



9. Heavy Vehicles

In the competitive heavy vehicle industry, HCH knows your requirements of low noise, long life, high quality, less friction, energy saving and anti-dust. Accordingly, demand is also rising for high-performance and maintenance free. HCH offers the best quality raw material of bearings and optimized seals solutions to sustain the long service life and operators' comfort.

HCH believes that downtime is not an option. No industry knows that better than the agriculture, mining, and construction industry, where the competitive nature of business is often fought in the world's harshest environments. To help maintain uptime and improve the efficiency needed to improve the bottom line, HCH offers a complete line of products, services, and solutions.

Over years, HCH has completed extensive research to gain a better understanding of the needs of these industries. As a result, we are able to provide reliable solutions to problems that are inherent in vibratory equipment, contaminated environments, and applications with shock load. For this industry, we provide some of the toughest and most dependable products, as well as a team of the field and application engineers to assist in protecting vital capital equipment.



HCH provides support to direct the heavy vehicle industry customers and sales partners worldwide. International sales, application engineering, the relevant product lines as a service provider help our customers find solutions for how are HCH reliable bearings dealing with your problems.



General requirements for heavy vehicles

Productivity

In the heavy vehicle industry, equipment precision is continuously being improved. Take agriculture for example, When working in the field, higher accuracy means improved productivity for the farmer. To the landowner in intensive agriculture, it is vital that every square meter of land is used in the most efficient way. Since precision is a key issue to HCH's customers, it's also a key issue to us. Therefore, we combine profound knowledge in bearings with low friction materials, optimized seals structure, clearance as well as the lubricants.



Comfort

For operators of heavy vehicles, it is absolutely vital that an optimal comfort level can be obtained during the often long working days. Avoiding stress and fatigue is an important way to keep productivity up. At HCH too, comfort is a prioritized area. Therefore, we offer both original equipment manufacturers and end-users a range of excellent and reliable solutions that generate a high level of comfort as well as high productivity. Behind our mechatronics solutions, lies sound bearing and lubrication knowledge combined with high quality materials, low friction and surface treatment expertise.

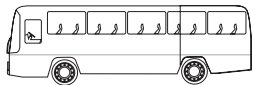


Environmental friendly





Due to the increasing environmental awareness in the market and stricter exhaust emissions and noise legislations, the development of engines used in heavy vehicles strives towards environmental friendly solutions. In addition, rising fuel prices affect the market greatly and engine designs are optimized in order to reduce emissions. For this, HCH has developed a wide variety of innovative solutions to provide performance durability as well as environmental friendly solutions.



9.1 Trucks & Buses



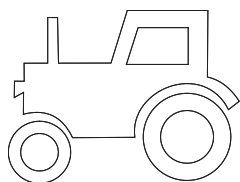
The commercial transport market is extremely competitive. Whether the operation is in Europe or in North America, ensuring vehicles are on the road is a prime focus for all areas of the industry. From designers working on the next generation of vehicles to a fleet's service manager, providing reliable on-road operation with extended yet flexible service intervals now drives much of the thinking.

<p>Power train</p> 	<p>By offering not only advanced application competence, but also a wide range of innovative and environmentally sustainable solutions for power train of trucks and buses, HCH is a competent engineering partner. By fast delivery and high quality product offering, we add further value to your equipments.</p>
<p>Chassis & attachments</p> 	<p>The working environment for chassis and attachments in trucks and buses is tough. To be cost-effective, these applications should require only a minimum of maintenance, but also contribute to increased productivity as well as comfort and safety. To meet these demands, HCH offers a wide range of special designed seal structure and lubrication solutions.</p>
<p>Mechelectricity</p> 	<p>For this application in trucks and buses, drivers' comfort is critical. Effortless control of equipment movement and low operating noise levels should be considered. HCH's engineering resources and consulting services can help the design engineers to improve the overall comfort and fuction of metroelectricity.</p>
<p>Engine</p> 	<p>Truck engines are going through significant technology upgrades, with legislation changes. In addition, engine designs are optimized in order to reduce fuel consumption. HCH offers bearing products with optimized sealing structure and customized grease choices to save energy and particulate emission levels.</p>






In collaboration with our customers' design specialists, we have developed a wide range of specific solutions for engines, transmissions, and running gears as well as for special applications. The know-how provided by HCH experts guarantees the highest quality and optimum coordination for every area of this application.

9.2 Agriculture



Rough working conditions and heavy loads are not the only factors that put great strain on today's agricultural machines and equipment. Along with end-users' constant demands for enhanced performance and cost-efficiency, these circumstances present a great challenge to original equipment manufacturers. For optimum result, we offer everything from perfectly adapted, customized solutions to well-ried and reliable standard products and solutions.

