PJ Global Co

NGC partner

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NGC

Industrial Gearboxes







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Industrial Gearboxes



1 Goal

We aim to provide the best products and services for our customers

3 business sectors

Our solutions cover wind power gearboxes, industrial gearboxes and robotic reducers

50+ years of experience

We have been focusing on the transmission field for more than 50 years, making us a global expert at gearbox and transmission technology solutions

500+ national patents

We are a technology-driven market leader with extensive experience in advanced manufacturing and R&D

535,000 m^2 industrial manufacturing and R&D centers

We are the world's leading gearbox manufacturer with a Sino-German dual R&D center



Jianheng Road Factory
For manufacturing of large and heavy-duty gearboxes and high-speed gearboxes



Tiance Road Factory
For manufacturing and assembly of standard industrial gearboxes



Qiande Road Factory
For manufacturing and assembly of small planetary gearboxes

Founded in 1969, NGC was listed on the Hong Kong stock exchange in 2007 under the name “China Transmission”. We are the world's leading provider of transmission solutions for industrial intelligent equipment, wind turbines and robotic reducers.

We are dedicated to developing gear technology, manufacturing and marketing gear products, and providing after-sales services for industrial sectors such as energy, major equipment, and general equipment. We also focus on long-term investment in clean energy, low consumption, and high efficiency fields. With leading technology, reliable quality, and thoughtful services, we have become one of the most competitive global partners in transmission technology.

With a pioneering spirit, we have developed a number of epoch-making products for industrial equipment, and now it is incumbent on us to lead the industry development.

For years, we have been improving our product line to cater to the ever-changing needs of our customers from various industries. Our products are widely used in industrial fields such as building materials, metallurgy, power generation, ports, coal, chemical processing of coal, mining, engineering machinery, rubber & plastics, petrochemistry, papermaking, and environmental protection.

Through close technical cooperation with customers at home and abroad and with the support of the global R&D system, we are capable of coming up with solutions that can meet and even exceed customers’ expectations. Our confidence is leading the industry towards higher pursuits.





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Standard Industrial Gearboxes

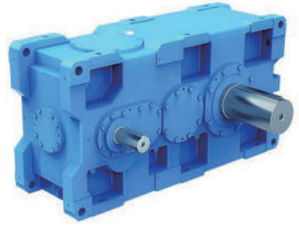
MHB Series Standard Industrial Gearboxes

The standard gearbox series, including the gearbox with helical gears and gearbox with helical-bevel gears, are applicable for various mechanical power transmission fields. Coming with different types and designs, as well as various forms of installation, the series can meet the needs of all industrial fields.

Performance Characteristics
- Modular design for better parts interchangeability
- Reasonable distribution of torque range for higher applicability
- Special flank modification for higher bearing capacity and lower noise
- Hard tooth surface design with the accuracy of above level 5
- A variety of sealing measures for different applications
- Short lead time and reliable quality

Main Technical Parameters
- Output Torque: 2 – 1,400 kNm
- Transmission Ratio: 1.25 - 450

Major Applications
- Belt conveyor, bucket elevator, blender, lifting equipment, traveling machine, paper machine, dryer, rotary kiln, powder concentrator, tension roller, etc.



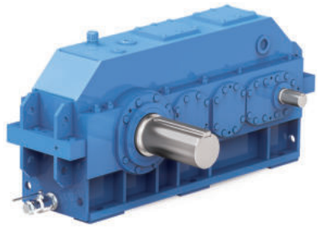
Lifting Gearbox

The gear reducer with hard tooth surface we have developed for cranes and luffers based on the domestic and overseas market needs features high bearing capacity and reliability, compact structure, and light weight.

Performance Characteristics
- Combination of modular design and special design to meet the requirements of different working conditions
- Compact structure with high bearing capacity
- Flank modification and large contact ratio for smooth transmission and low noise
- Multiple output modes: parallel keys, spline keys, gear shaft ends, hollow shafts, etc.
- Rolling bearing
- Non-standard design can be requested

Main Technical Parameters
- Output Torque: 1,400 kNm
- Transmission Ratio: 6.3 - 400
- Center Distance: 120 – 2,022 mm

Major Applications
- Gantry crane, bridge crane, portal crane, frame crane



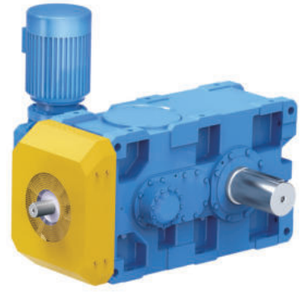
Bucket Elevator Gearbox

MBE series bucket elevator gearboxes are derivative products based on the MHB standard industrial gearbox. With the advantages of high modularity, bearing capacity, and reliability, as well as light weight, the series is widely used in heavy-duty chain and belt elevators in the cement industry and bucket elevators in the food industry.

Performance Characteristics
- Modular design for better parts interchangeability
- Special flank modification for high bearing capacity and low noise, and hard tooth surface design with the accuracy of above level 5
- A variety of sealing measures different applications, short lead time, and reliable quality
- Non-standard design can be requested

Main Technical Parameters
- Output Torque: 6.6-236 kNm
- Transmission Ratio: 25-90
- Nominal Power: 13-1,773 kW

Major Applications
- Elevator equipment for building materials, cement, mining, grain and other industries





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Standard Industrial Gearboxes

Gearbox for blenders

We have tweaked the product designs for the gearbox and adopted reinforced bearings, special seals, special lubrication, special casing, etc. to cater for the complex working conditions and high reliability requirements of stirred tank equipment in the chemical industry. For larger axial loads and radial loads, special flank modification is used and a thrust bearing package is configured to meet the load requirements. The special dry well design effectively reduces the risk of leakage, making the product reliable enough to meet the needs.

Performance Characteristics

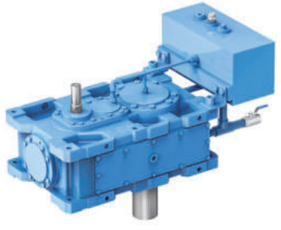
- Combination of modular design and special design for better parts interchangeability
- Flank modification specific to working conditions for high bearing capacity and low noise
- Compact structure for large axial load and radial load
- Hard tooth surface design with the accuracy of above level 5
- Special dry well design for high sealing reliability
- High-cost performance, a variety of optional accessories for different requirements

Main Technical Parameters

- Output Torque: 137-340 kNm
- Transmission Ratio: 22.4-450

Major Applications

- The equipment can be widely used in process equipment such as seed decomposer, high pressure dissolution tank, pre-desiliconization tank, diluted tank, mother liquor tank and reactor, chemical blender, etc.



