

腾达轧辊 » 质量上乘 » 完美服务

TENGDA ROLLS/QUALITY FIRST/SERVICE UPMOST



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邢台腾达机械轧辊股份有限公司

XINGTAI TENGDA MECHANICAL ROLL CO., LTD.

济源市瑞霖金属材料有限公司

JIYUAN RUILIN METAL MATERIAL CO., LTD.



追求卓越·打造精品轧辊生产基地
The pursuit of excellence · Manufacturing the high quality goods

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公司简介 ABOUT US



Jiyuan Ruilin Metal Material Co., Ltd. is the subsidiary company established by Xingtai Tengda Mechanical Roll Co., Ltd. in 2020. Our primary focus is on the export of rolls and other metallurgical components. Situated in the Xindu District, Economic Development Zone of Xingtai in Hebei Province, Tengda Roll enjoys an advantageous geographic location. Our facility spans 7 acres with a building area of 24,200 m². Currently, our company has a dedicated team of 186 personnel, and we get our registered trademark as "Qiyun." Over time, our company has consistently increased investment to expedite development.

Our diverse product range includes chill cast iron rolls, indefinite chill cast iron rolls, nodular cast iron rolls, high chrome cast iron rolls, adamite Composite rolls, centrifugal composite rolls, semi-high-speed, high-Speed steel rolls and other metallurgical spare parts. These products cater to various rolling mills, providing Solutions for the rolling of rods, wires, strips, and profiles.

Our products have successfully penetrated markets in over 20 provinces and municipalities within China. With independent import and export rights, we have also expanded our reach to North and South America, as well as countries in Southeast Asia. Recognized as a local enterprise of considerable scale, we have been honored as one of the Xingtai Top 100 Taxpaying Enterprises, Environmental Protection Governance Class B Enterprises, and positive list enterprises. Our annual production capacity stands at 15,000 tons of alloy rolls, contributing to an annual output value of approximately 160 million yuan (about 23 million US dollars).

公司风采

COMPANY DISTINCTION



The company has a state-of-the-art testing and lab system, a robust R&D team, and top-notch research equipment, providing solid technical support and assurance to our customer.

With seven advanced workshops, a lab, and an R&D center, we have the capability for independent production. Our skilled team, including over ten intermediate and senior engineers ensures every production process meets high standards with the help of advanced inspection tools.

We achieved ISO9001:2000 quality management system certification in April 2002, upgraded to ISO9001:2015 in August 2017, and successfully passed the 2022 quality management system review including environmental and occupational health system certification.

In 2018, the establishment of our B-grade high-speed steel and high-chromium iron rolls research institute was approved by the Department of Industry and Information Technology of Hebei Province for better product quality and market competitiveness. Building on this, in 2021

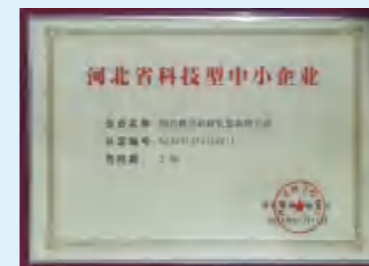
with the approval from Hebei Provincial Department of Science and Technology we established the Medium and Wide Band Roll Technology Innovation Center with Hebei University of Science and Technology.

These strategic moves ensure our commitment to high-quality products, meeting the diverse needs of our customers, and maintaining a competitive edge in the market.

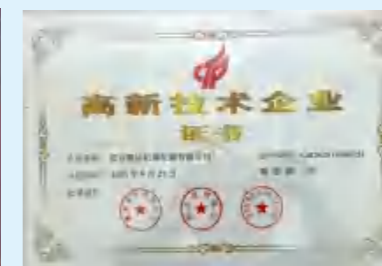
公司荣誉

REWARDS AND RECOGNITION

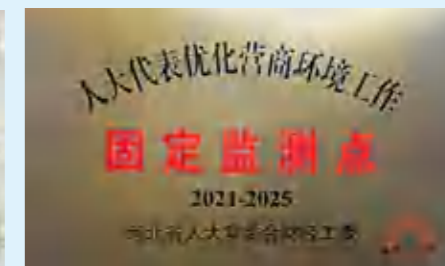
Our company adheres to the business philosophy rooted in integrity, efficiency, stability, and mutual benefit. Our guiding principles revolve around customer satisfaction with a focus on maintaining honesty and prioritizing product quality.



科技型中小企业
Small and medium-sized high-tech company



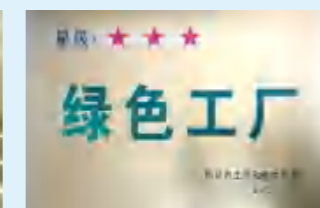
高新技术企业
High-tech enterprise



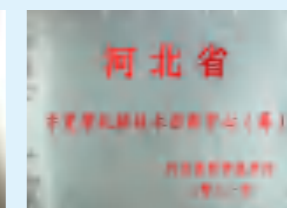
营商环境监测点
Business environment monitoring station



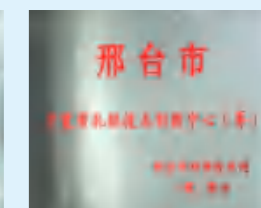
职业健康企业
Occupationally healthy enterprise



绿色工厂
Green factory



省级技术创新中心
Provincial-level technology innovation center



市级技术创新中心
City-level technology innovation center



旗焯商标注册证
Trademark registration certificate of "Qiyao"



研发机构证书
R&D agency certificate



质量体系认证英文版
QMS certificate (English)



质量体系认证证书
QMS certificate (Chinese)



环境体系认证英文版
Environmental quality system certificate (English)



环境管理体系认证
Environmental quality system certificate (Chinese)



职业健康安全管理体系认证英文版
Occupational health and safety assessment series (English)



职业健康安全管理体系认证证书
Occupational health and safety assessment series (Chinese)

公司设备 EQUIPMENT

Smelting equipment



There are 5 sets of medium frequency Induction furnaces, respectively 1t,2t,3t, 5t and 8t.Total annual smelting capacity 15000 tons.

Centrifugal casting machine



6 sets of centrifugal casting machines can produce centrifugal rolls with diameters ranging from 270mm to 1200mm and lengths ranging from 500mm to 1500mm as many as 10,000 tons every year.

Inspection equipment



There are 8 sets of equipment working for inspection: a spectrophotometer, a shore hardness tester, an ultrasonic flaw detector, a spectral analyzer, a metallurgical microscope, a balance instrument, a carbon and sulfur analyzer and a microcomputer high-speed analyzer.

Heat treatment equipment



There are 13 sets of heat treatment resistance furnaces reaching an annual heat treatment capacity of 15,000 tons, 8 sets of low-temperature trolley-type resistance furnaces and 5 sets of high-temperature resistance furnaces.

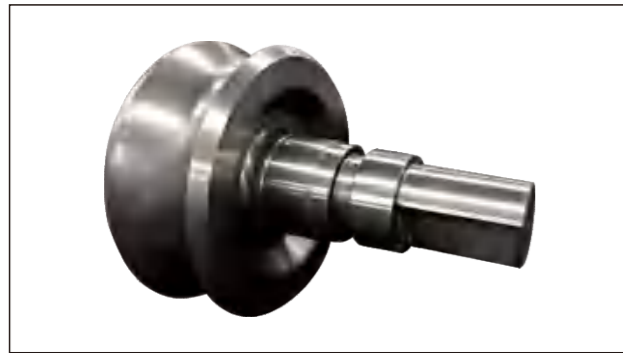
Machining equipment



There are 50 sets of machining equipment including 30 roughing and finishing machines, 4 grinding machines (2 are CNC grinders), 10 CNC lathe CKD61100 with Siemens CNC system, 3 gantry milling machines, 1 CNC milling machine, and 2 large vertical lathes. There are also 5 sets of other special equipment together reaching a total annual processing capacity of 15000 tons.

