

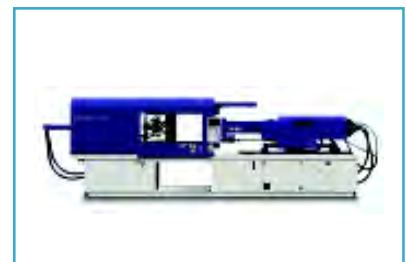


12.Machineries

HCH has been working with the machinery industry almost since the company's founding. Today, HCH offers a variety of customized solutions that are intended to ensure production efficiency and machine reliability while taking into consideration the quality, cost and environmental concerns of the industry.

Selecting the appropriate lubrication grease according to requirements could be crucial for operation reliability. HCH offers a variety of different lubrication greases for different machineries applications, e.g. printing and textile machines, plastic and rubber machines ask for long fatigue life etc. While the medical machineries ask for reliable operation with quite condition and the food machineries have extreme requirement of healthy and clean operation. HCH offers the appropriate lubrication greases which leads to reduced maintenance cost and a trouble-free operation.

Environmental concerns are one of today's main issues for machinery industry, whether you are a consumer, a manufacturer or an environmental agency. It is often expensive to comply with environmental legislation, but due to the heavy penalties involved, it is often even more expensive not to. The existence of an environmental policy is thought to have a positive impact on consumers and consequently on business. Some of the areas in which HCH can contribute include lubrication optimization, controlling lubricant leakage and usage, as well as minimizing waste from production.



There are many rolling bearings have been "tailored" to individual machinery applications. HCH's particular strength is in developing the right bearings to meet the respect requirements of low temperature, high temperature, high speed, low speed, low noise and vibration, high loads and moment loads, rust prevention...



General requirements for machinery industry

High productivity and high reliability

High productivity is one of the constant pressures within the machinery industry. To increase profitability there is a trend to further increase the speed of the machines in order to get even higher outputs. What is more, unexpected break-downs are costly. To maximize profitability, the machineries must be kept working. For machine operators, it is of utmost importance to run the machines with as low maintenance efforts as possible. For OEMs, to maximize revenue and to improve profitability, life cycle cost should be kept to a minimum. HCH's high quality material and full automatic bearing processes that ensure stable precise bearings, which are offered to improve machineries' reliability.



Reduce costs

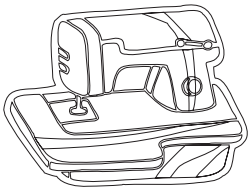
In all businesses, cost control is a major issue, since it is the key to profitability. Even if the biggest costs for a textile making plant are related to energy, raw materials and personnel, saving money on components such as bearings and lubricants that will have an immediate effect on the bottom line. HCH's experience and understanding of industrial processes is a unique resource with respect to cost-effectiveness. HCH has extensive know-how in areas such as maintenance strategy, bearing selection, fitting, lubrication, and monitoring. With the right components correctly fitted and properly maintained, overall costs can be considerably reduced and performance improved.



Save power by reducing friction

For many reasons, e.g. cost as well as environmental reasons, our dependence on fossil fuels needs to be reduced. In the machinery industry power saving is a major objective. Reducing friction in bearings and seals can considerably contribute to decrease energy consumption. Less power needed to run machines helps to downsize the power unit and at the end to save life cycle cost. The intense HCH product development has led to a wide range of products with excellent low friction operation.

12.1 Textile Machines



HCH has been working with the textile industry for more than 20 years and developing the bearing always together with the customers. HCH bearings perform valuable services in this industry every day. We can offer you a comprehensive product line of precision rolling bearings for textile machines for the reliable support of rotating. What is more, HCH offers a variety of customized solutions that are intended to ensure production efficiency and machine reliability while taking into consideration the quality, cost and environmental concerns of the industry.

Modern textiles, yarn and fabric can be found in retail, boutiques and department stores or in the mail order business. However, hardly anyone is aware of the technological accomplishments that are achieved every day in spinning, weaving, refining and processing cotton or synthetic fiber.