Gearbox for pumps

We have tweaked the product designs for the gearbox and adopted reinforced bearings, special seals, special lubrication, special casing, etc., to cater for the complex working conditions and high reliability requirements of pump equipment in the non-coal mining industry. For larger axial loads and radial loads, special flank modification is used. The special sealing design can reduce the risk of leakage and raise product reliability.

Performance Characteristics

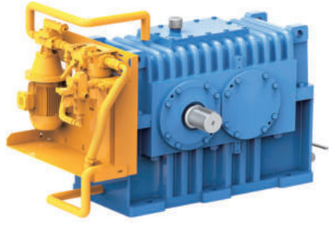
- Based on the MHB series platform, modular design for better parts interchangeability
- Reasonable distribution of torque range and high torque density for higher applicability
- Gears are made of high-quality alloy steel by carburizing, quenching, grinding and finishing
- Gear tooth profile modification and spiral modification, uniform load distribution along with the tooth profile, high strength, low noise, and low vibration
- Finite element analysis ensures an optimized part structure
- A variety of sealing measures for different applications
- Short lead time and reliable quality

Main Technical Parameters

- Output Torque: 4-136 kNm
- Transmission Ratio: 1.25-5.6

Major Applications

- Slurry pump, water pump, axial flow pump, perfusion pump, vacuum pump, reciprocating pump, disc refiner, etc.



Gearbox for Air Cooler

To meet the special cooling conditions, we have developed special gearboxes for cooling towers and air-cooling islands on the basis of modular gearboxes. The MHC series products are manufactured with all new designs, advanced calculation analysis and optimization, strict manufacturing standards and world-class manufacturing equipment, and are a model of high reliability and high bearing capacity. A variety of special designs are introduced to enhance sealing property, thermal efficiency, and gear strength, so as to cater for working conditions of cooling towers and air-cooling islands.

Performance Characteristics

- The output low-speed shaft adopts a specially designed dry well structure to reduce the risk of oil leakage;
- Curved surface design of the casing, with high heat dissipation efficiency and low operating temperature;
- Smooth operation with high transmission efficiency and low noise;
- Optimized structure with high bearing capacity and low vibration;
- The lubrication system is reasonably configured to meet the requirements of various working conditions;
- The external component structure is simple, reliable, and easy to maintain;
- A variety of accessories

Main Technical Parameters

- Output torque: 10.3-41.5 kNm
- Transmission Ratio: 8-22.4

Major Applications

- Air-cooling island for electric power, chemical and other industries



Gearbox for Cooling Tower

MBC series gearboxes are manufactured with all new designs, advanced calculation, analysis and optimization, and world-class manufacturing equipment in accordance with strict manufacturing standards. They are a model of high reliability and bearing capacity. Featuring a variety of special designs for sealing, thermal efficiency, and gear strength, the series is particularly suitable for cooling towers.

Performance Characteristics

- Based on the MHB series platform, with high modularity, and strong reliability;
- Gear parameter scheme for gear design is determined by multiple parameters such as gear tooth strength, transmission efficiency, wear speed, and vibration characteristics;
- Unique flank modification technology is applied based on the characteristics of working conditions;
- High-quality cast iron materials are adopted, with flat and smooth appearance, high reliability, and strong vibration absorption;
- Finite element analysis is adopted to calculate and check the strength and rigidity of components to determine the design plan;
- Topology optimization technology is applied to optimize the casing shape;
- Unique heat dissipation rib plate and deflector cover are introduced for high heat dissipation capacity

Main Technical Parameters

- Transmission Ratio: 6.3-18
- Power range: 55-315 kW

Major Applications

- Widely used in petrochemistry, chemical processing of coal, power generation, metallurgy and other fields, for cooling of steam turbines, air compressors, oil compressors and other machinery.





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Standard Industrial Planetary Gearboxes

Standard Industrial Planetary Gearboxes

To ensure that industrial gearboxes can perform well under extreme working conditions all year round, we have extended the bearing design life and increased the torque density to prolong the service life of our MP planetary gearboxes.

Performance Characteristics
- Independent industrial standard planetary gearbox platform
- Advanced modular design technology
- Meet ISO, AGMA and DIN standards
- Optimized gear design with high transmission efficiency
- Special flank modification for high bearing capacity of gear
- Multiple input and output types

Main Technical Parameters
- Output torque: 100 – 5,800 kNm
- Transmission Ratio: 25 - 4,000

Major Applications
- Used for various slewing drives, such as roller crusher drive, sugar mill drive, central transmission of tube mills, rotation of port cranes, hoisting mechanism of winches and heavy-duty transmission in mining, construction machinery, coal mine and other industries



Yaw Gearbox

We are one of the main manufacturers of yaw/pitch transmission equipment in the world, with more than 15 years of R&D and manufacturing experience. We have so far supplied various types of yaw/pitch gearboxes in large quantities. With the advantages of compact structure, high carrying capacity, high efficiency and high reliability, the product has been used in major domestic and foreign OEMs and wind farms under various working conditions and runs well.
We can provide customers with standard series of yaw/pitch transmission products, and customize FDX series according to customers' requirements. Our yaw/pitch platform transmission products are suitable for various working conditions at sea and on land, such as plateau, high temperature, low temperature, and low wind speed.

Performance Characteristics
- The products are developed based on the industrial standard planetary MP series platform
- Modular design is introduced to facilitate parts quality control and shorten the lead time
- Topology optimization technology is applied to improve the gearbox power density ratio
- A multi-floating load sharing mechanism is designed to improve the bearing capacity of the gearbox
- A maintenance-free sealing structure is designed to facilitate product maintenance
- Combined flank modification is adopted for smoother gearbox operation

Main Technical Parameters
- 1.5MW, 2.XMW, 3.XMW, 4.XMW, 5.XMW, 6.XMW, 7.XMW, 8.XMW, 10.XMW, 12.XMW etc.

Major Applications
- Used for wind turbine generators



Pitch Gearbox

Taking into consideration the actual working conditions, we have designed the yaw and pitch gearboxes with advanced international software, conducted sufficient test runs, and implemented strict standards in the manufacturing process (e.g., raw material control, heat treatment, assembly). In order to meet our high requirements on product quality, we have introduced a large number of advanced international machine tools, heat treatment equipment and inspection and testing equipment, and established several advanced assembly and painting lines;

Performance Characteristics
- The products are developed based on the industrial standard planetary MP series platform
- Modular design is introduced to facilitate parts quality control and shorten the lead time
- Topology optimization technology is applied to improve the gearbox power density ratio
- A multi-floating load sharing mechanism is designed to improve the bearing capacity of the gearbox
- A maintenance-free sealing structure is designed to facilitate product maintenance
- Combined flank modification is adopted for smoother gearbox operation

Main Technical Characteristics
- 1.5MW, 2.XMW, 3.XMW, 4.XMW, 5.XMW, 6.XMW, 7.XMW, 8.XMW, 10.XMW, 12.XMW, etc.

