

Shanxi Tianbao Technology & Industry

Leading Enterprise of China Forging Town



CONTENTS

01

Company Profile

02

Core Products

03

Production Base

04

Customers

01

Company Profile

Company Profile



Shanxi Tianbao Science & Industry Co., Ltd.

A high-tech enterprise specializing in the research, development, production and sales of forgings



Established in
2008



Registered Capital
1.32 hundred million RMB



Floor Area
240000 m²



Current Staff
488 person



Total Assets
10 hundred million RMB

Forging Process

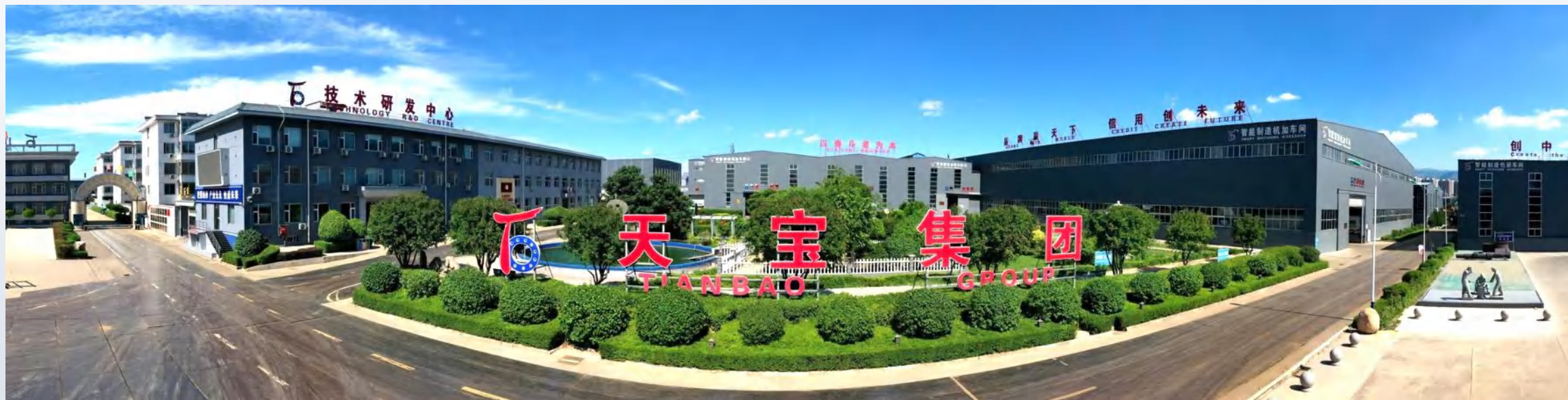
free forging, die forging, ring rolling

Main Products

pressure vessel flange, pipe flange, Slewing Bearing Blank, Vessel Shell Section Forgings

Application fields

aerospace, engineering machinery, petrochemical, ships & submarines, wind power equipment, Military Supplies, Rail Transit, nuclear power generation



Intelligent Transmission



The leader of wear and friction reduction self-lubricating composite sliding bearings.

As a provider of comprehensive solutions for high-reliability wear-resistant and anti-friction self-lubricating composite material sliding bearings, we are committed to bearing applications in new energy, military and other fields under complex working conditions such as high temperature, high speed, high load and extreme environment, so as to improve the reliability and service life of equipment for customers, reduce equipment maintenance costs and improve production efficiency.

We provide wear-resistant, friction-reducing self-lubricating composite bearings with exceptional wear performance, suitable for fluid lubrication, boundary lubrication, and mixed lubrication systems. Even under harsh conditions where conventional sliding bearings fail to maintain operation—such as with minimal oil supply, infrequent lubrication cycles, or complete oil deprivation—these composite bearings demonstrate outstanding durability and performance stability. They are widely used in wind power, hydropower, pumped storage, nuclear energy, military applications, and other critical sectors.

Externally rigid internally elastic front integrated sliding shaft system

Key words: high reliability, low cost, easy maintenance

Core features:

- Safety and service robustness:

It is suitable for low speed heavy load, high speed light load, variable speed and variable load, impact, reciprocation, swing, frequent start and stop and other complex combined working conditions. It can effectively reduce vibration and noise, and can achieve safe and stable shutdown and start-up without oil, less oil, heavy load and other extreme working conditions without high pressure lifting equipment.

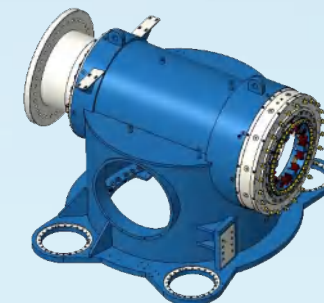
- Excellent environmental adaptability:

Chemical stability: can tolerate a variety of organic solvents, acid and alkali solutions, oils and oxidants.

Electrical insulation: excellent electrical insulation performance, can maintain stability under high voltage and high frequency.

Flame retardant: good flame retardant, not easy to burn and can be self-extinguished.

- Reduce life cycle costs:



Wind power spindle seal products

Key words: low cost, strong interchangeability, easy to replace

Core features:

Using wear-resistant and self-lubricating materials, low cost and high weather resistance: self-lubricating sealing material and ductile iron low friction wear, no need for high hardness of wear ring, simplified spindle design, cost reduction; self-lubricating materials, high weather resistance, acid and alkali resistance, can be used in harsh environment, with the size completely interchangeable with existing products.

