

ZWZ Group

HIGH-END PRODUCT
HIGH-END MANUFACTURING
HIGH-END MARKET
HIGH-END STRATEGIC
CUSTOMERS

ZWZ GROUP

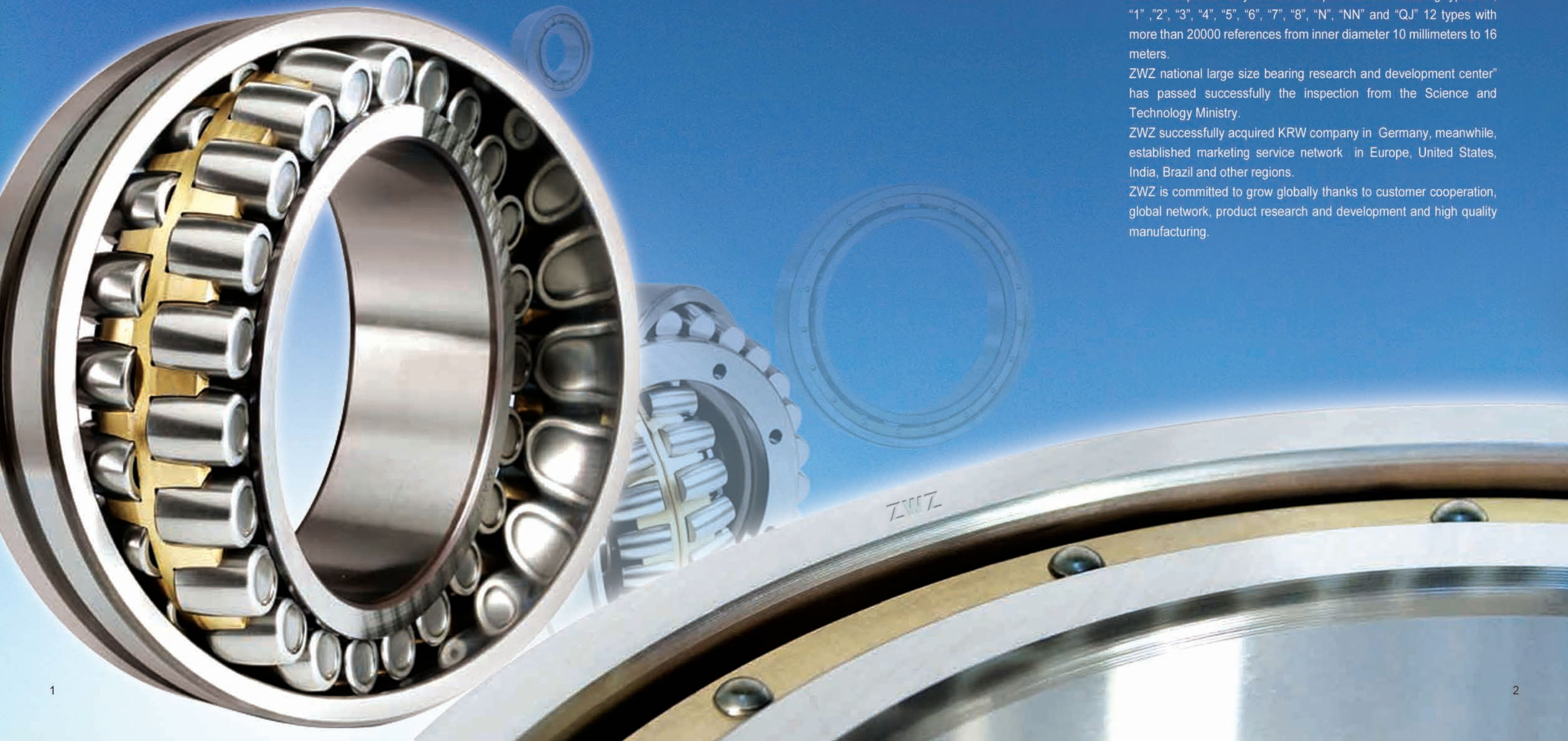
ZWZ, established in 1938, the leading enterprise in Chinese bearing industry, has obtained the recognition award of China Industrial Award, National Technology Innovation Model Enterprise and National Customer Satisfaction Enterprise.