Major Applications
- Used for wind turbine generators





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Standard Industrial Planetary Gearboxes

Traveling Gearbox

Traveling machinery gearboxes are widely used in the driving mechanism of various wheels or crawler mounted equipment. Our traveling machinery gearbox combines a modular design and special designs to meet the needs of different working conditions. With a compact structure and high bearing capacity, the gearbox can be integrated with a wet hydraulic multi-disc static brake. It has been introduced and acclaimed by large engineering machinery makers such as XCMG and SANY Group.

Performance Characteristics
- Modular design
- Compact structure with high bearing capacity
- Smooth transmission with low noise
- Shorter product development cycle
- Lower life cycle cost
- A wet hydraulic multi-disc static brake can be integrated
- Non-standard design can be requested

Main Technical Parameters
- Model: SCM-T
- Transmission Ratio: 20 - 460
- Maximum Output Torque: 1,300 kNm

Major Applications
- Applied in the traveling drive mechanism of equipment such as crawler excavators, rotary drilling rigs, crawler cranes, and aerial work platforms.

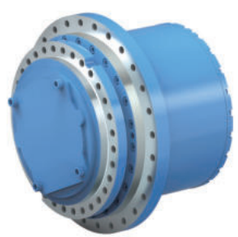
Winch Gearbox

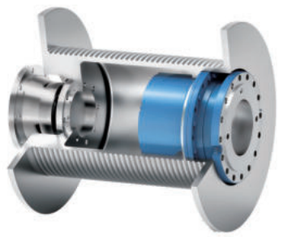
Winch reducers are widely used in various lifting mechanisms. Our winch reducer has a compact structure, excellent bearing capacity and working reliability, and can be integrated or equipped with wet hydraulic multi-disc static brakes, directly installed inside the drum. Space-saving and easy to install, it has been introduced and acclaimed by large engineering machinery makers such as XCMG and SANY Group.

Performance Characteristics
- Modular design
- Compact structure with high bearing capacity
- Smooth transmission with low noise
- Reel and rear support device can be provided
- A wet hydraulic multi-disc static brake can be integrated or equipped
- Non-standard design can be requested

Main Technical Parameters
- Model: SCM-W
- Transmission Ratio: 45 - 450
- Maximum Output Torque: 275 kNm

Major Applications
- Applied in winching and hoisting mechanisms of a variety of equipment such as cranes, rotary drilling rigs, and deck cranes





Slewing Gearbox

Our slewing gearbox is designed and developed on the basis of wind power yaw/pitch gearboxes and combined with the application conditions of construction machinery. The gearbox is applied in the slewing machine of various engineering lifting equipment, with a high bearing capacity, a compact structure, uniform load distribution, and high reliability. It can be integrated or equipped with a wet hydraulic multi-disc static brake. It has been introduced and acclaimed by large engineering machinery makers such as XCMG and SANY Group.

Performance Characteristics
- Modular design
- Compact structure with high bearing capacity
- Smooth transmission with low noise
- Long service life and easy maintenance
- A wet hydraulic multi-disc static brake can be integrated or equipped
- Non-standard design can be requested

Main Technical Parameters
- Model: SYW, SPT
- Transmission Ratio: 4 - 2,500
- Maximum Output Torque: 270 kNm

Major Applications
- Applied in the slewing machine of a variety of equipment such as cranes, excavators, rotary drilling rigs, horizontal directional drilling rigs, and deck cranes

Gearbox for Tower Mill

Tower mill is a high-efficiency and energy-saving vertical spiral mixing and fine grinding facility. It has the advantages of high grinding efficiency and uniform product size distribution, and it is easy to obtain the required product size. Tower mills have been widely recognized in the ultrafine grinding industry, with great development prospects and high energy utilization rate. Our MPT series gearboxes are based on the industrial standard planetary MP series platform and are specially developed for tower mills.

Performance Characteristics
- Modular design is introduced to facilitate parts quality control and shorten the lead time
- Topology optimization technology is applied to improve gearbox power density ratio
- A multi-floating load sharing mechanism is designed to improve the bearing capacity of the gearbox
- A maintenance-free sealing structure is designed to facilitate product maintenance
- Combined flank modification is adopted for smoother gearbox operation

Main Technical Parameters
- Transmission Ratio: 25-55
- Power Range: 160-2,250 kW

Major Applications
- Applied in tower mills, which are widely used for fine grinding of non-ferrous metals and gold and non-metallic minerals.







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Standard Industrial Planetary Gearboxes

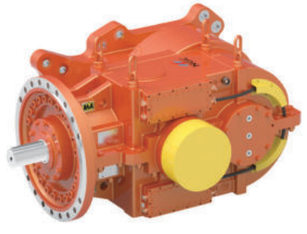
Gearbox for Scraper

The JS series scraper gearboxes are hard-toothed heavy-duty gearboxes we have developed after years of exploration and accumulation. This series is manufactured with advanced design concepts and world-class manufacturing equipment in accordance with strict manufacturing standards. With high reliability and bearing capacity, the series is especially suitable for underground coal mines or similar harsh working environments. Scraper gearboxes are allowed to be used within the inclination angle of 30° and the walking angle of 20° on the working surface. Oil pump is used for lubrication under high power to ensure safe lubrication in extremely inclined positions. The maximum input power can reach 1,600 kW and the maximum output torque can reach 850 kNm. A three-stage structure of bevel gear, cylindrical gear, and planetary gear is used for horizontal installation, and a two-stage planetary gear structures is used for vertical installation. A single-stage bevel gear transmission is used for horizontal installation of the crusher gearbox, allowing a maximum inclination of 3° on the working surface. The gearbox can be customized based on the actual needs of customers.

Performance Characteristics
- Special designs to meet the requirements of working conditions
- Compact structure with high bearing capacity
- Flank modification and large contact ratio for smooth transmission with low noise
- Special shaft seal design
- Strict loading test for high reliability
- Large inclination angle and walking angle

Main Technical Parameters
- Transmission Ratio: 3.5 - 40
- Nominal Power: 40 – 1,600 kW

Major Applications
- Scraper, transfer conveyor, etc.



