# **BUSINESS**

#### **OVERVIEW**

We are a leading manufacturer of roadheaders for coal mining and we are also a one-stop coal mining solutions and comprehensive coal mining equipment provider with strong research and development capabilities. We have the ability to design and manufacture a comprehensive range of coal mining equipment in accordance with the specific requirements of our customers with respect to excavating, coal mining, structural support and underground coal conveying functions.

We are the largest manufacturer of roadheaders for coal mining in the PRC, according to a report by the China National Coal Mining Machinery Industry Association (中國煤炭機械工業協會) published at www.coalchina.org.cn in July 2009, which ranks domestic manufacturers of roadheaders by the total number of roadheaders sold in 2008. According to the same report, we also successfully developed China's first fully-automated combined coal mining unit in 2008, which integrates coal mining, structural support and coal conveying functions with a centralised control system into a single coal mining unit. This allows for automated control of coal mining operations and transportation at the work site, as well as a variety of other support functions and significantly enhances the safety and efficiency levels of coal mining units. As at 30 September 2009, we had entered into 10 sales contracts for our combined coal mining units, amounting to a total contract price of approximately RMB511.0 million (including 17% value-added tax). Of the 10 sales contracts, we had delivered products, with total contract value amounting to approximately RMB136.0 million, to our customers and we expect to deliver products with contract value of approximately RMB223.6 million to our customers by the end of 2009.

We have invested heavily in building a strong research and development platform. We have established a research headquarters, which is responsible for implementing the overall planning and co-ordination of research and development projects, and five research institutions, which are responsible for the research and development of excavating machinery, coal mining machinery, scraper conveyors, hydraulic structural support equipment and coal mine transportation vehicles, respectively. As at the Latest Practicable Date, we had successfully registered 146 patents, and had 80 patents pending registration, with the State Intellectual Property Office of China.

We believe our strong research and development capabilities have allowed us to develop new and innovative products. To further strengthen our market position in the coal mining industry, we have already started designing and manufacturing coal mine transportation vehicles, for which we expect to enter into sales contracts by the end of 2009. In recognition of our outstanding and continuing research and development efforts, we have been granted an approval by the PRC Ministry of Human Resources and Social Security (國家人力資源和社會保障部) to establish a National Postdoctoral Scientific Research Base (國家級博士後科研工作站). Furthermore, we have been accredited as a National High New Technology Enterprise in 2008, and our products have received numerous awards, including the Shenyang Technology Revitalisation Award and the Certificate of Technology Achievement. In addition, we have prepared a research report entitled "Ideas for Developing a Large-scale Coal Machinery and Equipment Manufacturing Group" (培育大型煤炭機械裝備製造集團發展思路) in 2008 which was awarded third prize by the China National Coal Machinery Industry Association (中國煤炭機械工業協會).

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Our production facilities are strategically located in Shenyang City, Liaoning Province, which is an industrial base in Northeast China. Shenyang City is in close proximity to major coal mining sites and is a major rail and highway transportation hub in Northeast China. We have set up an extensive service network, with 11 service centres and 44 service outlets, covering 19 provinces throughout China near major mining sites where our customers operate.

We have experienced significant growth in sales revenue and profit in recent years. For the years ended 31 December 2006, 2007 and 2008, our total sales revenue was RMB159.9 million, RMB461.6 million and RMB1,146.8 million, respectively, representing a CAGR of approximately 167.8%. For the six months ended 30 June 2009, we had total sales revenue of RMB891.6 million, representing an increase of 103.3% as compared to the corresponding period in 2008. For the years ended 31 December 2006, 2007 and 2008, our profit was RMB18.4 million, RMB141.4 million and RMB211.9 million, respectively, representing a CAGR of approximately 239.4%. For the six months ended 30 June 2009, we RMB250.2 million, representing an increase in 222.0% as compared to the corresponding period in 2008.

## OUR COMPETITIVE STRENGTHS

We believe that our historical success and potential for future growth are attributable to our principal competitive strengths, which are as follows:

## We have strong research and development capabilities

We are committed to maintaining a competitive research and development team and have invested substantially in research and development. We aim to research and develop cutting edge products for our customers in order to achieve a competitive advantage over our domestic and international competitors. We have one research headquarters and five research institutions. Our research and development team is centrally managed by our research headquarters, which is responsible for implementing overall planning and co-ordination of research and development projects. The five research institutions are responsible for the research and development of excavating machinery, coal mining machinery, scraper conveyors, support and protection equipment and coal mine transportation vehicles, respectively. As at the Latest Practicable Date, our Company had approximately 450 research and development professionals. We increased our research and development expenses over the Track Record Period, dedicating approximately RMB12.9 million, RMB29.9 million, RMB43.7 million and RMB22.5 million, representing 8.1%, 6.5%, 3.8% and 2.5% of our total sales revenue to research and development activities for the three years ended 31 December 2006, 2007 and 2008, and the six months ended 30 June 2009, respectively. We intend to increase our research and development expenses by approximately 45% in 2009 compared to 2008.

We believe that our research and development capabilities have allowed us to launch new and innovative products. According to reports published by the Institute of Scientific and Technical Information of Liaoning Province (遼寧省科學技術情報研究所) in December 2008, we launched China's first roadheader equipped with high gradient downward excavation technology (EBZ160CD) in 2006, and in 2007, we launched the first narrow body roadheader in China with a body width of

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2.8 m (EBZ132CZ), which is able to significantly increase the excavation rate in coal mines with narrow tunnels. In addition, we launched the first roadheader in China used for excavating hard rock tunnels (EBZ200H). Furthermore, we launched China's first fully-automated combined coal mining unit in 2008, which is able to fully integrate coal mining, structural support and coal conveying functions with a centralised control system into a single coal mining unit, so as to achieve fully-automated, safer and more efficient coal mining without human operation.

In recognition of our research and development efforts, we have been granted an approval by the PRC Ministry of Human Resources and Social Security (國家人力資源和社會保障部) to establish a National Postdoctoral Scientific Research Base (國家級博士後科研工作站) and have been accredited as a National High New Technology Enterprise in 2008. In addition, we have received numerous awards for our products. For example, our EBZ160 roadheader was awarded the Shenyang Technology Revitalisation Award in 2007. In addition, our EBZ200H roadheader was recognised by the Science and Technology Office of Liaoning Province as a Provincial Grade Science and Technological Research Achievement in 2007 and was awarded the Shenyang Technology Advancement Award (First Prize) and the Shenyang Technology Revitalisation Award in 2008. Moreover, many of our products, including certain models of our roadheaders, coal loading machines, coal mine concrete pumps, continuous coal mining machines, scraper conveyors and shuttle cars were awarded Certificates of Technology Achievement. In addition, we have prepared a research report entitled "Ideas for developing large-scale coal machinery and equipment manufacturing group" (培育大型煤炭機械裝備製造集團發展思路) in 2008 which was awarded third prize by the China National Coal Machinery Industry Association (中國煤炭機械工業協會).

As at the Latest Practicable Date, we had applied for 218 patents and had successfully registered 146 patents with the State Intellectual Property Office of China. We collaborate closely with external organisations to conduct research and development work and have also established strategic partnerships with our key customers to better understand their needs, obtain valuable and timely feedback from them and optimise our research and development activities. Please refer to the paragraph headed "— Research and Development" in this section of this document for further details.

## We are a leading manufacturer of roadheaders for coal mining in China

According to the China National Coal Mining Machinery Industry Association (中國煤炭機械工 業協會), we are the largest manufacturer of roadheaders for coal mining in China in 2008 in terms of the total number of such machinery sold. We believe that our roadheaders are well-recognised and enjoy a good reputation in China due to their quality, performance and reliability and can effectively compete with imported products. We have received awards in recognition of our efforts to develop quality products. Please refer to the paragraph headed "— Our Competitive Strengths — We have strong research and development capabilities" in this section of this document for further details.

We believe our reputation and product quality will enable us to maintain and strengthen our market position as a leading roadheader manufacturer in China as well as provide a platform for our expansion into the integrated coal mining equipment market.

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## We have strong manufacturing capabilities and an advanced production system

We have developed and implemented a production system based on a lean production model, which we have tailored to meet the specific requirements to manufacture our products. Our production system has incorporated the concepts of "just-in-time" and "pull" production, which means that our production process is scheduled based on orders received from our customers and is driven by customer demand. We typically only commence the production of a product when we receive orders and will only produce what is required. As a result, we are able to ensure that the inventory levels of finished products are kept to a minimum, which prevents stock pile-up in our warehouses. Please refer to the paragraph headed "— Production System" in this section of the document for more information.

Since we only manufacture products in the quantity required by our customers, it is important to reduce the occurrence of defective products. Hence, we have implemented a "zero defects" quality management system, which aims to detect and prevent problems or defects.

In addition, we use computer numerical control equipment in our production process. With computer numeric controls, specific production processes can be programmed into the production machinery and such parameters can then be repeated precisely for each subsequent production cycle. We are able to effectively control our production parameters and produce products that are consistent in quality and closely match the original design. This also allows for greater flexibility in our production process because the parameters may be amended or varied easily according to any changes in product specifications.

We believe our advanced production system allowed us to significantly improve our inventory management and reduce inventory levels during the Track Record Period, and assure timely delivery of products to our customers while still maintaining the quality of our products as well as increasing efficiency through shorter production cycles.