- Wear and friction reducing sealing materials

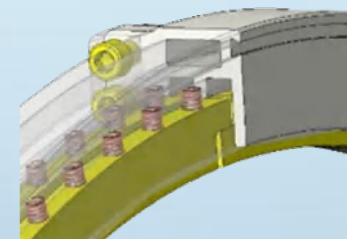
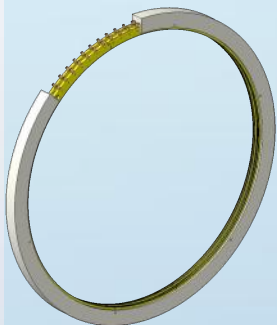
The design considers the applicability of different environments, such as high temperature, high humidity, corrosive conditions, etc. Wear-resistant and self-lubricating composite materials are selected to improve the sealing performance and durability, and ensure long-term stable operation.

- Seal structure innovation design

The multi-stage sealing design effectively isolates external impurities and moisture intrusion, ensuring perfect compatibility with the original seal dimensions. The system employs a combination of axial contact seals, face contact seals, and packing seals. A leakage-proof design solution is implemented through an oil reservoir-micro-pit-seal overlap configuration.

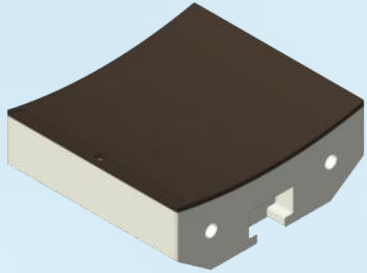
- Adaptive elastic adjustment

Compressed spring is used to automatically adjust the sealing strip pressing surface to prevent seal failure. Compressed spring is made of imported piano wire material to enhance the pressure uniformity of the spring under various loads and ensure the stability of the seal.



Intelligent Transmission

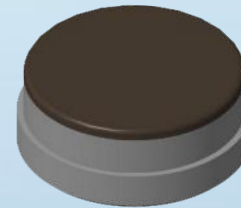
Tilting Pad Journal Bearings



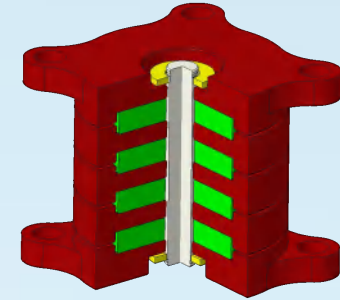
The rotating spindle rotates within the bearing housing, creating sliding friction between the shaft and housing. A lubricating film forms between these surfaces through liquid media such as oil or water. As the shaft rotates, this fluid generates dynamic pressure that balances radial loads, ensuring smooth operation. Radial sliding bearings are suitable for complex operational conditions including low-speed operation, heavy-duty loads, high-speed movement, and start-stop cycles.

Tilting Pad Thrust Bearings

Thrust bearings, designed to withstand axial loads (thrust), are widely used in various mechanical systems such as wind power, hydropower, thermal power, and marine vessels. The core principle involves placing friction-reducing flat or spherical surfaces between the shaft and housing. When axial loads are applied, these friction-reducing surfaces transfer the load to the support structure. This design effectively minimizes bearing friction and wear, thereby enhancing operational efficiency and extending equipment lifespan. The selection of thrust bearings should be comprehensively evaluated based on specific application requirements, including load type, speed specifications, working environment, and service life expectations. Proper lubrication and maintenance are essential during design and operation to ensure reliable performance and prolonged service life.



Elastic coupling



The elastic coupling is a high-performance integrated transmission system in wind turbines, featuring an outer steel casing and internal elastic components. Constructed from wear-resistant, self-lubricating composite materials, this maintenance-free disc coupling protects the gearbox and transmission system from bending and thrust loads transmitted by turbine blades, thereby extending the service life of bearings and gearboxes. Designed to smoothly transfer torque while minimizing blade impacts on the gearbox, this coupling compensates for axial, angular, and radial misalignment deviations.

Development History

2008-2010

- 2008** Shanxi Tianbao Wind Power Flange Co., Ltd. was established through the consolidation of five container forging enterprises, resulting in an annual production capacity of 30,000 tons of forgings.
- 2009** It obtained certifications for ISO 9000, ISO 14001, and OHSAS 18001, in addition to special equipment manufacturing licenses. Subsequently, it established partnerships as a supplier to five major companies, including Guodian, Goldwind, Envision, and Shanghai Electric.

2014-2016

- 2014** The transformation of equipment and the upgrading of industrial processes led to an annual output of 60,000 tons of forgings. As a result, the company was re-branded as Shanxi Tianbao Group Co., Ltd. Subsequently, it was recognized as a qualified supplier for Sinopec.
- 2015** Its exports constituted 50% of the total, thereby securing the foremost position in Xinzhou for foreign exchange earnings.

2021-2025

- 2021**
↓
2025 It will continue to upgrade the industry around petrochemical and wind power forgings, join intelligent manufacturing, increase investment in innovation, develop high-end material forging, and build a first-class forging enterprise, so as to make continuous contributions to carbon neutrality and carbon peak.

2011-2013

- 2011** It successfully passed the SGRE audit of foreign hosts and was designated as a qualified supplier.
- 2012** It successfully obtained PED/AD certification and CPR certification, thereby exporting products to Europe for the first time. In the same year, it launched a new 15,000-ton 3MW production line project, and its laboratory subsequently received certification from CNAS and CMA.