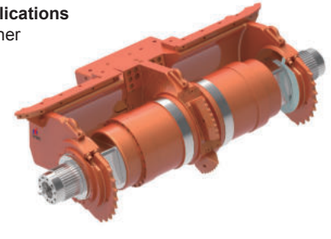
Bolter Miner Cutting Gearbox

Bolter miner is developed to cater for rapid excavation of coal mine roadways, and it can realize excavation, bolting and transportation at the same time. As the core component of a bolter miner, the cutting gearbox can meet the following requirements: harsh operating environment, complex structure, complex working conditions, high sealing performance, high transmission efficiency and high reliability. Developed based on our proprietary advanced industrial gearbox technology platform, the NGC bolter miner cutting gearbox features a number of advanced technologies, such as gear mesh characteristics analysis technology, multi-objective flank modification technology, planetary transmission uniform load characteristic analysis technology, structural topology optimization technology, bearing calculation analysis technology, and thermal power analysis. Nominal power ≥ 315 kW, transmission efficiency ≥ 93.2%, hydraulic oil circuit maximum pressure capacity ≥ 35 Mpa. The comprehensive performance has reached the advanced international standard.

Performance Characteristics
- Strong bearing capacity, with a nominal power ≥ 315 kW
- High transfer efficiency, transfer efficiency ≥ 93.2% under nominal conditions
- High reliability, with no-load test, pressure holding test, loading test and tilt test conducted before leaving the factory of the roadway environment and the reliability of the cutting gearbox operation
- The built-in hydraulic oil circuit system can realize the independent expansion and contraction of the cutting drum, which improves the accuracy of cutting drum control
- The built-in water spray system improves the safety

Main Technical Parameters
- Nominal Power: ≥ 315 kW
- Transmission Ratio: 49.26, 57.57
- Specifications: Standard, widened;
- Output Spline Specifications: DIN5480, GB3478;

Major Applications
- Bolter miner



Elevator Gearbox

They are specially developed for mine hoisting equipment. The MP series hard-tooth surface planetary gear reducers are developed amid the growing needs of the domestic and overseas markets and the technological development trend. There are two-stage (ZZL) planetary gear structure, single-stage and two-stage derived planetary gear structures, such as one-stage parallel shaft + one-stage planetary structure (ZZDP) and one-stage parallel shaft + two-stage planetary structure (ZZLP). The series features large transmission ratio range, large output torque and strong applicability, and can meet different requirements for installation.

Performance Characteristics
- Special designs to meet the requirements of working conditions
- Compact structure with high bearing capacity
- Flank modification and large contact ratio for smooth transmission with low noise
- Applicable for scenarios with frequent starting and braking
- Non-standard design can be requested

Main Technical Parameters
- Transmission Ratio: 20 - 400
- Nominal Power: 30 – 1,800 kW

Major Applications
- Mine hoister



Sugar Mill Gearbox

We have optimized the designs for our sugar mill gearboxes to increase their efficiency. The precisely designed drive system can save equipment space. Our ZT series double shunting gearboxes and MP series planetary gearboxes are all developed for sugar mills. Our gearboxes can also be used for conveyor belts, grinders and turbines for power generation.

Performance Characteristics
- Special designs
- Compact structure with high bearing capacity
- High transmission efficiency and high reliability
- Flank modification and large contact ratio for low noise
- High cost performance

Main Technical Parameters
- Specifications: MP, ZT
- Transmission Ratio: 25-300
- Torque: 100-5,800 kNm

Major Applications
- Sugarcanes pressing





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High-speed Gearboxes

MTG Series High-speed Gearboxes

The high-speed gearboxes are developed for special scenarios that need high rotating speed, such as energy, chemical engineering, and oil and gas sectors. Therefore, the efficiency, vibration, and reliability are all key metrics of the gearboxes. Our MTG series high-speed gearboxes have proved highly competitive in terms of efficiency, vibration, reliability, and cost performance. Besides, this series has passed the international API certification.

Performance Characteristics

- High rotating speed: The maximum rotating speed is 25,000 r/min, and the maximum linear speed is 176 m/s
- High standard: The series meets international and industry advanced standards such as API, AGMA and ISO
- High accuracy: The gear accuracy reaches ISO 3-5 level
- High efficiency: The efficiency reaches above 98.5%
- High reliability: The design life is no less than 20 years
- High bearing capacity: Advanced lightweight design technology is adopted

Main Technical Characteristics

- Structure: Single-stage herringbone gear
- Transmission Ratio: 1 - 10
- Speed Range: High-speed axis reaches 3,000 – 50,000 r/min
- Nominal Power: 500 – 100,000 kW

Major Applications

- Applicable for steam turbines, combustion turbines for power generation, centrifugal axial fans, blowers, compressors, high and low pressure pumps, energy recovery systems for catalytic cracking units, air separation units, etc.



High-speed Gearbox for Combustion Turbines

As the core equipment in combustion turbines for power generation, high-speed gearboxes must have high efficiency and high reliability. NGC high-speed gearboxes for combustion turbines have a wide range of options in center distance, speed, speed ratio, power, etc., meeting various needs of customers. The gearboxes all have passed rigorous tests in practice in terms of efficiency, reliability, and overall performance.

Performance Characteristics

- Flexible design, extended design based on the MTG series
- Customizable design to meet the requirements of different combustion turbines
- A variety of accessories (e.g., turning gear, oil pump) can be integrated based on actual needs
- Gearbox and accessories meet international and industry advanced standards such as API, AGMA and ISO
- The gear accuracy reaches ISO 3-5 level
- The efficiency reaches above 98.5%
- Stable operation with low noise
- High-precision vibration and temperature detection functions ensure high reliability of gearbox operation

Main Technical Characteristics

- Center Distance: 200-1,000 mm
- Speed Ratio Range: 1-10
- Speed Range: ≤ 25,000 r/min
- Nominal Power: ≤ 100,000 kW

Major Applications

- Steam/combustion turbines for power generation, distributed generation units



High-speed Gearbox for Compressors

As the main transmission equipment in the chemical industry, high-speed gearboxes must have a high standard. NGC high-speed gearboxes for compressors and expanders can meet the various needs of customers in terms of model selection, performance, safety and reliability.