# We are capable of providing integrated equipment and solutions in accordance with the specific requirements of our customers

We are capable of providing integrated equipment and solutions in accordance with the specific requirements of our customers with regards to excavating, coal mining and coal mine transportation functions. By leveraging on our strong research and development and production capabilities, we are able to design, manufacture and integrate various coal mining related machinery into a single combined unit, thereby providing our customers with a one-stop solution to purchase a comprehensive range of coal mining machinery from a single supplier, backed by our customer service, maintenance and support systems. For example, our JM11 bolting integrated roadheader integrates our roadheaders with the function of bolting, which allows for excavation work and bolting by a single unit; in 2008 we developed China's first fully-automated combined coal mining unit which fully combines coal mining, structural support and coal conveying functions with a centralised control system into a single coal mining unit, having the obility to carry out fully-automated coal mining activities. We also provide manually-controlled combined coal mining units with similar functions.

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We believe such capabilities are very important to our customers as they ensure consistency in the quality of coal mining equipment purchased, enhance the efficiency and safety levels of coal mining operations and reduce the need for our customers to assemble the machinery and carry out maintenance work on various machines. We believe that this will in turn lower the costs and expenses of coal mining enterprises, particularly for medium- and small-sized coal mining enterprises, which generally have limited in-house technical support capabilities.

# We have established an integrated service system to provide prompt, efficient and comprehensive services to our customers

We have established an integrated service system which provides a comprehensive range of pre-sales, sales and after-sales services to our customers. We believe that our comprehensive service system not only distinguishes us from our competitors, but also allows us to establish long-term relationships with our customers.

As part of our service system, we have established an extensive service network which consists of 11 service centres and 44 service outlets. These service centres and service outlets are strategically located across China and are in close proximity to major coal mines. We have dedicated and trained service teams in each service centre and service outlet. Our service teams are able to provide pre-sales consultancy services to our potential customers so that we are able to better understand their needs and recommend products tailored for their purposes and budgets. Further, we provide comprehensive after-sales services which include on-site training of our customers' workers and on-site installation and assembly of products. Regular maintenance and inspection tests are also provided by our service teams. In addition, we have a team of "second-assembly" technical specialists ready to assist our customers with on-site re-assembly of machines in underground mining areas.

We have a 24-hour after-sales service hotline and a "fast-response" team dedicated to providing rapid responses and solutions to our customers. Further, after receiving a call for assistance from a customer, we aim to arrive at the customer's site in China within two hours if the site is located in the same city as any of our service outlets, within eight hours if the site is located within the same province as any of our service outlets and within 24 hours for sites located in any other provinces.

We have 43 parts and components warehouses that are strategically located near mining sites all over China. We have also established a "Green Channel" system to ensure the quick delivery of essential spare parts to our customers as we understand that the prompt delivery of essential spare parts could be critical to our customers' operations.

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# Our management team has extensive industry experience and our employees are highly skilled

Our management team has extensive industry knowledge, operational experience and management skills, and is able to adapt quickly to changing trends. With an average of over 15 years of experience in the machinery industry, our management team is able to identify and pursue market opportunities and formulate and implement development strategies effectively.

We also have a highly skilled work force. We recruit our staff from a number of reputable colleges in China as well as from Sany Industry Vocational and Technical College (三一工業職業技術學院). Sany Industry Vocational and Technical College is wholly-owned by Sany Group and conducts courses with a focus on providing education, training and skills that are relevant to the operations of our Group. Please refer to the section headed "Directors, Senior Management and Employees — Employees" in this document for further details.

With our experienced management team and highly skilled employees, we have established a track record of rapid growth. Since manufacturing and selling our first roadheader in 2005, we have become one of the leading roadheader manufacturers in China in terms of number of roadheaders sold in a period of four years.

## **OUR BUSINESS STRATEGIES**

We aim to develop and maintain a product portfolio with a leading position in each of our product segments, in particular, we aim to become a leading one-stop coal mining solutions and comprehensive coal mining equipment provider in China. We intend to achieve this by focusing on the following strategies:

## Maintain and further strengthen our competitiveness and expand our customer base

We intend to leverage on our leading position as a manufacturer of excavating machinery and our strategic partnerships with customers to enhance our ability to provide coal mining solutions and comprehensive coal mining equipment. We believe that this will result in the development of new products, which will lead to an increase in sales to our existing customers and attract potential customers.

While China remains our focused market in the next few years, we intend to expand our customer base into the global market, increase our export volume and enhance the recognition of our products, initially targeting countries where we believe our products have an advantage in terms of technology or price.

With a view toward expanding our overseas distribution business, Sany Heavy Equipment has obtained a PRC customs import and export goods customs registration certificate of consignor and consignee (《中華人民共和國海關進出口貨物收發貨人報關註冊登記證書》), which has been registered in the relevant custom, allowing us to carry out export activities. We also plan to operate

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our own overseas distribution in the second half of 2010. To implement our overseas distribution plan, and subject to changes in overseas market conditions, we intend to set up our own branch offices at selected overseas locations including Russia, South Africa, India and Ukraine, and send our sales persons and service staff from the PRC and to employ new overseas sales persons and service staff to facilitate our overseas distribution. Through our own overseas distribution platform, we will sell our products directly to our existing overseas end-customers and attract new overseas customers procured by ourselves.

## Expand and upgrade our production capacity to satisfy growing market demand

We plan to continue improving and expanding our existing production capacity to meet growing customer demand for our products. In particular, to meet the increasing demand for our excavating machinery and combined coal mining units, as well as the expected demand for our coal mine transportation vehicles, we have started constructing new production facilities to enhance our overall production capacity. We plan to use our new production facilities, with a total area of approximately 629,015.2 sq.m. and located in Shenyang City, for the production of our combined coal mining units and coal mine transportation vehicles. Thereafter, our existing production facilities shall be used mainly for the production of excavating machinery. The new production facilities and expanded existing production facilities are expected to increase our production capacity. We expect to be able to produce approximately 780 roadheaders, 55 combined coal mining units and 100 coal mine transportation vehicles by the end of 2011.

## Expand our product portfolio and increase vertical integration

We plan to continue to expand our product portfolio in order to enhance our capabilities to provide one-stop coal mining solutions and a comprehensive range of coal mining equipment, which we believe can better serve our customers and further diversify our revenue streams. In 2008 we began offering our combined coal mining units, including fully-automated combined coal mining units. We have also started designing and manufacturing coal mine transportation vehicles. In addition, we expect to commence production of two new product segments by 2010, namely air ventilation equipment and coal washing equipment. This would further expand our product portfolio.

We currently produce approximately 35% of the parts and components required for the manufacture of our products and rely on external sources for the remaining parts and components. Out of the remaining 65%, 40% of the parts and components are obtained from either PRC or overseas suppliers, while the remaining 25% are designed by us with the manufacturing process outsourced to external parties. We will continue to develop the technology required to manufacture the key parts and components required for the production of our products. For instance, we intend to commence our own production of fuel tanks in 2011. We believe the in-house production process, which will reduce our reliance on the external sourcing of key parts and components and will further strengthen our competitive position in the domestic and global markets. This will also allow us to better control costs and quality as well as ensure the timely delivery of our products.

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#### Continue to invest in research and development and develop new products

We have invested substantially in our research and development activities and will continue to do so. We have been increasing our research and development expenditure over the years, incurring approximately RMB12.9 million, RMB29.9 million and RMB43.7 million, representing 8.1%, 6.5% and 3.8% of our total revenue in 2006, 2007 and 2008, respectively, and we intend to continue increasing our investment in research and development activities. We expect that our research and development expenses will increase by approximately 45% in 2009 as compared to that in 2008. We believe that by continuously investing in research and development, we can develop new products that adapt to market trends and demands, expand our product portfolio, provide customised products that meet the specific needs of our customers and manufacture products that may compete with both domestically produced and imported machinery.

#### **OUR PRINCIPAL PRODUCTS**

We design and manufacture excavating, coal mining, coal mine transportation and related products, which we offer to our customers who operate primarily in the coal mining industry. We have been designing, manufacturing and selling excavating machinery since 2005. Leveraging on our experience in the design, production and sale of excavating machinery, we have recently diversified into designing and manufacturing combined coal mining units and coal mine transportation vehicles with a view to provide one-stop coal mining solutions and comprehensive coal mining equipment to our customers.

Our current range of principal products can be categorised into two main product segments, namely excavating machinery and combined coal mining units. We have also recently diversified into the coal mine transportation vehicles product segment and have already started designing and manufacturing such vehicles, for which we expect to enter into sales contracts by the end of 2009.

## **Excavating Machinery**

Our excavating machinery comprises our roadheaders, continuous mining machines, coal mine concrete pumps as well as coal loading machines.

#### Roadheaders

Our roadheaders are equipped with the functions of a cutting head, a travelling track, a conveyor unit and dust reduction technology that is capable of removing approximately 95% of dust particles. These functions are combined to form an integrated unit of excavating equipment. Our roadheaders are used primarily in the coal mining industry to carry out excavating work on different types of coal and rock formations found in various coal mine tunnels.

We have designed and manufactured a comprehensive range of roadheaders with varying cutting powers and functions. Generally, our roadheaders fall into the following categories: (i) soft rock mining roadheaders; (ii) hard rock mining roadheaders; and (iii) special purpose roadheaders.

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The cutting power of our soft rock mining roadheaders ranges from 100kW to 200kW, while our hard rock mining roadheaders have a higher cutting power range of between 200kW and 318kW. Examples of our roadheaders are set out below:

Soft Rock Mining Roadheaders



EBZ100 roadheader, with a cutting power of 100kW.

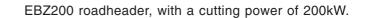


EBZ120 roadheader, with a cutting power of 120kW.

EBZ132 roadheader, with a cutting power of 132kW.



EBZ160 roadheader, with a cutting power of 160kW.