ZWZ Group meet any customer requirements on bearing types "0", "1", "2", "3", "4", "5", "6", "7", "8", "N", "NN" and "QJ" 12 types with more than 20000 references from inner diameter 10 millimeters to 16 meters.

ZWZ national large size bearing research and development center" has passed successfully the inspection from the Science and Technology Ministry.

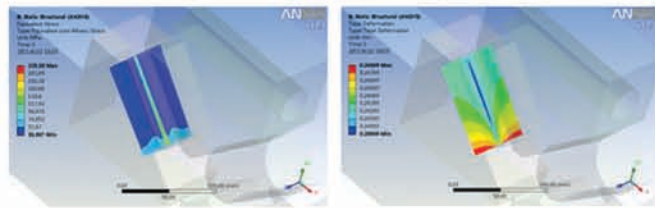
ZWZ successfully acquired KRW company in Germany, meanwhile, established marketing service network in Europe, United States, India, Brazil and other regions.

ZWZ is committed to grow globally thanks to customer cooperation, global network, product research and development and high quality manufacturing.





ZWZ Technology

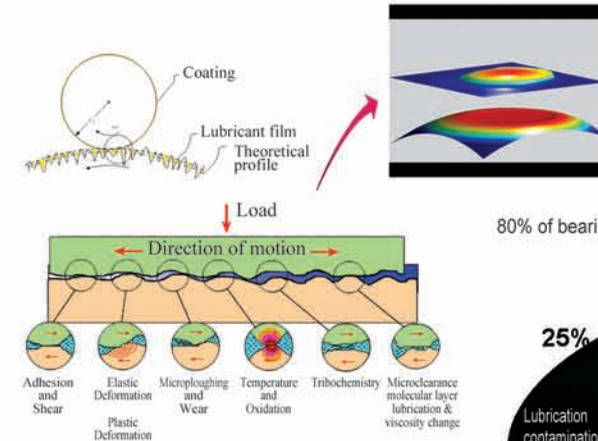
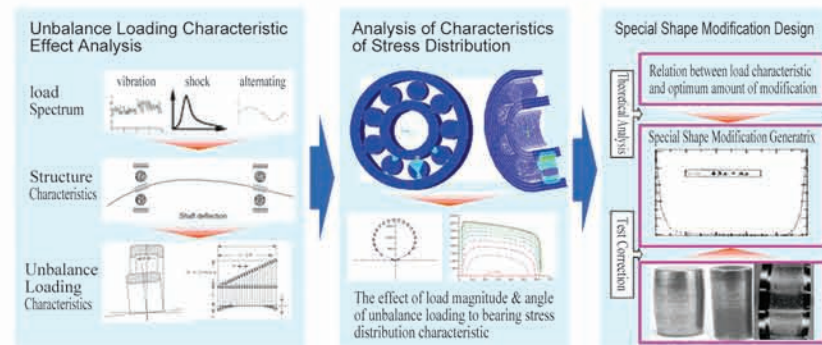


1. Material Technology

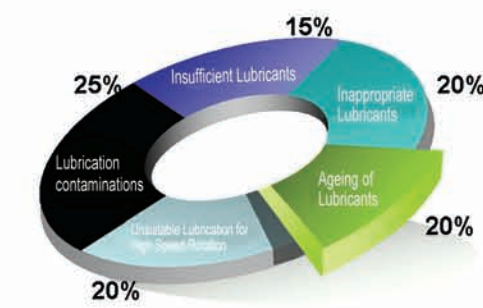
- 1) Professional material research and development team;
- 2) Develop bearing steel with the steel enterprises together;
- 3) Owning exclusive bearing material standards on 15 types of windpower bearings and rolling mill bearings, etc.

