

## 太原重工轨道交通设备有限公司

TAIYUAN HEAVY INDUSTRY RAILWAY TRANSIT EQUIPMENT CO., LTD.

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中国·山西·太原 TAIYUAN·SHANXI·CHINA



## 企业简介 Company Profile



太原重工股份有限公司其前身为太原重型机器厂,始建于1950年,是新中国自行设计建造的第一个重型机械制造企业,也是中国重型机械行业第一家上市公司。公司占地面积370万平方米,资产总额275亿元,员工8000余人,年销售额逾百亿元,属国家特大型重点骨干企业,被誉为"国之瑰宝"和"国民经济的开路先锋"。

太原重工具有较强的自主研发能力,设计、制造的多项产品填补了国家空白,许多产品荣获国优金奖,创造了420项中国和世界第一。

Taiyuan Heavy Industry Co., Ltd.(hereinafter "TYHI") is the first listed company in China's heavy machinery industry. The main holder, Taiyuan Heavy Machinery Group Co., Ltd., is the first heavy machinery enterprise designed and established independently in China in 1950. It covers an area of 3.7 million square meters with total assets of RMB 27.5 billion and 8000 employees. As a national key enterprise, TYHI has been honored as a "national treasure" and a "pioneer of the nation economic development".

TYHI's strength lies in its strong ability in research and self-development. We have created 420 types of nationally and internationally recognized products, many of which have filled gaps in the domestic market and have been awarded national prizes.

#### 诚信 创新 精益 卓越 Integrity Innovation Precision Brilliance



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专业从事轨道交通装备研发、设计、制造和服务的全资子公司,是国内唯一同时生产轨道交通用车轮、车轴、齿轮箱和轮对集成的大型国有企业。

公司于上世纪九十年代初开始进入轨道交通零部件研发制造领域,建立了专门的产品设计、材料研究、工艺研究、检测和实验等机构,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"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、工业、冶金、矿山、港口机械、电力等领域。

Taiyuan Heavy Industry Railway Transit Equipment Co., Ltd. is a wholly-owned subsidiary of TYHI specialized in the research, design, manufacture and service of railway transit equipment. It is the only large state-owned enterprise that manufactures railway wheels, axles, gearboxes and wheelsets.

The company started to engage in the development of railway equipment spare parts in the early 1990s. We have established professional institutions for product design and engineering, material research, technology research, testing and experiment, devoting us to the development of different types of wheels, axles, gearboxes and wheelsets. In recent years, we have actively expanded "production, study and research" cooperation and grasped core technologies in research, development, and manufacture. The products are widely used in railway, urban rail, metallurgy, mining, port machinery and electric power industries etc..

## 企业简介 Company Profile





公司以市场需求为导向,以高端化、国际化、集成化为目标,努力提升轨道交通装备研发、制造能力,以一流装备、一流管理和一流研发,努力打造成全球最重要的轨道交通用轮、轴、齿轮箱及轮对总成研发、设计、制造、销售和服务的专业化企业之一。依靠精细的管理,可靠的工艺,先进的设备,具备年产车轮60万片、车轴16万根、新造和检修齿轮箱1万套、轮对组装3万副的制造能力。



Being market-oriented, our company aims to become an international, integrated and high end oriented enterprise. With our state-of- the-art equipment, outstanding management and world-class R & D, we strive to enhance research and manufacturing ability and to be one of the most significant enterprises in railway transit equipment field.

The annual capacity is 600, 000 wheels,160, 000 axles, 30, 000 wheelsets and 10,000 gearboxes due to our intensive management, reliable technologies, and advanced equipment.

## 装备简介 Equipment Profile

公司拥有炼钢厂,两条辗钢整体车轮生产线,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。

The company has one steel plant, two wrought solid wheel production lines, one precision forging axle production line, one fast forging axle production line, one gearbox production line and one wheelset assembly line.



2012年,新炼钢系统建成投产,有先进的80吨电弧炉、钢包精炼炉及 VD真空脱气,年产钢水15万吨。

In 2012, the new steelmaking system was build and put into production equipped with 80t electric arc furnace, ladle furnace, VD vacuum degasser. The annual capacity is 150,000 tons of liquid steel.



1997年,太重建成投产了中国第二条辗钢整体车轮生产线。该生产线引进加拿大CSW辗钢整体车轮专用生产设备,经过系统设计和技术创新,可年产车轮30万片。

The company purchased and imported the wrought solid wheel production equipment from the Canadian Steel Wheel Plant, re-designed it and built the China's second wrought solid wheel production line in 1997. The annual capacity is 300, 000 wheels.



2012年,公司第二条辗钢车轮生产线建成投产。这条车轮生产线主要设备集中了当今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、智能化程度最高的车轮生产线,可年产车轮30万户

In 2012, the second wrought solid wheel production line of the company was built and put into production.

The second wrought solid wheel production line gathered all state-of - the-art technologies from world first class machinery suppliers and becomes the most advanced, automatic and intelligent wheel production line in the world. The annual capacity is now reaching 300,000 wheels.