Performance Characteristics

- Flexible design, extended design based on NGGS series
- Customizable design to meet the needs of different working conditions
- Various accessories and testing devices can be integrated based on actual needs
- Gearbox and accessories meet international and industry advanced standards such as API, AGMA and ISO
- The gear accuracy reaches ISO 3-5 level
- Stable operation with low noise

Main Technical Characteristics

- Standard Center Distance: 200-800 mm
- Speed Ratio Range: 1-10
- Speed Range: ≤ 25,000 r/min
- Nominal Power: ≤ 20,000 kW

Major Applications

- Expanders for power generation, gas compressors and separators





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Metallurgy Rolling Gearboxes

Modular Main Driving Gearboxes for Rolling Mills

NGC modular main driving gearboxes for rolling mills are solutions for the transmission system of bar, wire and section steel production lines. Modular rolling mill gearboxes consist of vertical gearboxes and horizontal gearboxes, which, generally, are installed alternately to ensure the right shape and size of the rolling products. The horizontal gearboxes are driven by parallel shafts, and the vertical gearboxes are driven by spiral bevel gears and parallel shafts. Generally, the gearbox has a single-input or double-output or triple-output structure, which transfers and distributes the motor power to two or three rolls, and achieves the required torque and speed for rolling through a reduction ratio. In addition to fully meeting the actual working conditions, the main driving gearboxes for bar and wire rolling feature compact structure, high impact resistance and stable operation. They can be used with closed-end or short-stress line rolling mills. Vertical and horizontal gearboxes and a horizontal-vertical conversion system can be customized based on actual needs.

Performance Characteristics
- Compact structure
- Low noise
- Good casing stability
- Forced lubrication to rolling bearings and spraying circulation lubrication, with high reliability

Main Technical Parameters
- Center Distance of Output Shaft: up to 1,100 mm
- Output Torque: up to 1,00 kNm
- Transmission Ratio: up to 120

Major Applications
- Large, medium and small bar production lines, wire and high-speed wire production lines, and some section steel production lines



Hot Rolling Plate

NGC main driving gearboxes for hot rolling plate can transmit power to the rough rolling area and the finish rolling area in the hot strip rolling plate and continuous casting and tandem rolling plate production lines. A main driving gearbox for hot rolling plate consists of a main reducer with a reduction ratio and a gear frame for power distribution. The tandem drive of the main reducer and the gear frame can transmit the power and torque of the main motor to the two rollers of the hot rolling plate mill through speed reduction and distribution.
The hot rolling plate production line features large rolling reduction and large rolling force, which requires a large rolling torque of the transmission system. Therefore, the reliability and stability of the gearbox in the main transmission system are two key metrics. The NGC main driving gearboxes for hot rolling plate can fully meet the demanding requirements on transmission.

Performance Characteristics
- Optimized flank modification technology
- Large housing rigidity
- High transmission torque
- Hardened tooth surface by carburizing and quenching and welded gears to reduce weight

Main Technical Parameters
- Output Torque: Up to 4,200 kNm
- Transmission Ratio: 1 - 10
- Nominal Power: Up to 12,000 kW

Major Applications
- Hot tandem rolling, continuous casting and tandem rolling plates production line



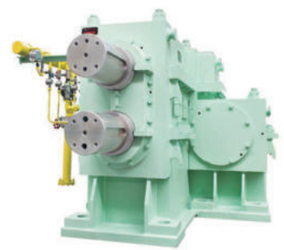
Cold Rolling Plate

NGC main driving gearboxes for cold rolling plate are used in cold tandem rolling or reversible plate rolling mill production lines. The gearboxes can transmit and distribute the motor power and torque to the rollers. In order to meet the requirements on high speed and high stability of cold-rolled plates, we have specially designed our main driving gearboxes for cold rolling plate to ensure their high precision and reliability, which have been proven in several cold tandem rolling plate production lines and reversible plate rolling mill production lines.

Performance Characteristics
- Optimized flank modification technology
- Optimized housing rigidity
- Higher gear accuracy and transmission efficiency
- Stable transmission with low vibration and low noise

Main Technical Parameters
- Output Torque: Up to 700 kNm
- Transmission Ratio: 0.8 - 6.8
- Nominal Power: Up to 7,500 kW

Major Applications
- Cold tandem rolling plate production line: Reversible cold rolling plate production line





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Gearbox for Metallurgy

Section Bar Flying Shears

Section bar flying shear is a device used to cut rolling pieces (head cutting, tail cutting, fragmentation and double-length cutting of finished products) during the continuous bar and wire rolling. We provide different types of flying shears, such as crank connecting rod type flying shears, rotary flying shears, crank connecting rod plus rotary combined flying shears, to meet the requirements of different rolling lines. Shears with different structures can provide different shearing speeds and shearing forces to meet the corresponding working conditions. With a mechanical and electrical integration control system, frequent startup and brake can be realized at large inertia.
Our low-temperature flying shear can shear bar and wire rolling products easily and precisely at low temperature after they are cooled in water.

Performance Characteristics
- Large shearing section, large shearing force
- High shearing precision
- Optimized housing stability and operational stability

Main Technical Parameters
- Max. Shearing Section: 17,600 mm^2(φ150 mm)
- Max. Shearing Speed: 22 m/s

Major Applications
Continuous rolling production lines for bars, wires and section bars



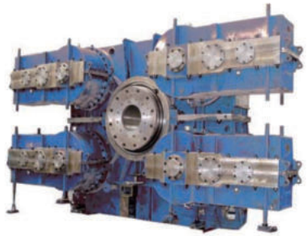
Tilting Device of Converter

Tilting device of converter is used to steadily tilt and accurately position the furnace bodies in oxygen top-blown convertors and steelmaking equipment, and perform a series of operations, including adding molten iron into converters, tapping steels, adding materials, and repairing furnaces. Our tilting device of converter primarily consists of an AC variable frequency motor, a primary reducer, a secondary reducer, and a torque arm balancing device. It adopts a fully-suspended flexible four-point meshed driving type, and a torque-arm movement balancing mechanism. As the key transmission equipment for converter steelmaking, the device is characterized by low speed, heavy load, high speed ratio, and frequent startup and brake. It can also bear larger dynamic loads and harsh working conditions.
The relevant core technologies of the primary reducer in the tilting device have acquired the national patent. With all main accessories purchased from top brands, the device is safe and reliable in overall performance.

Performance Characteristics
- High transmission torque
- Fully-suspended flexible structure

Main Technical Parameters
- Specifications: 30 - 300 T
- Max Torque: 6,500 kNm
- Accident Torque: 15,000 kNm
- Transmission Ratio: 520 - 1.200

Major Applications
- Converter steelmaking equipment



Gearbox for Vertical Slag Grinding Mill

Vertical mill gearboxes require extremely high rated power and high availability. As one of the key components of vertical roller mills, vertical mill gearboxes are used to transmit power, reduce the rotating speed of the motor to the one required by the mill during operation, and support the mill's grinding table. The higher axial force and partial radial force generated during the grinding process are transmitted to the mill foundation through a thrust bearing and the gearbox housing.

