



宝钢文化 Corporate Culture

严格苛求的精神
Stringent and exigent spirit

学习创新的道路
Learning and innovation road

争创一流的目标
Striving for first-class objective





核心价值 Core Value

诚信 Good Faith

协同 Synergy





特钢事业部 Special Steel Business Unit

宝钢股份特钢事业部位于中国上海市的东北部，前身为五钢公司（创建于1958年的上海第五钢铁厂及上海钢铁研究所）和上海第三钢铁厂的特殊钢及特殊合金研发生产之主业部分，是我国最早的特殊钢生产基地之一。1998年并入宝钢集团，2005年5月，五钢公司核心资产被宝钢股份收购，组建宝钢股份特殊钢分公司。2009年4月，宝钢组建特钢事业部，特殊钢分公司整体划归特钢事业部。

具有五十多年生产经验的特钢事业部已拥有特种冶金，不锈钢、结构钢、高合金钢长材，合金板带及钢管等多条现代化的生产线，产品涉及棒（线）、板、带、无缝管、锻件等品种，形成以特冶、不锈钢、结构钢三大系列为核心并聚焦于航空航天、能源、汽车（交通）三个关键行业以及模具钢、轴承钢、冷轧辊芯棒及不锈钢棒线等四大类产品体系。

宝钢特钢一直致力于向前沿技术市场、知名大公司、行业领导者、具有社会影响力的客户提供优质服务和开展广泛的合作。按照宝钢新一轮发展战略，秉承“精品、精益制造、精品文化”精神，特钢事业部将建成国际一流、国内领先的、具有强大综合竞争力的生态型特钢精品制造基地和特钢新材料、新工艺、新技术的研发基地。

Baoshan Iron & Steel Co. Ltd. Special Steel Business Unit is located at the northeastern part of Shanghai, China. It grew out Shanghai No.5 Steel Co.(It consists of Shanghai No.5 Steel Works set up in 1958 and Shanghai Iron & Steel Research Institute) and special steel section of Shanghai No.3 Steel Works. It is one of the earliest special steel production bases in China. In 1998, it merged into Baosteel Group. In May 2005, the core assets of Shanghai No.5 Steel Co. was purchased by listed Baosteel, and it became Special Steel Branch of Baosteel. In April 2009, Baosteel set up Special Steel Business Unit with Special Steel Branch wholly affiliated to this Business Unit.

With more than 50-year experience, Special Steel Business Unit possesses advanced production lines for special metallurgy, stainless steel, structural steel and high alloy long products, alloy plate & sheet and strip and seamless tube, etc. Forms of products cover bar, wire, plate & sheet, strip, seamless tube, forging, etc. The production system is formed with the dominant products as special metallurgy, stainless steel and structural steel. It focuses on applications in industries of aerospace & aviation, energy resources, automobile (transportation) and 4 key products i.e. tool & die steel, bearing steel, cold-roll & mandrel and stainless steel bar & wire.

Baosteel Special Steel Business Unit has been devoting its efforts to providing quality service to customers among notable companies, industry leaders, social influential entities and frontier technology market. According to the new development strategy of Baosteel, Special Steel Business Unit will be built into an ecologically-friendly global premium special steel manufacturing base taking the leading position domestically with its comprehensive competitiveness, as well as into a special steel R & D base for new materials, new processes and new technology.





产线简介

Production Lines

宝钢特钢供应能力与优势

Baosteel Special Steel's Capabilities and Advantages



- 现代化的装备能力
Modern Production Facilities
- 完善的质量控制体系
Comprehensive Quality Assurance System
- 市场驱动的材料设计理念
Market-driven Design Concepts for Materials
- 差异化的产品服务
Differentiated Products and Services



产线简介 Production lines

特种冶金产线

Special metallurgical production line

冶炼产线

冶炼产线由1吨、6吨、12吨等配套齐全的真空感应炉、0.5吨到20吨各种型号的电渣炉(ESR)、5吨到12吨真空自耗炉(VAR)、保护气氛电渣炉、电子束冷床炉(EB)、等离子冷床炉(PAM)等代表当代世界最先进水平的冶炼装备组成。其中、PA冷床炉是目前中国唯一一台专门用于航空发动机转动件的关键材料中试及产业化生产装备。



Smelting production line

Smelting line is composed of assorted vacuum induction furnace (1 ton to 6 tons, 12 tons), various types of ESR (0.5 tons to 20 tons), VAR (5 tons to 12 tons), Electroslag furnace protective atmosphere, EB, PAM. These equipments are representative of the contemporary world's most advanced level. Among them, PAM is the only one used exclusively for the aircraft engine rotating parts of the key materials in the production test and industrial equipment.

