintain its leading market position
- ▶ Core competencies drive technological innovation

Stuttgart – For 125 years, the Bosch name has been synonymous with innovative technology and groundbreaking developments that have revolutionised the industrial world. Since it was founded in 1886, Bosch has forged its reputation through a variety of highly successful products. Prominent examples include the magneto ignition device, the Bosch spark plug, the Bosch automotive lighting system, the diesel injection pump, the ABS antilock braking system, the electric hammer drill, the cordless screwdriver with a lithium-ion battery, the Bosch refrigerator, and the world's first swivel-arm industrial robot. Today, Bosch continues to pursue the customer-oriented business philosophy expressed by its corporate slogan "Invented for life." It does so by developing innovative products and practical solutions designed to improve quality of life for people everywhere.

A diverse range of products to enhance quality of life

The three Bosch business sectors – Automotive Technology, Industrial Technology, and Consumer Goods and Building Technology – each offer their customers a broad portfolio of modern products and services from a single source. For the automotive industry, Bosch offers a variety of products ranging from advanced fuel-injection systems for internal-combustion engines and concepts for hybrid vehicles to exhaust-treatment systems for diesel engines and safety and navigation systems for vehicles.

As a provider of industrial technology, Bosch manufactures solar cells and is rapidly expanding its presence in the solar-energy market, offering large-scale, turnkey projects for photovoltaic installations such as the one on the roof of the Stuttgart airport parking garage. Other product areas include gearbox systems for wind turbines, stage machinery for theaters and organizers of large-scale public events, hydraulic and pneumatic components for machine tools, and packaging technology for many well-known brand retailers. Bosch is a long-established leader in the markets for power tools, refrigerators and other household appliances, and systems for heating, hot water, and security. The expertise in each business field also drives innovation for new development trends, such as electromobility (motor-vehicle electrification), microsystems engineering, and the increasing use of renewable energy.

Worldwide presence as the leading supplier of automotive components
Automotive Technology is the largest of the Bosch Group's three business sectors, and generates the most sales. Bosch's position as a leading global supplier to the automotive industry is founded on its technological expertise, long years of experience in international markets, and innovative strength. Bosch employs some 165,000 associates in the Automotive Technology business sector, which manufactures automotive products at 125 locations in 28 countries. The Bosch Group's activities in this field focus on seven main product groups: fuel-injection systems for internal combustion engines, peripheral devices for powertrain control, alternative drive concepts, active and passive vehicle safety systems, driver-assistance and other guidance functions, in-car information and communication systems, and a range of after-sales, engineering-support, and service concepts for car retailers.

Ever more reliable, convenient, and safe
Bosch made its first decisive breakthrough in 1897, when it modified the low-voltage magneto ignition device so that it could be used in motor vehicles. This was then subsequently developed into the high-voltage magneto ignition system with a spark plug. That device was a huge success the world over and contributed greatly to the automobile's ascendance as a form of mass transportation in the early 20th century. This technical innovation set the scene for Bosch's expansion on an international scale and the company's growing reputation as a world-leading supplier of automotive technology. Throughout its long history, Bosch has often developed products that helped pave the way to the mobile society we know today. At each stage, the products Bosch launched were ahead of their time in terms of performance, ease of use, safety, and environmental compatibility. Significant milestones in the early years included the Bosch automotive lighting system, the Bosch horn, the electric starter motor, and the diesel injection pump.

Today, Bosch is the world's leading manufacturer of fuel-injection systems for internal-combustion engines. In addition to the common-rail injection system for diesel engines, its products also include safety systems such as the ABS antilock braking system and the ESP[®] electronic stability program. These and many other innovative technical solutions are the result of the 3S program that Bosch introduced in 1974, with the aim of making driving safer, cleaner, and more economical. For example, Bosch was one of the first companies to research hybrid engines in the 1970s, and was able to showcase its own prototype hybrid vehicle based on a production car of the time. The experience Bosch has accumulated since this early start is now paying off. Hybrid versions of the Volkswagen Touareg and the Porsche Cayenne S went into series production in mid-2010. Both vehicles are equipped with Bosch parallel full-hybrid technology that enables them to run exclusively on electric power. Now that electric vehicles are becoming more common, Bosch's next goal is to reduce the fuel consumption of internal combustion engines and, in the longer term, substantially cut the CO₂ emissions directly attributable to road traffic.