Performance Characteristics
- Modular design, high versatility of parts
- Longer bearing life, more reasonable lubrication distribution
- Flank modification for higher bearing capacity and lower noise
- Finite element analysis for smoother gearbox operation
- Unique complete thrust bearing device

Main Technical Parameters
- Transmission Stage: 2-stage (one spiral bevel gear drive and one planetary gear drive); 3-stage (one spiral bevel gear drive, one parallel gear drive, one planetary gear drive); 3-stage (one spiral bevel gear drive and two planetary gear drives)
- Transmission Ratio: 20 - 60
- Nominal Power: 80 – 9,000 kW

Major Applications
- Widely used in systems for grinding steel slag, granulated slag, mining slag, pulverized coal, limestone, etc. in metallurgy



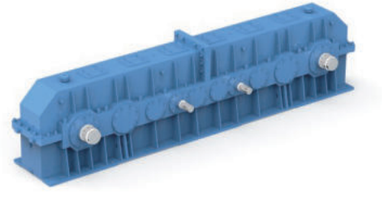
Gearbox for Casting Crane

YZ series and MHK series gearboxes with extended total center distance are developed as lifting and driving mechanisms of various metallurgical cranes and casting cranes in domestic and overseas markets. Based on the MHB series standard industrial gearbox platform, the two series gearboxes feature a hard-tooth surface, a wide range of center distances, high bearing capacity, high reliability, and light weight.

Performance Characteristics
- Modular design and special designs for different applications, with compact structure and high bearing capacity
- Flank modification and large contact ratio for smooth transmission with low noise
- Multiple output modes: parallel key, spline key, gear shaft end, hollow shaft, etc.
- Non-standard design on request

Main Technical Parameters
- Output Torque: 6.6-470 kNm
- Transmission Ratio: 14 - 250
- Center Distance: 405-1,990 mm

Major Applications
- Metallurgical cranes, casting cranes, etc.





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Mill Gearboxes

Vertical Roller Mill Gearboxes

Vertical mill gearboxes require extremely high rated power and high availability. As one of the key components of vertical roller mills, vertical mill gearboxes are used to transmit power, reduce the rotating speed of the motor to the one required by the mill during operation, and support the mill's grinding table. The higher axial force and partial radial force generated during the grinding process are transmitted to the mill foundation through a thrust bearing and the gearbox housing.

Performance Characteristics
- Modular design, high versatility of parts
- Longer bearing life, more reasonable lubrication distribution
- Flank modification for higher bearing capacity and lower noise
- Finite element analysis for smoother gearbox operation
- Unique complete thrust bearing device

Main Technical Parameters
- Transmission Stage: 2-stage (one spiral bevel gear drive and one planetary gear drive); 3-stage (one spiral bevel gear drive, one parallel gear drive, one planetary gear drive); 3-stage (one spiral bevel gear drive and two planetary gear drives)
- Transmission Ratio: 20 - 60
- Nominal Power: 80 – 9,000 kW

Major Applications
- Grinding or pre-grinding systems in the building material industry (e.g., raw material, coal, cement, slag, gypsum, coal ash), power and metallurgical industries (e.g., coal, limestone), and other industries (e.g., calcite, ceramic powder).

Roller Press Gearboxes

Between the two oppositely rotating grinding rollers, small dry particles bear extremely high pressure. The fine particle materials are crushed into powder or uniform shapes. In the cement industry, this type of gearboxes can be applied to raw material grinding, pre-grinding, and final-cement grinding. In the mining industry (copper mine, gold mine, diamond mine, etc.), mining roll presses are usually used before other grinders. We are dedicated to providing customers with reliable gearboxes.

Performance Characteristics
- Optimized meshing accuracy of gears for lower noise and higher efficiency;
- The housing and planetary carriers are analyzed and optimally designed by FEM, with less deformation during operation process, and more stable operation
- Guaranteed manufacturing quality, higher reliability, and compact structure
- A complete set of accessories such as the torque reactive force arm system, coupling, and oil supply system are optional
- A shrink disc is optional, with special designs for easy assembly and disassembly

Main Technical Parameters
- Transmission Stage: 2 or 3-stage, single-stage parallel shaft gear set (configured based on specific needs) + 2-stage planetary gear set + 3-stage planetary gear set
- Output Torque: 200 – 3,200 kNm
- Transmission Ratio: Max i= 125

Major Applications
- Systems for grinding cement materials and ores





MFY, MFYT Central Drive Gearbox

MFY and MFYT series central drive gearboxes are a new type of low-speed and heavy-duty gearboxes we have developed after we introduced state-of-the-art technology from industrially developed countries, summarized the shortcomings of domestically manufactured gearboxes for large-scale mills, and took into consideration the characteristics of our company. The MFY series mill gearboxes adopt double power shunting, two-stage reduction, and concentric transmission in structure. The MFYT series mill gearbox adopts double power shunting, three-stage reduction, and concentric transmission in structure.

Performance Characteristics
- Hardened tooth surface, with tooth ground
- Plain bearings and gears with a permanent design life
- Electronic control and detection systems for real-time monitoring of operating status
- Wide application, stable transmission
- Easy to operate and maintain

Main Technical Parameters
- Transmission Stage: 2-stage double power shunting; 3-stage parallel gears + double power shunting
- Nominal Power: 800 – 8,000 kW

Major Applications
- Systems for grinding cement clinkers, ores, coal, and other materials in the building material, coal, and mining industries

MBY (MBYX) Side Drive Gearbox

We have specially developed a high-performance MBY (MBYX) side drive gearbox as the main drive device for tube mills. Based on the modern gear design and manufacturing technology, MBY (X) series side drive gearboxes are specially developed for cement and coal mills that feature harsh working conditions, low speed, heavy load, and high requirements on safety and reliability, and service life.

Performance Characteristics
- Tooth surface with carburizing and quenching, with the accuracy of above level 6
- Easy to maintain
- An oil pan is optional to meet different needs
- Symmetrical design, gears can be used on both sides
- High reliability and long service life

Main Technical Parameters
- Transmission Stage: 1-stage, parallel shaft gear set
- Transmission Ratio: Max i= 7.1
- Nominal Power: 200 – 5,000 kW

Major Applications
- Cement and coal mills







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Rubber & Plastic Gearboxes

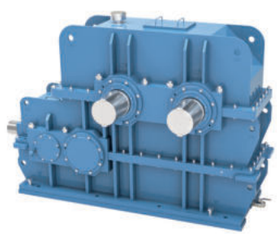
Internal Mixer Gearbox

As the main gearbox for rubber internal mixers, the internal mixer gearbox features high precision, heavy duty, and hardened tooth surface. The internal mixer gearbox adopts the transmission mode of parallel cylindrical gear deceleration. The input shaft is connected to the motor shaft through a coupling and is driven by the motor. After gear reduction and power shunting between the two output shafts, the power is then transmitted to the rotor shaft of the internal mixer through the coupling, thus driving the rotor of the internal mixer for rubber mixing.