锻造产线

锻造产线由13MN 径锻、25MN 快锻和40MN 快锻和在建的63MN快锻等锻造主机组成以及相配套的热工炉和后步热处理、精整、机加工设备等组成。13MN 径锻机组由SMS—Meer 公司制造，25MN 快锻机组由DEMAG 公司制造，40MN 快锻机组由SPS 公司制造。锻造产线主要承担中高合金钢的中大型棒材、方扁钢、模块、轧辊辊坯以及轴类锻件、饼环件各类异形自由锻锻件等产品的锻制，以及锻造部分高合金难变形材料，为下工序供坯。

精整线有抛丸、砂轮剥皮/切割等处理手段。还配备有棒材超声波探伤、高精度C扫描等先进无损检测装备。

锻造产品圆棒最大规格 $\phi 1200\text{mm}$ ，饼环件最大直径 $\phi 2000\text{mm}$ ，最大锻件单重25t。





Forging production line

Forging production line consists of one 13 MN radial forging press manufactured by SMS-Meer, one 25 MN forging press manufactured by Demac, one 40 MN forging press manufactured by SPS, one 63 MN forging press manufactured (Under construction) related heating furnaces, and downstream heat treatment furnaces, finishing facilities, machining facilities, etc. The forging production line is mainly to produce forged intermediate- and large-size high alloy bars, square steel, flat steel, die block, roll blank, shafting, disk and shaped forgings. It also forges some less-deformable high alloy materials to feed the downstream processes.

Finishing line consists of shot blasting, abrasive wheel grinding and cutting facilities. In the downstream, there equipped with advanced nondestructive facilities including an ultrasonic tester, high precision C-scan equipment, etc.

The maximum diameter of the forged bar is 1200 mm. The maximum diameter of forged disk is 2000 mm. The maximum weight of single piece of forging is 25 tons.

高合金棒材生产线

高合金棒材生产线是引进POMINI技术，生产规格范围有： $\phi 14$ —85mm棒材、20—50mm方钢、8—20×28—75mm扁钢。产线适应高合金钢的热加工变形特性，可实现轧制中间加热。轧机采用16架45°斜轧连轧技术，使产品的尺寸精度满足高要求。产线后道有完善配套的多台连续退火炉，车底式退火炉、移罩式退火炉、固溶炉及精整探伤线等，适应高合金品种的质量要求。

High Alloy Bar Production Line

Imported Pomini technology is applied in high alloy bar production line to produce $\phi 14$ - 85 mm bars, 20 - 50 mm square steel and 8 - 20 x 28 - 75 mm flat steel. To meet deformation characteristics of high alloy steel during hot working, intermediate heating can be applied. The line consists of 16 mill stands with continuous 45° skew rolling technology to assure high requirements of dimensional accuracy. In the downstream of the line several continuous annealing furnaces, car-bottom annealing furnaces, hood type annealing furnaces, solution furnaces, finishing and flaw detection lines are installed to meet the quality requirements of high alloy products.