产品展示

PRODUCTS



贝氏体球墨铸铁轧辊
Bainite Nodular Cast Iron Roll



贝氏体球墨铸铁轧辊
Bainite Nodular Cast Iron Roll



珠光体球墨铸铁轧辊
Pearlitic Nodular Cast Iron Roll



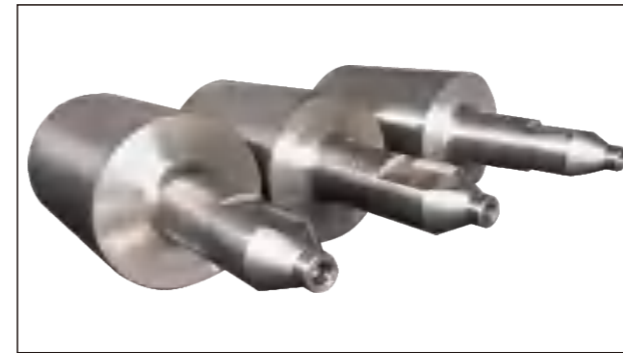
珠光体球墨铸铁轧辊
Pearlitic Nodular Cast Iron Roll



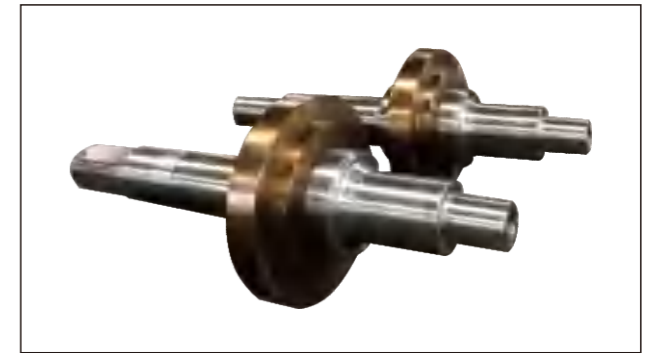
高硼钢轧辊
High Boron Steel Roll



高速钢轧辊
High Speed Steel Roll



合金半钢轧辊
Alloy Semi-Steel Roll



合金钢轧辊
Alloy Steel Roll



无限冷硬轧辊
Infinite Chill Roll



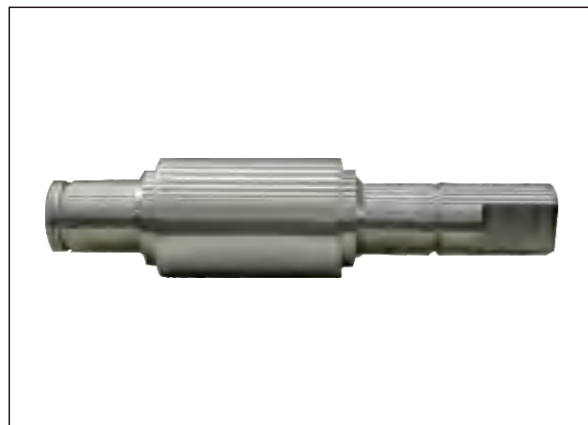
石墨钢轧辊
Graphite Steel Roll



合金无限冷硬轧辊
Alloy Infinite Chill Roll



半钢轧辊
Semisteel Roll



热轧带钢粗轧工作辊
Hot Rolled Strip Roughing Work Roll



热带连轧机精轧辊
Hot Strip Continuous Rolling Mill Finishing Roll



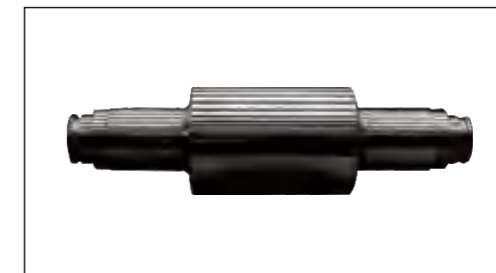
线材轧辊
Wire Roll



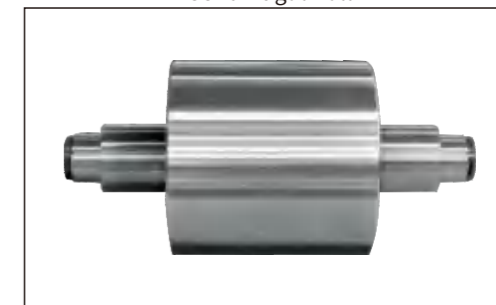
高速钢轧辊
High Speed Steel Roll



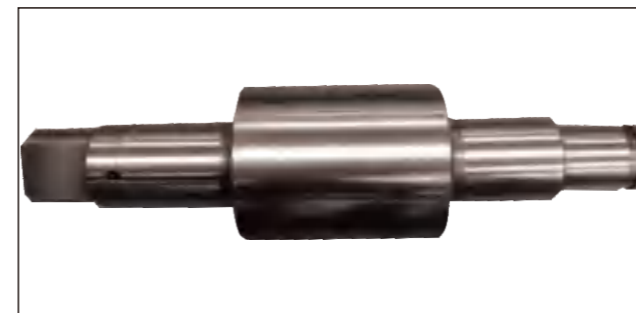
辊套
Roller Shell



离心辊
Centrifugal Roll



型钢轧机工作辊
Section Mill Work Roll



离心复合高速钢轧辊
Centrifugal Composite High Speed Steel Roll



离心复合铸铁轧辊
Centrifugal Composite Cast Iron Roll



半钢轧辊
Semisteel Roll



轧辊性能及用途

ROLL PERFORMANCE AND APPLICATION

一、石墨钢 Graphite steel

■ 化学成分 Chemical Analysis

轧辊名称 Designation of rolls	材质代码 Material code	C	Si	Mn	Ni	Cr	Mo	规格及制造方法 Specifications and manufacturing methods
G140CrNiMo	GS140	1.30-1.50	1.30-1.60	0.60-0.80		0.40-0.70	0.20-0.50	静态、静态铸槽 组合镶套 Φ350-1800 Static, static cast slot a assembled with shell
G160CrNiMo	GS160	1.50-1.70	0.80-1.50	0.60-1.00	0.20-1.00	0.50-1.50	0.20-0.80	
G180CrNiMo	GS180	1.70-1.90	0.80-2.00	0.60-1.50	0.80-1.00	0.50-1.50	0.20-0.80	
G200CrNiMo	GS200	1.90-2.10	0.80-2.00	0.50-1.50	0.80-1.50	0.50-2.00	0.20-0.80	
G220CrNiMo	GS220	2.10-2.30	0.80-2.00	0.60-1.50	0.80-1.50	0.50-2.00	0.20-0.80	

■ 产品特性 Product Features

轧辊名称 Designation of rolls	材质代码 Material code	产品特性 Product Features
G140CrNiMo	GS140	良好的耐磨、抗热裂、咬入性和抗断裂能力 Good wear resistance, thermal cracking, biting and fracture resistance
G160CrNiMo	GS160	良好的耐磨、抗热裂、咬入性和抗断裂能力 Good wear resistance, thermal cracking, biting and fracture resistance
G180CrNiMo	GS180	较高的耐磨、抗热裂、咬入性和抗断裂能力 High wear resistance, thermal cracking, biting and fracture resistance
G200CrNiMo	GS200	优越的耐磨、抗热裂、咬入性和抗断裂能力 Superior abrasion resistance, thermal cracking, biting and fracture resistance
G220CrNiMo	GS220	优越的耐磨、抗热裂、咬入性和抗断裂能力 Superior abrasion resistance, thermal cracking, biting and fracture resistance

■ 物理性能和应用范围 Physical Properties and Application

轧辊名称 Designation of rolls	材质代码 Material code	辊身硬度 HSD Barrel hardness	辊颈硬度 HSD Neck hardness	抗拉强度 Mpa Tensile strength	应用范围 Application
G140CrNiMo	GS140	36-46	≤46	≥540	大型钢、H型钢开坯 Large steel H-shaped steel billet
G160CrNiMo	GS160	45-55	≤50	≥500	
G180CrNiMo	GS180	50-60	≤50	≥500	大型钢、H型钢、棒线、板钢中、精轧 BD 辊、立辊、辊环 Large steel H-shaped steel bar, wire sheet steel finishing BD roll, vertical roll, roll ring
G200CrNiMo	GS200	50-60	≤50	≥500	
G220CrNiMo	GS220	50-65	≤50	≥500	

■ 金相组织特点 Microstructure features

少量点状石墨、颗粒状合金渗碳体镶嵌于细珠光体、回火索氏体、回火索氏体 + 贝氏体等基体之上。

A small amount of the point spherical graphite, granular alloy cementite embedded in fine pearlite, tempered sorbite above, tempering sorbite+bainite matrix.



