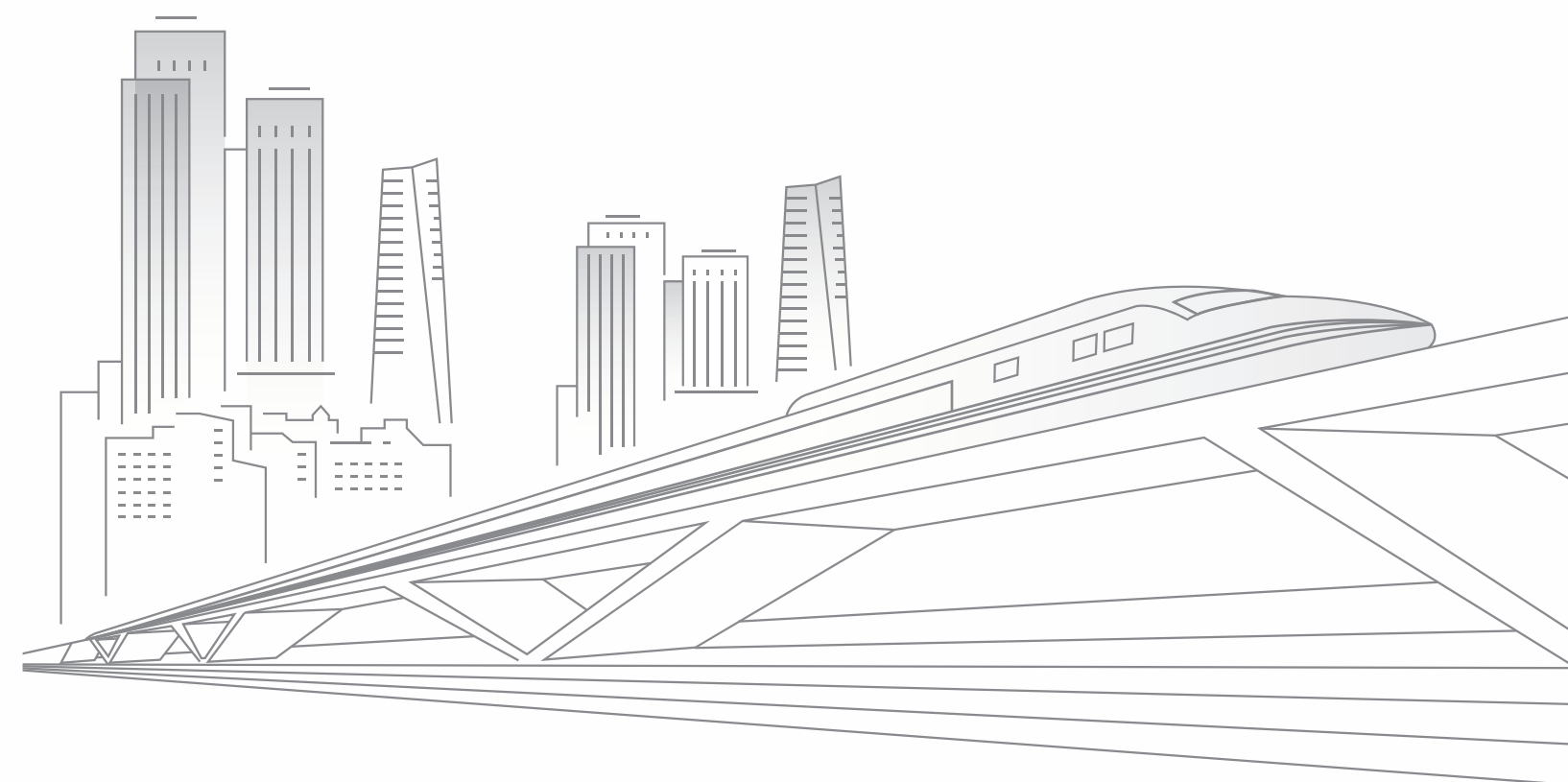


# 太原重工轨道交通设备有限公司

Taiyuan Heavy Industry Railway Transit Equipment Co.,Ltd.



太原重工轨道交通设备有限公司  
TAIYUAN HEAVY INDUSTRY RAILWAY TRANSIT EQUIPMENT CO.,LTD.