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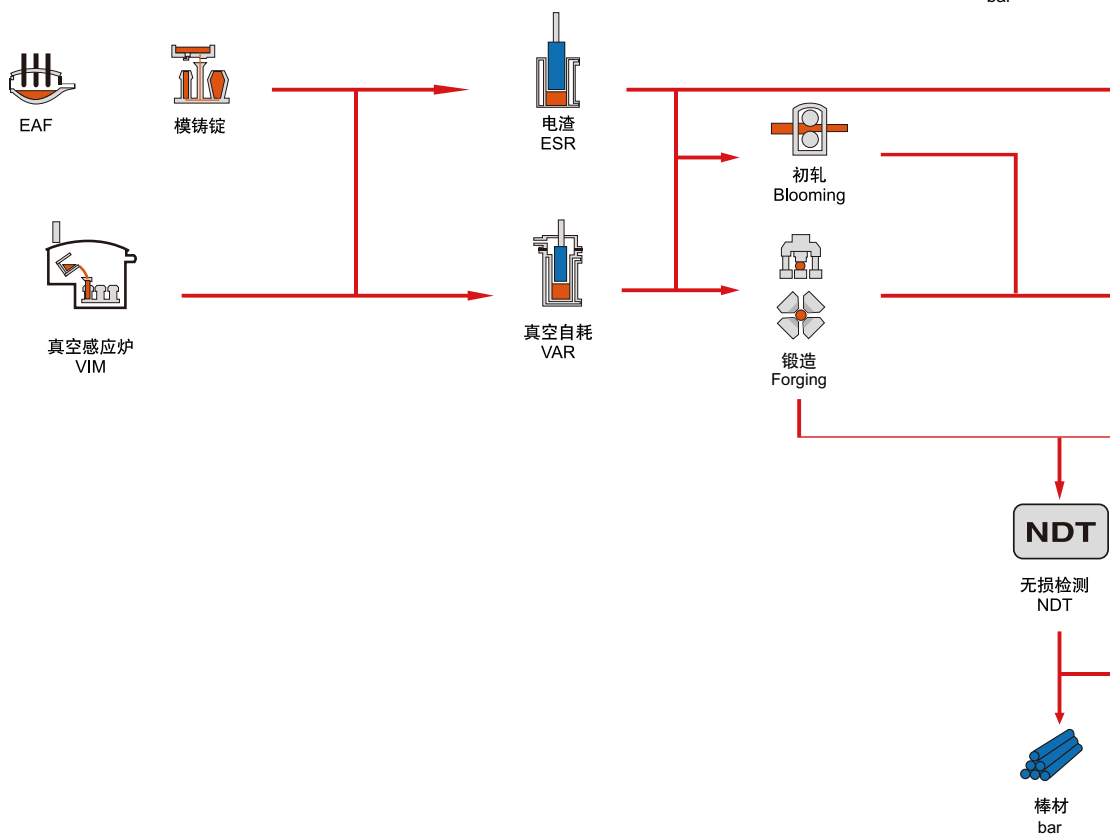
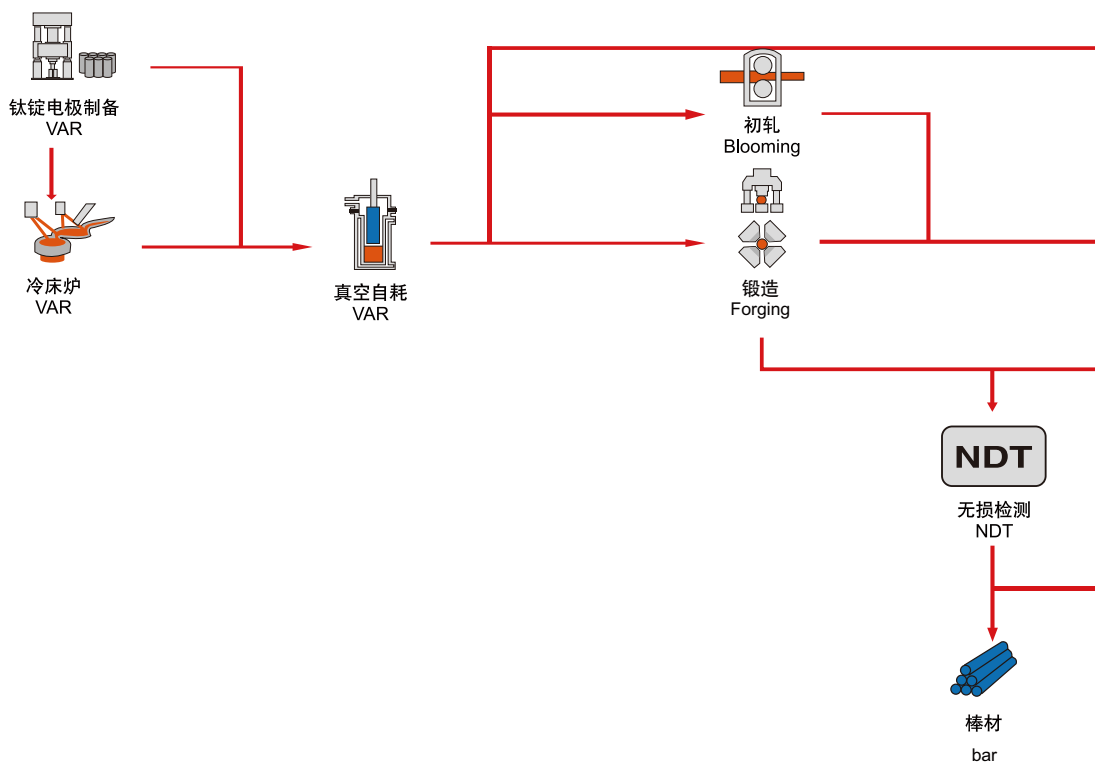
工艺流程