For textile industry, high speed is critical through the whole production process, especially during spinning, the rotating speed can reach 18,000 rpm, or even more than 20,000 rpm and the machines are usually in a non-stop working condition - 24 hours per day and 30 days per month.



HCH bearings for textile machinery

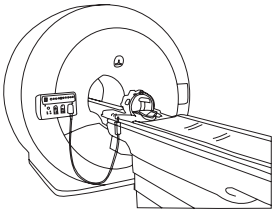
There can be no doubt that the right bearing components are a crucial cost factor. High vibration levels increase energy consumption and can cause premature equipment failure and costly maintenance, often including unplanned downtime and loss of production. For bearings in textile machines, "right" means low friction, high precision, clearance free, as easy to mount as possible, low maintenance, long product life, etc. And for these requirements you are at the right place

with HCH. HCH products and systematic solutions considerably increase machine power, whilst simultaneously keeping costs down in spinning preparation, thread production, creating surfaces, finishes and in the manufacture of ready-to-wear clothing.



HCH develops and manufactures high-precision bearings for a textile machine moves. In doing so, we pay particular attention to maximum operating safety and low operating costs. Reliable in operation, our rolling bearings increase cost-effectiveness and offer compact system designs.

12.2 Medical Equipments



The safety and reliability of medical equipment is literally a matter of life and death. It is imperative that medical OEMs are able to integrate many components into fully functioning systems with ease and, and have full confidence in the reliability of their designs. Working with medical original equipment manufacturers, HCH's engineers provide solutions that optimize the performance of the equipment while helping medical design engineers achieve their goals of reliability and enhanced performance.

Dental equipment

Dental equipment must be designed to meet strict hygienic standards, and those standards must be easy to maintain. Further, the equipment needs to be reliable, with a focus on ergonomics for the dentist and comfort for the patient. HCH has been involved in the design of various dental equipment applications and can draw on its knowledge of this specialized field.



Life support equipment

Life support equipment such as baby incubators, respiratory equipment and equipment used for critical patient conditions need to be safe and reliable. With the growing complexity in hospital environments, the patient-care staff has to rely on their equipment to an increasing extent, which consequently places ever-higher demands on its function. HCH applies knowledge, experience and global capability to help you meet increasingly tough requirements.



HCH bearing for medical machinery

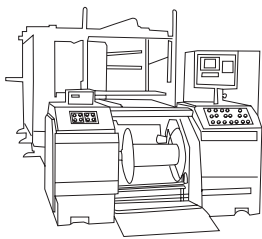
Engineering expertise is vital from both the supplier and the manufacturer so that the components and assemblies in the equipment meet the design requirements. Fortunately, you can rely on HCH to meet your specific demands. As the need for quiet-operating products is great in medical applications, HCH has developed a range of low noise bearings that enhance patient comfort. As one of the most demanding industries for clean and precise products, HCH has a product

offering to meet your needs. From precise, miniature products to clean room and special coating capabilities, HCH has the products and solutions to meet the high requirement of accuracy in the medical industry.

Safe and efficient bearing supports for moving machine parts has been our profession for over 30 years. We are both an engineering partner and a reliable supplier for bearings that are responsible for movement in medical technology.

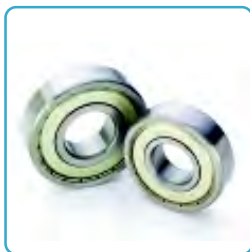


12.3 Printing Machines



High productivity and improved printing quality coupled with reliability are just some of the constant pressures within the printing industry. High precision and accuracy as well as high stiffness of a bearing solution highly contribute to the high printing quality. Printing press manufacturers also look to their component suppliers for innovative solutions that will meet such demands.