Performance Characteristics
- The products are developed based on the industrial standard platform
- Modular design is introduced to facilitate parts quality control and shorten the lead time
- Topology optimization technology is applied to improve the gearbox power density ratio
- A multi-floating load sharing mechanism is designed to improve the bearing capacity of the gearbox
- A maintenance-free sealing structure is designed to facilitate product maintenance
- Combined flank modification is adopted for smoother gearbox operation

Main Technical Parameters
- Transmission Ratio: 12.5 - 50
- Nominal Power: 22 – 3,000 kW

Major Applications
- Applied in internal mixers for mixing, plastication and final mixing of rubber or plastic



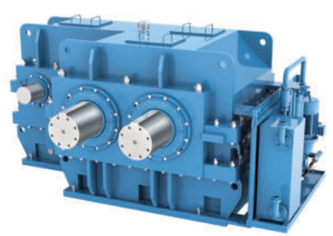
Open Mill Gearbox

As the main gearbox for the open rubber mixing mill, the open mill gearbox is a high-precision, heavy-duty, hard-toothed gearbox. The gearbox adopts the transmission mode of parallel cylindrical gear deceleration. The input shaft is connected to the motor shaft through a flexible coupling and is driven by the motor. After a gear reduction and power shunting between the two output shafts, the power is then transmitted to the rotor shaft of the open mill through the coupling by the output shaft, driving the rotor of the open mill for rubber mixing.

Performance Characteristics
- The products are developed based on the industrial standard platform
- Modular design is introduced to facilitate parts quality control and shorten the lead time
- Topology optimization technology is applied to improve the gearbox power density ratio
- A multi-floating load sharing mechanism is designed to improve the bearing capacity of the gearbox
- A maintenance-free sealing structure is designed to facilitate product maintenance
- Combined flank modification is adopted for smoother gearbox operation

Main Technical Parameters
- Transmission Ratio: 10 - 103
- Nominal Power: 37 – 450 kW

Major Applications
- Applied in open mills for rubber mixing, hot smelting, tabletting, plastication, etc.



Gearbox for Single Screw Extruder

The gearbox for single screw extruder(s) is mainly used as a power transmission device for extruded rubber materials in the rubber and plastic industry. It can also be used as a power transmission device for extruded materials in other industries. The compound extrusion unit can be used for the production of truck tires for cars, light trucks and heavy trucks, and can be used for the compounding of tire crown rubber, tire shoulder wing rubber and base rubber, compounding of tire sidewall rubber and seam allowance wear-resistant rubber, compounding of bead filler, extrusion of tire shoulder pad rubber, production of bias tires, and composite extrusion of integral products in the head of the tire tread and sidewall.

Performance Characteristics
- The products are developed based on the industrial standard platform
- Modular design is introduced to facilitate parts quality control and shorten the lead time
- Topology optimization technology is applied to improve the gearbox power density ratio
- A multi-floating load sharing mechanism is designed to improve the bearing capacity of the gearbox
- A maintenance-free sealing structure is designed to facilitate product maintenance
- Combined flank modification is adopted for smoother gearbox operation

Main Technical Parameters
- Transmission Ratio: 18.35-53.6
- Nominal Power: 22-750 kW

Major Applications
- Supporting single-screw extruder for extruding semi-finished rubber products, etc.

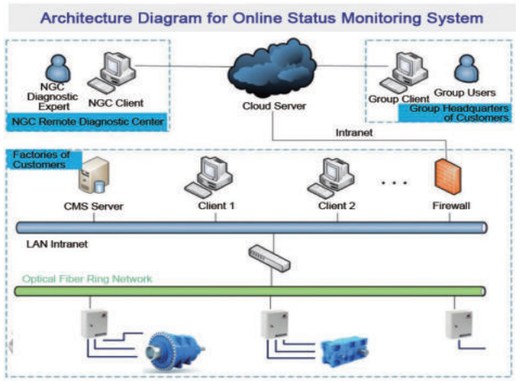




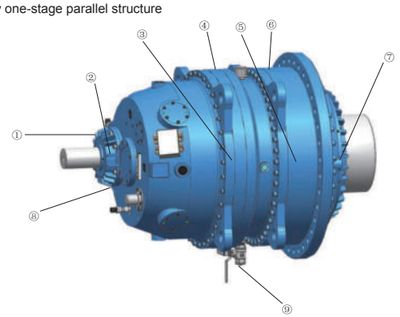
Intelligent Products

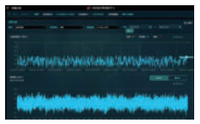


The Gear-Sight series systems for transmission equipment health monitoring and fault diagnosis can monitor and record real-time operating data, including vibration and oil metal wear particles, and store the data on the cloud platform through Internet technology. With our available design, manufacturing, and testing data, we can perform accurate assessment and remote fault diagnosis of our transmission equipment regularly. Through monitoring and management of the operating data, we can ensure the safe operation of equipment and low repair costs, thereby maximizing the economic benefits of our customers.



Note: The gearbox is a two-stage planetary one-stage parallel structure





View trends



Results warning



Real-time monitoring

Gearbox Monitoring Point Description

No.	Monitoring Point Location	Sensor	Number of Sensors
1	High-speed side, axial	Passband acceleration sensor	1
2	High-speed side, radial	Passband acceleration sensor	1
3	Middle, radial	Passband acceleration sensor	1
4	Middle, vertical	Passband acceleration sensor	1
5	Low-speed side, radial	Low-frequency acceleration sensor	1
6	Low-speed side, vertical	Low-frequency acceleration sensor	1
7	Output end, radial	Low-frequency acceleration sensor	1
8	Rotating speed of high-speed shaft	Rotating speed sensor	1
9	Main oil circuit of the lubrication system (optional)	Oil metal wear particle sensor	1