2017-2020

- 2017** It obtained certifications from VESTAS and GE to enhance its recognition among international customers.
- 2019** It obtained API certification and was awarded the title of "High-tech Enterprise in Shanxi Province", holding a total of 40 patents.
- 2020** To enhance market consolidation and improve competitiveness, an investment of RMB 238 million was allocated for the construction of a new intelligent manufacturing workshop, which is designed to have a capacity of 80,000 tons.

Enterprise Advantages

Competitiveness

Reliability



- Steady Growth and Expansion
- Whole-Process Autonomous Control and Production Capacity
- Dun & Bradstreet Certified Enterprise
- AAA Integrity Certification Enterprise
- Internal Control Management Specification
- Industry material specifications are varied and encompass a wide range of standards and requirements

Customer Recognition



- Recognition by numerous domestic and international customers
- Excellent Supplier
- Annual Continuous Surveillance Audits and Certifications

Cost Control



- Application of Patented Technology for Steady Near Net Shape Forming
- Application of Precision Die Forging
- Extensive Geographical Supporting Advantages

Delivery Timeliness



- Stable Personnel & Skillful Operation
- Digital Management Process Visualization
- Flexible Production
- Sufficient Equipment Capacity
- Effective inventory management

Quality Assurance



- Proven Quality Management
- Certification Systems Across Various Industries (18 Items)
- Process for Special Certification, Heat Treatment, and Nondestructive Testing
- Excellent Quality Management Team
- Unwavering Commitment to Quality Management Philosophy
- Comprehensive Inspection Plan
- Systematic Laboratories and Personnel

R&D and Sustainability



Collaborative R&D by multiple universities

Forging Research Institute
of Tsinghua University

Taiyuan Institute of
Technology

Taiyuan University of
Science and Technology

North University of China

Chongqing University

Chongqing University of
Arts and Science

- Continuously Recognized High-Tech Enterprise
- Simufact Forging Forming

02

Core Products

Wind Power Forgings

The company ranks among the top three leading enterprises in the wind power flange sector in China, with its business extending to numerous countries and regions worldwide. It has forged long-term strategic partnerships with state-owned power companies, wind turbine manufacturers, and large enterprises both domestically and internationally, consistently providing high-quality core components for the industry.

Wind power products encompass tower flanges, tower forged door frames, pile top flanges, pitch and yaw bearing forgings, gearbox shafts, and ring gear forgings. These products provide comprehensive solutions that span the entire life cycle of wind power, thereby consistently driving technological innovation and industrial advancement within the sector.

Raw Material Category: Carbon Steel, Alloy Steel, Stainless Steel, Aluminum alloys, titanium alloys, and other specialized alloy materials



Share in National Wind Power Market
≈17% +



Export Performance in Recent Years
Steady Growth



National Wind Power Sector
Brand Power

8m



Maximum Rolling Ring Size (Outer Diameter)

6.66cm



Minimum Rolling Ring Size (Outer Diameter)

90,000t



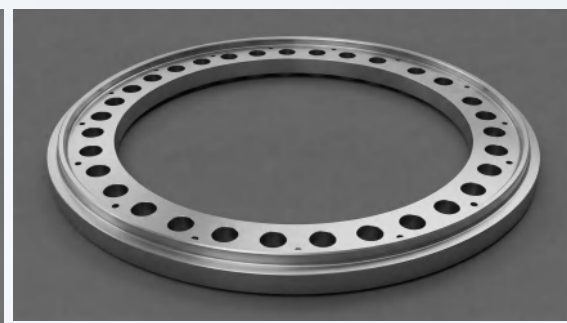
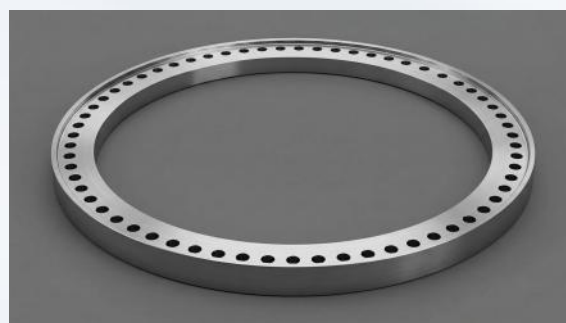
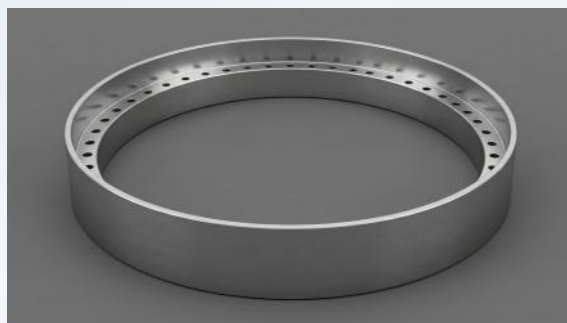
Current Annual Output