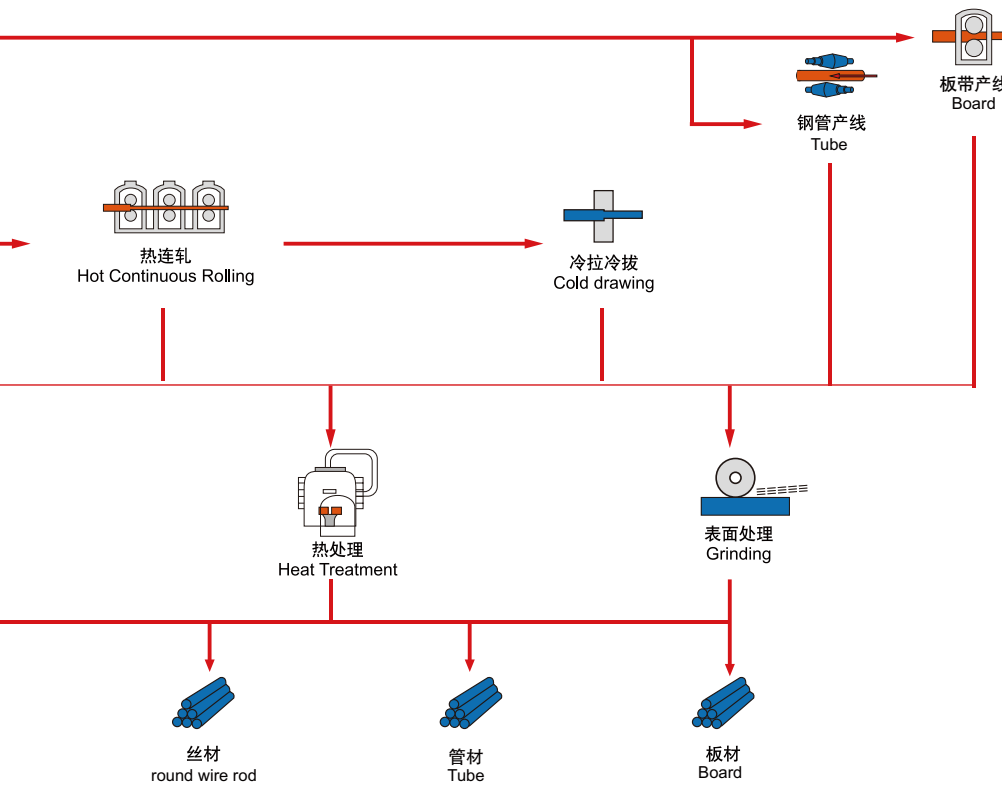
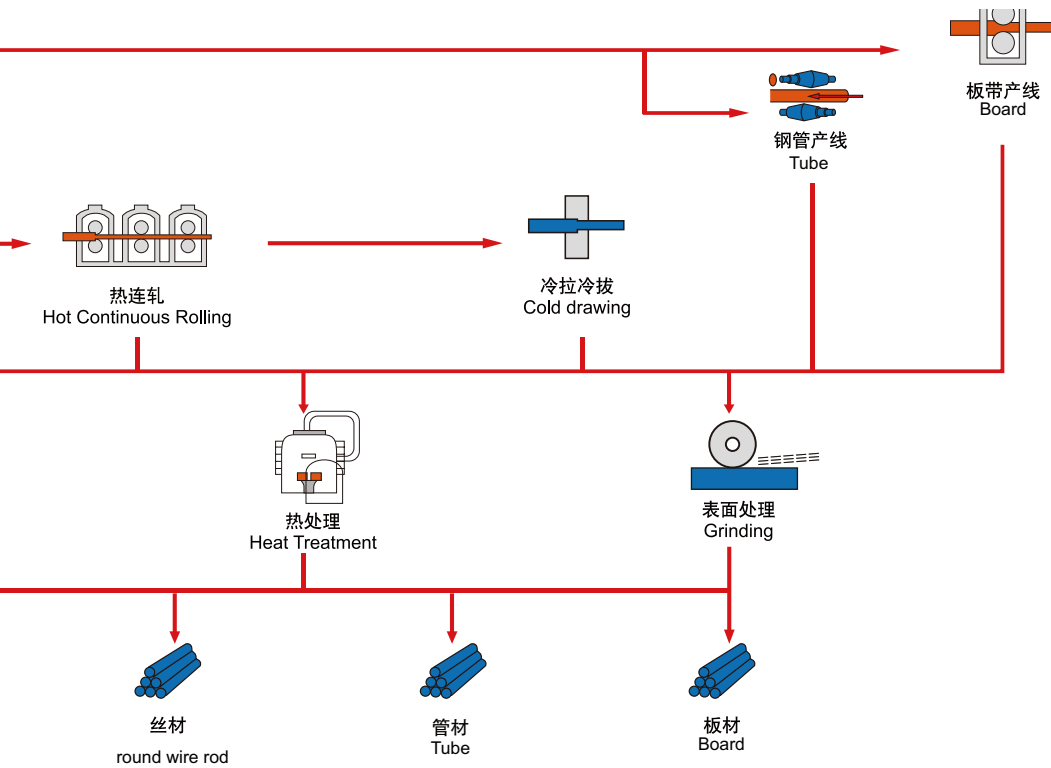
Process Flow