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Hard Rock Mining Roadheaders



EBZ200H roadheader, with a cutting power of 200kW.



EBZ260H roadheader, with a cutting power of 260kW.



EBZ318H roadheader, with a cutting power of 318kW, has one of the highest performance levels in China.

Special Purpose Roadheaders

Our roadheaders may be further integrated with additional functions for special purposes, such as bolting, which allow for excavating works while concurrently carrying out bolting functions, thereby improving work efficiency.



JM11 bolting integrated roadheader

To cater to the varying needs of our customers, we have also designed and manufactured roadheaders with special purposes tailored to our customers' requests. Such special purpose roadheaders, which have the characteristics of our other roadheaders, are further enhanced with special features customised according to the specific requirements of our customers. Through our strategic partnerships with our customers, we are able to better understand their needs and develop designs which fulfil their requirements. Please refer to the paragraph headed "— Research and

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Development — Co-operation with External Organisations" in this section of this document for further details. We have designed and manufactured the following roadheaders based on our customers' requirements:



EBZ132CZ roadheader, specifically tailored from our EBZ132 roadheader, is a type of narrow body roadheader which is able to tunnel through narrow passageways and has a cutting power of 132kW. This narrow body roadheader has a body width of less than 2.8 m and a height of 1.55 m. It is able to perform cutting work in very narrow or small sections of coal mines, commonly located in the western and southern regions of China.



EBZ160CD roadheader, specifically tailored from our EBZ160 roadheader, is equipped with the function of high gradient downward excavation. This high gradient roadheader is able to excavate while moving along downward gradients of up to 25 degrees as compared to a typical roadheader, which is only able to travel along downward gradients of up to 16 degrees. It comes equipped with a special crawler belt which travels easily on upward and downward gradients of up to 25 degrees.

Continuous Mining Machinery



Our continuous mining machines are designed to cut, gather and load coal continuously, used primarily in "room and pillar" coal mining as well as coal mining in tunnels. Our continuous mining machine has a broad cutting drum that rotates and cuts coal from the coal seam. Using a "room and pillar" mining method, the machine excavates the coal in a manner that divides the mine into several large "rooms" and coal pillars so as to carry out coal mining activities in the "rooms". Pillars of coal which separate the "rooms" are not removed in order to support the roof of the mine. The machine is thereafter able to immediately transport the cut coal away with the help of conveyors. Further, our continuous mining machines come equipped with a dust reduction function, with the aim of protecting the health of coal miners.

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## Coal Mine Concrete Pumps



Our coal mine concrete pumps are designed and manufactured to transport concrete into underground coal mines. It has three main purposes: (i) transporting concrete into underground coal mines to fill the working surface in excavated coal mines, which prevents the working surface from collapsing so as to protect the environment, (ii) strengthening tunnel walls, and (iii) other instances where concrete is used in coal mines, such as for levelling tunnel floors.

## Coal Loading Machinery



Our coal loading machines are not only equipped with coal and rock loading functions, they are also equipped with a dust reduction function. Our coal loading machines are typically used to carry out excavation of tunnels or mines through blasting with explosives. After the blast, the coal loading machine collects the blast material with a shovel loader or a shovel board and deposits the fallen rock and coal onto a coal mine transportation vehicle, which transports the coal and rock onto a conveyor system for removal from the underground coal mine.

## Drilling and Loading Machinery



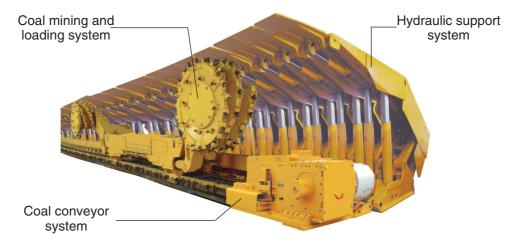
Our drilling and loading machines have the functions of our coal loading machines and are further equipped with drilling functions. These machines are typically used to drill coal and rock for excavation through blasting. After blasting with explosives, the fallen coal and rock can then be easily loaded onto the drilling and loading vehicle and transported onto a conveyor system for removal from the coal mine.

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For the years ended 31 December 2006, 2007 and 2008 and the six months ended 30 June 2009, our revenue from excavating machinery amounted to RMB156.5 million, RMB437.1 million, RMB1,018.3 million and RMB739.2 million, respectively, which accounted for 97.9%, 94.7%, 88.8% and 82.9% of our total sales revenue, respectively.

## **Combined Coal Mining Units**

To achieve our goal of becoming a one-stop coal mining solutions and comprehensive coal mining equipment provider to our customers, we have diversified into designing and manufacturing combined coal mining units. Our range of machines can be integrated and combined to form a complete set of machines with various functions for conducting coal mining activities. Generally, our combined coal mining units fall under two categories, namely our manually-controlled combined coal mining unit and our fully-automated combined coal mining unit.



Our combined coal mining unit comprises three key functions: (i) coal mining and loading; (ii) structural support; and (iii) coal conveying. In addition to these three key functions, our fully-automated combined coal mining unit also includes a centralised control function, which achieves full automation and enhances mining safety and efficiency levels.

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Coal Mining and Loading System



Our combined coal mining unit is a sophisticated unit of machinery. It comprises a coal mining machine that has rotating drums that are able to simultaneously mine and collect coal. The collected coal is then removed from the work area by a conveyor system. Our coal mining machines are able to automatically adjust cutting speed, adapt to varying heights in the coal mines, as well as memorise and apply the initial coal cutting profile and conditions on subsequent coal cutting, thereby allowing coal mining activities to be monitored and controlled. Our combined coal mining unit also comes equipped with technology capable of dust reduction.

Structural Support System



To provide structural support during coal mining activities, we have designed and manufactured hydraulic support structures. Hydraulic support structures are essential in coal mining. They are large mobile roof-support structures designed to support the roof of a coal mining work site where coal mining activities are being carried out, in order to protect and ensure the safety of miners and their coal mining equipment. Our hydraulic support structures are equipped with a hydraulic control system developed by us and complement our coal mining capability. To be reliable, hydraulic support structures are designed to withstand high amounts of pressure.

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Coal Conveying Function



We have designed and manufactured various conveyor systems for different mining work sites. Our conveyor systems are equipped with lengths between 150 meters and 400 meters and have coal conveying capacities ranging from 450 mt/h to 4,000 mt/h. They are able to handle bulk materials and provide an efficient means of conveying coal from the coal mining sites.

Centralised Control Function



In an effort to improve the productivity and safety levels of coal mining, we integrated our combined coal mining unit with a centralised control function to form a fully-automated combined coal mining unit. Our centralised control machine centrally controls our combined coal mining unit. This centralised control system can either be placed in a tunnel close to the mining operations or in an above-ground control centre.

Our fully-automated combined coal mining unit is designed to increase the safety and efficiency levels in mining as it does not require human operation but allows for intelligent and centralised control of the coal mining operations. This ensures that productivity and efficiency levels are not compromised. Our fully-automated combined coal mining unit relies on automated imaging and other sensors to automatically detect coal locations and to accordingly adjust its traction speed, the height of the coal cutting drum and the level of hydraulic support. The cut coal is then automatically transferred onto a conveyor system, which is integrated with the fully-automated coal mining unit, and conveyed out of the mining site. The speed at which the cut coal is conveyed can also be adjusted and controlled automatically.

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As at 30 September 2009, we had entered into 10 sales contracts for our combined coal mining units, amounting to a total contract price of approximately RMB511.0 million (including 17% value-added tax). Of the 10 sales contracts, we had delivered products, with total contract value amounting to approximately RMB136.0 million, to our customers and we expect to deliver products with contract value of approximately RMB223.6 million to our customers by the end of 2009.

## **Coal Mine Transportation Vehicles**

In line with the advancement of coal mining and excavating equipment and machinery, we believe that a lack of improved coal mine transportation vehicles, which serve to support coal mining activities, will hinder the development and growth of the coal mining industry. To complement excavating and coal mining works, since 2008, we have started designing and manufacturing coal mine transportation vehicles, of which we expect to have sales by the end of 2009. Safe, efficient and reliable transportation vehicles are important in a coal mining site as they improve working conditions for miners and increase the efficiency levels of coal mining.

Our coal mining transportation vehicles are generally designed to transport materials, machinery, including underground coal mining machinery and large equipment, and coal miners around the coal mining sites in a safe and efficient manner. Below are examples of sample models of coal mine transportation vehicles we have designed and manufactured:



Shuttle Car: This vehicle complements our continuous mining machinery as it can be used for underground coal mining purposes. It has a large loading capacity such that materials can be transported, loaded and unloaded efficiently.



Multi-purpose Vehicle: This vehicle is multi-functional and has loading capabilities as well as transportation functions. It has interchangeable shovel heads and fork lifts to load and transport various large underground machinery and equipment.

Support and Transportation Vehicle: This vehicle facilitates the transportation and assembly of hydraulic support structures as well as the transportation of various large underground machinery and equipment.

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## PRODUCTION FACILITIES AND PRODUCTION CAPACITY

Our production facilities are located in the Shenyang Economic and Technological Development Area in Shenyang City, Liaoning Province, with an aggregate gross land area of approximately 215,070 sq.m.

For the production of our products, we have over 700 units of production machinery, on which we carry out regular maintenance. Our production equipment was purchased from both domestic and overseas suppliers in China.

We have adopted a production platform to meet the demands of our customers on a timely basis, which is triggered upon receiving orders for our products. Please refer to the paragraph headed "— Production System" in this section of this document for further details on our production system.