地址：山西转型综合改革示范区唐槐产业园电子街17号 电话 (Tel)：0086-0351-7651802  
售后服务热线 (Service)：400-080-0533 邮箱 (E-mail)：tzlzbgs@163.com  
邮编 (Post code)：030032

Add: No.17 Dianzi Street, Tanghuai Industrial Zone, Shanxi Transformation and comprehensive Reform Demonstration Area



官方网站



微信公众号

产品宣传册

2000+ 种

30000+ 台/套

服务国家重点建设项目

2000+ types  
30000+ sets  
used for China key projects

460+ 项

中国 / 世界第一

460+  
National & international No.1s



1950 年

公司成立  
Since 1950

493 万m<sup>2</sup>

公司面积  
Total area of 4.93 million  
square meters

10000+ 人

在岗员工  
10000+ employees

500+ 亿

总资产  
Total assets of RMB  
50+ billion

## INTRODUCTION

### 集团简介

太原重型机械集团有限公司（简称太重集团），始建于1950年，是新中国自行设计建造的第一座重型机械制造企业。主要成员单位包括太原重工股份有限公司、太原重型机械集团煤机有限公司、太重集团榆次液压工业有限公司等。公司拥有国家级技术中心和国家重点实验室，先后获得国家级发明奖4项、国家级成果奖26项、国家科技进步奖23项，创造了460多项中国和世界第一，为国家的建设、改革和发展做出了重要贡献，被誉为“国民经济的开路先锋”。

作为国内最重要的重型装备研发与制造基地之一，太重集团具有一流的装备制造水平和研发创新能力，是全国“创新型企业20强”之一，主要服务于轨道交通、矿山、冶金、煤炭、新能源、海洋工程、航天等领域，产品涵盖了铁路装备、露天矿和井工矿采掘输送设备、冶金设备、风力发电设备、工程机械、化工装备等，拥有设备成套和工程总承包能力，产品已出口到全球50多个国家和地区。

Taiyuan Heavy Machinery Group Co., Ltd (referred to as “TZCO”), founded in 1950, has been the first self-designed-and-built heavy machinery manufacturer since 1949. It is composed of Taiyuan Heavy Industry Co., Ltd, Taiyuan Heavy Machinery Group Coal Machinery Co., Ltd, Taiyuan Heavy Machinery Group Yuci Hydraulic Industry Co., Ltd etc. It has one nationally recognized technology center and one state key laboratory. In addition to four national prizes for new inventions, 26 national achievement prizes, and 23 national scientific progress prizes, It has made over 460 No.1 technology achievements in China and the world at large. It is known as “Trailbreaker for National Economy” for its important contributions to the national reform and development.

As one of the most important bases of R&D and manufacturing for heavy manufacturing in China. TZCO is one of the “Top 20 Innovative Enterprises” in China, with first-class equipment manufacturing, R&D and innovation capabilities. Its products are widely used in fields like rail transit, mining, metallurgical, coal, new energy, marine engineering, and aerospace. The products include railway equipment, equipment for open pit and underground mining and transportation, metallurgical equipment, wind power equipment, construction machinery and chemical equipment. Capable of providing complete equipment sets and EPC solutions, it has exported products to more than 50 countries and regions.



# COMPANY PROFILE

## 公司简介

太原重工轨道交通设备有限公司是太原重工股份有限公司从事研发、设计、制造和服务轨道交通领域的专业化子公司，是目前国内外唯一能同时生产轨道交通用车轮、车轴、齿轮箱及轮对的重要基地。荣获“中国质量标杆企业”称号，入选国务院“科改示范企业”名单，是山西省智能制造示范企业。

公司于上世纪九十年代初进入轨道交通零部件研发制造领域，成立了专门的产品设计、材料研发、工艺研究及实验检测等机构，拥有技术中心、重点实验室、院士工作站等创新平台，致力于车轮、车轴、齿轮箱及轮对全系列产品的开发；积极扩大“产、学、研、用”交流合作，掌握研发、制造的核心技术，产品广泛用于铁路、城市轨道交通、工矿冶金、起重运输、港口机械、能源电力等领域。

Taiyuan Heavy Industry Railway Transit Equipment Co., Ltd. (hereinafter referred to as “THRE”), as a subsidiary of TYHI, specializes in the research, design, manufacture and service for railway transit equipment. It is the only major producer for railway wheels, axles, wheelsets and gearboxes. In addition to the title of “quality beacon of China manufacturing” and “Technology Reform Model Enterprises” by the State Council, it is a model enterprises for intelligent manufacturing in Shanxi.

The company started to engage in the development of railway equipment spare parts in early 1990s. We have established institutions for product design and engineering, material research, process research and experimental testing. The innovative platform covering a technology center, an academician workstation and a key laboratory, is committed to development of different types of wheels, axles, gearboxes and wheelsets. In recent years, we have actively expanded cooperation and exchanges among industries, universities, research institutes and end users. Thanks to core technologies in research, development, and manufacture, its products are widely used in fields of railway, urban rail, metallurgy, mining, lifting equipment and transportation, port machinery and electricity.

### 年生产能力

**60** 万片 车轮 / **16** 万根 车轴 / **3** 万付 轮对 / **1** 万套 轨道齿轮箱

The annual capacity is 600,000 wheels, 160,000 axles, 10,000 (newly-built and overhauled gearboxes) and 30,000 wheelsets.



公司始终以市场需求为导向，以高端化、国际化、集成化为目标，持续提升产品研发、制造能力，努力打造成全球最重要的轨道交通通用轮、轴、齿轮箱及轮对总成研发、设计、制造、销售和专业化企业。

Being market-oriented, our company aims to build into an international enterprise for integrated and high-end manufacture. We strive to be a major manufacturer specializing in R & D, design, manufacture and service for railway wheels, axles, gearboxes and wheelsets.