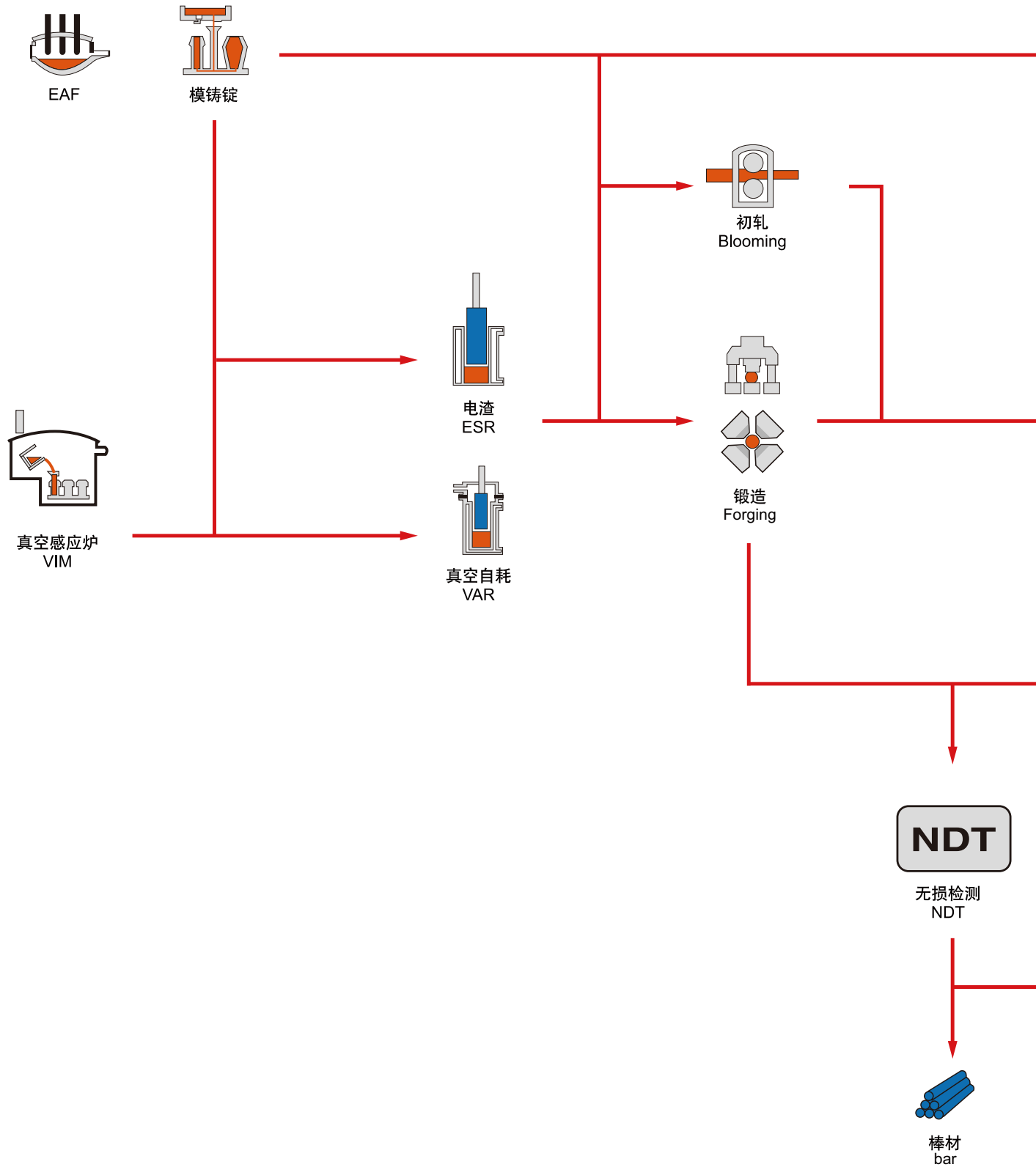
工艺流程 Process Flow

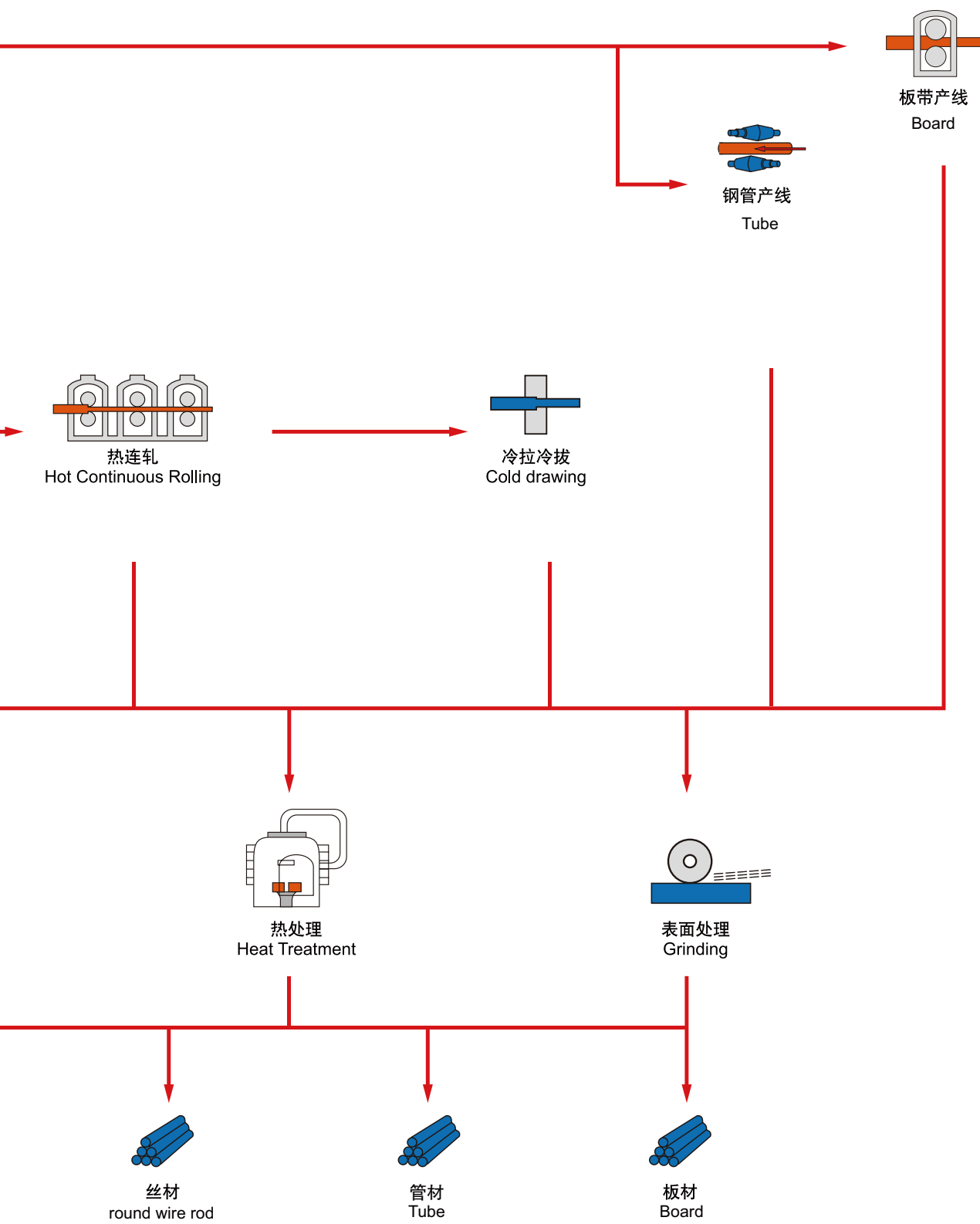






工艺流程 Process Flow

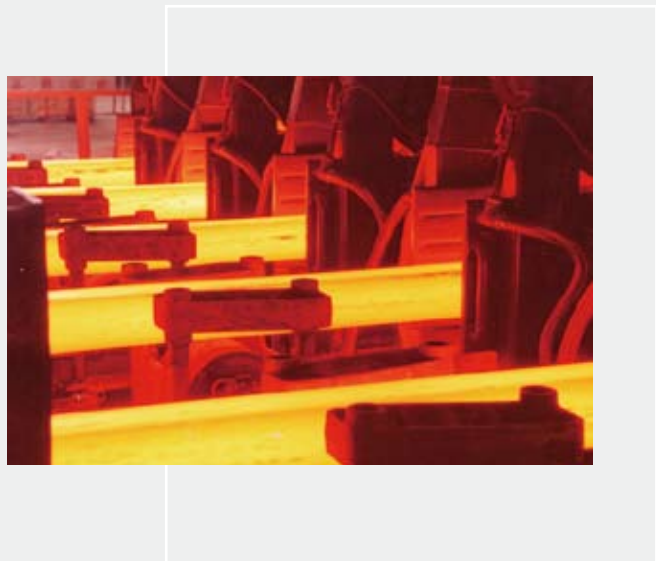






生产装备

Production facilities





冶炼设备及特点 Melting Equipment & Features

电炉 Furnace



交流电弧炉 (AC/EA)



AOD



VD/VOD

浇铸方式 Casting	EA	AOD	VD/VOD	坯/锭型 Billet / Ingot	冶炼能力 Annual Capacity
模铸 (IC)	40吨	40吨	40吨	all kinds	15万吨 (150,000t)



冶炼设备及特点 Melting Equipment & Features

真空感应炉 Vacuum

真空感应冶炼由于整个冶炼过程是在与大气隔离的条件下进行的，避免了大气对钢液的氧化和污染，加上钢液在磁力作用下产生的搅拌运动，从而使真空感应冶炼和其他冶炼方法相比，具有独特的特点：真空感应炉是控制化学成分最佳的冶炼手段之一，特别是活泼元素可以控制在很窄的范围之内，这就为获得稳定的使用性能和充分发挥合金元素的作用，创造了良好的前提条件；真空感应冶炼时的脱气、脱氧等冶炼特点使真空感应冶炼的钢和合金中的气体和非金属夹杂物的含量水平远低于其他冶炼方法，从而使钢与合金的性能得到明显提高；真空感应冶炼时，能够在较大的范围内调节精炼时间、温度和真空度，为冶金反应创造良好的热力学和动力学条件。