The table below sets out our production capacity. Given that we commence production of a particular product only when we receive an order for that product, our utilisation rate can be expressed in terms of the units of products sold compared to the capacity of our existing facilities.

	Three years ended 31 December					
	2006		2007		2008	
Products	Sales Volume	Utilisation Rate	Sales Volume	Utilisation Rate	Sales Volume	Utilisation Rate
	(units)		(units)		(units)	
Roadheaders	61	90%	151	92%	318	90%

We have a plan to construct new production facilities to increase our overall production capacity, enhance our product quality and diversity, further integrate our production process as well as to cater for our expansion into new products segments. We expect to enter into new product segments, such as air ventilation equipment and coal washing equipment, by 2010.

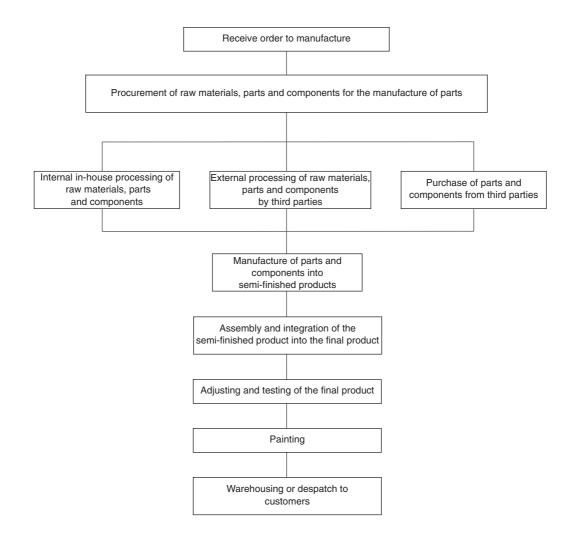
We plan to continue improving and expanding our existing production capacity to meet growing customer demand for our products. In particular, to meet the increasing demand for our excavating machinery and combined coal mining units, as well as the expected demand for our coal mine transportation vehicles, we have started constructing new production facilities to enhance our overall production capacity. Our new production facility, with a total area of approximately 629,015.2 sq.m. located in Shenyang City, is expected to commence production operations of our combined coal mining units and coal mine transportation vehicles in 2010. Thereafter, our existing production facilities shall be used mainly for the production of excavating machinery.

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We expect that our existing production facilities will enable us to produce 450 roadheaders and eight combined coal mining units by the end of 2009. The new production facilities and expanded existing production facilities are expected to increase our production capacity. We expect to be able to produce approximately 630 roadheaders, 20 combined coal mining units and 25 coal mining transportation vehicles by the end of 2010 and approximately 780 roadheaders, 55 combined coal mining units and 100 coal mine transportation vehicles by the end of 2011.

## **PRODUCTION PROCESS**

The following diagram illustrates the major production process of our principal products:



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Generally, our production process by product segment can be broadly categorised into seven steps:

Procurement of raw Principal raw materials, parts and components include steel sheets, round steel, steel pipes, electrical parts and hydraulic materials, parts and components: parts. Processing of raw Raw materials, parts and components are processed materials, parts and according to the necessary technical specifications to form the specified components required. Such treatment process components: includes cutting, drilling, gas cutting, bending and polishing. While we purchase some components processed by third parties, the processing of raw materials, parts and components is typically either carried out by us or is outsourced to external third parties who conduct the processing based on our designs and technical specifications. Manufacturing of Raw materials, parts and and components are further components into processed to form semi-finished parts ready for final semi-finished products: assembly. These materials will undergo processes including welding and drilling. Components such as the main body, tractor belt, cutting head and shovel are assembled together and undergo drilling according to the necessary technical specifications to form semi-finished products. Assembly and integration All semi-finished parts and external parts, such as electric motors, speed-reducing machines, electric controls and hydraulic systems and other external parts, are assembled and integrated to form the finished products. Adjusting and testing Finished products are sent for further adjustments and fine-tuning before being sent out of the production sites for evaluative testing and inspection of the finished products as a whole in accordance with the products' post-factory requirements. Painting Products which pass the final testing and inspection stages are sent to the painting factory. Warehousing Finally, the painted final products are sent to our warehouses for storage and despatch to our customers.

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The lead production time for our products varies. The lead production time for our roadheaders is typically between 20 and 30 days, while the lead production time for our combined coal mining units is typically between three and four months. Every stage of our production process is subject to quality control procedures and has to adhere to a "zero defects" quality management system. Please refer to the paragraph headed "— Quality Control — Quality Control During the Production Process" in this section of this document for further details.

#### **PRODUCTION SYSTEM**

We have developed and implemented an advanced production system based on the lean production model, which we have further tailored to meet the specific needs required to manufacture our products. Our production system has incorporated the concepts of "just-in-time" and "pull" production, with a focus on the elimination of "waste", which refers to anything that does not advance or afford any value to the production process. The concepts of "just-in-time" and "pull" production mean that our production process is scheduled based on orders received from our customers and is driven by customer demand. Only when we receive orders for a particular product do we then commence the production of that product and in the quantities required. As such, we are able to ensure that the inventory levels of finished products are kept to a minimum, thereby reducing stock pile-up in our warehouses. Furthermore, our focus on eliminating waste means removing unnecessary steps and non-value added activities in our production process. This leads to a reduction in costs and shorter production cycles, resulting in the timely delivery of products to our customers.

Since we only manufacture products in the quantity required by our customers, and because our aim is to eliminate waste, reducing the occurrence of defective products is of particular importance. Consequently, we have implemented a "zero defects" quality management system. Every stage of our production process is subject to strict quality control procedures and whenever a problem or defect is detected, the manufacturing equipment stops immediately, thereby reducing the occurrence of defective products from being produced. Please refer to the paragraph headed "— Quality Control — Quality Control During the Production Process" in this section of this document for further details.

Instead of controlling all of our production equipment manually, we use computer numerical control equipment for some stages of our production process. Such stages of the production process are highly automated as the process is computerised. With computer numeric controls, specific production processes, such as the processing of machinery, changing of production tools along the production line, automatic movement of parts along the production line, parameters for welding, bolting and drilling, and the assembly of parts, can all be programmed into the production machinery. Such parameters can then be repeated precisely for each subsequent production cycle. We believe this increases the quality of our products as we are able to effectively control our production parameters and produce products which are consistent in quality and closely match the original design. This also allows for greater flexibility in our production process as the parameters may be amended or varied easily according to any changes in product specifications.

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With our advanced production system, we believe we are able to manufacture products based on the specifications of our customers, which include the type of products required, at the optimal quantity and at the correct time.

## QUALITY CONTROL

We have implemented quality assurance measures throughout our production process. As at the Latest Practicable Date, our quality control department comprised approximately 130 quality management and testing personnel.

Our comprehensive quality assurance measures can be divided into three stages: (i) raw materials, parts and components quality control, (ii) production process quality control, and (iii) finished products quality control.

## **Quality Control of Raw Materials, Parts and Components**

We conduct quality control assessments on our suppliers and those suppliers whose raw materials, parts or components fall below our standards are removed from our supplier list. Our guality control, procurement, production process and research and development personnel are actively involved in deciding on the type of raw materials, parts and components we purchase. With regards to the raw materials purchased, we typically enter into a trial arrangement with our potential suppliers pursuant to which they will supply a sample quantity of raw materials to us. Once satisfied with the performance and product quality of a supplier, we will enter into a procurement agreement with that supplier. Our quality control department will continue to conduct tests on every batch of raw materials purchased. In the event we detect any sub-standard raw materials, we will return them to the suppliers and claim compensation in accordance with the terms of the procurement agreements. With regards to the parts and components purchased for the production of our products, our quality control department will conduct tests on every batch of parts and components purchased and prepare a report reflecting the results of the quality control tests. If any of our suppliers do not meet our quality control standards, we will issue a warning notice to the supplier and if such supplier is still unable to meet our standards within a stipulated time, we will remove such supplier from our list of suppliers. In addition, our quality control personnel visit our suppliers to carry out on-site inspections of raw materials, parts and components.

## **Quality Control During the Production Process**

We continuously monitor our production process and carry out inspections at systematic intervals throughout the process to ensure consistency in the quality of our products. Our quality control personnel conduct tests and inspections at the various stages of production before the parts are passed on to the subsequent stage of production. Any defective part will be removed from the production line, thereby minimising defective products from being produced. In line with our production system and the concept of "getting it right", our aim is to detect all defects in our products even before they are assembled. Through this system, we aim to correct any defects immediately and before they are assembled to form our finished products.

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## **Quality Control of Finished Products**

Even though we believe in conducting vigorous quality control checks on products throughout the production process, our finished products still have to go through a series of inspections and tests, including tests on the functionality and performance of our finished products, before they are delivered to our customers. Our finished products have to undergo successful continuous testing regarding their functional and performance capabilities for a period of at least 24 hours before they are painted and stored pending delivery to our customers.

We have in place quality assurance measures to ensure that the quality of our finished products meets our customers' standards for acceptance. As a general policy, we strictly adhere to our "zero defects" quality management system, which requires products to be free of defects at every stage of our production process.

In recognition of our quality control efforts, we have obtained the ISO 9001:2000 "Quality Management System Certification" for our products. In addition, since our establishment in 2004, until the Latest Practicable Date, we had not received any material complaints due to quality problems with our products, such as instances where use of our products resulted in accidents or had materially and adversely affected our customers' operations.

#### **INVENTORY MANAGEMENT**

We undertake inventory control in order to reduce the risks of over-stocking. In line with the concepts of "just-in-time" and "pull" manufacturing adopted by our advanced production system, we generally purchase some of the raw materials, parts and components required for the production when a customer order is received. As such, our build-up of raw materials, parts and components required is minimised and kept at an appropriate level to facilitate the production process. Please refer to the paragraph headed "— Production System" in this section of the document for further details on our production system.