New products based on microchip technology

Bosch is also one of the leading developers of electronic components for automotive applications, including semiconductor devices and microelectromechanical sensors. The first Bosch product to feature electronic components manufactured in-house was the Bosch alternator regulator introduced in 1958. It was followed in 1967 by the Bosch Jetronic fuel-injection system, the first-ever electronic fuel-injection system to be manufactured on an industrial scale. With automotive electronics playing an ever more important role, Bosch opened a new plant in Reutlingen near Stuttgart in 1970. This facility was exclusively devoted to semiconductor manufacturing.

One of the most significant milestones in the history of road safety was the ABS antilock braking system, which Bosch launched in 1978 and which continues to reduce the number of road deaths to this day. Many other innovative products would have been inconceivable without advances in semiconductor technology. They include the lambda sensor to control exhaust emissions (1976), the EDC electronic diesel control system (1986), the TravelPilot navigation system (1989), and the ESP[®] electronic stability program (1995). Bosch also supplies microelectromechanical sensors for consumer-electronics products. Recognizing the importance of the promising consumer-electronics market, Bosch opened a brand-new, state-of-the-art fabrication plant in Reutlingen in 2010. The cost of this project, in excess of 600 million euros, makes it the largest single investment in the company's 125-year history.

Innovative engineering partner for industry

Bosch's activities in the Industrial Technology business sector extend to 100 locations in 25 countries – locations operated by three divisions: Drive and Control Technology, Packaging Technology, and Solar Energy. In 1984, Bosch set a milestone in the field of industrial automation by introducing the world's first swivel-arm robot. Today, the Drive and Control Technology division is a leading systems provider of highly efficient drive and control solutions. The Bosch subsidiary Bosch Rexroth offers a complete range of drive, control, and actuation solutions based on hydraulic, electric, mechanical, and pneumatic technologies. Processes that rely on Bosch Rexroth technology run smoothly wherever they are used: in tunnel boring machines, on the stages of theater festival venues in Bregenz and Bayreuth, and in the drive system that turns the giant wheel of the London Eye. Bosch Rexroth is also active in the field of renewable energy, supplying drive and gearbox solutions for wind turbines. Another Bosch subsidiary, Bosch Solar Energy, develops and manufactures solar cells and modules for photovoltaic installations. In packaging technology, Bosch specializes in machinery and lines for the confectionery, foodstuff, and pharmaceuticals industries. Many products consumed by millions of people every day, including coffee, tea, gummy bears, chocolates, and painkillers, are packaged by Bosch machines.

Innovations for the home

The Bosch Group's second-largest business sector, Consumer Goods and Building Technology, produces power tools, heating and hot-water systems, household appliances, and security systems. The business sector employs some 60,000 associates at 84 locations in 28 countries.

Pioneer and market leader in power tools

The Forflex hair trimmer, launched in 1928, marked the beginning of the Bosch Power Tools division's long and successful history. Today, Bosch is the global market leader in hand-held electric power tools and power-tool accessories. Bosch power tools are, and have always been, appreciated for their quality and innovative design, not only by do-it-yourself and gardening enthusiasts but also by professional users in the skilled trades and industry. Among the many innovative products developed by Bosch are the electric hammer drill, the multi-sander, and screwdrivers and chain saws powered by rechargeable lithium-ion batteries. In 2009 alone, Bosch launched 120 new or updated power tools. The latest generation of tools featuring Bosch lithium-ion battery technology is especially popular. The tools enable numerous tasks in the workshop, at home, and in the garden to be carried out with greater ease and safety. The Ixo, an especially compact and lightweight cordless screwdriver, is the world's widest-selling power tool. Over ten million units have been sold to date.