## 装备简介 Equipment Profile









1991年,精密锻造车轴生产线建成投产。该生产线是国家"七五"计划重点技改项目,主要生产设备为奥地利制造的SHP32型精锻机,全线工艺流程和布局合理,由微机控制,集机、电、液技术于一体,可年产车轴10万根。

In 1991, the axle production line was put into production. It is the key technology renovation project of the "National Seventh Fiveyear Plan" period. Its main set up is a SHP32 type 500t precision forging machine made in Austria. The whole line is controlled and monitored by microprocessors, integrating mechanical, electrical and hydraulic system in one. The advanced process flow and layout is well organized. The annual capacity is 100, 000 axles.

2014年,快速锻造车轴生产线建成投产。该生产线装备有目前国内车轴 单机能力最大的1000t快锻机及国内首条连续调质功能的车轴热处理 线,以生产重载、高速和城轨的高端车轴为主,可年产车轴6万根。

In 2014, the fast forging axle production line was put into production which focuses on heavy load axles, high speed axles and urban rail axles. Its main set up is a 1000t fast forging machine with biggest capacity for single machine in China. It is also the first domestic axle heat treatment line with continuous adjustment capability in the country. The annual capacity is 60,000 axles.

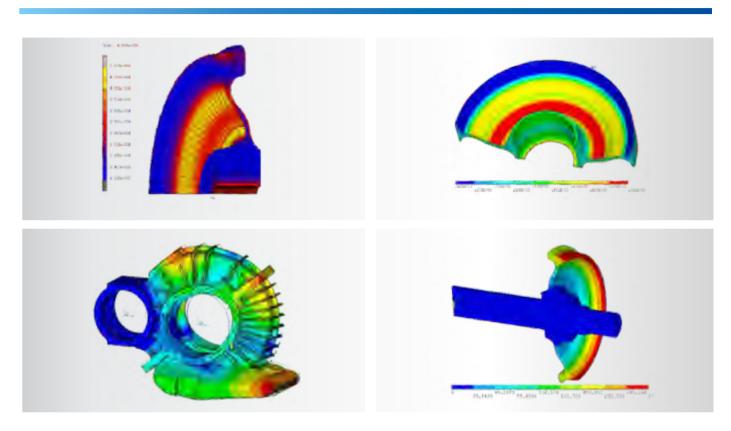
2014年建成的齿轮箱生产线,主要用于高铁、动车、城轨齿轮箱的新造和检修,该生产线包含了热处理多功能炉,齿轮、箱体类零件精加工及检测设备,多工位装配线,负载试车平台,为生产高精度、高可靠性的齿轮箱提供强大的设备保证,年新造、检修齿轮箱1万套。

In 2014, the gearbox production line was built for the production and repair of high speed and urban rail gearboxes. The annual capacity is 10, 000 gearboxes. Its main set up includes multifunctional heat treatment furnace, finish machining and inspection equipment, assembly line, and test bed for high-accuracy gearboxes.

2009年,包括车轴精加工及轮对压装的轮对总装生产线建成投产,该生产线引进国际先进的技术装备,以城轨和出口轮对为主,年产各类轮对3万副。

In 2009, the wheelsets assembly line (mainly for the production of urban rail wheelsets and export wheelsets) was put into production. This line includes the finish machining line of axles and wheelsets assembly line. The main equipment used is all imported from the world-class manufacturers. The annual capacity is 30,000 wheelsets.

# 技术研发 Research and Development



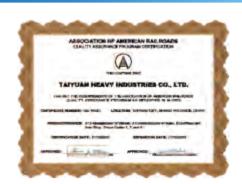
太原重工技术实力雄厚,拥有国家级技术中心、博士后科研工作站以及独立的轨道交通研发中心。轨道交通研发中心专门从事轨道交通产品设计和检测实验工作,在材料研究、制造工艺、检测试验技术等方面积累了丰富的经验。通过自主研发、与国内外科研院所及知名企业合作,掌握了高速轮轴、重载轮轴、大功率牵引机车轮轴、城市轨道交通用轮轴、城轨和高铁牵引齿轮箱的制造技术。

The company has strong technical strength. The company owns a state-level technology center, a post-doctoral R&D workstation, an independent R&D center for railway transit equipment. The R&D center specializes in product design, engineering, and testing experiment, and has accumulated rich experience. Through independent research and close cooperation with scientific research institutions and renowned enterprises at home and abroad, the company masters manufacturing technologies for the production of high-speed, heavy load, high-power locomotive, urban rail wheels and axles and urban rail traction gearboxes.

## 资质证书 Qualifications and Certifications

公司取得了IRIS、ISO体系认证、铁路产品通过了中国铁路 CRCC认证以及美国AAR、欧盟EC(TSI)、英国RISAS等机构和 国际重要铁路产品供应商的认证。

We have obtained IRIS certificate, ISO certificate, CRCC certificate, AAR certificate, EC(TSI) certificate, RISAS certificate and other certificates accredited by world railway products suppliers.