50X点状石墨照片
50X spherical graphite photos



100X组织照片
100X organize photos



500X组织照片
500X organiza photos



典型轧辊实物照片
Typical roll physical photos

■ 承制规格 Scope of supply

辊身直径 ≤1250mm Barrel diameter ≤1250mm 辊身长度 ≤5000mm Barrel length ≤5000mm

二、贝氏体球墨铸铁 Bainite nodular cast iron

■ 化学成分 Chemical Analysis

轧辊名称 Designation of rolls	材质代码 Material code	C	Si	Mn	Ni	Cr	Mo	Mg	规格及制造方法 Specifications and manufacturing methods
贝氏体球墨离心复合铸铁 I Bainite ductile centrifugal composite cast iron I	SGA I	3.00-3.40	1.20-1.90	0.40-0.80	3.01-3.50	0.20-0.80	0.50-1.00	≥0.04	静态、离心, Φ250-850 Static centrifugal, Φ250-850
贝氏体球墨离心复合铸铁 II Bainite ductile centrifugal composite cast iron II	SGA II	3.0-3.40	1.20-1.90	0.40-0.80	3.51-4.50	0.20-1.00	0.50-1.00	≥0.04	静态、离心, Φ250-850 Static centrifugal, Φ250-850

■ 物理性能 Physical Properties

轧辊名称 Designation of rolls	材质代码 Material code	辊身硬度 HSD Barrel hardness	辊颈硬度 SSHSD Neck hardness	抗拉强度 Mpa Tensile strength
贝氏体球墨离心复合铸铁 I Bainite ductile centrifugal composite cast iron I	SGA I	55-78	32-45	>350
贝氏体球墨离心复合铸铁 II Bainite ductile centrifugal composite cast iron II	SGA II	60-80	32-45	>350

■ 产品特性 Product Features

轧辊名称 Designation of rolls	材质代码 Material code	产品特性 Product Features
贝氏体球墨离心复合铸铁 I Bainite ductile centrifugal composite cast iron I	SGA I	较高的耐磨性与抗事故性相匹配 High wear resistance and anti-accident phase matching
贝氏体球墨离心复合铸铁 II Bainite ductile centrifugal composite cast iron II	SGA II	优越的耐磨性、强韧性有机结合 Superior wear resistance, toughness combine

■ 应用范围 Application

轧辊名称 Designation of rolls	材质代码 Material code	应用范围 Application
贝氏体球墨离心复合铸铁 I Bainite ductile centrifugal composite cast iron I	SGA I	型钢、棒线、无缝中精轧 Steel, wire rod, seamless pipe medium finishing stand
贝氏体球墨离心复合铸铁 II Bainite ductile centrifugal composite cast iron II	SGA II	型钢、棒线、无缝中精轧 Steel, wire rod, seamless pipe medium finishing stand

金相组织特点 Microstructure features

适量的球状石墨 +25-35% 合金渗碳体, 镶嵌在强韧性良好的贝氏体 + 少量细珠光体、贝氏体 + 少量马氏体基体上。

The right amount of spherical graphite +25-35% alloy cementite, set in good toughness bainite + small amount of fine pearlite, bainite and martensite matrix.



50X球状石墨照片
50X spherical graphite photos



100X碳化物照片
100X carbide photos



500X典型贝氏体照片
500X typical bainite photos



典型轧辊实物照片
Typical roll physical photos

■ 承制规格 Scope of supply

辊身直径 ≤1250mm Barrel diameter ≤1250mm 辊身长度 ≤5000mm Barrel length ≤5000mm

三、合金球墨铸铁 Alloy ductile cast iron

■ 化学成分 Chemical Analysis

轧辊名称 Designation of rolls	材质代码 Material code	C	Si	Mn	Ni	Cr	Mo	Mg	规格及制造方法 Specifications and manufacturing methods
Ni CrMo I 系合金球墨铸铁 Ductile iron alloy Ni CrMo I	ASG I	3.00-3.40	1.40-1.90	0.200.80	0.50-1.00	0.20-0.60	0.20-0.60	≥0.04	静态整体 Φ 350-650 Static Φ 350-650
Ni CrMo II 系合金球墨铸铁 Ductile iron alloy Ni CrMo II	ASG II	3.0Q-3.40	1.50-1.90	0.200.80	1.10-2.00	0.20-0.80	0.20-0.60	≥0.04	静态、离心 Φ 350-650 Static, centrifugal Φ 350-650
Ni CrMo III 系合金球墨铸铁 Ductile iron alloy Ni CrMo III	ASG III	3.00-3.40	1.60-1.90	0.200.80	2.10-2.80	0.20-1.00	0.20-1.00	≥0.04	静态、离心 Φ 350-650 Static, centrifugal Φ 350-650

■ 物理性能 Physical Properties

轧辊名称 Designation of rolls	材质代码 Material code	辊身硬度 HSD Barrel hardness	辊颈硬度 HSD Neck hardness	抗拉强度 Mpa Tensile strength
Ni CrMo I 系合金球墨铸铁 Ductile iron alloy Ni CrMo I	ASG I	45-65	35-55	>320
Ni CrMo II 系合金球墨铸铁 Ductile iron alloy Ni CrMo II	ASG II	50-70	35-55	>320
Ni CrMo III 系合金球墨铸铁 Ductile iron alloy Ni CrMo III	ASG III	60-70	35-55	>320

■ 产品特性 Product Features

轧辊名称 Designation of rolls	材质代码 Material code	产品特性 Product Features
Ni CrMo I 系合金球墨铸铁 Ductile iron alloy Ni CrMo I	ASG I	较高的强韧性、耐磨性有机结合 High strength and toughness, wear resistance
Ni CrMo II 系合金球墨铸铁 Ductile iron alloy Ni CrMo II	ASG II	优越的抗事故能力、耐磨性 Superior anti-accident ability, wear resistance
Ni CrMo III 系合金球墨铸铁 Ductile iron alloy Ni CrMo III	ASG III	良好的耐磨性与抗事故性相匹配 Good wear resistance and anti-accident phase matching

■ 应用范围 Application

轧辊名称 Designation of rolls	材质代码 Material code	应用范围 Application
Ni CrMo I 系合金球墨铸铁 Ductile iron alloy Ni CrMo I	ASG I	型钢、棒线粗轧、中轧 Steel, wire rod rough rolling, medium rolling
Ni CrMo II 系合金球墨铸铁 Ductile iron alloy Ni CrMo II	ASG II	型钢、棒线、窄带粗中轧 Steel barwire, narrow strip roughing medium rolling
Ni CrMo III 系合金球墨铸铁 Ductile iron alloy Ni CrMo III	ASG III	型钢、棒线粗轧、中轧 Steel, wire rod rough rolling, medium rolling

金相组织特点 Microstructure features

适量的球状石墨 +8-15% 合金渗碳体, 镶嵌在强韧性良好的珠光体、细珠光体基体上。

The right amount of spherical graphite +8-15% alloy cementite, embedde in good toughness pearlite, the fine pearlite matrix.