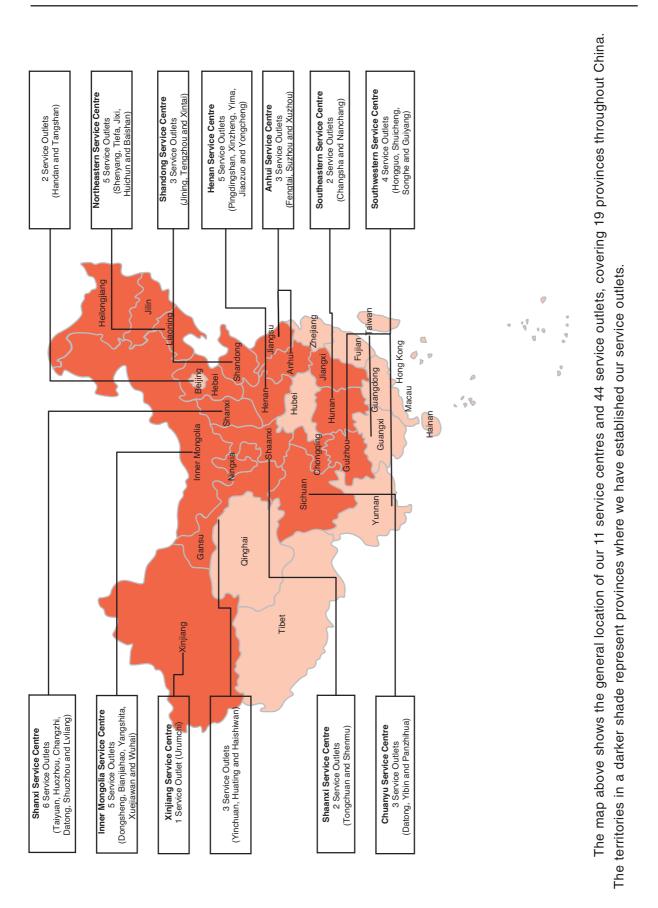
While we purchase some of the raw materials, parts and components required for production when an order is received, we have also implemented a "supermarket" inventory model for certain small key parts and components, where we maintain stock at a level based on our inventory policy. This is to ensure that we will have a ready and sufficient inventory of key raw materials, parts and components at all times. To balance the benefits of having a ready supply of raw materials, parts and components against the risks of obsolete inventory, we endeavour to maintain a flexible inventory policy with reference to the estimated market demand for our products and the relevant prevailing market prices with respect to raw materials, parts and components. We have also installed an ERP (enterprise resource planning) system which provides us with instant information about purchases, production schedules and supplies of our raw materials. By providing us with quick access to various data and easy formulation of operating models, the ERP system substantially improved our inventory controls. Our quality control department monitors the quality of the purchased raw materials, parts and components as well as our inventory levels. Please refer to the paragraph headed "— Quality Control of Raw Materials, Parts and Components" in this section of this document for further details.

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## SERVICE SYSTEM, SALES AND MARKETING

We sell our products primarily to coal mining companies located in China. We have established an integrated system to provide a comprehensive range of pre-sales, sales and after-sales services to our customers. We have set up an extensive service network, with 11 service centres and 44 service outlets operated by us, covering 19 provinces throughout China and are near major mining sites where our customers operate. Service centres supervise and manage our service outlets and one service centre may manage and oversee several service outlets located in various provinces. Service outlets are generally located near coal mining sites or near our customers' sites. Our service centres and service outlets offer both pre-sales and after-sales services. As at the Latest Practicable Date, we had approximately 580 sales and service personnel.

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## **Pre-Sales Services**

As part of our comprehensive service system, we provide pre-sales consultation to potential and existing customers. Our dedicated team is well-trained in providing personalised pre-sales consultancy services to our potential customers so that we may better understand their needs and recommend products tailored to their purposes and budgets. We can also design new products or tailor existing products to suit our customers' requirements. For example, we have designed and manufactured a narrow body roadheader (EBZ132CZ) and a high gradient downward excavation roadheader (EBZ160CD) in response to our customers' needs. Please refer to the paragraph headed "— Research and Development — Co-operation with External Organisations" in this section of this document for further details.

#### Sales

Our products are sold mainly in China through our service network. Our sale prices are controlled by our sales headquarters. We formulate and adjust the prices of our products with reference to domestic prices as well as overseas competitors' prices. As our prices are currently not subject to official price guidelines in China, we are able to formulate, review and adjust our pricing strategies in a flexible and market-oriented manner. Despite our premium price as compared to our domestic competitors, we believe we still maintain a competitive edge over our domestic competitors as we not only provide quality products, but we also provide comprehensive sales services to our customers.

Our products are partly sold to customers who, as a result of our reputation or customer referrals, approach us directly. However, in an attempt to expand our customer base, we also source for business through open or invited tenders where competitive bidding processes are arranged by potential customers. Our potential customers generally seek to purchase products which are good in quality as well as within their price range. Of all the competitive bidding processes we had participated in during 2008 and the first half of 2009, we had won bids to supply approximately 61.2% and 58.6% of the roadheaders available for bidding at these processes, respectively. Our roadheaders sold through competitive bidding processes amounted to approximately 69%, 38%, 26% and 22% of the total number of roadheaders we had sold during the years ended 31 December 2006, 2007 and 2008, and the six months ended 30 June 2009, respectively.

Typically, we receive an initial payment of 30% of the total contract price within seven days of entering into the sales contract, 30% of the total contract price within seven days upon the delivery of our products, and another 30% of the total contract price within one month after the delivery of our products. The remaining 10% of the total contract price is retained by our customer and paid to us within seven days after the expiration of the warranty period of our products, if our customer is satisfied that our products are free from defects. Our warranty period is typically 12 months but may vary depending on the product as well as the parts and components of the products. As at the Latest Practicable Date, we had not received any material complaints from our customers.

We enter into direct sale and purchase agreements with our end-customers. We have also entered into tripartite financing arrangements with finance lease companies, including Kangfu International and an independent finance lease service provider. In such arrangements, the finance

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lease company enters into a sale and purchase agreement with us, while at the same time entering into a finance lease agreement with our end-customers. The sale and purchase agreement and the finance lease agreement are inter-conditional and form an integral part of our tripartite financing arrangements. While we deliver our products and provide warranty and maintenance services directly to our end-customers, we receive payment from the finance lease company instead and the ownership of our products is transferred to the finance lease company upon our receipt of such payment. We have entered into a finance lease arrangement with an independent finance lease company and will continue to enter into finance lease arrangements with other finance lease service providers. Kangfu International is a finance lease company which is 75% held by Sany Group, and 25% held by Synnium Machinery. Transactions between Kangfu International and us constitute an on-going continuing connected transaction subject to the reporting, announcement and independent shareholders' approval requirements. Please refer to the section headed "Connected Transactions - Continuing connected transactions which are subject to the reporting, announcement and independent shareholders' approval requirements — Sale of equipment under finance lease arrangements to Kangfu International" in this document for further details. For the two years ended 31 December 2007, 2008 and the six months ended 30 June 2009, our revenue generated from sales to Kangfu International accounted for approximately 1.2%, 13.9% and 11.0% of our total revenue, respectively.

In 2009, we offered a relatively small number of our products and machinery parts to our end customers through distribution arrangements with Sany Development, a company 100% held by Sany Heavy Industry. Sany Development would sell our products and machinery parts to overseas distributors, including those in Russia, South Africa, India and Ukraine. We sell our products and machinery parts to Sany Development at a pre-agreed discount rate of approximately 10% to our standard retail prices and Sany Development would carry out the delivery of products and/or machinery parts and after-sales services to the overseas end-customers. With regards to machinery parts, we would typically receive 100% of the payment from Sany Development within the month following the delivery of our machinery parts. With regards to our products and certain large machinery parts, such as coal mining machines, hydraulic support structures and conveyors, we typically receive 40% of the payment from Sany Development before commencing production, with the remaining 60% to be paid within the month following the delivery of our products and machinery parts. With a view to expanding our overseas distribution business, Sany Heavy Equipment has obtained a PRC customs import and export goods customs registration certificate of consignor and (《中華人民共和國海關進出口貨物收發貨人報關註冊登記證書》), has consignee which been registered in the relevant custom, allowing us to carry out export activities. We also plan to operate our own overseas distribution in the second half of 2010. To implement our overseas distribution plan, and subject to the changes in overseas market conditions, we intend to set up our own branch offices at selected overseas locations including Russia, South Africa, India and Ukraine, and send our sales persons and service staff from the PRC and to employ new overseas sales persons and service staff to facilitate our overseas distribution. Through our own overseas distribution, we will sell our products directly to the existing and potential overseas customers procured or to be procured by ourselves and by Sany Development in the future as well as target future overseas end-customers procured by ourselves through, for example, direct approach to potential customers and participation in overseas coal mining machinery exhibitions. Transactions between Sany Development and us would constitute an on-going continuing connected transaction subject to the reporting,

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announcement and independent shareholders' approval requirements. Please refer to the section headed "Connected Transactions — Continuing connected transactions which are subject to the reporting, announcement and independent shareholders' approval requirements — Distribution Agreement with Sany Development" in this document for further details.