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Customer Services

Customized Services

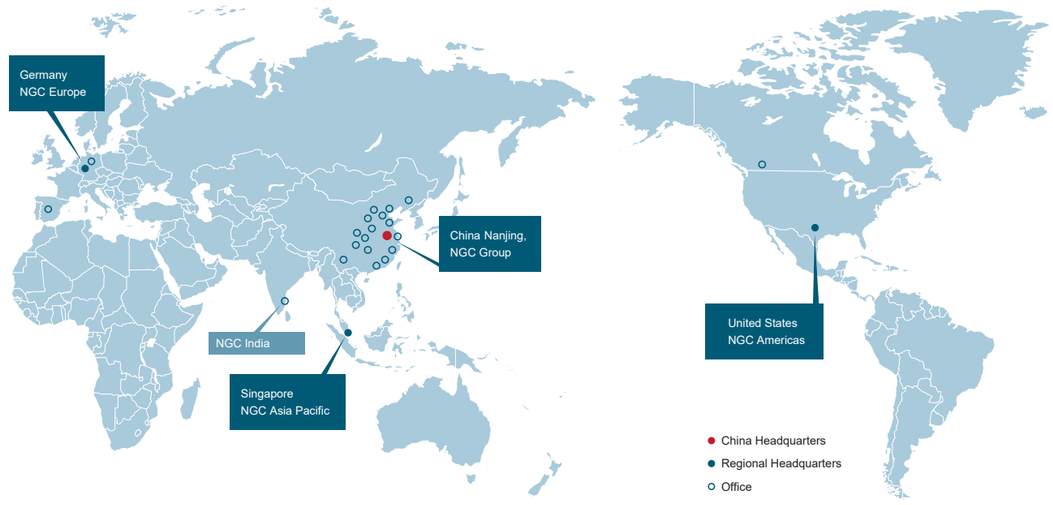
- Provide customized services based on customers' specific needs;
- If you need more information, please feel free to contact us. (See the back cover for the contact information)

Comprehensive Services

We are committed to providing comprehensive customer services in the product life cycle. Our global service network based in China, the United States, Germany, and Singapore provides full solutions and timely service support.

We believe that the real challenge for customer services starts from product and technology delivery. To meet diverse needs of our customers, we provide full solutions covering R&D, manufacturing, guidance on installation and debugging, training on use and maintenance, spare parts, and technical upgrading of existing products.

We have established a complete service system and a global service network according to the ISO 9001:2015 quality management system. We are also dedicated to helping our customers achieve high availability and low operating costs of drive systems. We win customer trust with our responsibility!





Service Procedures

Receive calls from customers

Dispatch service staff from service centers

Visit customers and product on-site services

Acceptance check by customers

Summary and filing

Follow-up visits

Service Items

- Design, manufacturing, assembly, testing and maintenance of new products
- Technical training on product application
- On-site services
- Technical upgrading of existing products
- Spare parts storage service
- Proactive on-site diagnostic services (mainly preventive measures)
- Comprehensive maintenance services

Service Quality

- We have established a complete service system in accordance with ISO 9001:2015 and GB/T19001-2016 quality management systems.
- All of our service staff members are well-trained to follow the requirements of service systems and put “customer satisfaction” as our top priority.
- We have established a telephone follow-up service to guarantee that we can get customers’ feedback to help improve our customer services.

Service Network in China

Our service network has covered over 30 provinces, municipalities, and autonomous regions in China, which guarantees that our service staff can reach customers within 48 hours.

On the principle of “customer first”, we have streamlined our service procedures, so that we can respond quickly to customers’ needs establish a life-cycle management document for every product.



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Partners

(All names are arranged in random order)



Wind Power

Goldwind
Envision Energy
Mingyang Smart Energy
Windey
Shanghai Electric
CSIC HZ Windpower
Dongfang Electric
Guodian United Power
CRRC Wind Power
Sany Renewable Energy
Sinovel
NJWP
GE
SGRE
Nordex



Ferrous Metallurgy

China Baowu
HBIS
Jiangsu Shagang Group
Angang Steel Company
Shougang Group
Valin Steel
Fangda Special Steel
CITIC Special Steel
Jianlong Group
MCC
Sinosteel MECC
Zhongzhong Science & Technology
CHMP
NSSMC
Primetals Technologies
SMS Group



Building Materials

CNBM
Anhui Conch Cement
Tangshan Jidong Cement
Huaxin Cement
Asia Cement China
Yatai Group
Jiangxi Wannianqing Cement
Sinoma
TCDRI
HCRDI
CDI
MTP
Heidelberg Cement
LafargeHolcim
CEMEX
Loesche



Coal and Coal Chemical Industry

China Energy
China Coal Group
SDEG
SCCIG
HNEC
Shenma Corporation
Shandong Energy Heavy Equipment Manufacturing Group
ZMJ
NXTDBN
ZMM
ZGCMC
KDHI



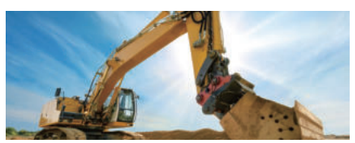
Port and Crane

Port of Ningbo-Zhoushan
Port of Guangzhou
Qingdao Port
Port of Xiamen
Weihua Group
DHHI
HMC
Shanqi Heavy Machinery
Zhuzhou Tianqiao Crane
RHM
HXME
Wuxin
Wuxi Gongli



Rubber and Plastic

ZC-RUBBER
Linglong Tire
SAILUN GROUP
MCIC
BRIDGESTONE
GITI TIRE CORP
Yiyang Rubber
CGEC
MESNAC
DXS
HF China
TST
YAXI MACHINES



Construction Machinery

XCMG
SANY Group
Zoomlion
LiuGong Group
CRCHI
CREG
Sunward



Nonferrous Metallurgy

Chalco
East Hope Group
Zijin Mining
TNMG
Jinchuan Group
JCC
Yunnan Copper
SD-Gold



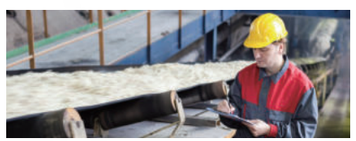
Electricity

HPI
GD Power Development
Datang Power
SEHPS
BPEG
CGE
DEC
HHI



Non-coal Mine

Ansteel
TISCO
BSP
pzhsteel
Masteel
CINF
NHI
Shankuang Company
SBM
HCM



Grain, Oil, and Sugar

COFCO
NNSUGAR
Yangpu Nanhua
Sssugar
Hosley Machinery
Sifang Machinery
Shanghai Liangyou (Group)
Buhler Group



Chemical and Environmental

CNPC
Sinopec Group
CNOOC
BASF
Shaangu Power
Hangyang
Guangzhong
EGP
BOMCO
Longking

PJ Global Co

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Nanjing High Speed & Accurate Gear Group Co., Ltd.

Nanjing High Speed & Accurate Gear Group Co., Ltd

Note: The model numbers and parameters borne in this document are subject to change without prior notice. Please contact us to get the latest edition.

www.NGCtransmission.com
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