50X球状石墨照片
50X spherical graphite photos



100X碳化物照片
100X carbide photos



500X典型珠光体照片
500X typical pearlite photos



典型轧辊实物照片
Typical roll physical photos

■ 承制规格 Scope of supply

辊身直径 ≤1250mm Barrel diameter ≤1250mm 辊身长度 ≤5000mm Barrel length ≤5000mm

四、高合金钢 High quality steel

■ 化学成分 Chemical Analysis

轧辊名称 Designation of rolls	材质代码 Material code	C	Si	Mn	Ni	Cr	Mo	V/Nb/W	规格及制造方法 Specifications and manufacturing methods
高铬铁 High-chromium steel	HCrS	0.80-1.80	0.40-1.00	0.50-1.00	8.00-15.00	0.50-1.50	1.50-4.50	0.20-0.40	离心复合, Φ250-1200 Centrifugal composite, Φ250-1200
半高速钢 High speed steel	SHSS	0.60-1.20	0.80-1.50	0.50-1.00	0.20-1.20	3.00-9.00	2.50-5.00	0.50-0.20	离心复合, Φ250-1200 Centrifugal composite, Φ250-1200
高硼高速钢 High speed boron steel	HSSI	2.50-3.00	0.30-1.00	0.50-1.20	0.70-1.70	15.00-18.00	0.70-1.50	B0.5-3.0	离心复合, Φ250-1200 Centrifugal composite, Φ250-1200
高钒高速钢 High speed vanadium steel	HSSII	1.50-2.00	0.30-1.00	0.40-1.00	0.50-1.50	3.00B.00	2.00-8.00	V3.0-8.0	离心复合, Φ 250-850 Centrifugal composite, Φ250-850
高铌高速钢 High speed niobium steel	HSSIII	1.50-2.00	0.30-1.00	0.40-1.00	0.50-1.50	3.00B.00	2.00-8.00	V+Nb3-8	离心复合, Φ 250-850 Centrifugal composite, Φ250-850

■ 产品特性 Product Features

轧辊名称 Designation of rolls	材质代码 Material code	产品特性 Product Features
高铬铁 High-chromium steel	HCrS	较高的耐磨性、抗回火性和优越的抗裂纹扩展能力 High wear resistance, tempering resistance and superior resistance to crack propagation capability
半高速钢 High speed steel	SHSS	较高的耐磨性、抗回火性和优越的抗裂纹扩展能力 High wear resistance, tempering resistance and superior resistance to crack propagation capability
高硼高速钢 High speed boron steel	HSSI	较高的耐磨性、抗回火性和优越的抗裂纹扩展能力 High wear resistance, tempering resistance and superior resistance to crack propagation capability
高钒高速钢 High speed vanadium steel	HSSII	较高的抗磨性、红硬性和优越的抗裂纹扩展能力 High abrasion resistance, red hardness and superior resistance to crack growth
高铌高速钢 High speed niobium steel	HSSIII	较高的抗磨性、红硬性和优越的抗裂纹扩展能力 High abrasion resistance, red hardness and superior resistance to crack growth

■ 物理性能和应用范围 Physical Properties and Application

轧辊名称 Designation of rolls	材质代码 Material code	辊身硬度 HSD Barrel hardness	辊颈硬度 HSD Neck hardness	抗拉强度 Mpa Tensile strength	应用范围 Application
高铬铁 High-chromium steel	HCrS	70-85	35-45	≥450	热轧板、带粗轧辊、立辊棒线粗、中轧工作辊 Hot-rolled plates with rough roll, vertical roll bar line finishing work rolls
半高速钢 High speed steel	SHSS	75-85	35-45	≥450	热轧板、带粗轧辊、立辊棒线粗、中、精轧工作辊 Hot-rolled plates with rough roll, vertical roll bar line finishing work rolls
高硼高速钢 High speed boron steel	HSSI	70-85	35-45	≥450	热轧板、带精轧辊、棒线中、精轧、预精轧工作辊 Hot-rolled sheet, strip finishing rolls, bar lines, finishing, pre-finishing work rolls
高钒高速钢 High speed vanadium steel	HSSII	70-95	35-45	≥450	
高铌高速钢 High speed niobium steel	HSSIII	70-95	35-45	≥450	

金相组织特点 Microstructure features

颗粒状高合金碳化物镶嵌于高温回火马氏体基体之上。
Granular high hard alloy carbides embedded in the top of tempering martensitic matrix.



100X高铬钢组织照片
100X high-chromium steel organiza photos



100X高速钢组织照片
100X high-speed steel organiza photos



500X高速钢组织照片
500X high-speed steel organiza photos



典型轧辊实物照片
Typical roll physical photos

■ 承制规格 Scope of supply

辊身直径 ≤1250mm Barrel diameter ≤1250mm 辊身长度 ≤5000mm Barrel length ≤5000mm

五、珠光体球墨铸铁 Pearlitic nodular cast iron

■ 化学成分 Chemical Analysis

轧辊名称 Designation of rolls	材质代码 Material code	C	Si	Mn	Ni	Cr	Mo	Mg	规格及制造方法 Specifications and manufacturing methods
Ni CrMo 系珠光体球墨铸铁 Ni CrMo pearlite ductile Department I	SGP I	3.00-3.40	1.50-1.90	0.40-0.80	1.50-2.00	0.20-0.60	0.20-0.60	≥0.04	静态、离心 Φ350-650 Static, centrifugal Φ 350-650
Ni CrMo 系珠光体球墨铸铁 Ni CrMo pearlite ductile Department II	SGP II	3.00-3.40	1.30-1.90	0.40-0.80	2.01-2.50	0.20-0.80	0.20-0.60	≥0.04	静态、离心 Φ 350-650 Static, centrifugal Φ350-650
Ni CrMo 系珠光体球墨铸铁 Ni CrMo pearlite ductile Department III	SGP III	3.00-3.40	1.20-1.90	0.40-0.80	2.51-3.00	0.20-1.20	0.20-0.60	≥0.04	静态、离心中 Φ350-650 Static, centrifugal Φ 350-650

■ 物理性能 Physical Properties

轧辊名称 Designation of rolls	材质代码 Material code	辊身硬度 HSD Barrel hardness	辊颈硬度 HSD Neck hardness	抗拉强度 Mpa Tensile strength
Ni CrMo 系珠光体球墨铸铁 Ni CrMo pearlite ductile iron	SGP I	45-55	35-55	>450
Ni CrMo 系珠光体球墨铸铁 Ni CrMo pearlite ductile iron	SGP II	55-65	35-55	>450
Ni CrMo 系珠光体球墨铸铁 Ni CrMo pearlite ductile iron	SGP III	62-72	35-55	>450

■ 产品特性 Product Features

轧辊名称 Designation of rolls	材质代码 Material code	产品特性 Product Features
Ni CrMo 系珠光体球墨铸铁 Ni CrMo pearlite ductile iron	SGP I	良好的耐磨性与抗事故性相匹配 Good wear resistance and accident phase matching
Ni CrMo 系珠光体球墨铸铁 Ni CrMo pearlite ductile iron	SGP II	较高的强韧性、耐磨性有机结合 High strength and toughness, abrasion resistance combined
Ni CrMo 系珠光体球墨铸铁 Ni CrMo pearlite ductile iron	SGP III	优越的抗事故能力、耐磨性 Superior anti-accident ability, wear resistance

■ 应用范围 Application

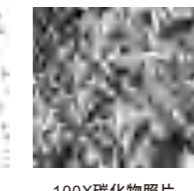
轧辊名称 Designation of rolls	材质代码 Material code	应用范围 Application
Ni CrMo 系珠光体球墨铸铁 Ni CrMo pearlite ductile iron	SGP I	型钢、棒线、窄带粗中轧 Steel bar, wire, narrow strip intermedium rough stand
Ni CrMo 系珠光体球墨铸铁 Ni CrMo pearlite ductile iron	SGP II	型钢、棒线、窄带粗中轧 Steel bar; wire, narrow strip intermedium rough stand
Ni CrMo 系珠光体球墨铸铁 Ni CrMo pearlite ductile iron	SGP III	型钢、棒线、窄带精中轧 Steel bar, wire, finishing a narrow strip intermedium finishing stand

金相组织特点 Microstructure features

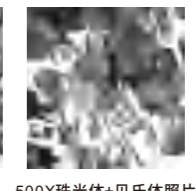
适量的球状石墨 +15-25% 合金渗碳体，镶嵌在强韧性良好的细珠光体、细珠光体 + 贝氏体基体上。
The right amount of spherical graphite +15-25% alloy cementite, set in good toughness fine pearlite, fine pearlite+bainite matrix.