As we generally procure raw materials, parts and components for production only after we have secured a sales contract, the costs of raw materials, parts and components procured by us may not always be reflected in our contract prices to our customers. In order to minimise any adverse impact caused by fluctuations in the prices of raw materials, parts and components, especially since steel is a significant raw material used in our production and is subject to constant price fluctuations, we procure raw materials, parts and components through methods as described in the paragraph headed "— Suppliers of Raw Materials, Parts and Components" in this section of this document.

As at the Latest Practicable Date, we had over 340 customers, who operate primarily in the coal mining industry. Of all our customers, approximately 85% operate in the coal mining industry, 10% operate in mining construction companies and the rest operate outside the mining industry. For the years ended 31 December 2006, 2007 and 2008, and the six months ended 30 June 2009, sales to our five largest customers accounted for approximately 27.4%, 27.2%, 12.9% and 16.9% of our total revenue, respectively, and sales to our largest customer accounted for approximately 7.0%, 6.8%, 3.0% and 4.8% of our total revenue, respectively. None of our Directors or their associates, or any Shareholders, who, to the best knowledge of our Directors, owns more than 5% of our issued share capital, has any interest in any of our five largest customers for the years ended 31 December 2006, 2007, 2008, and the six months ended 30 June 2009.

## **Marketing Activities**

We place emphasis on promoting market awareness of our products. We keep abreast of market trends and actively collect feedback from our customers. With a view to increasing public awareness of our products, we have strategically conducted advertising campaigns through different media, including newspapers, the Internet, magazines and outdoor advertisements. We have also taken part in various press conferences as well as international, domestic and regional mining exhibitions in China in order to identify new customers and to promote our products. Through such conferences and exhibitions, we are able to better understand the industry we operate in and keep up to date with changing market trends. Whenever we successfully develop and manufacture new products, we also invite existing and potential customers to the launch of our new products. For each of the years ended 31 December 2006, 2007 and 2008, and the six months ended 30 June 2009, our promotion and advertising expenses amounted to approximately RMB13.9 million, RMB32.4 million, RMB71.7 million and RMB38.7 million.

## **After-Sales Services**

## Delivery of Products

We believe the timely delivery of our products is critical not only to our business operations but also to our customers' operations. Our production facilities are strategically located in Shenyang City, Liaoning Province, an industrial base and a major transportation hub in Northeast China, which

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provides easy access to a dense network of highways and railways, thereby facilitating timely delivery of our products. As our products are usually large and heavy, we select a third party independent logistics company which we believe, based on their experience and expertise, is able to ensure that our finished products are not only delivered on time but also arrive in good condition to our customers.

## Installation, Assembly, Training and Maintenance

When our products arrive at our customers' locations, our technical specialists are also present to provide installation services of our products. Further, we provide on-site training for our customers' technical workers. This is to ensure that our customers understand the operations and functions of our products.

As most of our customers are in the coal mining industry, they often require the products to be transported into underground coal mining sites and then re-assembled there. We have a team of "second-assembly" technical specialists ready to assist our customers with a second round of on-site assembly of our products in the underground mining sites. In the underground mining site, we will carry out product installation, assembly as well as a 48 hours "zero defects" testing process to ensure that all the products function properly and without defects.

Our typical after-sales services also include regular on-site maintenance and inspection services. Instead of waiting for our customers to request maintenance services, our technical specialists conduct regular visits to our customers' sites to perform tests on the products, which allows us to detect and rectify any problems at an early stage.

## "Green Channel"

We understand that there may be situations where our customers require spare parts to be delivered quickly and that a delay in the delivery of essential parts and components could affect their operations. As such, we have set up a "Green Channel" system to ensure the quick delivery of our parts and components to our customers. The "Green Channel" system is used only in situations where the quick delivery of spare parts is crucial. Despatch of parts and components can be expedited as approval only needs to be obtained from the head of the services department and will be given priority. The approval for a delivery to be made via our "Green Channel" system can be obtained as quickly as within 30 minutes to an hour, whereas obtaining all the requisite approvals in the normal process for the delivery of parts and components which are less critical may take half to one day. Further, we have established 43 spare parts warehouses, which are located near mining sites all over China so as to afford timely parts and components services and quick delivery to our customers.

## Warranty Period

Our warranty period varies depending on the product and the parts and components of the products. During the warranty period, our customers may request that our technical specialists replace or repair defective parts and components free of charge. Following the expiration of the warranty period, we provide repair and maintenance service and supply parts and components to

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our customers for a fee based on the services required. We have incurred warranty costs of RMB2.6 million, RMB6.4 million, RMB11.7 million and RMB9.0 million for the years ended 31 December 2006, 2007 and 2008, and the six months ended 30 June 2009, respectively. These costs represented 49.9%, 69.5%, 50.9% and 49.8% of our total provisions for warranties during the same periods.

## "Fast-Response" Team

As part of our commitment to provide quality after-sales services, we have a 24-hour after-sales service hotline with a "fast-response" team, comprising members mainly from our research and development team, which provides rapid responses and solutions to our customers' problems on a as-needed and stand-by basis. Our "fast-response" team comprises members mainly from our research and development team and depending on the problems faced by our customers, we are also able to include, and leverage from the expertise of, members from various departments. Hence, we are able to provide specific and relevant solutions to our customers. Further, we usually arrive at our customer's site in China within two hours if the site is located in the same city as any of our service outlets, within eight hours if the site is located within the same province as any of our service outlets, and within 24 hours for sites located in other provinces.

We understand the importance of developing long-term relationships with our customers and have established strategic partnership arrangements with some of them so as to better understand their needs, obtain valuable feedback from them and leverage on our common pool of knowledge to carry out research and development activities together. Please refer to the paragraph headed "— Research and Development" in this section of the document for further details.

## **RESEARCH AND DEVELOPMENT**

We place a significant amount of emphasis on our research and development with a view toward increasing our competitive advantage. As at the Latest Practicable Date, our research and development department comprised approximately 450 research and development professionals, with approximately 90% who are graduates. Of the 90% who are graduates, approximately 30% are either master's or doctorate degree holders. Our key research and development staff include the heads of our various research institutions. They not only head their respective research institutions, they are also actively involved the research and development process of various products, including China's first fully-automated combined coal mining unit in 2008 as well as the first roadheader in China used for excavating hard rock tunnels (EBZ200H) which was recognised by the Science and Technology Office of Liaoning Province as a Provincial Grade Science and Technological Research Achievement in 2007 and was awarded the Shenyang Technology Advancement Award (First Prize) and the Shenyang Technology Revitalisation Award in 2008.

In recognition of our outstanding and continuing research and development efforts, we have been granted an approval by the PRC Ministry of Human Resources and Social Security (國家人力資源和社會保障部) to establish a National Postdoctoral Scientific Research Base

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(國家級博士後科研工作站). Further, as at the Latest Practicable Date, our research and development team has successfully registered 146 patents and had 80 patents pending registration with the State Intellectual Property Office of China. Please refer to the paragraph headed "— Intellectual Property" in this section of the document for further details on our patents.

Our research and development efforts are focused on the following areas:

- expanding our current product portfolio by developing new products with cutting-edge technology so as to keep pace with the rising demands of our customers for better and new products and to increase our competitive advantage;
- enhancing the performance, efficiency and safety levels of our products;
- improving our technical capabilities in order to provide better after-sales services to our customers; and
- reducing our reliance on imported parts and components by developing the technology and expertise to manufacture such parts and components ourselves, so as to become a one-stop coal mining solutions and comprehensive coal mining equipment provider to our customers.

Our research and development organisation comprises a research headquarters and five research institutions.

## **Research Headquarters**

Our research headquarters is responsible for the overall planning, managing and co-ordination of our product research and development programs with the support of other research institutions.

In addition, our research headquarters is responsible for the safety levels of our products and applies for Coal Mining Safety Symbols for our coal mining products from the State Administration of Coal Mine Safety (國家煤礦安全監察局). The Safety Symbol, composed of a certificate and mark, is proof that the coal mining product meets national and industry safety standards. We understand that the safety level of a product is critical to coal miners and it is important that we are able to develop products that our customers can rely on. We believe that the incorporation of safety measures as well as the testing of products during their research and development phase will enable us to develop reliable products.

Further, our research headquarters also has a research and development unit which carries out research and development activities with reference to the demands of the global market for coal mining machinery. This is to enable us to research new products and further improve existing products to meet the requirements of overseas customers and achieve a competitive advantage over both domestically produced and imported machinery.

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## **Research Institutions**

Our five research institutions are categorised according to our product range and carry out specialised and targeted research and development activities.

Our five research institutions are:

- Research Institution for Excavating Machinery, which engages primarily in the research and development of excavating machinery and their supporting equipment;
- Research Institution for Coal Mining Machinery, which engages primarily in the research and development of integrated coal mining machinery;
- Research Institution for Scraper Conveyors, which engages primarily in the research and development of scraper conveyors to suit the needs of our customers;
- Research Institution for Supporting and Protection Equipment, which engages primarily in the research and development of hydraulic pressure support as well as its equipment safety; and
- Research Institution for Mining Vehicles, which engages primarily in the research and development of mining vehicles and their ancillary parts and components, including explosion-proof diesel engines, with the aim of enabling them to be highly efficient and of high quality.

Our research and development team has succeeded in developing numerous new products, such as:

- the EBZ318H roadheader, with a cutting power of 318kW, which has one of the highest performance levels in China;
- the first narrow body roadheader (EBZ132CZ) in China, which is able to tunnel through narrow soft rock passageways and has a cutting power of over 130kW;
- the first roadheader (EBZ160CD) in China which applies high-gradient downward excavation technology; and
- the combined coal mining unit (QMZ200 Fully-automated Combined Coal Mining Unit) which integrates and combines coal mining loading, conveying, transport and coal mine structural support functions with a centralised control system for fully-automated coal mining.