Main Products

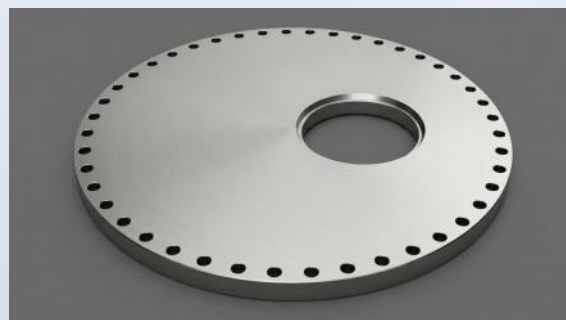
Ring Forging

Product Specification: DN500mm·DN9000mm



Disk Forging

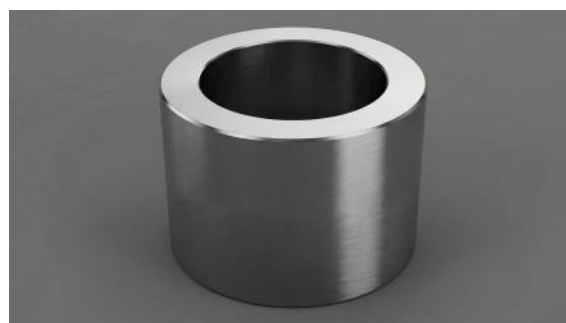
Product Specification: DN500mm·DN4000mm



Main Products

Cylindrical Forging

Product Height: $\leq 4000\text{mm}$



Shaft Forging

Product Specification: $\leq 8500\text{mm}$



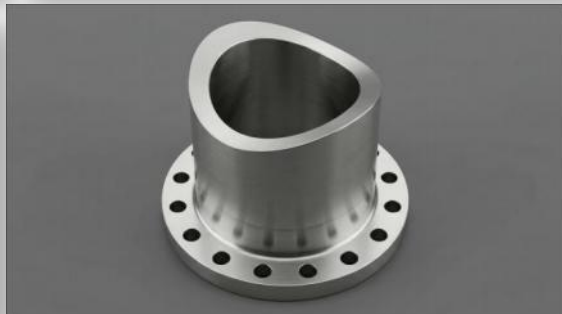
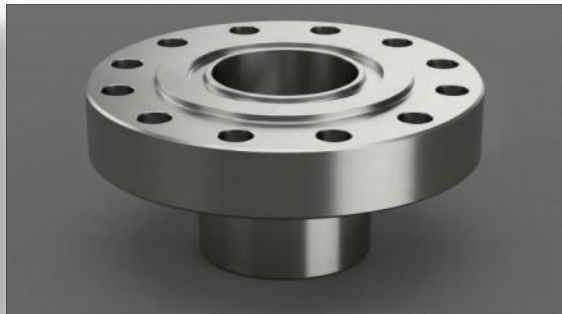
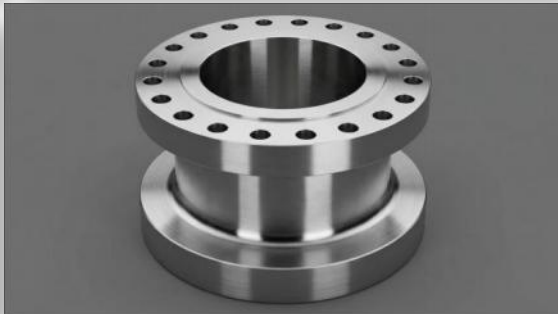
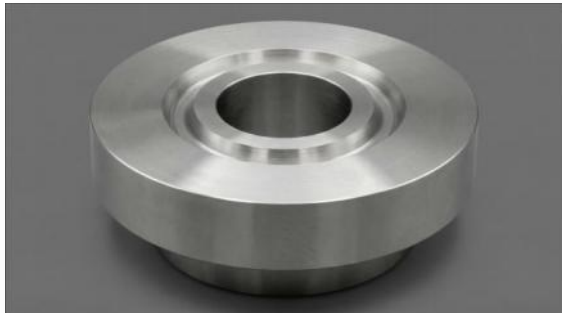
Main Products