For many years, HCH has been partner to the printing industry, supporting the need for maximum reliability. By continuous innovation and development of customized products. HCH has contributed to increase productivity and printing quality. HCH manufactures a full range of ball bearings suitable for a wide variety of applications. HCH's competence in service and application engineering is the base to be the best partner for the Graphic Arts Industry worldwide.



HCH bearings for printing machinery

HCH has developed a range of solutions to facilitate assembly and reduce the need for maintenance. These solutions are characterized by their ease of use, their innovativeness and low requirement for maintenance. What is more, friction reduction in HCH bearings and seals can considerably contribute to decrease energy consumption. Less power needed to run printing machines helps to downsize the power unit

and at the end to save life cycle cost. With these solutions, HCH adds value to the product offers, strengthening the customers' competitiveness by providing cost-effective operation.

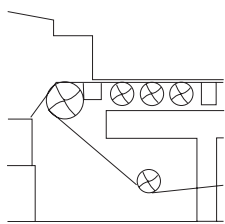
Both end-users and manufacturers expect high-performing products that are conformable to current and future legislation. In addition, end-users want to reduce cost of ownership to stay competitive, while manufacturers want to cut production costs to stay profitable. Here, HCH's in-depth application knowledge, experience of cost-effective solutions and understanding of manufacturing processes is a unique resource at your service. We offer you standard and customized solutions that enable you to improve performance and, simultaneously, reduce overall costs.

HCH also provides a wide range of solutions to meet customers' demands for improved productivity. For this factor, HCH's highly skilled application engineers could help to meet specific targets.



As a result of cooperation over decades with reputable printing machine manufacturers as well as with maintenance and production departments, our engineers have achieved a great deal of expertise. Now, hundreds of printing factories have benefited from the quality of HCH tailor-made solutions that are reliable and efficient and achieve ever increasing production speeds.

12.4 Pulp & Paper



Paper machines are the giants in the machine construction sector: many of them are 200 meters long and 10 meters wide. In just a single minute, nearly 2000 meters of paper fly through the machine over rolls and cylinders at a speed of 120 km/h. The rolling bearings installed in such a machine must meet extreme requirements: moisture, very high temperatures, shaft deflections, high speeds and long running times. Only bearings that work with a very high degree of reliability make it possible to produce paper of the highest quality.

Forming section

The forming section consists of the headbox and the wire section. It is a critical section of the paper machine, since it is here that the quality and structure of the finished product is determined. However, for bearings, the operating conditions are not too challenging - except for the water and moisture present in the process. As in all paper machine applications, reliability is critical to ensure continuous production.

Breast, drive, guide and stretch wire rolls

Breast, drive, guide and stretch wire rolls are not particularly demanding applications from a bearing perspective. The main issue is the amount of process water present and consequent problems relating to corrosion and lubrication. However, like most applications in a paper machine, these rolls are subject to misalignment and axial expansion of the shaft, and the bearings must accommodate this.

Suction rolls

Suction rolls are used for dewatering the web. Like most applications in a paper machine, they are subject to misalignment and axial expansion of the shaft and the bearing arrangement must accommodate this. In addition, of all the rolls in a paper machine, suction rolls have the highest speed demands. As production capacity is pushed further and further, speed requirements are likely to increase even more in the future. The operating conditions for this application are therefore considerable, placing high demands on the machinery components.



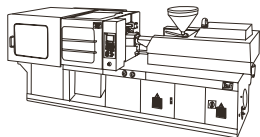
As a global bearing technology leader, HCH understands and provides solutions to the challenges found in the pulp & paper industry. With products specifically designed to support equipment utilized in high temperature, and highly contaminated environments, HCH bearings allow longer life and higher limiting speeds which result in greater productivity.



HCH bearing for pulp and paper machinery

Bearings in pulp and paper machinery often operate under high-temperature conditions, vulnerable to problems such as fracturing of the inner ring, which can result in work stoppages. Excellent durability under high temperature conditions including moisture and dust laden environments can result in longer life, high limiting speed and dramatically enhanced productivity. Operating difficulties often put great demands on the bearing solutions in pulp and paper machinery.