In anticipation of increasing demand for our products and in an attempt to provide one-stop coal mining solutions and a comprehensive range of coal mining equipment to our existing and potential customers, we intend to improve our existing range of products as well as develop new product models. We have already started designing and manufacturing coal mine transportation vehicles,

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which will constitute a new product segment, and we intend to venture into the air ventilation equipment and coal washing equipment product segments by 2010. In addition, our research and development team has already started on the following projects to research and develop products which we expect to successfully launch over the next two years:

- Research and development on improvements to be made to our current range of roadheader models, such as our EBZ132, EBZ160, EBZ200 and EBZ200H roadheaders. We expect to develop a range of second-generation roadheaders with enhanced functions, which include increased working capacities, improved control systems as well as higher efficiency levels.
- Research and development on improvements to be made to our existing range of machines which constitute our combined coal mining units, including:
  - (a) Enhancing our existing coal mining machines by equipping them with rotating drums of a larger coal mining radius and cutting heads with more powerful cutting power.
  - (b) Development of new models of hydraulic support structures capable of supporting thicker coal seams and which are able to withstand greater amounts of pressure, in order to afford greater reliability. We expect to develop hydraulic support structures with heights up to approximately 6.3 metres.
  - (c) Development of new models of conveyor systems with increased coal conveying capacities that complement our improved models of coal mining machines and hydraulic support structures.
- Development of a new model of support and transportation vehicle, which will possess the same functions as those we previously developed but complements our new models and hydraulic support structures.
- Development of a new product, drilling and transportation machines, which can carry out drilling activities in hard rock tunnels as well as transportation and loading functions.
- Introduction of a new product, coal ploughing units, will be developed to safely and efficiently plough for coal on thin coal seams. The coal plough machines consist of a ploughing head, a conveyor system, hydraulic support structures and can be further equipped with a centralised control system so as to become a fully-automated coal ploughing unit.

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## **Co-operation with External Organisations**

We believe that through extensive co-operation and interaction with external research centres, we are able to mutually leverage on our collective expertise. Currently, we maintain the following relationships in connection with our research and development:

- co-operation with National Mining University (中國礦業大學) and its relevant science departments;
- co-operation with the Workstation Academy (院士工作站), to identify opportunities to develop coal mining technology;
- co-operation with numerous coal planning and mining research institutions (煤炭設計院) in Guizhou Province, Inner Mongolia, Shijiazhuang City, Xi'an City, Lanzhou City and Heilongjiang Province; and
- strategic partnership arrangements with approximately 40 domestic coal mining enterprises, which allow us to better understand our clients' needs, obtain valuable feedback from them and to leverage on a common pool of knowledge. Through such strategic partnerships, our customers may request that we design and manufacture products based on requirements specific to their needs. Given that the development of such products, while based on requests from our customers, are actually designed and manufactured by us, any intellectual property rights arising from the development of such products are owned by us and not by a third party.

Generally, we enjoy certain rights provided by the external organisations (the "Partner") which we enter into strategic partnership arrangements with. For instance, (a) the Partner shall arrange for technicians to participate in an appraisal of our new product designs, (b) the Partner shall also provide us with industrial testing fields for the testing of our new products, and (c) after using our products, the Partner shall provide us with periodical updates and information so as to assist us in the development of new technology to upgrade the performance of our current products. In return, we shall (a) conduct research for new products and shall design and manufacture products based on the Partner's requirements, (b) sell our products to the Partner at favourable prices and shall also provide a discount to the Partner of approximately 3% for the spare parts they require, and (c) give priority to the Partner when considering locations to establish a service outlet. Under such strategic arrangements, the Partner and us shall also visit each other regularly and hold strategic workshops twice a year so as to allow both parties to exchange new information and expertise pertaining to technology, sales and marketing in the relevant industries. Either the Partner or us may also send study teams to the other party for discussion and learning purposes. The strategic partnership arrangements do not affect the independence of either the Partner or us and we still have the right to carry out business activities independently.

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As at the Latest Practicable Date, we had manufactured the narrow body integrated roadheader (EBZ132CZ) and the integrated roadheader (EBZ160CD) equipped with high gradient downward excavation technology based on our customers' needs. Subsequently, we have also sold such integrated roadheaders to other customers who have found such specifications capable of meeting their needs.

In recognition of our outstanding research and development efforts, we have been awarded certificates with respect to the development of our products, including the EBZ160 roadheader and the EBZ200H roadheader. We believe that successful research and product development is critical to our ability to stay competitive in the industry in which we operate. As such, we have been increasing our research and development expenses and have dedicated approximately RMB12.9 million, RMB29.9 million, RMB43.7 million and RMB22.5 million, representing approximately 8.1%, 6.5%, 3.8% and 2.5% of our annual sales for the years ended 31 December 2006, 2007 and 2008, and the six months ended 30 June 2009, respectively, and we intend to continue increasing our research and development expenses. We intend to increase our research and development expenses by approximately 45% in 2009 as compared to that in 2008.

## SUPPLIERS OF RAW MATERIALS, PARTS AND COMPONENTS

Our suppliers provide us with the raw materials we require, such as steel, which is the main raw material used in the manufacture of our products, as well as the parts and components which we do not produce. Our raw materials are sourced mainly from domestic suppliers, while the key parts and components which we do not produce are typically sourced from overseas suppliers, including suppliers from Germany and the United States. We currently produce approximately 35% of the parts and components required for the manufacture of our products and rely on external sources for the remaining parts and components, with 40% of the parts and components being obtained from either PRC or overseas suppliers, and 25% being designed by us with the manufacturing process outsourced to external parties. We have been subcontracting the processing and manufacturing of certain parts and components to external parties during the Track Record Period as we did not have sufficient production capacity to manufacture all the parts and components required to meet our increasing sales volume. Further, we believe that it would be more cost effective and resource efficient if we subcontract such manufacturing processes to external parties.

We have entered into two types of subcontracting arrangements with external parties. Under the first type, we provide the designs of the parts and components we require, along with the raw materials required for the production of such parts and components, and the external parties are only required to manufacture the products in accordance with our specifications. Under the second type, external parties procure the specified raw materials and welding materials that are consistent with our chosen brands, the required standards and suitable for our specifications under our blueprints. The external parties then manufacture the specified products using facilities and technology which meet the necessary standards. The subcontracting fees under this type of subcontracting agreements are an accumulation of the total costs of raw materials and processing fees which cannot be ascertained separately.

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Under the first type of subcontracting arrangements, the processing fees charged to the subcontractors are the subcontracting fees. The major terms and conditions such subcontracting arrangements include:

- the processed parts and components shall comply with the requirements as set out in the blueprint/designs provided by us and the technology used by the subcontractor shall satisfy our requirements for assembly and use as set out in a technology agreement entered into between the subcontractor and us;
- any delay in delivery of the parts and components from the subcontractor will result in a penalty of 2% of the contract price per day;
- we are responsible for the transportation and the corresponding transportation fees;
- the subcontractor shall inspect the quality of the parts and components manufactured and provide us with an inspection report upon delivery of the parts and components. Once the parts and components are delivered to our warehouse, we will carry out inspections in accordance with the standards set out in our blueprint/designs and inform the subcontractor of the inspection results; and
- the settlement and payment of subcontractor fees shall be made through telegraphic transfer or by cheque transfer or bill of exchange within the stipulated time (as decided between the subcontractor and us and which is typically between one and three months) upon receipt of the value added tax invoice and its entry into our accounts.

Under the second type of subcontracting arrangements, the fees charged to the subcontractors include the costs of procuring the raw materials, the raw materials used as well as the subcontracting fees. The major terms and conditions of such subcontracting arrangements include:

- the processed parts and components shall comply with national, industrial and enterprise standards, environmental protection rules and regulations, as well as the requirements specified in our blueprint/designs as well as the requirements for assembly and use as set out in a technology agreement to be entered into between the subcontractor and us. If the blueprint/design contains explicit requirements, the inspection carried out by the subcontractor shall follow such requirements and if a technology agreement is entered into between the subcontractor and us, the parties will adhere to the level of quality as contained in the technology agreement;
- the warranty period is typically one year commencing from the date of sale;
- the subcontractor shall strictly follow the requirements set out in the blueprint, provide suitable raw materials and welding materials and manufacture the products using good quality equipment and techniques;

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- any delay in delivery of the parts and components from the subcontractor will result in a penalty of 2% of the contract price per day. If the delay exceeds a certain period (as specified in the agreement), we shall have the right to terminate the agreement;
- the subcontractor is responsible for delivery of the parts and components to the warehouse as specified by us and the subcontractor is also responsible for the corresponding transportation fees;
- the subcontractor shall inspect the quality of the parts and components manufactured and provide us with an inspection report upon delivery of the parts and components. Once the parts and components are delivered to our warehouse, we will carry out inspections in accordance with the standards set out in the our blueprint/designs and inform the subcontractor of the inspection results; and
- the settlement and payment of fees (including subcontractor fees as well as fees for procurement of raw materials and raw materials) will be made through telegraphic transfer or by cheque transfer or bill of exchange within the stipulated time (as decided between the subcontractor and us and which is typically between one and three months) upon receipt of the value added tax invoice and its entry into our accounts.

The contract value of both types of subcontracting arrangements amounted to RMB58.4 million, RMB131.7 million, RMB268.9 million and RMB295.0 million, respectively, for the years ended 31 December 2006, 2007, 2008 and the six months ended 30 June 2009. Out of this amount, the processing fees under the second type of subcontracting arrangements amounted to RMB2.7 million, RMB2.5 million and RMB14.2 million respectively during the years ended 31 December 2006, 2007 and 2008.