Irregular forging

Product Weight: <40T

Standard Forging

Product Weight: <40T



Product Material

Application Fields	Segmented Directions	Domestic Grades	Foreign Grades (ASTM / EN Standards)
Boilers, Pressure Vessels and Pressure bearing Equipment	Pressure Vessel Plate	Q245R, Q345R	P235GH, P245GH, P265GH, P295GH, P355GH
	Forgings (Carbon Steel)	20#, 25#, 35#, 45#	SA-105, SA-266 Gr.2, SA-266 Gr.4, SA-350 LF2 CL.1, SA-350 LF3 CL.2, SA-516 GR.70, SA-765 Gr. II, SA-765 Gr. III
	Heat resistant Steel (Alloy Steel)	12Cr1MoV, 12Cr2Mo1, 14Cr1Mo(H), 15CrMo	SA-182 F22, SA-182 F12 CL.2, SA-182 F11 CL.2, SA-336 F12, SA-336 F11, SA-182 F91, SA-182 F92
	Low temperature Steel (Alloy Steel)	09MnNiD, 16MnD, 20MnMoD	—
	Other Forgings (Alloy Steel)	20MnNiMo, 35CrMo, 38CrMoAl, 20MnMoNb	SA-182 F1, SA-182 F5, SA-182 F6a
Petrochemical Industry under High Temperature and High Pressure	Stainless Steel (Austenitic / Duplex)	06Cr19Ni10, 022Cr19Ni10, 06Cr18Ni11Ti, 06Cr17Ni12Mo2, 022Cr17Ni12Mo2, 06Cr17Ni12Mo2Ti, 06Cr18Ni11Nb, 06Cr25Ni20, 022Cr22Ni5Mo3N, 022Cr23Ni5Mo3N, 022Cr25Ni7Mo4N, 015Cr21Ni26Mo5Cu2	SA-182 F304, SA-182 F304L, SA-182 F316, SA-182 F316L, SA-182 F321, SA-182 F347, SA-182 F347H, SA-182 F904L, SA-965 F304, SA-965 F304L, SA-965 F316, SA-965 F316L
	Alloy Steel (Hydrogen-Resistant / Heat Resistant)	12Cr2Mo1, 15CrMo, 14Cr1Mo(H)	SA-182 F5, SA-182 F22, SA-182 F91, SA-182 F92
Low temperature and cryogenic environments	Martensitic Stainless Steel	—	SA-182 F6a, X3CrNiMo13-4 (1.4313), X4CrNiMo16-5-1 (1.4418)
	Alloy Steel	09MnNiD, 16MnD, 20MnMoD	SA-350 LF2 CL.1, SA-350 LF3 CL.2
	Carbon Steel	Q355D, Q355E, Q355NE, Q420NE	S355JR
Structural Engineering and Construction Machinery	Stainless Steel	06Cr19Ni10, 022Cr19Ni10	—
	Carbon Structural Steel, Low Alloy High Strength Steel	Q235A, Q235B, Q355B, Q355D, Q355E, Q420C, Q460C	S355JR
Machinery Manufacturing, Transmission & Moulds	Quenched and Tempered Steel (for shafts / connectors)	16Mn, 27SiMn	—
	Carburizing Steel (Gears / Wear resistant Parts)	40Cr, 35CrMo, 42CrMo, 40CrNiMoA, 34Cr2Ni4Mo, 40CrNi2Mo	42CrMo4
	Die Steel	20CrMnTi, 17Cr2Ni2Mo	—
	For Other Forgings / Vessel	5CrNiMo, 60Si2Mn	—
Special Stainless Steels and Heat Resistant Steels	Applications Austenitic Stainless Steel	20MnMo, 20MnMoNb, 15NiCuMoNb	—
	Ferritic Stainless Steel	06Cr19Ni10 (304), 022Cr19Ni10 (304L), 06Cr17Ni12Mo2 (316), 022Cr17Ni12Mo2 (316L), 06Cr18Ni11Ti (321), 06Cr18Ni11Nb (347), 06Cr17Ni12Mo2Ti, 06Cr25Ni20 (310S)	SA-182 F304/F304L, SA-182 F316/F316L, SA-182 F321, SA-182 F347/F347H, SA-965 系列, X2CrNi18-9 (1.4307), X2CrNi19-11 (1.4306), X5CrNi18-10 (1.4301), X6CrNiTi18-10 (1.4541), X6CrNiNb18-10 (1.4550), X1CrNi25-21 (1.4335)
	Duplex Stainless Steel	—	X2CrNi12 (1.4003), X6CrNiTi12 (1.4516), X2CrTi17 (1.4520), X3CrTi17 (1.4510), X2CrMoTi17-1 (1.4513), X2CrMoTi18-2 (1.4521), X6CrMoNb17-1 (1.4526), X2CrTiNb18 (1.4509)
	Martensitic Stainless Steel	022Cr22Ni5Mo3N (2205), 022Cr23Ni5Mo3N, 022Cr25Ni7Mo4N (2507)	—
		1Cr13, 2Cr13, 3Cr13	SA-182 F6a, X3CrNiMo13-4 (1.4313), X4CrNiMo16-5-1 (1.4418), X2CrNi18-7 (1.4318), X5CrNi19-9 (1.4315), X2CrNi18-10 (1.4311)