2. Design Technology

- 1) Establish and design the mathematical model;
- 2) Engineering teams are defining bearings thanks to state of the art finite element software and bearing life modelling ;
 - Model surrounding parts
 - Integrate deformation into the bearing life calculation
 - Analyze bearing rolling contact stresses
 - Optimization of the bearing design



80% of bearing failure is caused by improper lubrication

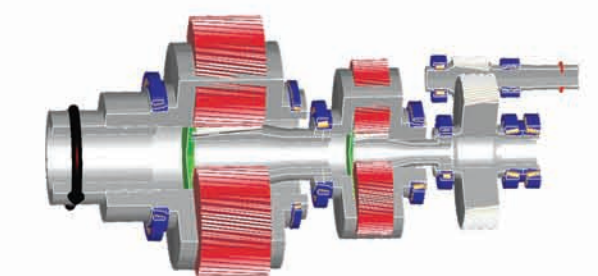


3. Friction and Lubrication Technology

- 1) Set up a mathematical model on the friction technology and lubrication technology;
- 2) Determine the optimum parameters of the oil film lubrication;
- 3) Confirm the optimum proportion between the surface roughness and oil film thickness of the bearing outer ring and rollers, for metallurgical cold rolling mill intermediate roll, working roll, in order to make the bearing life improved.

4. Surface Modification Technology

Adopt surface treatment techniques like nitriding, carbonitriding, sulphurizing and black oxide coating and corrosion prevention and etc. to improve rolling bearing surface lubrication performance.



Gearbox bearing complete machine analysis technology



ZWZ Technology

5. Inspection and Test Technology

- 1) National level inspection and testing center works on bearing life and reliability test, bearing performance test and simulation test, physical and chemical property test and analysis of the bearing metal and nonmetal materials, analysis of bearing precision and vibration, test and analysis of noise and etc.
- 2) Steel, machine tool motor, windpower, railway, automotive and fundamental application test platform can verify design;
 - Railway bearing temperature-rise test;
 - Automobile hub bearing rigidity test, muddy water resistance test, durability test; Clutch bearing durability test; Front suspension bearing corrosion resistance test;
 - Machine tool bearing temperature-rise test; Motor bearing high speed performance test; Motor bearing dynamic test;
 - Life tests of wind power main bearing, slewing bearing and accelerator bearing, etc.
 - Metallurgy bearing temperature-rise performance and durability test.
- 3) Own 1200 inspection and testing equipments covers various types.
- 4) Issue the test results approved by ILAC;
- 5) Process inspection control;
 - 100 % Raw materials ultrasonic flaw detection;
 - 100 % Dimension and form and position accuracy detection;
 - 100 % Extra large bearing magnetic powder inspection;
 - "Identity Card" traceability management;
 - SPC statistics.



Six Main Product Series

ZWZ



ZWZ Product

1. Heavy Load Series Bearing

- 1) Steel and alloy mill machinery
Continuous casting machine bearings, hot strip rolling mill bearing, section mill bearing, cold strip rolling mill bearing, Sendzimir mill bearing, high speed wire rod guide bearing, cooling bed bearing.
- 2) Cement machinery bearing
Cement vertical mill bearing, roller press bearing, crusher bearing, ball mill bearing, separator bearing, conveyor bearing.
- 3) Petroleum machinery bearing
Drilling bearing, slush pump bearing, pumping unit bearing.
- 4) Paper machinery bearing
Press roll bearing, drying cylinder bearing, paper reeling machine bearing, water extractor bearing.
- 5) Boiler preheater bearing