Economical and eco-friendly heating

Bosch Thermotechnology specializes in heating and hot-water systems, and has been providing convenient, energy-saving, eco-friendly solutions for private homes and industrial and commercial buildings since 1932. Its extensive range of products includes condensing gas boilers, heat pumps, co-generating power plants, tankless hot-water heaters, solar thermal systems, and industrial boilers. These products help to generate heat more efficiently and increase the use of renewable energy sources. System solutions provided by Bosch Thermotechnology form an important part of the equipment of eco-friendly “energy-plus” homes, which are setting construction standards for the future by producing more energy than they consume.

Pioneering solutions to increase energy efficiency

Bosch refrigerators and freezers, food processors, washing machines, and dishwashers have been trusted household assistants for decades. Ever since Bosch launched its first refrigerator in 1933, and thus entered the household appliance market, its products have been renowned for their quality and durability. The original Bosch refrigerator became known for its rounded drum shape and sold in huge numbers. Ever since then, Bosch has been a recognized leader in the white-goods industry, pioneering the development and manufacturing of innovative, energy-efficient products. A typical example is the dishwasher that uses a novel zeolite® drying process to recycle energy. It received the German environment ministry's innovation award in 2010.

Security systems for historical monuments, conference centers, and power stations

Bosch is one of the world's leading suppliers of electronic security and communications systems. The product portfolio of its relatively young Security Systems division mainly comprises intrusion-alarm and video-surveillance systems, public-address and paging systems, access control systems, and biometric identification systems. For instance, Bosch supplied digital conference equipment to the G20 summit meeting in London and the UN climate-change conference in Copenhagen. Discreetly concealed, modern Bosch technology assures the security of the picturesque Neuschwanstein castle in Bavaria and its many visitors, while special cameras keep watch over the lost city of Machu Picchu in Peru, at an altitude of 2,300 meters. And when the rock band AC/DC goes on tour, it is accompanied by Bosch loudspeakers, amplifiers, and mixing desks.

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The Bosch Group is a leading global supplier of technology and services. In the areas of automotive and industrial technology, consumer goods, and building technology, some 275,000 associates generated sales of 38.2 billion euros in fiscal 2009. For fiscal 2010, Bosch forecasts sales of roughly 46 billion euros and a headcount of a good 280,000 by the end of the year. The Bosch Group comprises Robert Bosch GmbH and its more than 300 subsidiaries and regional companies in over 60 countries. If its sales and service partners are included, then Bosch is represented in roughly 150 countries. This worldwide development, manufacturing, and sales network is the foundation for growth. Each year, Bosch spends more than 3.5 billion euros for research and development, and applies for some 3,800 patents worldwide. With all its products and services, Bosch enhances the quality of life by providing solutions which are both innovative and beneficial.

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The company was set up in Stuttgart in 1886 by Robert Bosch (1861-1942) as "Workshop for Precision Mechanics and Electrical Engineering." The special ownership structure of Robert Bosch GmbH guarantees the entrepreneurial freedom of the Bosch Group, making it possible for the company to plan over the long term and to undertake significant up-front investments in the safeguarding of its future. Ninety-two percent of the share capital of Robert Bosch GmbH is held by Robert Bosch Stiftung GmbH, a charitable foundation. The majority of voting rights are held by Robert Bosch Industrietreuhand KG, an industrial trust. The entrepreneurial ownership functions are carried out by the trust. The remaining shares are held by the Bosch family and by Robert Bosch GmbH. □

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Additional information can be accessed at www.bosch.com, www.bosch-press.com □

Automotive Technology

www.bosch-kraftfahrzeugtechnik.de

www.automotive-tradition.de

Industrial Technology

Drive and Control Technology: www.boschrexroth.com

Packaging Technology: www.boschpackaging.com

Solar Energy: www.bosch-solarenergy.de

Consumer Goods and Building Technology

Power Tools: www.bosch-pt.com

Thermotechnology: www.bosch-thermotechnology.com

Security Systems: www.boschsecurity.com

Household Appliances: www.bosch-home.com/de