Application scope



Aerospace



Construction Machinery



Petrochemical



Ship & Submarine



Wind Power Generation



Military Supplies



Rail Transit



Nuclear Power

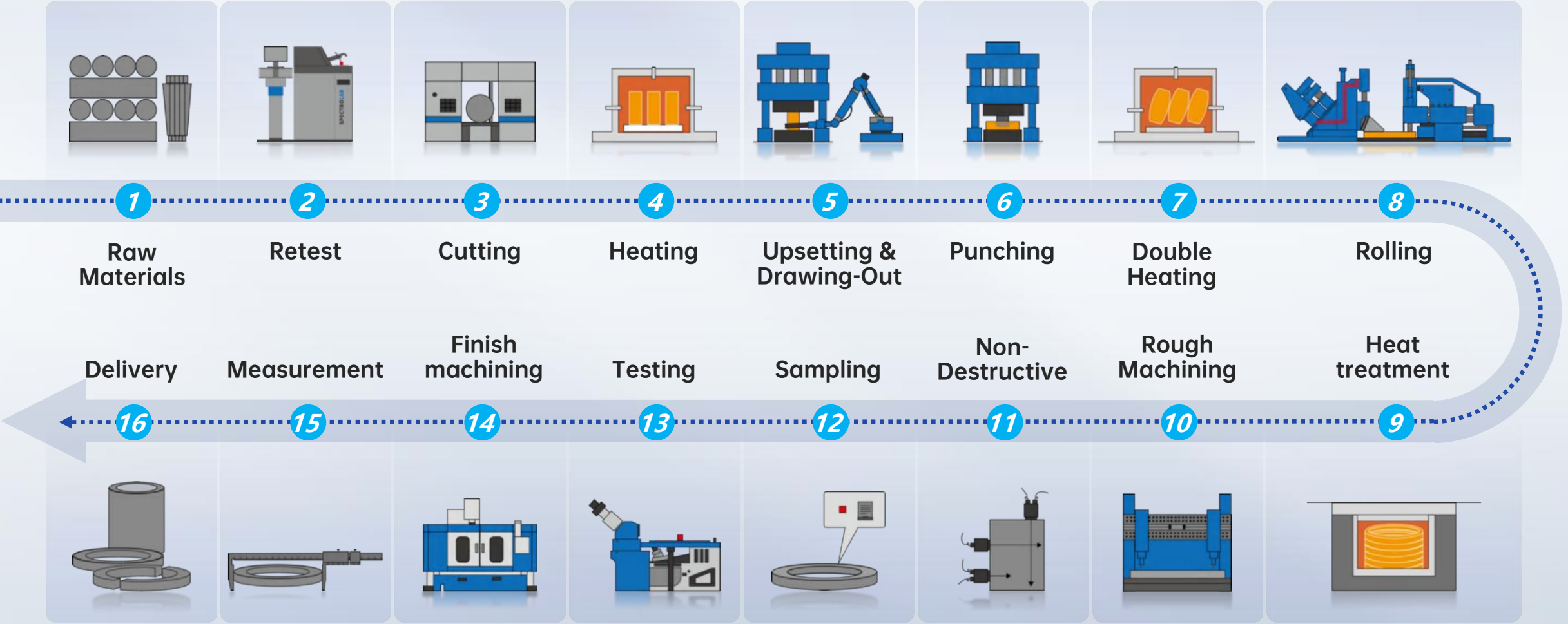


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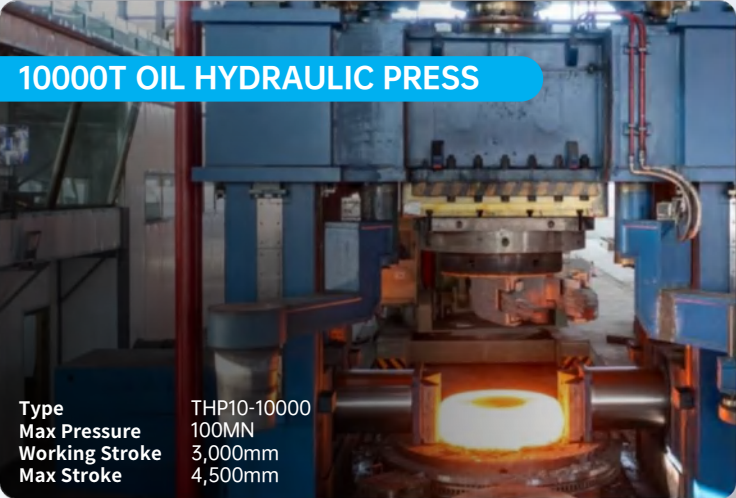
Production Base

Production process

100% Whole Process Traceability

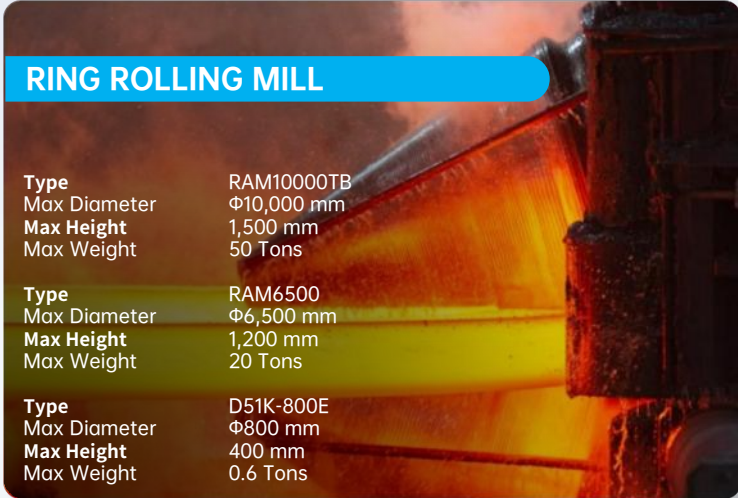


Equipment Display



10000T OIL HYDRAULIC PRESS

Type	THP10-10000
Max Pressure	100MN
Working Stroke	3,000mm
Max Stroke	4,500mm



RING ROLLING MILL

Type	RAM10000TB
Max Diameter	Φ10,000 mm
Max Height	1,500 mm
Max Weight	50 Tons

Type	RAM6500
Max Diameter	Φ6,500 mm
Max Height	1,200 mm
Max Weight	20 Tons

Type	D51K-800E
Max Diameter	Φ800 mm
Max Height	400 mm
Max Weight	0.6 Tons



INDUSTRIAL ROBOTS

Type	KR600
Max Load	600kg
Max Arm Span	2,826mm



CNC VERTICAL LATHE

Type	CK5290
Max Diameter	Φ9,000mm
Max Height	3,500mm

Type	CK5283
Max Diameter	Φ8,300mm
Max Height	2,500mm

Type	CK5265
Max Diameter	Φ6,500mm
Max Height	2,500mm



CNC HIGH-SPEED DRILLER

Type	DMH8500/2
Max Diameter	Φ8,500 mm
Max Height	700 mm
Max Hole Diameter	Φ90mm

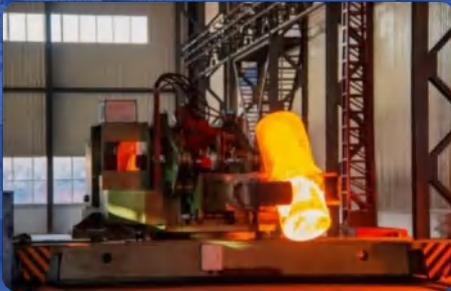
Type	DMH6500/2
Max Diameter	Φ6,500 mm
Max Height	500 mm
Max Hole Diameter	Φ90mm