Hot Strip Rolling Mill Bearing



Section Mill Bearing



Cold Strip Rolling Mill Bearing



Continuous Casting Machine Bearings



Sendzimir Mill Bearing



High Speed Wire Rod Guide Bearing



Cooling Bed Bearing



Cement Vertical Mill Bearing



Drying Cylinder Bearing



Boiler Preheater Bearing



ZWZ Product

2. Precision Series Bearing

- 1) Machine Tool Bearing
Main spindle bearing, ball screw support bearing, operating platform bearing
- 2) Motor Bearing
DT series bearings: high precision level, high rotate speed, low noise.
- 3) Elevator Bearing
- 4) Hydraulic pump bearing
- 5) Compressor Bearing
- 6) Coal Mining Bearing
Scraper bearing, coal mining machine bearing, roadheader bearing, hoister bearing
- 7) CC Type Spherical Roller Bearing
Heavy & Medium & Light series with 280 specifications
Inner Diameter 45mm~Outer Diameter 440mm
Precision P5 Level
Rated dynamic load improved by 10%~18%
Limit rotation speed improved by 20%~30%
Lower noise and vibration level
High rotation flexibility
Mainly applied to various kinds of machine equipments in the industries such as: Gearbox, air blower, paper making, iron & steel, shipping, coal mining machinery, electricity and others.



Main Spindle Bearing



Ball Screw Support Bearing



Operating Platform Bearing



Motor Bearing



Hydraulic Pump Bearing



Compressor Bearing



Scraper Bearing



Coal Mining Machine Bearing



Roadheader Bearing



CC Type Spherical Roller Bearing



ZWZ Product

3. Railway Bearing

- 1) Railway Wagon Bearing
23, 25 tons axial load new and repair bearings are in batch production. Low temperature resistant bearings with axial weight of 27 tons, 30 tons and 40 tons have been put into production .
- 2) Passenger Train Bearing
Railway passenger car journal box bearings
- 3) Locomotive Bearing
Journal box bearing, full suspension bearing, journal sticking bearing, tractor motor bearing, main generator bearing, transmission system bearing have all been supplied in batch quantity.
Now working on developing locomotive bearing with axial weight of 30 tons and "Harmonious" locomotive bearing with more than 7200 KW power.



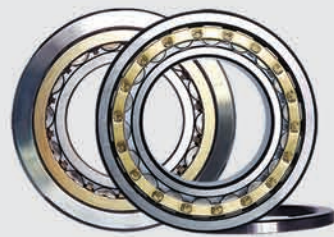
- 4) Subway & Light Rail Bearings
Subway and light rail journal box bearing
- 5) High-Speed Railway Bearing
Have developed bullet train bearing with the speed of 250km/h.
Working on developing high-speed railway bearing with the speed of 300km/h.



Heavy Axle Load Railway Wagon Bearing Component



Railway Wagon Journal Box Free Bearing



Railway Passenger Car Bearing



High-power Locomotive Journal Box Bearing



Tractor Motor, Main Generator Bearing



Subway & Light Rail Bearings



High Speed Railway Bearing

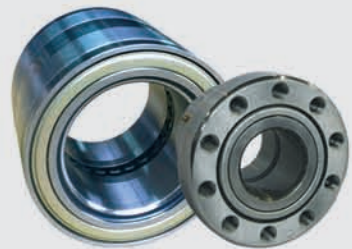
Six Main Product Series



ZWZ Product

4. Automotive Bearing

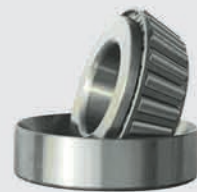
- 1) Truck Bearing
Axle (hub bearing, differential & reducer bearing), gearbox bearing, generator bearing, retarder bearing.
- 2) Car Bearing
Hub bearing, gearbox bearing
- 3) Automotive Bearing (U.S. OEM Bearing Project)
Supply supporting bearings for transfer case and school bus.



Second Generation Truck Wheelhub Bearing



Truck Retarder Bearing



Truck Differential Bearing



Truck Gearbox Double-row Tapered Roller Bearing



Car Gearbox Bearing



First, Second, Third Generation Car Wheelhub Bearings



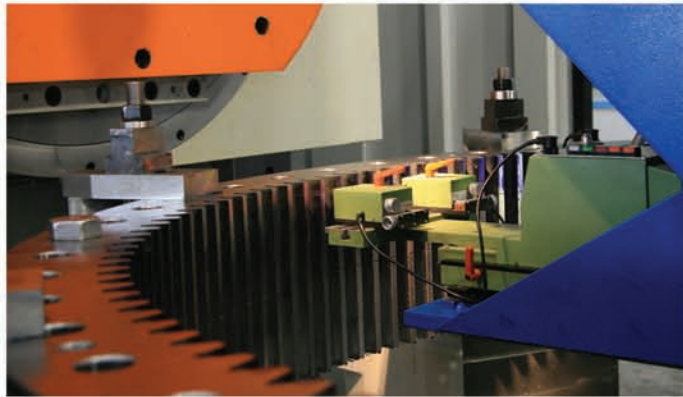
Automotive Bearing Export To U.S. OEM Customers