美国铁路协会轮轴产品质量AAR认证 Certificate Issued by AAR



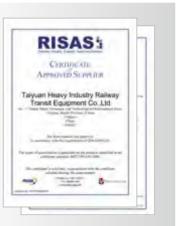
IRIS Certificate IRIS认证



CRCC Certificate CRCC认证



EC Certificate for Wheel, Axle and Wheelset 火车轮、轴、轮对EC认证



RISAS Certificate RISAS认证



ISO9001 Certificate



OHSAS18001 Certificate OHSAS18001证书



ISO14001证书



#### 产品 Products









公司产品可分为轮类产品、轴类产品、齿轮箱产品、轮对及集成产品,可满足TB、AAR、EN、BS、IRS、JIS、KS等标 准要求,产品广泛用于铁路、城市轨道交通、工业、矿山、冶金、电力、石油机械等领域。

Our company's products can be divided into several categories: axles, wheels, gear boxes, wheelsets and integrated products, which can meet standards like TB, AAR, EN, BS, IRS, JIS, KS, etc. These products are widely used in railway, urban rail transit, industries, mining, metallurgy, electric power, petroleum machinery and other fields.



车轮生产线可生产直径Φ500-Φ1250mm的轮类产品,主要产品有高速动车轮,大直径机车轮、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 of  $\Phi$  500 –  $\Phi$  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 duty 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-typemining metallurgical wheel; gear billets for the locomotives, wind power and oil machinery; fission wheel (wheel tyre, wheel center, snap ring), elastic wheel, etc..



#### 诚信 创新 精益 卓越 Integrity Innovation Precision Brilliance



大直径机车轮 Large diameter locomotive wheel



高速动车轮 High-speed rail wheel



齿轮坯 Gear billets



重载货车轮 Heavy duty freight car wheel

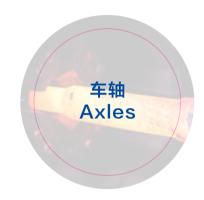


高硬度行车轮 High-hardness crane wheel



城轨车轮Urban Rail Wheel





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、RC3等型号客车轴,RD2型货车轴,RE2B型货车轴,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 axle with the diameter of  $\Phi$  70 –  $\Phi$  350 mm. The main products are high precision high-speed train axle, locomotive axle, RC3 passenger car axle, RD2 freight car axle, RE2B freight car axle, RF2 large diameter heavy duty freight car axle; Export locomotives axle, passenger car axle, freight car axle and other railway axle; Urban rail axle, Multi-type mining metallurgical axle, etc.



## 诚信 创新 精益 卓越 Integrity Innovation Precision Brilliance







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,并且成功通过了试验验证,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(250-350)km/h高速列车牵引齿轮箱等产品。

Our company has developed the traction gear boxes series products for domestic high-speed railway and urban rail and our products has been successfully tested by experiments, and got authoritative approval at home and abroad. The main products are Type A and Type B urban rail traction gearboxes,100% low floor traction gearboxes, and(250-350 km/h)high speed rail traction gearboxes.



## 诚信 创新 精益 卓越 Integrity Innovation Precision Brilliance



A型城轨列车牵引齿轮箱 Type Aurban rail traction gearbox



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





B型城轨列车牵引齿轮箱 Type Burban rail traction gearbox



时速(250-350)Km/h高速列车牵引齿轮箱 (250-350)km/h high-speed rail traction gearbox





轮对生产线可生产多类型轮对产品,可压装客车轮对、货车轮对、带轴承轮对、带齿轮箱轮对、带轴盘轮对,产品广泛用于铁路、城市轨道交通、工业、矿山等领域。

The wheelset production line can produce multi-type wheelset, passenger car wheelset, freight car wheelset, wheelset with bearings, wheelset with gearbox, as well as wheelset with disc, which are widely used in railway, urban rail transit, industries, mining and other fields.



货车轮对 Freight wheelset





### 诚信 创新 精益 卓越 Integrity Innovation Precision Brilliance



公司可生产低地板独立轮轴系统、行车轮组等集成产品。

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。

Our company can also produce low floor independent wheel& axle, crane wheelset and other integrated products. Low floor independent wheel& axle system employs flexible wheel and overall forging axle bridge, which has the characteristics of low noise, low vibration, high applicability. As key running and load components, it provides important support for localization of 100% low floor trams. The products are widely used in industries, port machinery, and other fields.









车轮组 Driven wheel group, Non-driven wheel group

## 国际合作与出口 International Cooperation and Export

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。二十多年来,已为全球50余个国家和地区提供了300余万件质量优异的轮、轴及轮对集成产品。

The company has actively engaged in obtaining various qualification certificates and cooperated with several world renowned enterprises like Alstom, Bombardier and Siemens to expand market. The company has already exported over 3,000,000 high-quality axles, wheels and wheelsets to more than 50 countries and regions in recent 20 years.





#### 太重核心价值观 Our Core Values

卓越

Brilliance