500X球状石墨照片
500X spherical graphite photos



100X碳化物照片
100X carbide photos



500X珠光体+贝氏体照片
500X pearlite + bainite photos



典型轧辊实物照片
Typical roll physical photos

■ 承制规格 Scope of supply

辊身直径 ≤1250mm Barrel diameter ≤1250mm 辊身长度 ≤5000mm Barrel length ≤5000mm

六、半钢 Adamite

■ 化学成分 Chemical Analysis

轧辊名称 Designation of rolls	材质代码 Material code	C	Si	Mn	Ni	Cr	Mo	规格及制造方法 Specifications and manufacturing methods
ZuB140CrNiMo	Ad 140 I	1.30-1.50	0.30-0.60	0.70-1.10	0.50-1.20	0.80-1.20	0.20-0.60	静态、静态铸槽 组合镶套 Φ350-1800 Static, static cast slot a assembled with shell
ZuB160CrNiMo	Ad 160 I	1.50-1.70	0.30-0.60	0.80-1.30	≥0.20	0.80-2.00	0.20-0.60	
ZuB180CrNiMo	AD180	1.70-1.90	0.30-0.80	0.60-1.10	0.20-2.00	0.80-1.50	0.20-0.60	
ZuB200CrNiMo	AD200	1.90-2.10	0.30-0.80	0.80-1.20	0.60-2.50	0.60-2.00	0.20-0.80	
ZuB220CrNiMo	AD220	2.00-2.20	0.30-0.80	0.80-1.20	0.60-2.50	0.80-2.00	0.20-0.80	

■ 产品特性 Product Features

轧辊名称 Designation of rolls	材质代码 Material code	产品特性 Product Features
ZuB140CrNiMo	Ad 140 I	良好的耐磨、抗热裂、咬入性和抗断裂能力 Good wear resistance, thermal cracking, biting and fracture resistance
ZuB160CrNiMo	Ad 160 I	良好的耐磨、抗热裂、咬入性和抗断裂能力 Good wear resistance, thermal cracking, biting and fracture resistance
ZuB180CrNiMo	AD180	较高的耐磨、抗热裂、咬入性和抗断裂能力 High wear resistance, thermal cracking, biting and fracture resistance
ZuB200CrNiMo	AD200	优越的耐磨、抗热裂、咬入性和抗断裂能力 Superior abrasion resistance, thermal cracking, biting and fracture resistance
ZuB220CrNiMo	AD220	优越的耐磨、抗热裂、咬入性和抗断裂能力 Superior abrasion resistance, thermal cracking, biting and fracture resistance

■ 物理性能和应用范围 Physical Properties and Application

轧辊名称 Designation of rolls	材质代码 Material code	辊身硬度 HSD Barrel hardness	辊颈硬度 HSD Neck hardness	抗拉强度 Mpa Tensile strength	应用范围 Application
ZuB140CrNiMo	Ad 140 I	35-45	≤60	500-800	大型钢、H型钢、棒线、板钢中、 精轧 BD 辊、立辊、辊环 Large steel H-shaped steel bar, wire sheet steel finishing BD roll, vertical roll, roll ring
ZuB160CrNiMo	Ad 160 I	40-60	≤50	500-800	
ZuB180CrNiMo	AD180	45-60	≤50	450-700	
ZuB200CrNiMo	AD200	50-65	≤50	450-700	
ZuB220CrNiMo	AD220	50-65	≤50	450-700	

金相组织特点 Microstructure features

细珠光体、回火索氏体、回火索氏体 + 贝氏体等
基体内镶嵌棒状、颗粒状合金渗碳体。
Fine pearlite, tempered sorbite, tempered
sorbite+bainite matrix rod mosaic, granular alloy
cementite.



100X棒状碳化物照片
100X carbide rod photos



100X颗粒状碳化物照片
100X granular carbide photos



500X回火索氏体照片
500X tempered sorbite photos



典型轧辊实物照片
Typical roll physical photos

■ 承制规格 Scope of supply

辊身直径 ≤1250mm Barrel diameter ≤1250mm 辊身长度 ≤5000mm Barrel length ≤5000mm

七、铸造辊环 Casting roll ring

■ 化学成分 Chemical Analysis

轧辊名称 Designation of rolls	材质代码 Material code	C	Si	Mn	Ni	Cr	Mo	规格及制造方法 Specifications and manufacturing methods
珠光体类铸铁辊环 Pearlite cast iron roll ring	SGP 辊环 SGP roll ring	2.90-3.60	1.00-2.00	0.40-1.00	1.00-3.00	0.20-1.00	0.20-0.60	静态、离心 Φ450-1200 Static, centrifugal Φ450-1200
贝氏体类铸铁辊环 Bainite cast iron roll ring	SGA 辊环 SGA roll ring	2.90-3.60	1.00-2.00	0.40-1.00	3.00-4.00	0.30-1.00	0.20-0.80	离心复合 Φ350-1200 Centrifugal composite Φ350-1200
合金半钢类铸钢辊环 Semi-steel alloy steel roll ring	AD 辊环 AD roll ring	1.20-2.20	0.30-0.80	0.70-1.30	0.50-2.20	0.80-3.00	0.2-0.0.80	静态、离心 Φ850-1200 Static, centrifugal Φ850-1200
合金石墨类铸钢辊环 Cast alloy graphite steel roll ring	GS 辊环 GS roll ring	1.30-2.00	0.80-1.70	0.50-1.00	0.20-2.20	0.40-2.00	0.20-0.80	静态、离心 Φ850-1200 Static, centrifugal Φ850-1200
高铬系列铸造辊环 High chromium cast roll ring	HCr 辊环 HCr roll ring	0.80-2.80	0.30-1.00	0.50-1.20	0.50-1.70	8.00- 22.00	0.70-2.50	离心复合 Φ350-850 Centrifugal composite Φ350-850

■ 物理性能 Physical Properties

轧辊名称 Designation of rolls	材质代码 Material code	辊身硬度 HSD Barrel hardness	抗拉强度 Mpa Tensile strength
珠光体类铸铁辊环 Pearlite cast iron roll ring	SGP 辊环 SGP roll ring	45-70	≥450
贝氏体类铸铁辊环 Bainite cast iron roll ring	SGA 辊环 SGA roll ring	50-75	≥350
合金半钢类铸钢辊环 Semi-steel alloy steel roll ring	AD 辊环 AD roll ring	40-65	≥490
合金石墨类铸钢辊环 Cast alloy graphite steel roll ring	GS 辊环 GS roll ring	40-65	≥500
高铬系列铸造辊环 High chromium cast roll ring	HCr 辊环 HCr roll ring	65-85	≥350

■ 产品特性 Product Features

轧辊名称 Designation of rolls	材质代码 Material code	产品特性 Product Features
珠光体类铸铁辊环 Pearlite cast iron roll ring	SGP 辊环 SGP roll ring	良好的耐磨性与抗热裂特性 Good wear characteristics and thermal cracking
贝氏体类铸铁辊环 Bainite cast iron roll ring	SGA 辊环 SGA roll ring	较高耐磨性和孔型保持能力 Ability to maintain high wear resistance and pass
合金半钢类铸钢辊环 Semi-steel alloy steel roll ring	AD 辊环 AD roll ring	强韧性、耐磨性及抗热裂于一体 Toughness, wear resistance and thermal cracking combined
合金石墨类铸钢辊环 Cast alloy graphite steel roll ring	GS 辊环 GS roll ring	强韧性、耐磨性及抗热裂于一体 Toughness, wear resistance and thermal cracking combined
高铬系列铸造辊环 High chromium cast roll ring	HCr 辊环 HCr roll ring	高抗磨性, 抗回火红硬性 High wear resistance, hard red back