12.5 Plastic & Rubber



The industry of plastic and rubber are always working to improve the reliability of the processes. The downtime costs are so high and the margins in many cases so tight that the survival of a factory itself is the result of a delicate balance. The challenge for plastic and rubber making is to maximize uptime and reduce maintenance costs for improved productivity. To play the game, you need reliable partners

and state-of-the-art solutions.

Extrusion machines

Extrusion process is critical both for the quality of the production and for the productivity of a plant. During the process, the raw material and the additives (lubricants, colors, strengtheners...) are mixed, melted and then pushed through a drawplate. The resulting product could be either sent to the next transformation or sold to a customer that will transform it later.



HCH bearing for plastic and rubber machinery

As in screw extrusion, the rotational speed of the screw is a few rpm only. Furthermore the cyclic stop and go generated by the moulding process negatively affects the bearing lubrication condition. When there is no rotation, the lubricating oil film thickness between rollers and raceways drops down to zero. In this metal-to-metal contact, the strong accelerations and the high axial loads acting on the bearings cause surface smearing and the consequent bearing failure.

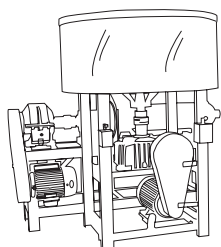
In a process where high shock loads can be a realistic risk, the choice of the right components is an important moment to guarantee the good performance of the machine in any situation.

HCH intimate process knowledge and enhanced competences now can lead both machine and plastic manufacturers to remove all the significant downtime causes, thus giving the right answer to the reliability requirements. What is more, HCH has applied advanced technology to exceed the life and limiting speed of conventional bearings. Our superior bearings offer higher limiting speed and longer operating life, thereby reducing maintenance costs.



Plastic and rubber are the basis material for the modern industries. For this application, It is critical for you to be able to understand the nature of the problems in order to recommend appropriate actions.

12.6 Tough Machinery



The process of mechanical parts processing machine is not all the same and the configuration of these machines vary according to the products they are designed to produce. Generally they are divided into turning machines, grinding machines, punching machines, cutting machines and mixer machines. However, process efficiency and profitability is one common ground of all mechanical parts processing machinery requirements.

The working environment of bearings in tough machineries are extraordinary in most respects, mainly including high speed and relatively light radial loads, extreme temperatures, dust, contaminants and humidity that can cause costly, unplanned stops. Superior bearing quality can bring you utmost plant availability. Normally it contains following characteristics:

- > High operational safety and reliability
- > High load carrying capacity
- > Insensitive to shocks and vibration
- > Simple mounting and dismounting



HCH bearing for tough machinery

The rough operating and environmental conditions require extremely robust bearings. Due to our research and development activities and to an intensive exchange of experience with manufacturers and operators of machines and plants. We dedicate to supply our customers cost-effective and trouble-free operation solutions. HCH is your reliable partner who can help increase productivity, reduce costs and protect the environment and workforce.

HCH has achieved a great deal of expertise for this tough machinery application. We are able to offer a variety of solutions that are intended to ensure production efficiency and machine reliability while taking into consideration the quality, cost and environmental concerns of the industry. The high quality and toughness of HCH bearings reduce maintenance costs in the tough machinery.

HCH has produced bearings with superior resistance to inner ring fractures, outstanding hardness, and excellent dimensional stability under high temperatures, producing solutions for a host of tough machinery applications and operating environments.



This application includes a variety of machines that running in the factories or construction places. The high quality of our products and the technical expertise of our engineers ensure the reliable, durable and cost-efficient use of our bearings in your specific machines.



CHINA · HUANCHI BEARING GROUP

Add: No.12 Hengpeng Road, Henghe Industry Zone, Cixi City, zhejiang, China

Tel: 0086-574- 63199899 63198088

Fax: 0086-574-63197123 63196123

P.C.: 315318

<http://www.hchbearing.com>

www.hch.cn