综上所述，由于真空感应冶炼的这些特点，使这一冶炼方法在生产精密合金、高温合金和特殊用途的合金钢以及有色金属合金等方面得到了广泛的应用。

真空感应冶炼不仅可以生产供轧制和锻造成材的钢锭，和供电渣重熔和真空自耗重熔用的自耗电极，还可以生产铸件。总之，真空感应冶炼以其独有的特点，在特殊钢与合金的生产中占有重要的位置。

特冶厂真空感应炉的冶炼容量从150公斤到12吨不等，大小5台。其中2006年引进一台12吨真空感应炉，是目前国内最大、最先进的真空感应炉：配备有一台8000kg和12000kg的炉体（感应圈、坩埚）可以根据产量需要进行选择、互换；可采用底注法真空浇铸钢锭新技术。

Vacuum Induction Melting As the entire smelting process is isolated from the atmosphere under the conditions, avoiding the atmospheric oxidation of liquid steel and pollution, coupled with the role of liquid steel produced under magnetic stirring movements so that the vacuum induction smelting and other metallurgical method, compared with unique characteristics: the vacuum induction furnace is to control the chemical composition of the smelting of the best one of the means, especially the active element can be controlled in a very narrow range, which in order to obtain a stable performance and give full play to the use of alloy The role of elements to create a good prerequisite; vacuum induction degassing during smelting, deoxy and other features make vacuum induction smelting smelting of steel and alloys in the gas and the levels of non-metallic inclusions is far below that of other refining methods to the performance of the steel and alloys has been markedly improved; vacuum induction smelting, can be adjusted in a larger range of refining time, temperature and vacuum, in order to create a sound metallurgical reaction thermodynamic and kinetic conditions.

In conclusion, due to vacuum induction smelting of these features make this smelting method in the production of precision alloys, high-temperature alloys and special purpose alloy steel, and non-ferrous metal alloys, etc. have been widely used.

Vacuum Induction Melting could be produced not only become useful for the rolling and forging the ingot, and the power consumption of slag remelting and vacuum from the use of self-consumable electrode remelting, but also can produce castings. In short, Vacuum Induction Melting of its unique characteristics in the production of special steel and alloys occupy an important position.

Special Metallurgical Plant vacuum induction furnace and the smelting capacity from 150 kg to 12 tons range, size, 5 sets. Which in 2006 imported 12 tons of a vacuum induction furnace, is the largest and most advanced vacuum induction furnace: equipped with a 8000kg and 12000kg of the furnace (induction ring, crucible) can be selected according to production needs, exchange; can be at the end of the vacuum injection method using the new technology casting ingot.

生产能力：9000 t/年 Annual capacity: 9000 t/年

锭型：ø80~ø710mm (0.11t-10t) 电极棒或感应锭

公称吨位	炉型	数量
12t	真空感应炉 Vacuum	1座
6t	真空感应炉 Vacuum	1座
1t	真空感应炉 Vacuum	2座
150kg	真空感应炉 Vacuum	1座
4.5t	非真空感应炉 Not The vacuum	1座
1t	非真空感应炉 Not The vacuum	1座

主要产品：镍基合金、耐腐蚀合金、精密合金、高强度钢

Main products: Nickel base alloy, Corrosion resistant alloy, Precision alloy, High strength steel



6t真空感应炉

真空自耗炉 VAR



电极制备 Pre-Electrode



等离子焊接 Plasma-welding



真空电弧炉 VAR

电极制备能力 Pre-Electrode Capacity

装备 Equipment	数量 Quantity	产量 Annual Capacity
电极压制 Pre-Electrode	2	10000t
等离子焊接 Plasma-welding	2	10000t

熔炼能力 Melting Capacity

公称吨位 Equipment	数量 Quantity	主要锭型 Annual Capacity
5吨	1座	∅305、∅355、∅423、∅508、∅580
8吨	1座	∅360、∅423、∅508、∅580、∅610
10吨	2座	∅423、∅508、∅610、∅810
12吨	3座	∅610、∅660、∅760、∅860、∅960、∅1060
15吨	1座	∅560、∅760、∅860、∅960、∅1060

主要产品

涉及高温合金（GH4169、GH738等）、特钢类（LF2、4340H等）、钛及钛合金（GR2、TC11等）。

Main Products

Involved in high-temperature alloy (GH4169, GH738, etc.), special steel type (LF2, 4340H, etc.), titanium and titanium alloy (GR2, TC11, etc.)

特点

自耗炉冶炼过程为真空气氛下进行，产品最大锭重为11吨、最大冶炼锭型为∅1066mm。冶炼过程可选择氩气气氛保护、冲氦气体冷却等效果，并可实现电流控制、电压控制、熔速控制、熔滴控制等多种控制方式的切换。部分炉座配置有锁阀机构，与双工位结构配合可起到提高生产效率的作用。

Features

Self-consuming furnace smelting process is carried out under a vacuum atmosphere, the product maximum ingot weight of 11 tons, the largest smelting ingot type is ∅1066mm. Smelting process can choose argon atmosphere protection, red helium body cooling effect, and can achieve the current control, voltage control, melt-speed control, a variety of droplet control, control mode switching. Part of the furnace equipped with lock valve seat body and duplex structures to improve the production efficiency can play the role.