ZWZ Product

5. Wind Power Bearing

- 1) Power
Fan bearings with power of 600KW-850KW, 1.0MW-2.3MW, 2.5MW-3.0MW and 5.0MW-6.0MW.
Now working on 10MW wind turbine bearing.
- 2) Structure
Doubly-fed, direct-drive, multibrid technology type , vertical axis wind turbine.
- 3) Environment
Onshore, offshore, low temperature, ultralow temperature.
- 4) Position
The yaw, pitch, main shaft, accelerator, generator, driving reducer.



Accelerator Series Bearing



Generator Series Bearing



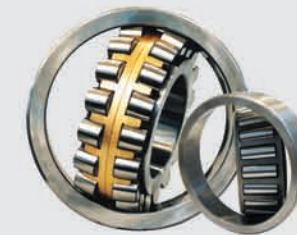
Yaw Bearing



Pitch Bearing

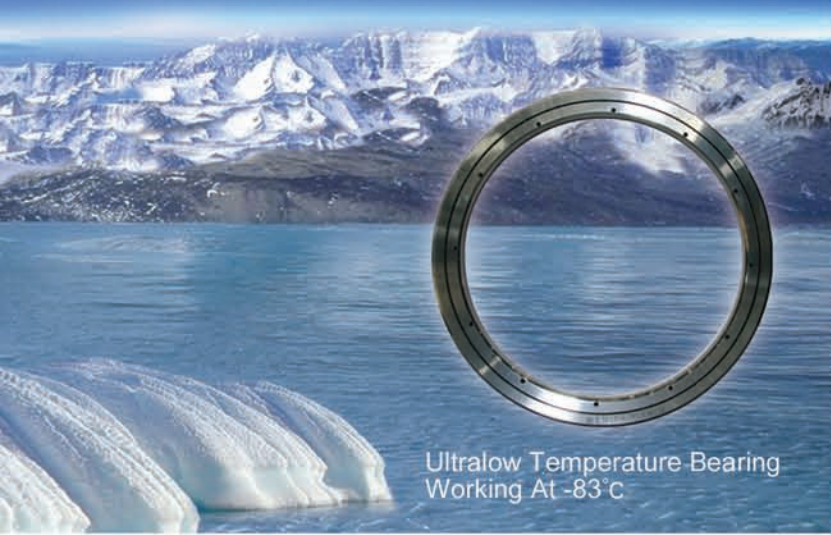


Main Bearing



Driver Reducer Series Bearing

Six Main Product Series



Ultralow Temperature Bearing
Working At -83°C



ZWZ Product

6. Special Application Bearing

- 1) Aerospace field, special application field bearing;
- 2) 11 meter stacker-reclaimer large size slewing bearing;
- 3) Ultralow temperature bearing working at -83°C ;
- 4) 200 Thousand tons ethylene pelletizer bearing;
- 5) 2000 tons auto crane slewing bearing;
- 6) Special mute bearing.



Stacker-reclaimer Slewing Bearing



2000 Tons Auto Crane Slewing Bearing



Shipping Usage Bearing



Thrust Swing Bearing



Aerospace Engine Bearing



Special Equipment Bearing



Special Slewing Bearing



Conveyor Bearing



Mute Bearing



200 Thousand Tons Ethylene
Pelletizer Bearing

Precision Manufacturing Technology



ZWZ Manufacturing

Forging:

- 4500 tons press machine
- 6.3 meter ring rolls
- Wagner ring rolling machine from Germany

Heat Treatment:

- Aichelin Martensite Heat Treatment Line
- Bainite quenching production line
- Controllable atmosphere well type carburizing production line
- Adopt "visible" expert system from Germany, timely monitored

Rolling Element:

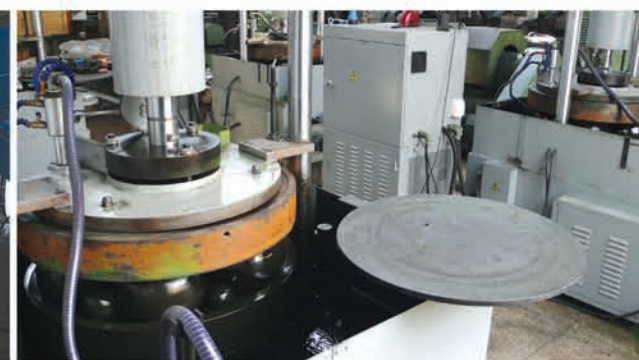
- All adopt numerical control production to turning and grinding process
- Nagel superfinishing machine from Germany
- Can manufacturing grade 1 rolling element

Cage:

- Numerical control lathe
- Numerical control boring lathe
- Machining center precision manufacturing

Turning machining:

- CNC turning production line
- 12.5 meter vertical turning machine



Grinding Manufacturing:

- Automatic online inspection grinding production line
- 2.5meter vertical grinding machine one time location
- Multi-face grinding Supfine
- Supfine superfinishing machine

Assembling:

- Far infrared flaw detection
- Demagnetization & cleaning
- Automatic assembling inspection production line



ZWZ Service

1. Various kinds of supporting services:
20000 designations and dimensions: Inner diameter 10 mm
Outer diameter 16000 mm;
2. New product development and services :
(1) Develop over 1000 types of new products annually;
(2) Investigate customers' needs and formulate new product development plans;
(3) Professional team serve the new product development
3. Professional service for strategic customers :
Professional team offer the service to the customer sites every day;
4. Centralized management of orders and on-time delivery:
(1) All the orders of ZWZ bearings will be handled in the Sales Head Office;
(2) Special bearing production lines manufacture bearing according to order;
(3) General bearings replenish stock;
(4) All the orders process are traced according to the timeline.
5. Training Service:
(1) Professional engineers come to customers and train them for installation, using and test failure analysis of bearing;
(2) The bearing sales and agent staff are trained regularly;
(3) Regularly issue the professional catalogues on metallurgy, cement, papermaking, mining, drive, railway, automotive, precision, petroleum machinery, electronic motor, wind power, slewing, etc.
6. Set up customer profiles, improve individualized service:
(1) Establish customer profiles and tracking the customers' demands;
(2) Solve the problem in the first time and improve the solution according to customers' demands;
(3) Ask customers to evaluate the ZWZ service team;
(4) Become the service expert for customers and supply the most practical and effective service.
7. Shorten the service radius of customers:
(1) Set up 9 sales companies in Tianjin, Guangzhou (Foshan), Xi'an, Chengdu, Wuxi, Jinan, Hefei, Hangzhou, Shanghai, etc.
(2) Set up 26 sales branch companies in Chengdu, Shenyang, Wuxi, Foshan, Tianjin, Xi'an, Taiyuan, Ningbo, Jinan, Zhengzhou, Chongqing, Zibo, Hefei, Liuzhou, Tangshan, Hangzhou, Beijing, Changsha, Nanchang, Changchun, Lanzhou, Wuhan, Urumchi, Fuzhou, Harbin, Qingdao, etc.
(3) Set up 15 distribution centers in Yantai, Jinan, Hefei, Wuxi, Shanghai, Xiaoshan, Shenyang, Changchun, Harbin, Xi'an, Tianjin, Chengdu, Foshan, Zhengzhou, Changsha, etc.