# EQUIPMENT PROFILE

## 装备简介

公司拥有一条炼钢生产线，两条辗钢车轮生产线，一条精密锻造车轴生产线，一条快速锻造车轴生产线，一条齿轮箱生产线和一条轮对组装生产线，生产工序覆盖从冶炼到轮对总成全部流程，可以满足轨道交通机、客、货、动全系列及工矿冶金等产品的制造需求。

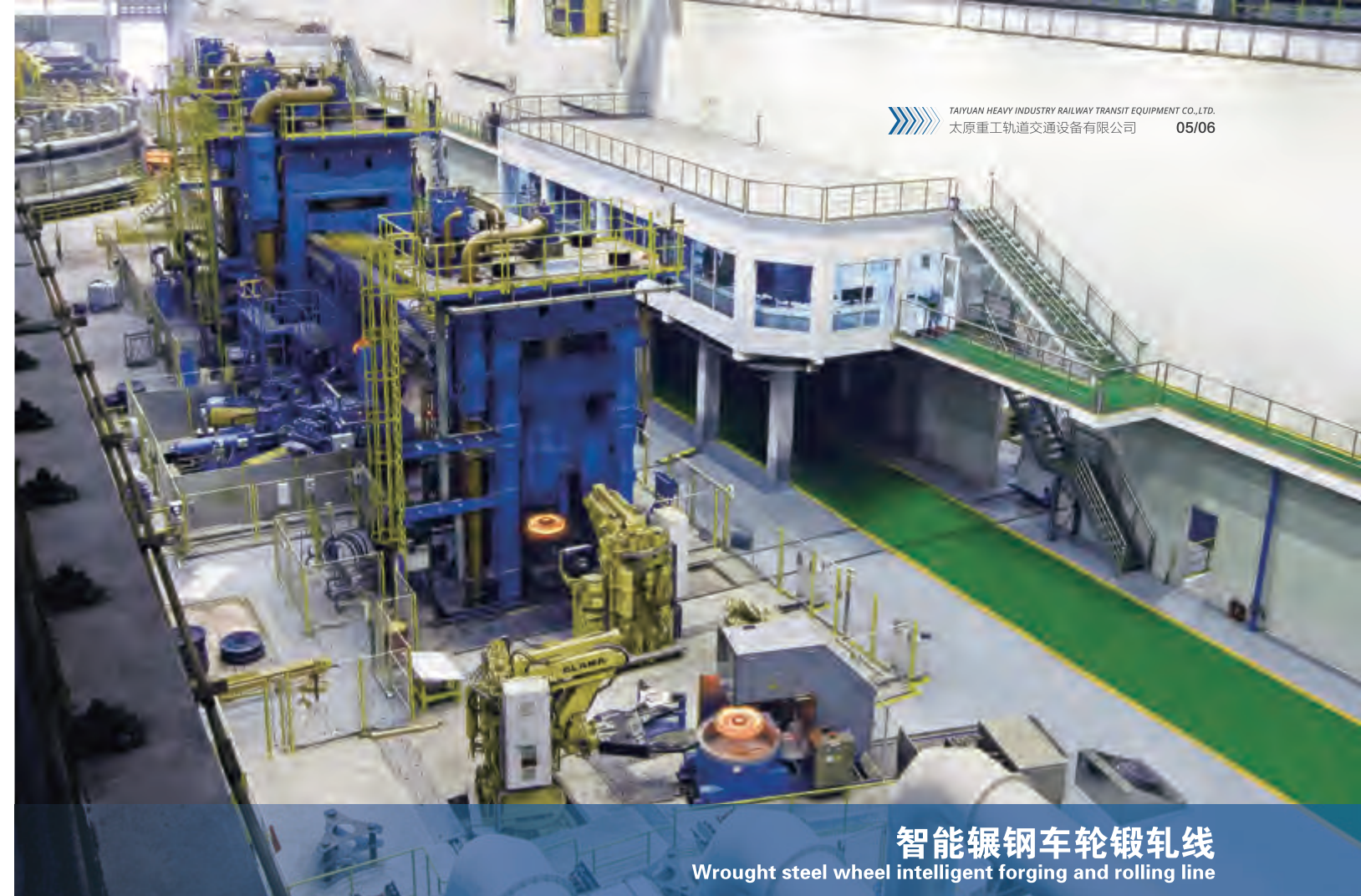
The company has one steel-making line, two wrought solid wheel production lines, one precision forging axle production line, one production line for fast forging axle, one gearbox production line and a wheelset assembly line, covering all process from steel smelting to wheelsets assembling. We can meet requirements for railway locomotives, passenger cars, freight cars, high-speed rail, industrial and mining fields.