■ 应用范围 Application

轧辊名称 Designation of rolls	材质代码 Material code	应用范围 Application
珠光体类铸铁辊环 Pearlite cast iron roll ring	SGP 辊环 SGP roll ring	型钢矫直、立辊、棒线中轧、无缝管定径、万能水平 Steel straightening, vertical roll, rod rolling line, reducing fixed seamless, universal level
贝氏体类铸铁辊环 Bainite cast iron roll ring	SGA 辊环 SGA roll ring	万能精轧、棒线预精轧、无缝管定径、型钢矫直 Universal finishing, pre-finishing line rods, seam less sizing, straightening steel
合金半钢类铸钢辊环 Semi-steel alloy steel roll ring	AD 辊环 AD roll ring	万能精轧、立辊、无缝定径 Universal finishing, edger, seam less sizing
合金石墨类铸钢辊环 Cast alloy graphite steel roll ring	GS 辊环 GS roll ring	万能粗轧、无缝管粗轧 Universal rough rolling, seam less roughing
高铬系列铸造辊环 High chromium cast roll ring	HCr 辊环 HCr roll ring	立辊、棒线精轧、H 钢矫直 Edfer, wire rod finishing, H steel straightening

金相组织特点 Microstructure features

可根据用户及使用需要生产单一材质的离心整体辊环, 外硬内韧两种材质的离心辊环, 配合先进的多次热处理制造技术, 在保证合理的辊面耐磨性能基础上, 同时兼顾了芯部强韧性特点, 具有耐磨与抗裂能力的有机结合。

According to user needs and the use of a single material produced centrifuge whole roll rings, two outer hard and tough material composite centrifugal roll rings, with multiple heat treatment of advanced manufacturing technology, while ensuring a reasonable basis for the roll surface wear on, while taking into account the characteristics of the core part toughness, abrasion resistance and crack resistance with the combination of ability.



典型轧辊实物照片
Typical roll physical photos



典型轧辊实物照片
Typical roll physical photos



典型轧辊实物照片
Typical roll physical photos



典型轧辊实物照片
Typical roll physical photos



典型轧辊实物照片
Typical roll physical photos

■ 承制规格 Scope of supply

辊身直径 ≤1500mm Barrel diameter ≤1500mm 辊身长度 ≤3000mm Barrel length ≤3000mm

八、合金铸钢 Alloy steel casting

化学成分 Chemical Analysis

轧辊名称 Designation of rolls	材质代码 Material code	c	Si	Mn	Ni	Cr	Mo	规格及制造方法 Specifications and manufacturing methods
Zu60CMoMn	AS60	0.55-0.65	0.20-0.45	0.90-1.20		0.80-1.20	0.20-0.45	静态、静态铸槽、镶套 Φ350-1800 Static, static cast slot casement Φ350-1800
Zu60CrMoMnNi	AS60I	0.55-0.65	0.20-0.60	0.50-1.00	0.20-1.50	0.80-1.20	0.20-0.60	
Zu65CrNiMo	AS65I	0.60-0.70	0.20-0.60	0.50-0.80	0.20-0.50	0.80-1.20	0.20-0.45	
Zu70Mn	AS70	0.65-0.75	0.20-0.45	0.80-1.40				
Zu70Mn2	AS70I	0.65-0.75	0.20-0.45	1.40-1.80				
Zu70Mn2Mo	AS70 II	0.65-0.75	0.20-0.45	1.40-1.80			0.20-0.45	
Zu75CrMo	AS75	0.70-0.80	0.20-0.45	0.60-0.90		0.70-1.00	0.20-0.45	
Zu75CrNiMnMo	AS75I	0.70-0.80	0.20-0.70	0.70-1.10	≥0.20	0.80-1.50	0.20-0.60	

产品特性 Product Features

轧辊名称 Designation of rolls	材质代码 Material code	产品特性 Product Features
Zu60CMoMn	AS60	较好的强韧性、咬入性和抗破断能力 Good toughness, and crack resistance
Zu60CrMoMnNi	AS60I	较好的强韧性、咬入性和抗破断能力 Good toughness, and crack resistance
Zu65CrNiMo	AS65I	较好的强韧性、咬入性和抗破断能力 Good toughness, and crack resistance
Zu70Mn	AS70	较好的强韧性、咬入性和抗破断能力 Good toughness, and crack resistance
Zu70Mn2	AS70I	较好的强韧性、咬入性和抗破断能力 Good toughness, and crack resistance
Zu70Mn2Mo	AS70 II	较好的强韧性、咬入性和抗破断能力 Good toughness, and crack resistance
Zu75CrMo	AS75	较好的强韧性、咬入性和抗破断能力 Good toughness, and crack resistance
Zu75CrNiMnMo	AS75I	较高的强韧性、咬入性和抗破断能力 High toughness, and crack resistance

物理性能和应用范围 Physical Properties and Application

轧辊名称 Designation of rolls	材质代码 Material code	辊身硬度 HSD Barrel hardness	辊颈硬度 HSD Neck hardness	抗拉强度 Mpa Tensile strength	应用范围 Application
Zu60CMoMn	AS60	35-45	≤45	>650	型钢 棒线粗轧 板带破鳞 开坯 Rough stand of section wire rod, descaling of strip and plate rolling bloom
Zu60CrMoMnNi	AS60I	35-45	≤45	>750	
Zu65CrNiMo	AS65I	35-45	≤45	>750	
Zu70Mn	AS70	32-42	≤45	>650	
Zu70Mn2	AS70I	35-45	≤45	>680	
Zu70Mn2Mo	AS70 II	35-45	≤45	>700	
Zu75CrMo	AS75	35-50	≤45	>700	
Zu75CrNiMnMo	AS75I	35-50	≤45	>800	

金相组织特点 Microstructure features

珠光体、细珠光体、回火索氏体。
Pearlite, fine pearlite, tempered sorbite.



100X组织图片
100X organize photos



400X基体组织图片
400X matrix organization photos



500X基体组织图片
500X matrix organization photos



典型轧辊实物照片
Typical roll physical photos

承制规格 Scope of supply

辊身直径 ≤1250mm Barrel diameter ≤1250mm 辊身长度 ≤5000mm Barrel length ≤5000mm

金相组织

METALLOGRAPHIC STRUCTURE



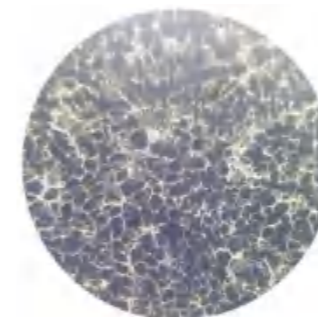
100× 珠光体
+ 球状石墨 + 碳化物
100× Pearlite + Spheroidal
Graphite + Carbide



100× 高镍离心轧辊
+ 球化石墨 + 碳化物
100× High nickel centrifugal roll +
Spheroidized graphite + Carbide



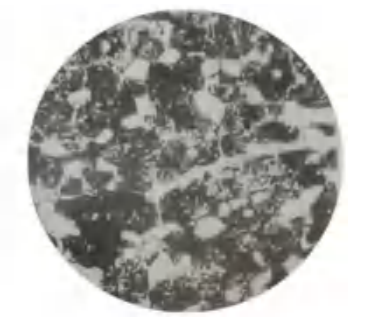
100× 中镍球无轧辊
金相组织
100× Medium nickel ductile indefinite
chill cast roll metallographic structure



100× 高速钢轧
辊金相组织
100× High speed steel roll
metallographic structure



100× 半钢轧辊
金相组织
100× Adamite roll metallographic
structure



100× 中镍球无轧辊
+ 球化石墨 + 碳化物
100× Medium nickel ductile indefinite
chill cast roll + Spheroidal graphite + Carbide