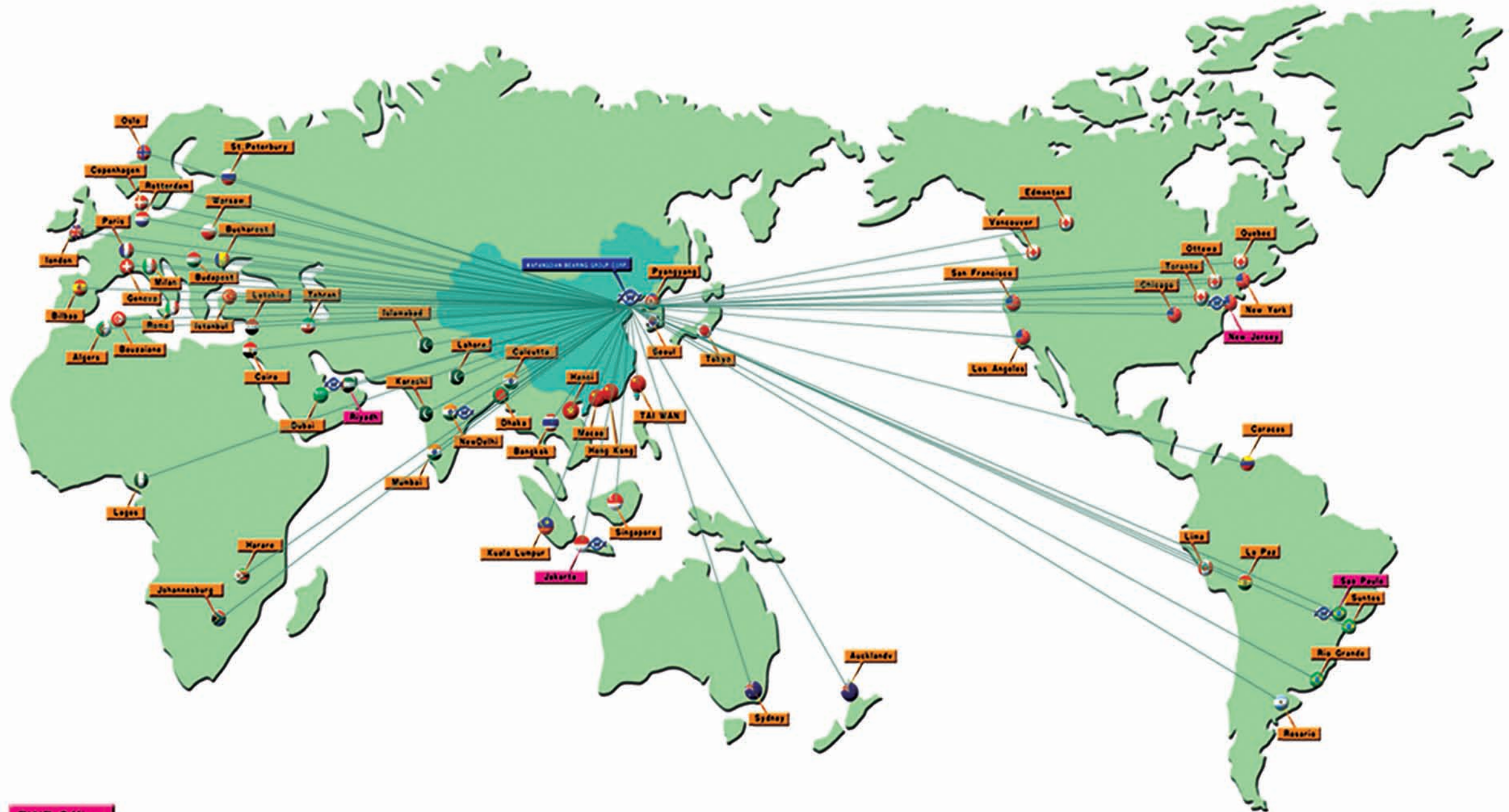
High Quality
Practicability
High Efficiency

ZWZ

ZWZ Service

Global Marketing Network

	2012 ZWZ U.S. Company
	2013 ZWZ U.S. Logistics Center
	2014 ZWZ North America Technical and Sales Center
	2013 ZWZ Germany Production Base
	2014 ZWZ Europe R&D Center



ZWZ Office
ZWZ Oversea agency & Customer