Generally, upon placing an order with our overseas suppliers, we are required to pay between 10% and 30% of the purchase price, with the remainder to be paid usually upon receipt of the goods. When we purchase from our domestic suppliers, we are typically required to pay the full purchase price within one to three months upon receipt of the goods. Most supplies procured have a delivery time of between two to three months.

We maintain multiple suppliers for our raw materials, parts and components in an effort to avoid relying too heavily on any single supplier and we typically maintain at least two suppliers for each key raw material, part and component required. Further, while we purchase some of our key raw materials, parts and components from overseas suppliers, we believe that the raw materials, parts and components we require for the production of our products are abundant in China and in the event that any of our existing suppliers is no longer willing to supply goods at an attractive price, we can identify suitable substitute suppliers in a timely manner. We enjoy stable relationships with our suppliers, generally averaging four years with our key suppliers. Although we have entered into yearly procurement agreements with some of our key suppliers, we have not entered into long-term supply agreements with all of our suppliers. However, we have not experienced any significant difficulties in sourcing raw materials, parts and components required for the production of our products. We do not foresee any major difficulties in sourcing raw materials, parts and components required for the production of our products in the future. For the years ended 31 December 2006,

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2007 and 2008, and the six months ended 30 June 2009, our single largest supplier accounted for approximately 12.6%, 12.5%, 9.8% and 11.4%, respectively of our total purchases, and our five largest suppliers together accounted for approximately 44.8%, 41.6%, 34.2% and 34.8%, respectively, of our total purchases.

While some of our raw materials and parts and components are sourced in co-operation with Sany Group so as to enjoy a favourable price through bulk purchases, we also enter into agreements with our suppliers directly. Sany Group procures, enters into negotiations with, or receives tender bids from, potential suppliers for and on behalf of its subsidiaries as well as our Group, and enters into annual supply agreements with selected suppliers. We believe that we are able to secure a stable supply of raw materials, parts and components at prices and terms that are more favourable to us through collective negotiation and bulk purchases. With regards to raw materials, parts and components which are not sourced in co-operation with Sany Group, we procure suppliers of such raw materials, parts and components by ourselves and enter into price negotiations and agreements with such suppliers directly.

We also source certain parts and components, such as fuel tanks and electric motors, and pumps from members of the SG Group. While we have been purchasing parts and components from members of the SG Group for the manufacture of our products since 2007, we only started purchasing pumps from a member of the SG Group in 2008. For the years ended 31 December 2007 and 2008, and the six months ended 30 June 2009, our total purchases from members of the SG Group amounted to approximately RMB2.7 million, RMB28.3 million and RMB34.4 million, respectively. We have a master purchase agreement with the SG Group, pursuant to which we agree to purchase these parts and components, and pumps from members of the SG Group. Transactions between us and members of the SG Group constitute on-going connected transactions subject to the reporting, announcement and independent shareholders' approval requirements. We believe that maintaining strategic relationships with members of the SG Group will afford a stable supply of parts and components, and pumps at quality in which we are confident and at prices and terms not less favourable to those we can obtain from independent third parties. Please refer to the section headed "Connected Transactions — Continuing connected transactions which are subject to the reporting. announcement and independent shareholders' approval requirements — Purchase of equipment, parts and components, and pumps from the SG Group" in this document for further details. However, given that we currently have independent access to suppliers and we believe that the parts and components, and pumps supplied by the SG Group are generally and widely available in the market at comparable market prices, we intend to gradually reduce the purchasing of parts and components, and pumps from the SG Group. In addition, we intend to commence our own production of fuel tanks in 2011.

Save as disclosed above, none of our Directors or their associates, or any Shareholders, who, to the knowledge of our Directors, owns more than 5% of our issued share capital, has any interest in any of our five largest suppliers for the years ended 31 December 2006, 2007, 2008, and the six months ended 30 June 2009.

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#### INTELLECTUAL PROPERTY RIGHTS

We regard our patents, trade secrets and other intellectual property rights as an important factor to the success of our business. As at the Latest Practicable Date, we had had successfully registered 146 patents, and had 80 patents pending registration, with the State Intellectual Property Office of China. Our patents are in connection with the manufacture of our products. Please refer to the section headed "Statutory and General Information — Further information about our Business — Intellectual property rights of the Group" in Appendix VI to this document.

#### COMPETITION

We compete with major coal mining machinery manufacturers in China and to a lesser extent, overseas coal mining machinery manufacturers.

Our competitors may have better track records or larger sales networks. In addition, we face increasing competition from our existing customers that have begun manufacturing their own coal mining machinery and from new foreign entrants seeking to enter the PRC market. We operate in an industry which is intensely competitive and price sensitive. However, we believe we are able to compete on the basis of our reputation, strong research and development capabilities, high quality products, integrated service system and strong relationships with our customers. Please refer to the section headed "Risk Factors — Risks relating to the industry in which we operate — The industry that we operate in is competitive and a further increase in competition or productivity by our competitors may affect our market share and profit margins" in this document for further details.

#### INSURANCE

We maintain insurance coverage for our production facilities. As at the Latest Practicable Date, no incident had occurred as a result of which we would have had to make any significant claims under these insurance policies.

We also maintain mandatory social security insurance policies for our employees in China pursuant to PRC laws. We make contributions to mandatory social security funds for our employees to provide for retirement, medical, work-related injury, maternity and unemployment benefits. Please refer to the section headed "Directors, Senior Management and Employees" in this document for further details.

#### SAFETY AND ENVIRONMENTAL MATTERS

#### Workplace Safety

We are subject to the PRC laws and regulations regarding labour, safety and work-related incidents. We provide safety protection to our employees working in our production facilities, which includes providing them with adequate safety equipment and ensuring that our production facilities have adequate precautionary measures. In addition, we ensure that our production facilities are not cluttered and have clear walk-paths for our employees. We also provide safety-related education to

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our employees to increase their awareness of work safety. Warning signs against smoke and heat emissions are also placed at prominent locations. As at the Latest Practicable Date, we had complied with the PRC workplace safety regulatory requirements in all material respects and have not had any incidents or complaints which had materially and adversely affected our operations.

## **Environmental Protection**

We are subject to environmental protection laws and regulations promulgated by the PRC government. Our production facilities discharge pollutants such as waste water, smoke emissions, solid wastes and noise during our production process. We have implemented a set of waste treatment procedures in our production facilities and have also implemented measures to control the noise levels caused by our machines. Waste produced by us is treated in compliance with applicable environmental standards in our production facilities. As at the Latest Practicable Date, we had not received any notifications or warnings, nor had we been subject to any fines or penalties in relation to any breach of any such environmental laws or regulations which had materially and adversely affected our production.

## PROPERTIES

Our head office is located at 31 Yansaihu Street, Shenyang Economic and Technological Development Area, Shenyang City, the PRC. As at 31 August 2009, our offices, existing production facilities, residential units and other ancillary facilities have a total gross floor area of approximately 90,198.30 sq.m. and occupy approximately 215,070.44 sq.m. of land. Please refer to the valuation report prepared by Jones Lang LaSalle Sallmanns Limited, an independent property valuer, in "Appendix IV — Property Valuation" to this document for further details on the valuation.

## **Owned Properties and Buildings**

On or about 23 July 2009, we have obtained the land use rights certificates for one parcel of land with a site area of approximately 215,070.44 sq.m. Seven buildings, comprising five industrial buildings, an office building and a dormitory, with a total gross floor area of approximately 87,709.51 sq.m. were erected on this parcel of land. We have obtained building ownership certificates for all of the buildings with a total gross floor area of approximately 87,709.51 sq.m.

The buildings are currently occupied by our Group for production, office and staff dormitory purposes, except for a portion of an industrial building which is rented out to a connected party. Please refer to the section headed "Connected Transactions — (B) Continuing connected transactions which are exempt from the reporting, announcement and independent shareholdres' approval requirements" in this document for further details.

We have obtained building ownership certificates for 20 residential units with a total gross floor area of approximately 2,488.79 sq.m. in Jinsha Yanxiangyuan, a residential development in Shenyang City, which was completed in or about 2006. The property is currently occupied by our Group for residential purposes.

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#### **Buildings under Construction**

As at 30 June 2009, we held three parcels of land, with a total site area of approximately 629,015.2 sq.m. As at the same date, we also held one dormitory building and one industrial building, with a total planned gross floor area of approximately 35,159 sq.m., which are under construction and expected to be completed in December 2009 and May 2010, respectively. The property is scheduled to be developed into an industrial zone. We have already obtained the relevant construction permits and construction planning permits.

#### Leased Buildings

We have already obtained part of the building ownership certificates for the 77 buildings leased, with a total leased area of approximately 15,738.48 sq.m., from various independent third parties which our Group currently occupies for office, storage and residential purposes. The buildings are leased for various terms at a total annual rental of approximately RMB2,568,821. We have already obtained part of building ownership certificates for the buildings leased. Please refer to Appendix IV to this document for further details.

## LEGAL PROCEEDINGS AND COMPLIANCE

There are no litigation or arbitration proceedings pending or threatened against our Group or any of our Directors which could have a material adverse effect on our Group's financial condition or results of operations.

## **Compliance with PRC Laws and Regulations**

Our Directors, as advised by our PRC legal advisers, Jingtian & Gongcheng, confirm that as at the Latest Practicable Date, our Group had complied with all relevant PRC laws and regulations in all material respects of our operations in China, including obtaining all required permits and licences.