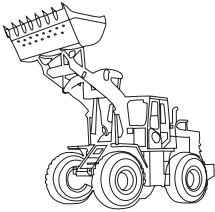
<p>Power train</p> 	<p>Agricultural equipment is designed for maximum power density and minimum power losses. At the same time, the demands for reliability and cost-effectiveness are high. HCH offers you standard and customized solutions, sealing solutions for harsh environment. By worldwide HCH distribution availability, we can offer you fast delivery time.</p>
<p>Chassis & attachments</p> 	<p>For this application, bearings are commonly exposed to heavy loads, often in muddy and dusty working conditions. These applications should be extremely reliable. HCH offers a wide range of high quality bearing products which are designed for tough working environments and also offer minimal environmental impact.</p>
<p>Mechelectricity</p> 	<p>Integrating electronic solutions with the mechanical systems traditionally used in agricultural applications, often improves farm productivity as well as operator safety and comfort. By being at the forefront of this technology for many years, HCH has developed unique application knowledge. We have been able to develop a number of customized bearings for these solutions.</p>
<p>Engine</p> 	<p>Due to the increasing environmental awareness in the market and stricter exhaust emissions and noise legislations, the development of engines used in agricultural vehicles strives towards environmental friendly solutions. For this, HCH has developed a wide variety of innovative solutions and bearing products to achieve combining reduced fuel consumption and emissions with performance and cost-effectiveness.</p>



You can rely on efficient sourcing worldwide, solutions for a more efficient mounting process, and shorter time-to-market. HCH rolling bearings significantly contribute to the outstanding performance of a large variety of agriculture equipments worldwide.



9.3 Construction & Mining



It's not only the heavy loads but also the tough working conditions that put pressure on modern construction machines and equipments, the users' ever-increasing demands for performance and cost-efficiency add further to this pressure. Living up to these demands is a tough challenge to the world's equipment manufacturers.

Power train



Construction equipment is engineered for demanding duty, often in harsh environments. This requires power train applications that to be reliable and efficient, as well as functional and cost-effective. We offer you standard and customized solutions that are pre-set in the factory, heavy-duty sealing solutions.

Chassis & attachments



There is an urgent need for operator comfort and safety. Whether your bearings are suffering from contamination and over consumption of grease in your roll neck applications, excessive loads, or if you're just looking for a fresh approach to achieving maximum uptime, HCH has the answer.

Mechelectricity



Integrating mechanical systems with electricity solutions leads to more efficient, reliable and safer products. HCH endeavors to design and produce bearings with standard to meet customers' requirement. We continue to focus on our customers by enhancing quality, design flexibility and total cost optimization.

Engine

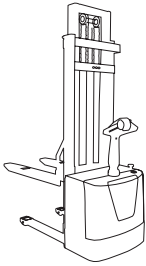


The development of engines used in construction vehicles strives towards environmental friendly solutions. Keeping the correct balance between price and performance is a real challenge. For this, HCH has developed a wide variety of innovative solutions and bearing products to provide performance durability as well as sustainability.



The construction and mining industries require high performance equipment for efficiently carrying out construction and mining projects. To achieve and ensure this efficiency, construction equipment manufacturers consequently come to HCH bearings to expect suitable solutions from their applications.

9.4 Material Handling



Bearings in material handling are exposed to a number of different heavy-load environments-in addition to dirt, mud, rain and dust when used in outdoor applications. HCH medium size deep groove ball bearings and tapered roller bearings keep construction and mining machineries in production longer with less downtime. HCH products for these applications overcome contamination, debris, good resistance to temperature change, operate in poorly lubricated environments, and keep performing even with heavy loads at ultra-low speeds.

Hand trucks, pallet jacks and walkies



Hand trucks, pallet jacks and walkies operate in highly diverse environments with varying levels of operator use/abuse. They are subject to a lot of ramming and pushing. Bearings, particularly in the mast area and wheels must be able to withstand the resulting shock loads.



Forklift trucks



Forklift trucks used in the warehouse environment are exposed to varying loads under changing environmental conditions. Bearings must be able to withstand cold temperatures (-40 °C) when equipment is used to transport materials in and out of freezers. And, they must be able to perform properly upon returning to warmer temperatures. In addition, forklifts typically operating in a highly abusive environment where the mast, in particular, are subjected to a lot of ramming and pushing. Therefore, the ability to withstand heavy shock loads is paramount.



HCH bearings are used in the mast and bracket sections of material handling. These bearings rotate in constant contact with the masts under heavy load while the mast and bracket move upward and downward. HCH bearings are with enough compression strength to prevent wear of the masts.

HCH bearings for material handling

HCH mast guide and chain guide bearings are specially designed for forklift trucks. Engineered to accommodate heavy radial loads, HCH bearings can withstand heavy shock loads and handle over-turning moments produced by combined radial and thrust loads. The outer diameter profile of these bearings can be customized to meet the needs of a particular application. Bore diameters typically range from 25 mm to 60 mm. A bearing is always part of a system which requires lubrication to perform well and seals to retain the lubricant and keep it clean.