1990年，引进奥地利GFM精密锻造机，经自主设计建成了流程先进、布局合理、生产高效的轴生产产线，曾荣获国家科技进步二等奖。2016年改造成为世界上自动化、信息化、智能化程度最高的生产产线，年产车轴10万根。

1997年，引进加拿大CSW车轮专用生产产线，经过不断完善优化，智能升级，形成了柔性生产组织模式，并可满足高品质、高性能的产品需要，年产车轮30万片。

After importing Austria GFM forging machine in 1990, we designed and reconstructed it to be an advanced, reasonable arranged and efficient axle production line which was honored with "National Scientific and Technological Progress Award". In 2016, the line was upgraded to a production line featuring the highest degree of automation, IT application and intelligence with an annual capacity of 100,000 axles.

Introducing the wrought solid wheel production line from the Canadian Steel Wheel Plant in 1997, we have optimized it to be a flexible production line. It can manufacture high-quality and high-performance wheels with an annual capacity of 300,000 wheels.



智能辗钢车轮锻轧线  
Wrought steel wheel intelligent forging and rolling line

2009年，建成轮对总装生产产线，该生产产线以铁路客车、货车、城轨轮对为主，兼具多品种轮对的组装和检修能力，可年产各类轮对3万副。

2012年，炼钢系统建成投产，配套先进的80吨电弧炉、钢包精炼炉及VD真空脱气，年产钢水20万吨。

2012年，公司第二条辗钢车轮生产产线建成投产，该生产产线主要设备汇集了国际一流车轮制造设备供应商的最先进技术，是当今世界上自动化、信息化、智能化程度最高车轮生产产线，年产车轮30万片以上。

The first assembly line was built in 2009 for the production of railway passenger car wheelsets, freight car wheelsets and urban rail wheelsets. It can also assemble or overhaul various kinds of wheelsets. The annual capacity is 30,000 wheelsets.

The steel-making system was put into operation in 2012, equipped with 80t electric arc furnaces, ladle furnaces and VD vacuum degassers. The annual capacity is 200,000 tons of liquid steel.

The second wrought solid wheel production line was put into operation in 2012. With state-of-the-art technologies from world top machinery suppliers, the production line is known as the most advanced, automatic and intelligent wheel production line in the world. The annual capacity is over 300,000 wheels.





精密锻造车轴生产线  
Precision forging axle production line



轮对组装生产线  
Wheelsets assembly production line



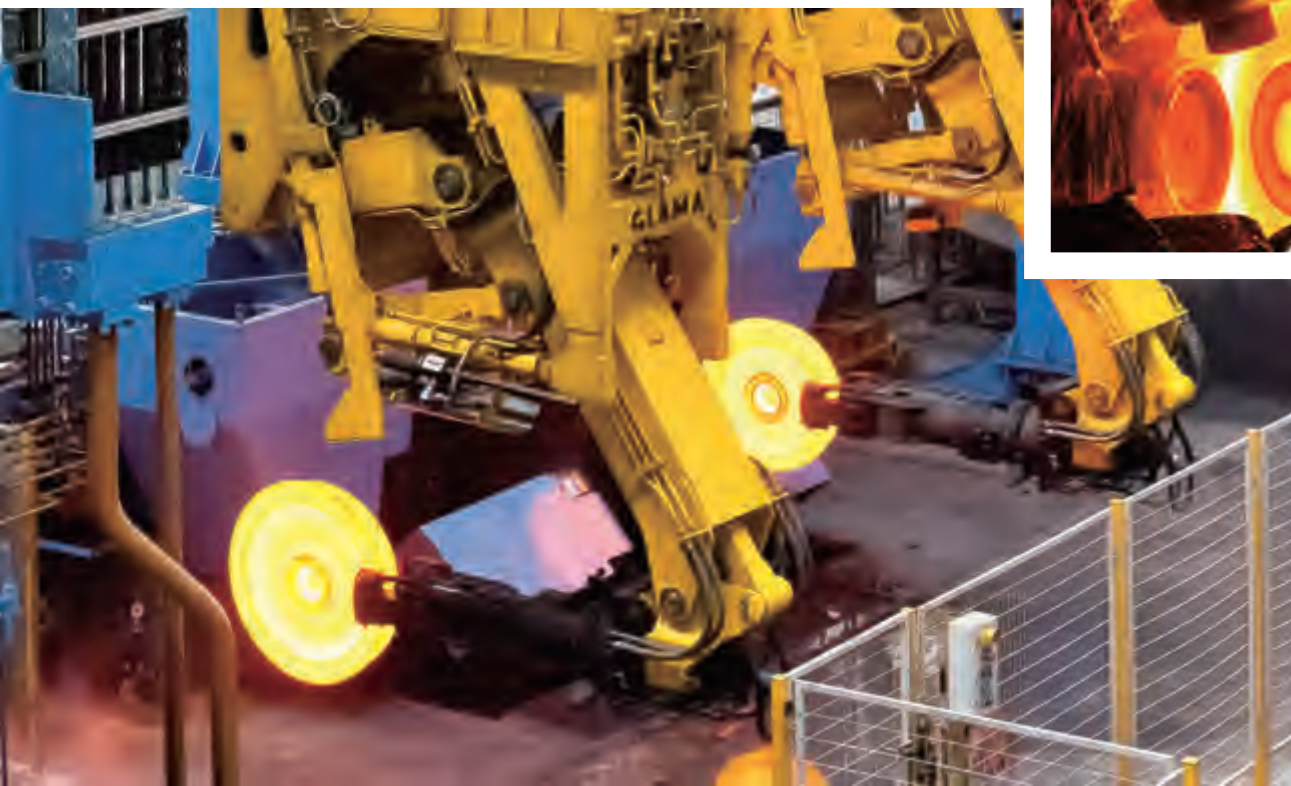
快速锻造车轴生产线  
Production line for fast forging axles