3600T FRAME HYDRAULIC PRESS

Type	YD12F2-3600
Max Pressure	36 MN
Working Stroke	2,000 mm
Max Stroke	4,000 mm

Workshop Photographs



Intelligent Manufacturing Control Center



Corporate culture



Corporate vision

Forging excellent quality, refining brilliant performances



Enterprise Mission

To share win-with customers, seek common development with employees , and create a harmonious society together



Business Philosophy

Integrity-based, customer-axis, quality win the market



Enterprise Spirit

Learning,beyond,leading



Social responsibility



12+

12+times of safety training each year

100+

Helping Special Populations Every Year100+

300人

300 New Jobs in Past Three Years

30+

Various Social Welfare Activities30+

We consider employees to be our most valuable asset and are dedicated to fostering a safe and healthy working environment for each individual. We are committed to providing vocational training and opportunities for skill enhancement, thereby assisting employees in realizing their self-worth and facilitating their career advancement. We diligently fulfill our social responsibilities by engaging in charitable donations, expressing social condolences, and participating in various public welfare activities. We remain attentive to the needs of vulnerable groups and strive to promote harmony and progress across all sectors of society.

Enterprise Honor



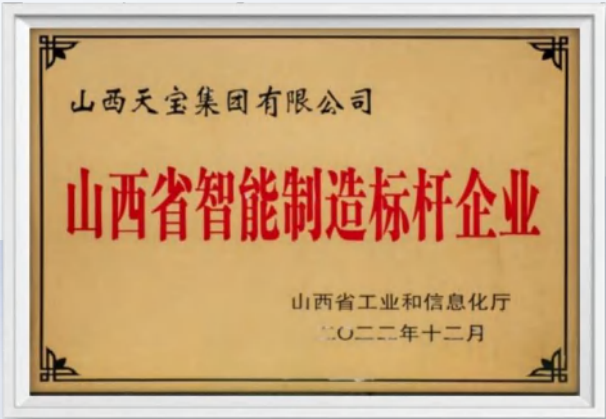
High-Tech Enterprise



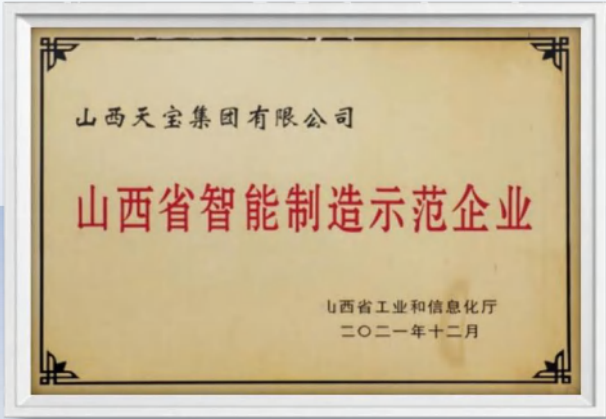
National-Level Professional, Specialized and New "Little Giant"



National Green Factory



Intelligent Manufacturing Benchmarking Enterprise in Shanxi Province



Intelligent Manufacturing Demonstration Enterprise in Shanxi Province



Top 100 Manufacturing Enterprises in Shanxi Province

Enterprise Qualification



Enterprise Qualification

General System Certification

- ISO 9001 /TUV NORD
- ISO 14001 /TUV NORD
- ISO 45001/TUV NORD
- API 认证

Laboratory Accreditation

- ISO17025/CNAS
- CMA

Product and Industry Certification

- PED/AD TUV NORD
- CCS
- PCCC认证
- CPR
- Special equipment manufacturing license

Periodic audit or certification by enterprises

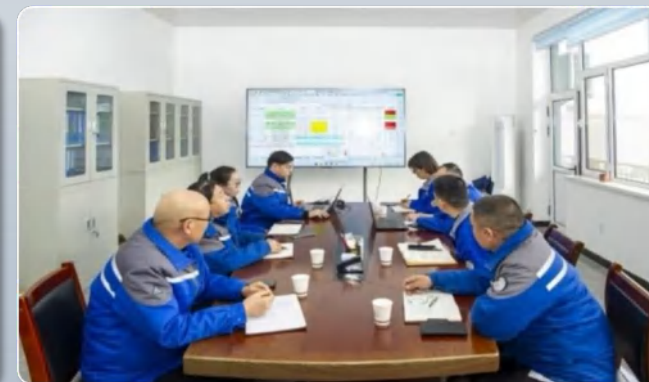
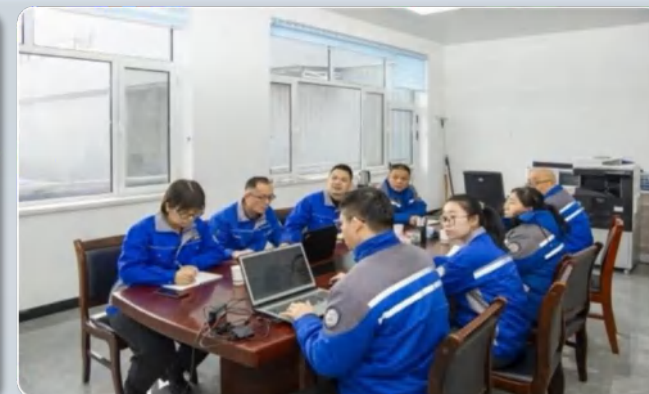
- SIEMENSGAMESA
- Sinopec
- GOLDWIND
- ENVISION
- SANY
- GE
- The Challenge Petrochemical Machinery Corporation
- VESTAS
- TITAN



Technology R&D Center

The objective is to foster technological innovation and facilitate industrial upgrading through scientific and technological research, as well as the development of new products.