100× 贝氏体轧辊
金相组织
100× Bainite roll
metallographic structure



100× 高镍离心轧辊
金相组织
100× High nickel centrifugal roll
metallographic structure



100× 贝氏体轧辊
+ 球化石墨 + 碳化物
100× Bainite roll +
Spheroidal graphite + Carbide



100× 珠光体轧
辊金相组织
100× Pearlitic roll
metallographic structure



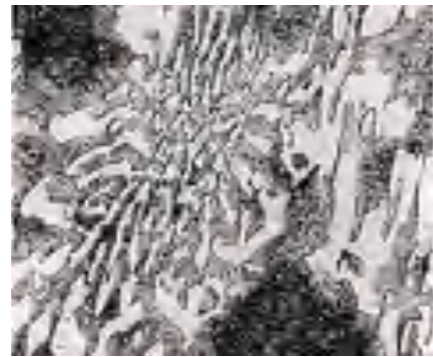
500× 回火索氏体 + 球状石墨 + 碳化物
500× Tempered sorbite + Spheroidal graphite + Carbide



500× 珠光体 + 球状石墨 + 碳化物
500× Pearlite + Spheroidal graphite + Carbide



500× 回火索氏体
500× Tempered sorbite



500× 屈氏体 + 回火索氏体 + 贝氏体 + 碳化物
500× Fractured martensite + Tempered Martensite + Bainite + Carbide



500× 贝氏体 + 马氏体 + 碳化物
500× Bainite + Martensite + Carbide



500× 珠光体 + 碳化物
500× Pearlite + Carbide



500× 细珠光体 + 少量贝氏体 + 碳化物
500× Fine pearlite + Small amount of bainite + Carbide



500× 细珠光体 + 球状石墨 + 碳化物
500× Fine pearlite + Spheroidal graphite + Carbides

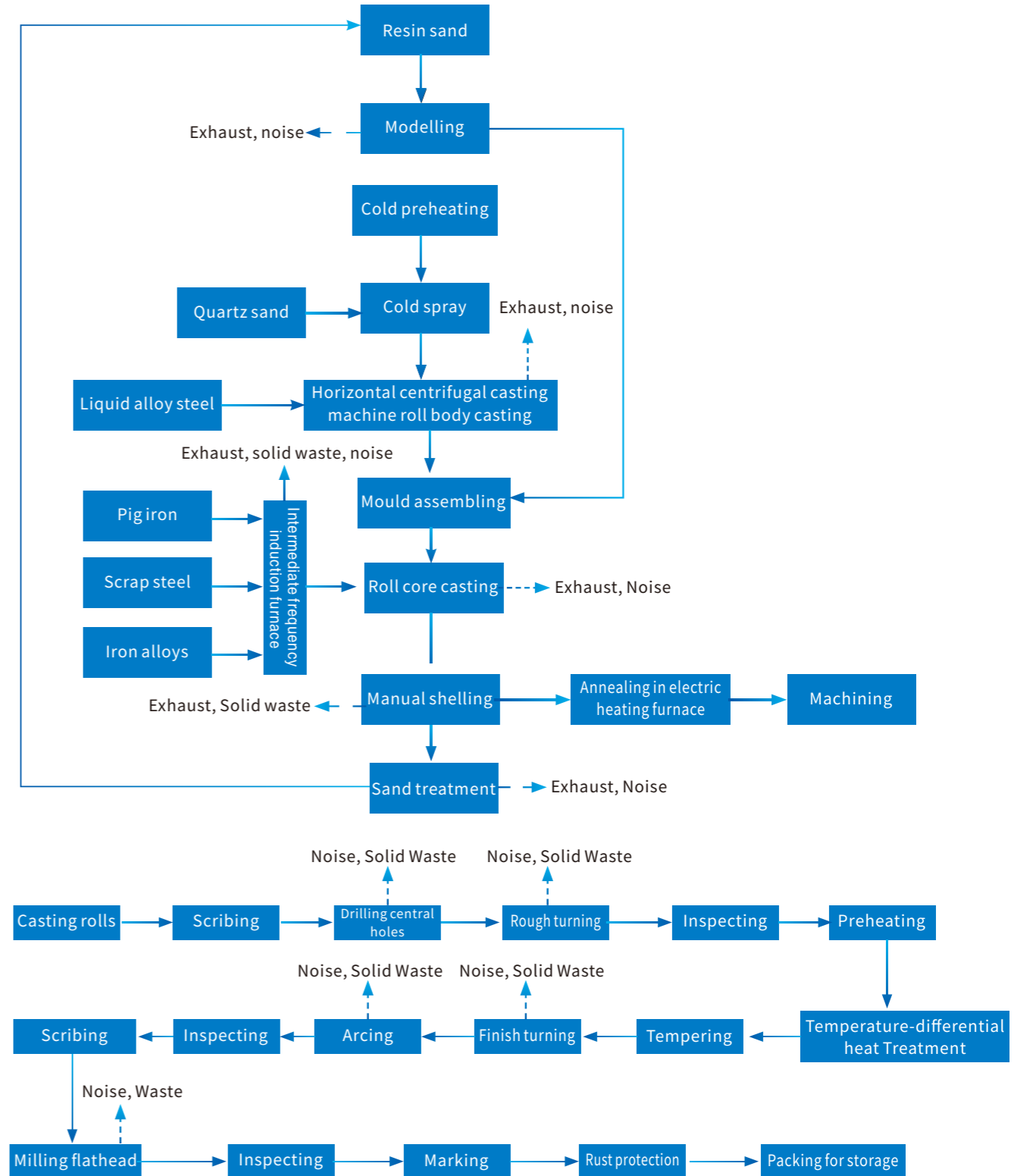


500× 贝氏体 + 回火索氏体
500× Bainite + Tempered sorbite



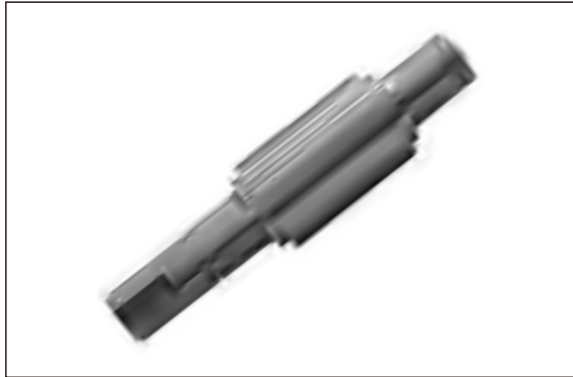
500× 回火索氏体 + 贝氏体 + 石墨 + 碳化物
500× Tempered martensite + Bainite + Graphite + Carbide