2014年，公司自主设计和建造了全自动快速锻造车轴生产线，具有产品适应范围广、生产组织灵活的特点，其中电加热悬挂式热处理系统设计理念先进，温度控制精确，加热均匀性高，技术水平国际领先，年产车轴6万根。

The automatic production line for fast forging axles designed and developed by the company in 2014, is widely adaptable and flexible in production organization. The technology of the heat treatment system is leading the world, which has advanced designing concept, precise temperature control, and well-balanced heating, The annual capacity is 60,000 axles.

四机组全动车轮锻轧生产线由国际著名公司设计制造，生产效率、参数化控制水平、成材率、产品合格率世界一流；热处理生产线由温度控制精确的步进式隧道炉及智能化工艺软件控制的全自动淬火系统组成，可确保车轮优异的性能；机加工生产线选用全数控车削加工中心及数控钻铣中心，具有加工精度和生产效率高的特点；检测线由超声波检测、磁粉检测、静平衡测量、喷丸强化、硬度测量、全尺寸激光测量、打刻、自动喷涂等关键设备组成。

As the four-unit automatic line for wheel forging and rolling is designed and developed by the world renowned company, it ranks top in the world in terms of productivity, parameterized control and yield rate. The heat treatment line is equipped with walking beam furnaces with accurately controlled temperature and automatic quenching system controlled by intelligent software, which ensures high quality mechanical properties of wheels. The mechanic line consists of CNC turning center machine and CNC drilling and milling center machine, featuring precision and high efficiency. The Inspection line is composed of UT tester, MT tester, balance tester, blasting equipment, BHN tester, full dimension laser measurement, stamping machine and auto spraying machine.



智能辗钢车轮生产线  
—车轮轧制  
Wrought steel wheel  
intelligent production  
line—wheel rolling



齿轮箱生产线  
Gearbox production line

2014年建成的齿轮箱生产线，由齿轮、齿轮轴、箱体、螺旋锥齿四个柔性加工单元和热处理线及试验台组成，可满足小批量、多品种、结构复杂产品的制造要求，适应于高铁、动车、城轨齿轮箱的新造和检修，具备年新造、检修齿轮箱1万套的能力。

The gearbox production line set in 2014 is composed of four flexible units for gears, gear shafts, boxes, helical bevel gears and heat treatment line with test beds. It can meet the manufacture requirements of small-lot, multiple-type and complicatedly constructed products. Besides, it can manufacture and overhaul urban rail gearboxes, high-speed rail gearboxes with an annual capacity of 10,000 sets.



# R & D CAPABILITIES

## 研发能力

公司技术中心是太原重工股份有限公司国家级技术中心重要组成部分，在材料研究、产品设计、制造工艺、检测试验等方面积累了丰富的经验，先后承担了二十余项国家、省部级重大课题研究。

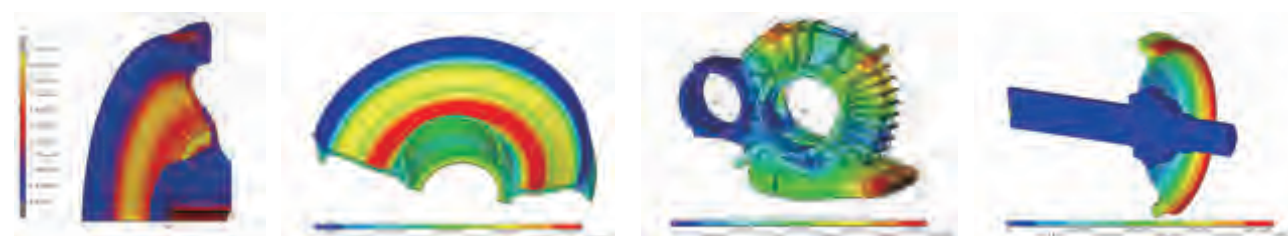
通过不断的创新和自主研发，现已掌握了高速、重载、大功率牵引机车、城市轨道交通通用各种轮轴及齿轮箱的核心技术。自主研发的高速轮轴、40t级以上轴重重载轮轴、低地板轮对以及城轨系列产品已批量运用，完成了高铁牵引齿轮箱系列化开发和试验验证。

公司和中国科学院、铁道科学研究院、钢铁研究总院、北京交通大学、西南交通大学、太原科技大学等权威研究机构进行密切合作，在产品设计、先进制造技术、产品应用等领域开展广泛研究。

The Technology Center, an important part of the TYHI' s State-level Technology Center has accumulated rich experience in material research, product design, manufacturing craft, inspection and testing work. It has undertaken more than 20 national, provincial major research projects.