It convenes a consortium of experts and technicians aimed at enhancing the market competitiveness of enterprises through the research and development of new products, technologies, processes, and materials, as well as the improvement of existing products and technologies.



Physical and Chemical Testing Center

- Qualification Accreditation of CMA Inspection and Testing Institutions
- CNAS Laboratory Accreditation (L6010) Qualifications



Main tests include

Chemical Composition of Metallic Materials, Mechanical Properties, Metallographic Structure, Hardenability; Corrosion resistance; NDT



Main Testing Equipment

SPECTRO LAB Direct Reading Spectrometer, AxioVert.A1 Metallographic Microscope, WAW-300 Microcomputer-Controlled Electro-Hydraulic Servo Universal Testing Machine, JBW-450CY Pendulum Impact Tester, Oxygen, Nitrogen and Hydrogen Analyzer, CMT-300 High and Low Temperature Universal Testing Machine (-60 to 1000 °C), Automatic End Quenching Tester, Automatic Intergranular Corrosion Tester...



04

Customers

Customers



Note: The above contents are in no particular order.

Customers



Note: The above contents are in no particular order.

Key project



Wind power

Nukus Project, Uzbekistan

150 MW Hybrid Tower of Xinhua Hydropower, Qiaocheng District, Bozhou City, Anhui Province

20 MW Distributed Wind Power Project in Urad Front Banner

50 MW Phase II of Wumei Mountain, Quannan, Datang International

Wind Generator Towers for 150 MW Wind Power Project in Chaoyang Baishan, China Energy Investment Corporation

1000 MW Wind Power Project for Desert Governance in Horqin Left Wing Rear Banner, Tongliao City

500 MW Project in South Adqin Area

20 MW Distributed Phase II Project of Wugong Mountain, Ruichang City, Jiangxi Province, Datang

2.8 MW Wind Tower Project for Rural Revitalization by Jingha New Energy, Songyuan Cogeneration Co., Ltd., Huaneng Group

800 MW "Second Corridor" External Transmission Project in Mulei, Changji Prefecture, Xinjiang, Huadian Corporation

Heilongjiang Chenneng Ruifeng Project

NX240918A Huaneng Longdong New Energy Base Phase II D2 Project

Jingneng Rujin Banqiao 7W Project

P-149 1 Lucheng Tianchen Guangyun 150MW Project

Zheztazgan 100MW Project, Kazakhstan

AMUNET Project, Egypt

BASH Green Hydrogen Project, Uzbekistan

Cangxian Steel Section 220 Model Project

Mingyang 6.25MW Linzhou Project

Tongwei 100MW Project



Pressure vessels

Fushun Kejianglong Self-procurement Project

Ethylene Plant of SEI ExxonMobil 71-Unit Project

Sinopec Zhenhai Refining & Chemical Branch Company

SEI Tianjin Nangang Ethylene Project 1.2 Million Tons/Year Ethylene Project in Tianjin Nangang

Shandong Hi-Speed Hainan Development Co., Ltd.

Sinopec Ningbo Zhenhai Refining & Chemical Co., Ltd.

Hubei Yangtze Petrochemical Equipment Co., Ltd.

Self-procurement of Phase I Project of ExxonMobil Huizhou Ethylene Project

Conclusion

Answering the call of the times, boldly shaping a smart future

In future development, the company will focus on building the competitiveness of core technologies and products while strictly maintaining quality. Based on this, we aim to explore new opportunities and lead the industry with even better product quality and thoughtful, detailed solutions, giving back to society! We look forward to working hand in hand with partners from home and abroad, growing together, and creating a bright future!



山西天宝集团（香港）有限公司
Shanxi Tianbao Group (Hong Kong) Co., Ltd.



山西天宝集团有限公司北京分公司
Shanxi Tianbao Group Co., Ltd.Beijing Branch



山西天宝集团有限公司上海分公司
Shanxi Tianbao Group Co., Ltd.Shanghai Branch



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**Shanxi Tianbao Science
& Industry**

电话: +86 (0) 350-3322173
邮箱: info@sxtbfd.com
网址: www.tianbao.ltd

Shanxi Tianbao · Group Beijing

电话: +86 (0) 010-88405622
邮箱: zrong@sxtbfd.com
网址: www.tianbao.ltd

Shanxi Tianbao Group · Taiyuan

电话: +86 (0) 0351-2020777
邮箱: tianbaoflange@sxtbfd.com
网址: www.tianbao.ltd

**Inner Mongolia Tianbao Wind
Power · Inner Mongolia**

电话: +86 (0) 0472-2677777
网址: www.tianbao.ltd