工艺流程 PROCESSING

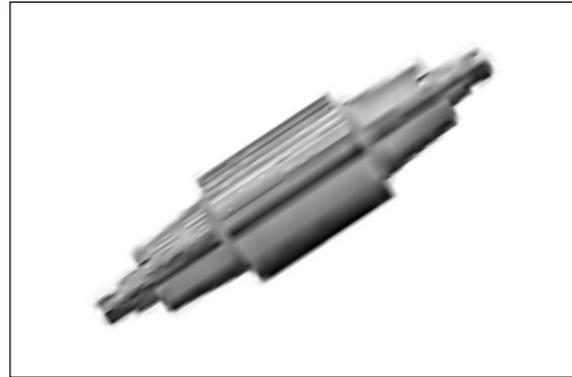


冶金轧辊及配件

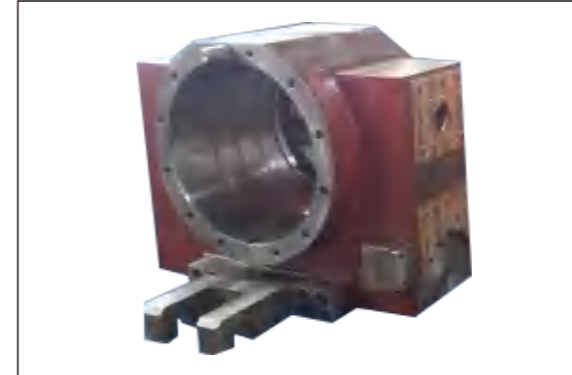
METALLURGICAL ROLLS AND SPARE PARTS



工作辊
Work Roll



支撑辊
Backup Roll



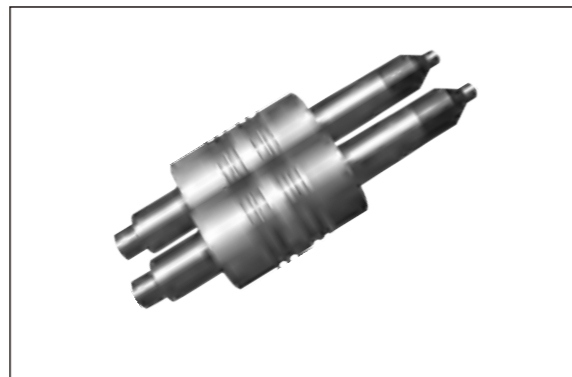
轴承座
Bearing Chock



辊环
Roll Ring



矫直辊
Straightening Roll



棒材用辊
Rolls for Rebar



齿轮轴
Gear Shaft



穿孔机辊
Piercer Roll



无缝管用辊
Rolls for Seamless Tube



卷取轴
Coiler Mandrel



减径机辊
Reducing Roll



定径机辊
Sizing Roll

轧辊使用与维护

ROLL USAGE AND MAINTENANCE

I. Handling and storage

- 1.The rolls shall be loaded and unloaded with hoisting belts during the handling process to prevent bumps.
- 2.Rolls should be stored in a dry and ventilated room to prevent moisture with their surface coated with anti-rust oil. Do not store them in acid, alkali and other chemical corrosive environment.
- 3.Handle the installation and disassembly of rolls with extreme care to prevent scratching or damaging the roll surfaces.
- 4.The hot rolls should not be stacked on the wet and cold ground, and the collision between the rolls should be avoided.
- 5.After grinding, the rolls intended for machine use should undergo anti-rust protection.

III. Use of rolls

- 1.Clean the rolls' surface from oil, dust and rust before routine testing. Particular attention should be paid to the roll body and neck to see whether there are scratches, indentations, rust spots, cracks and other defects, which are not allowed for machine use.
- 2.The quality of plate surface, plate composition and hardness of rolled blanks should be carefully checked before rolling while making sure a flat interface free of bulging when it is necessary to connect the strips.
- 3.In case of high speed, wide width, high reduction rolling and low temperature, the rolls should be preheated before they are put into use. Under general rolling conditions they should be preheated at low speed before the rolling starts.
- 4.Rolls off the machine should be grinded timely in accordance with the system of regular roll-changing and roll-repair instead of doing that only when the plate surface or roll surface quality problems occur. Ensure the grinding removes the surface hardening fatigue layer.
- 5.Rolling coolant should ensure uniform and sufficient cooling and lubrication of the rolls to prevent the hardness from dropping or even cracking due to high working temperature or local overheating of the rolls.
- 6.The roll necks should be well lubricated and cooled to prevent overheating and surface damage. The bearing system should be lubricated and cooled sufficiently to prevent the holding shaft caused by the roll neck breakage
- 7.The rolling environment and billet surface should be clean. Stacked rolling or foreign matters are forbidden.
- 8.Prevent occurrences of sticky steel, stuck steel, runout, broken belts, and slippage resulting from roll accidents during the rolling process. In case of such incidents, promptly replace work rolls, intermediate rolls, backup rolls, and conduct the necessary inspections and repairs.
- 9.Maintain a uniform and consistent strip shape throughout the rolling process, control center and edge waviness, and prevent prolonged overloading of rolling force on specific areas of the rolls.

II. Management of rolls

- 1.A roll usage card should be created before the rolls are into use where the roll number, specification and dimension should be recorded. Upon the completion of the roll's service life, ensure that the card is archived as the original record.
- 2.A roll usage card should record the time of rolls on and off the machine, the rolling steel number, specifications, rolling volume and the reason for regrinding (such as normal change of series, change of specifications for the series, scratches, flaking, sticking to the steel, cracks, etc.).
- 3.The starting time, the diameter before and after, the amount and the reasons for each grinding should be recorded.
- 4.Formulate a reasonable rolling process (rolling pass, single pass reduction and rolling speed, etc.) according to the different materials, and establish corresponding roll changes for different rolling processes systems.
- 5.Choose the proper work rolls in terms of hardness and roughness for the machine use according to the usage, the rolling material, and the rolling process (crude or fine). Ensure the middle rolls and backup rolls match on hardness.
- 6.The principle of using rolls is as follows: new (high-hardness) rolls are suitable for fine rolling of wide and thin strips, while old (low-hardness) rolls are suitable for the coarse rolling of narrow and thick strips. The use of rolls must adhere to the principle of separate machines, avoiding misuse or mixing, and ensuring that precision rolls are not used for coarse rolling.
- 7.Regular maintenance, inspection and monitoring of rolling mills should be conducted. Roll assembly and gearing should be installed accurately to ensure its smooth operation. Faulty and obsolete machines are not allowed to work. Pay attention to anti-vibration so that the rolls are working in good condition.

IV. Grinding of rolls

- 1.In grinding of rolls-use 24 hours natural cooling cycle to prevent cracks and dimensional deviations.
 - 2.Enforce a systematic roll-changing grinding approach, ensuring timely and judicious grinding. Utilize non-destructive testing methods such as magnetic particle and surface wave inspections to determine optimal grinding amounts and processes. Complement these measures with hardness testing.
 - 3.In roll regrinding, meticulously select the grinding wheel material, hardness, binding agent, particle size, and coolant to prevent grinding burns. Severity of burns is categorized by the following: invisible burns, surface color change, hardness reduction, visible cracks, network of visible cracks, and flaking.
 - 4.In the work roll grinding, the minimum amount of grinding each time should be able to ensure that the fatigue layer, the depth of which is generally 0.15 ~ 0.30mm, removed.
 - 5.Maintain suitable convexity during grinding, ensuring each session meets original design requirements for edge arc, slightness, coaxiality, and roughness.
 - 6.Backup rolls should be thoroughly removed off the gross surface layer and fatigue layer (this layer of deep 5 degrees is generally 2 ~ 5mm) after working for a while to prevent spalling (six rolls above the intermediate rolls of the mill should also be regularly repaired and ground).
- During roll grinding, be attentive to the difference in diameters between paired rolls to ensure compliance with design requirements.

SALES NETWORK

销售网络

Global Partnership



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展望未来

FUTURE OUTLOOK



雄鹰展翅，鹏程万里。

面对今天，腾达人不断前进，努力创造，展望未来，腾达人满怀信心。肩负着对客户，员工和社会的责任，腾达将以“恪守质量第一，信誉至上，以顾客满意”为目标的原则加速驶入企业发展快车道，聚焦轧辊核心业务，不断优化，完善内部管理，将改革、创新与发展有机结合，增强核心竞争力，打造一个生命力强劲的轧辊生产企业，我们一定能抵达遥远的彼岸。

Meeting today's challenges head-on, Tengda persistently advances, striving to shape a brighter future with unwavering confidence. Embracing the responsibility of our customers, employees, and society, Tengda is dedicated to accelerating its journey into the fast lane of corporate development guided by the principles of 'Quality First, Integrity Paramount, and Customer-Centric Approach.' Specializing in roll production, we are committed to refining internal management, seamlessly integrating reform, innovation, and development to bolster our core competitiveness. Tengda aims to evolve into a resilient manufacturing enterprise, and we are steadfast in our belief that we will successfully reach the distant shores of prosperity.