Through consistent innovation and independent research, we have mastered key manufacturing technologies of high-speed, heavy load, high-power locomotive, urban rail wheels and axles as well as gearboxes. Products of independent research and development, such as wheels and axles for high-speed train and for 40t level heavy load freight, wheelsets for low-floor tram and series of urban rail transit have been widely used . Besides, the development and test verification of high-speed rail traction gearboxes have been completed.

The Company has closely cooperated with Chinese Academy of Sciences, Railway Academy of Sciences, Iron and Steel Research Institute, Beijing Jiaotong University, Southwest Jiaotong University, Taiyuan University of Science and Technology and other authoritative institutes, conducting extensive research in fields like product design, manufacture technology and product application.



### 取得的成绩 Achievements

- ◎ 国家授权专利**40**余项
- ◎ 获得国家科技进步奖、机械工业科技进步奖、省科技进步奖等**11**项奖励
- ◎ 承担动车组轮轴、齿轮箱、轮轴材料、应用研究等国家级、省部级科技项目**20**余项
- ◎ 省级以上期刊发表论文百余篇
- ◎ Over 40 state authorized patents;
- ◎ 11 awards including the National Science and Technology Progress Award, the Machinery Industry Science and Technology Progress Award, and the Provincial Science and Technology Progress Award;
- ◎ More than 20 national and provincial science and technology projects concerning CRH wheels & axles, wheels & axles material and application research etc;
- ◎ Publication of over 100 papers in academic periodical at or above province level.





# INSPECTION AND TESTING GUARANTEE

## 检验及检测保证

公司拥有高端检测线，专业专检员及科研实验中心，检测线设备能够实现自动检测和识别流程，信息化、智能化程度国际领先，为轨道交通产品安全运行和科研实验提供了强有力的保障。

With a high-end inspection line of automatic inspection and identification, professional inspectors and a scientific research experiment center, it leads the world in IT application and smart manufacture, providing a strong guarantee for safe operation of rail transit products and scientific research experiments.

实验中心瞄准轨道交通走行关键零部件领域发展方向和技术前沿，着力解决关键、共性技术问题和难题。具备新材料及新产品开发、新工艺研究、新结构设计验证、质量保障及运用过程失效分析能力。

中心的检测能力涵盖了机械性能检测、金相检验、化学分析以及精加工测量等领域，涉及国标及美标、欧标、ISO等国际先进标准，通过了中国合格评定国家认可委员会（CNAS）的认可。

The experiment center aims at development and cutting-edge technology of key parts of rail transit, and strives to solve key and common technical problems. It engages in development of new materials and new products, new process research, new structure design, quality control and application process failure analysis.

Its testing capabilities cover mechanical performance testing, metallographic inspection, chemical analysis, and finished machine measurement, involving international advanced standards such as AAR standard, TSI standard and ISO. It has been recognized by China National Accreditation Service for Conformity Assessment (CNAS).



美国MTS低频疲劳试验机  
American MTS low-frequency fatigue testing machine



美国INSTRON电子万能材料试验机  
American INSTRON electronic material testing machine



德国LEICA金相显微镜  
German LEICA metallurgical microscope



美国FEI场发射扫描电子显微镜  
American FEI field emission scanning electron microscope



美国LECO氧氮氢分析仪  
American LECO Oxygen, Nitrogen and Hydrogen Analyzer



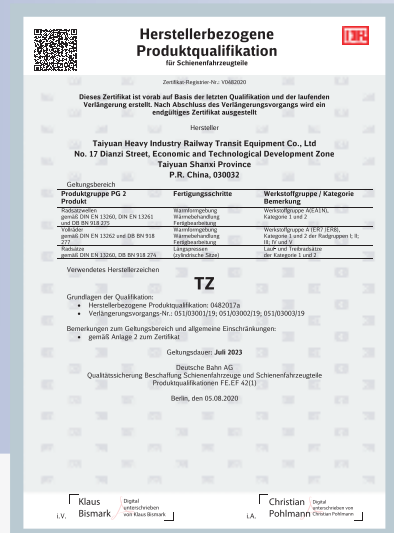
美国THERMO FISHER等离子体发射光谱仪  
American Thermo Fisher plasma emission spectrometer



