



Hightech

A linear bearing allows machine elements to be displaced along a straight rail. It is capable of shifting loads to and fro precisely, without excessive resistance.



m o v e s



Its area of application includes the machine tool industry and the construction of semi-conductor equipment. The linear bearing was invented by Walter SCHNEEBERGER-Grütter and his son-in-law, Ernst Pfister. The former is the founder of SCHNEEBERGER AG and the grandfather of Dr. Hans-Martin SCHNEEBERGER, who is the current chair of the company's administrative board.

"My grandfather began in 1923 by constructing equipment for carpentry workshops and the wood processing industry", he says. This included cutter sharpening machines and wood boring machines as well as special wood processing installations. He continued to expand his product portfolio, ran a taxi firm for a while and in 1945, he took on the first design engineer: Ernst Pfister. This bright team recognized the potential application of linear

SCHNEEBERGER AG, based in Roggwil, manufactures large and small size linear bearings. Their ability to be exactly positioned to the nearest nanometre does not absolutely depend on their size, although a certain correlation does exist.



bearings in machine tool construction and proceeded to build a cutter sharpening machine with in-built linear bearings. In taking this step, the team laid the foundations of linear bearing technology. The standards developed at the time for the construction of linear bearings are still in use today. The linear bearing went on to become an immense commercial success. This success story has continued to the present day...

A linear bearing can measure up to 100 metres. Its guideway can support loads of up to 120 tonnes. Large and medium-sized linear bearings are employed above all in the machine tool industry. Grinding machines provide a good example: in this application, the

linear bearing moves the work surface, to which a component has been fixed, in a regular to-and-fro motion thus allowing the rotating grinding disk to uniformly machine the component. Small-size linear bearings are the most reliable aids in the semi-conductor equipment industry when it comes to manufacturing microelectronic components. Layers with electrical properties are mounted on a base plate measuring 1 mm, known as a wafer. By varying the properties of the individual layers, electrical components are formed – for example transistors, which are the most important components in computers.

Linear bearings fulfil a variety of tasks in this manufacturing process which range from

***Hardening**
 The components of the linear bearings are hardened in vacuum compressed gas quenching installations, since compressed gas quenching is one of the most effective processes available. Components hardened under vacuum retain their brightness.





inspection of structures, positioning elements to wiring and packing. All these operations require extreme reliability and a high degree of precision. "A degree of precision, which is measured in nanometres", insists Dr. Hans-Martin Schneeberger.

By way of comparison: in a piece of metal, a nanometre corresponds roughly to a row of four adjacent atoms or the thirty thousandth part of the diameter of a hair. Only working on such a scale is it possible to appreciate the dimensions involved in this precision work. "This is work at the frontiers of technology", explains the descendant of the inventor of linear bearings. "That's what I really call high technology". Products that guarantee precise positioning on the nanometre scale, products that allow work to be carried out at the very limits of what is technically feasible – such products place the highest demands on their very own manufacturing process. "Our machines and installations incorporate the most up-to-date technology, our employees, suppliers and partners all play in the first division."

However, "a football team that was made up of eleven Maradonas would not necessarily win the World Cup. Every team must play in harmony." Know-how alone is not enough if soft skills are lacking. Employees, suppliers and partners must all deliver quality; they must play together as a team, be reliable and generate confidence. In short, they must deliver high performance right down the line. Only when the notion of being 'the best' is apprehended in all its nuances can it be said to reflect Dr. Hans-Martin SCHNEEBERGER'S

understanding of the term. One of the partners playing in this league is Härtereier Gerster AG. The heat treatment specialist from Egerkingen in the canton of Solothurn hardens* between 50,000 and 100,000 linear bearing components for SCHNEEBERGER AG every year, ensuring that every component part reaches its specific hardness and guaranteeing maximum lifespan. "When we choose a partner firm for hardening operations, not just anyone will do; our choice of firm must perform hardening operations reliably while at the same time guaranteeing high quality, and maintain this over a long period of time", says Schneeberger.

"This is the only way to create products that correspond to the current state-of-the-art." A standard of production that constitutes the highest level of technical development for a product in its class and which continues to demand further development from its manufacturers. Growth potential exists, above all the mechatronic sector, in which electronic engineering and information technology enter the realm of mechanical engineering. "A whole world of possibilities is opening up before us, a world of fantastic possibilities."

Working together with the best, belonging to the best, working on behalf of the best - these maxims may be resumed in the phrase "Essentials for the best". This is both SCHNEEBERGER AG's company slogan and its programme. Within the company, this also means concentrating on essentials, on core competences, on the continuing development of linear bearing products. □□□

SCHNEEBERGER AG, Roggwil

The name Schneeberger is synonymous with modern linear bearing technology in equipment and machine construction. This family business has produced linear bearings, both in standard format and according to client specifications, for over 60 years. In addition, SCHNEEBERGER AG also offers complete linear-technical solutions. These include structural elements and modules made of mineral casting. SCHNEEBERGER AG employs 600 persons around the world and has production plants in Switzerland, Germany, China and the Czech Republic as well as sales outlets in all the industrialized nations.

Contact

Schneeberger AG
 St. Urbanstrasse 12
 4914 Roggwil
 Telefon +41 (0)62 918 41 11
 Fax +41 (0)62 918 41 00
www.schneeberger.com
info-ch@schneeberger.com

'We leave research to universities and technical colleges. Our task is to glean research results and transform them into marketable propositions. I do not regard one-off results obtained in the university world that cannot be commercialized as high tech. High tech products only come about if we develop these ideas and make them economically viable.'

Dr. Hans-Martin Schneeberger