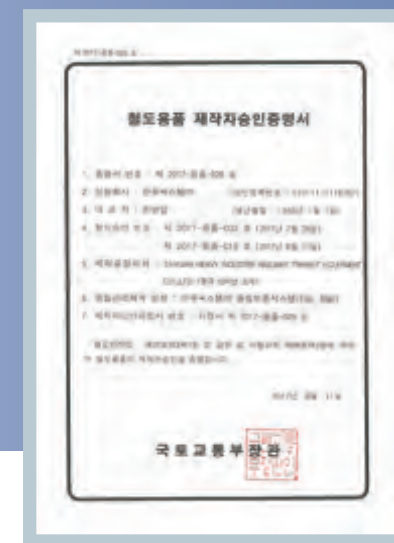
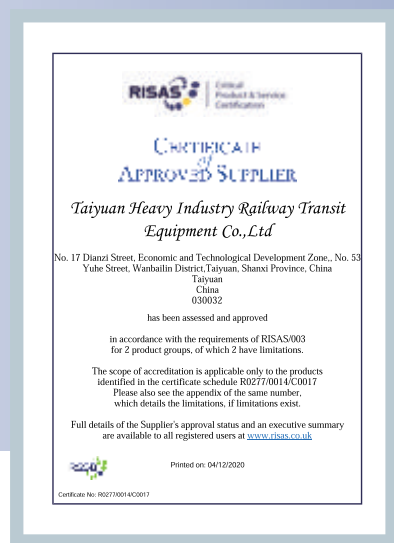
# QUALIFICATIONS AND CERTIFICATIONS

## 资质认证

The company possesses a wide range of qualifications and certifications. It got manufacture qualification for axles and wheels in 1991 and 1998 respectively. It has professional certifications, such as international ISO9001, IRIS, CNAS, American AAR, China Railway CRCC, Germany DB, European TSI, EN15085, Eurasian Union EAC, British RISAS, and South Korea MOLIT. It is the first domestic company to obtain the certificate for Chinese “Fuxing” high-speed rail wheels and axles and DB bearing axle box assembly certificate, and is the only domestic enterprise that has obtained the certificate for Chinese standard EMU wheels and axles.



公司获得的资质覆盖广泛，1991年、1998年分别取得中国铁路车轴和车轮生产资质，先后通过了国际ISO9001、IRIS、CNAS、美国AAR、国铁CRCC、德国DB、欧洲TSI、EN15085、欧亚联盟EAC、英国RISAS、韩国MOLIT等专业认证。国内首家获取中国“复兴号”高铁轮轴认证、DB轴承轴箱组套认证，是国内唯一同时获得中国标准动车车轮、车轴证书的企业。





# PRODUCTS

## 产品



### 轮类产品 Wheels

车轮生产线可生产直径 $\Phi 500 - \Phi 1250$ mm的轮类产品，主要产品有高速动车轮，大直径“和谐”系列机车车轮，KKD型客车轮，HDSA型货车轮，HESA型货车轮，HFS型重载货车轮，出口机车、客车、货车（包括30吨、40吨重载车轮）等铁路车轮产品；多型号城市轨道交通用车轮；多型号工矿冶金用车轮；机车、风电、石油机械用齿轮坯；分体（轮毂、轮芯、扣环）车轮、弹性车轮等产品。

Wheel production line can produce wheels with the diameter ranging from  $\Phi 500$ mm to  $\Phi 1250$  mm. The main products are high-speed CRH wheel, large diameter locomotive wheel, KKD passenger car wheel, HDSA freight car wheel, HESA freight car wheel, HFS heavy load freight car wheel, export railway wheels for locomotives, passenger cars, freight cars (including 30 tons, 40 tons heavy load wheels); multi-type urban rail wheel; multi-type mining metallurgical wheel; gear billets for the locomotives, wind power and oil machinery; fission wheel(wheel tyre, wheel center, snap ring), elastic wheel, etc.



公司产品分为轴类、轮类、齿轮箱、轮对集成四大系列，能够按TB、AAR、EN等世界任何一种标准生产制造，为用户创造最具竞争力的产品。

Our products can be divided into four categories: wheels, axles, gearboxes and wheelsets assembly. We are able to manufacture products conforming to any standard in the world like TB, AAR, EN and etc ,developing the most competitive products for customers.



动车轮  
High-speed train wheel



机车轮  
Locomotive wheel



客车轮  
Passenger car wheel



重载货车轮  
Heavy load freight car wheel



地铁车轮  
Urban rail wheel



弹性车轮  
Elastic wheel



行车轮  
Crane wheel





## 轴类产品 Axles

车轴生产线可生产Φ70-Φ350mm直径的轴类产品，主要产品有高精度多轮盘动车轴，机车轴、RD2、RD3、RE2B等型号客货车轴，RF2型大直径重载货车轴，出口机车、客车、货车等铁路车轴产品；城市轨道交通用车轴；多型号工矿冶金用车轴等产品。

Axle production line can produce axles with diameter ranging from Φ 70mm - Φ350 mm. The main products are high-precision axles for high-speed trains , locomotive axles, freight car axles(RD2/RD3/RE2B), RF2 large diameter heavy load freight car axles, axles for export( locomotive axles/ passenger car axles/ freight car axles) ; urban rail axles; and multi-type mining metallurgical axles.



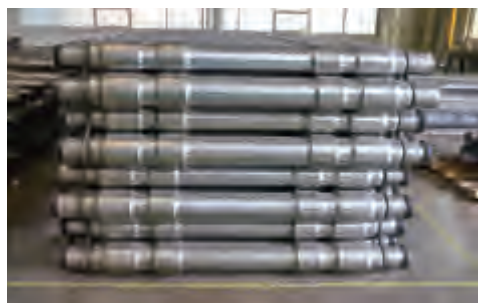
## 齿轮箱产品 Gearboxes

公司开发出了国内高铁及城轨使用的牵引齿轮箱系列产品，并且通过了试验验证，主要产品有A型城轨列车牵引齿轮箱、B型城轨列车牵引齿轮箱、100%低地板列车牵引齿轮箱、时速（250-350km/h）高速列车牵引齿轮箱等产品。

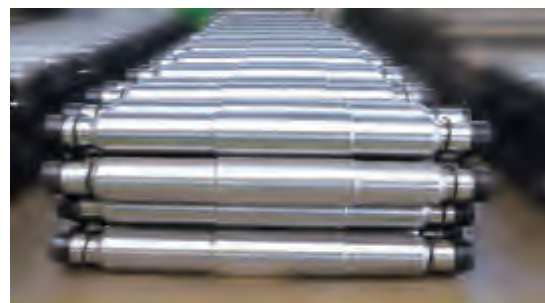
Our company has developed a range of traction gear box products for domestic high-speed railway and urban rail, and successfully passed the experimental tests. The main products are Type A and Type B urban rail traction gearboxes, 100% low floor traction gearboxes, and traction gearboxes for high speed rail (250-350 km/h).



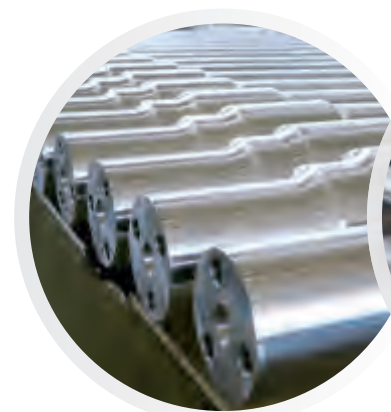
动车轴  
High-speed train axle



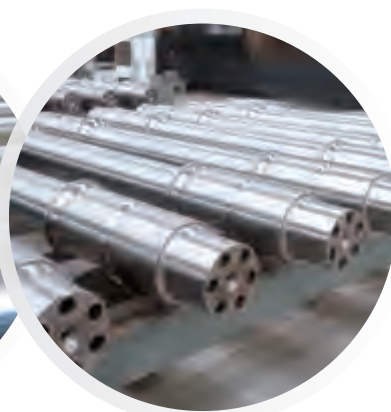
客车轴  
Passenger car axle



机车轴  
Locomotive axle



货车轴  
Freight car axle



地铁车轴  
Urban rail axle



工业车轴  
Industrial axle



100%低地板列车牵引齿轮箱  
100% low floor traction gearbox



地铁齿轮箱  
Urban rail gearbox



高铁齿轮箱  
Gearbox for high speed rail



## 轮对集成产品 Wheelsets and Integrated Products

轮对生产线可组装带轴承、轴箱、齿轮箱、轴盘等多种轮对产品，广泛用于铁路、城市轨道交通、工矿冶金等领域。

The wheelsets production line can assemble multi-type wheelsets and wheelsets with bearings, gearboxes, or discs, which are widely used in railway, urban rail transit facilities, industries, mining and other fields.



100%低地板轮对  
100% low floor wheelsets



城轨轮对  
Urban rail wheelsets



车轮组  
Wheel sets



客车轮对  
Passenger car wheelsets

公司可生产低地板独立轮轴系统、起重机车轮组等集成产品。低地板独立轮轴系统，使用弹性车轮及整体锻造轴桥，具有低噪音、低振动、高适用性特征，作为走行和承载的关键零部件，为100%低地板有轨电车国产化提供了重要支撑。

车轮组产品广泛用于工业、港口机械等领域。



出口轮对  
Wheelsets for export

Meanwhile, our company can also produce low floor independent wheels and axles, crane wheelsets and other integrated products. Low floor independent wheel& axle system with elastic wheels and overall forging axle bridges features low noise, low vibration and high applicability. Those key motion components serve as important support for domestic manufacture of 100% low floor trams.

The wheelset products are widely used in industries, port machinery, and other fields.



# INTERNATIONAL COOPERATION AND EXPORT

## 国际业务

公司积极参与各类国际机构认证，为深入拓展市场提供资质保障，同时积极与阿尔斯通、庞巴迪、西门子等国际知名企业合作，拓宽产品出口渠道。三十年来，已为全球50余个国家和地区提供了600余万件质量优异的轮、轴及轮对集成产品。



The company has obtained various qualifications and cooperated with several world renowned enterprises like Alstom, Bombardier and Siemens to expand market. It has exported over 6,000,000 high-quality axles, wheels and wheelsets to more than 50 countries and regions in recent 30 years.