冶炼设备及特点 Melting Equipment & Features

冷床炉 (EB/PAM)



等离子冷床炉 PAM



电子束冷床炉 EB

生产能力 Annual capacity

装备 Equipment	数量Quantity	产量 Annual Capacity
EB	1	3000t
PAM	1	1500t
Total	2	4500t

主要产品

可生产包括纯钛（GR1、GR2等）及各类钛合金（TC4、TC11等）在内的圆锭及扁锭。

Main Products

Produce, including pure titanium (GR1, GR2, etc.) and various types of titanium alloy (TC4, TC11, etc.), including round ingots and a flat ingot.

特点

可使用同钢种返回料进行冶炼，节省原材料消耗；相较自耗炉冶炼，产品锭型增加了冷床炉扁锭，可为纯钛扁平材直接供料，缩短生产流程；同时经冷床炉工序冶炼的钛及钛合金产品，可以大幅降低高、低密度夹杂发生的概率，有效提升产品质量。

Features

You can use the same kinds of returns expected for steel smelting, savings in raw material consumption; compared to consumable furnace smelting, products, an increase of spindle-type cooling bed furnace flat ingots, titanium flat products for the direct feeding to shorten the production process; the same time by the cooling bed furnace smelting process of titanium and titanium alloy products, can significantly reduce the high and low density mixed probability of occurrence, effectively improve product quality.

电渣炉 (ESR)



20t可控气氛电渣炉



5t可控气氛电渣炉

生产能力 Capacity

装备 Equipment	数量Quantity	产量 Annual Capacity	备注 Notes
PESR	4	10000t	6t、7t、20t
ESR	12	34000t	0.5t~4t
ESR	4	16000t	20t
Total	20	60000t	

主要产品

镍基合金、高强钢、特殊不锈钢、特种合金钢。

特点

部分炉座拥有惰性气体保护气氛和熔化速度自动控制的功能，
部分炉座拥有按设定功率自动控制的功能。

Main Products

Nickel base alloy、High strength steel、Special stainless steel、Special alloy structural steel.

Features

Part of the Fornax has a protective atmosphere of inert gas and the melting rate of automatic control functions, part of the Fornax has a press set up auto-power features.



锻造设备及特点 Forging Equipment & Features

锻造装备 Forging Equipment



40/45MN快锻机



1300t径锻机

生产能力 Capacity

装备 Equipment	数量Quantity	Class Interval
20/30MN Forging Press	1	ø200~300mm
40/45MN Forging Press	1	ø300~500mm
1300t Radial Forging Press	1	ø80~300mm
60MN Forging Press I	1	在建

产品规格

棒材 ø90—ø850mm
 方钢 80—1000mm
 扁钢 厚（最小）100mm
 宽（最大）1800mm
 饼环 ø400—ø2000mm（外径）

主要产品

镍基合金、高强钢、特殊不锈钢、特种合金钢

Main Products

Nickel base alloy,
 High strength steel,
 Special stainless steel,
 Special alloy structural steel,
 Special alloy structural steel.

Main Products

Nickel base alloy, High strength steel, special stainless steel, special alloy structural steel



热轧设备及特点 Rolling equipment & Features

热轧装备 Rolling equipment & Features



长型材轧机 Long products mill

长型材 Long products

线材 round wire rod ϕ 5-25mm

盘卷 Coil ϕ 15-40mm

棒材 round bar ϕ 12-50mm

高合金棒材 High alloy bars

圆钢 bar ϕ 14~ ϕ 85

方钢 bar 20方~50方

扁钢 bar 小扁钢: 8~20 \times 28~75

成品长度 Length 通常3~6米 (最长7米; 缓冷、退火材一般3~5米)

主要产品

镍基合金、高强钢、特殊不锈钢、特种合金钢

Main Products

Nickel base alloy, High strength steel, special stainless steel, special alloy structural steel



高合金轧机



银亮设备及特点 Bright steel equipment & features

银亮装备 Bright steel equipment



连续拉拔机组



盘圆剥皮机

年生产能力 Annual capacity	50000吨
产品规格 Specifications	冷拔棒材： $\varnothing 9-50$ mm Cold bar
	冷拔盘卷： $\varnothing 2-20$ mm Cold Coil
	剥皮材： $\varnothing 12-80$ mm Bright bar
主要钢种 Main products	异型材： $5.9 \times 16-15 \times 40$ Profiled bar
	不锈钢、阀门钢、轴承钢、高工钢、高温合金、钛及钛合金等 Stainless steel、valve steel、bear steel、Tool & die steel、Titanium、Nickel base alloy



等温锻设备及特点

Super Plastic Die Forging equipment & features

装备能力 Equipment capability



500t、800t、2000t、3000t 液压机



10000t 压机



K3 模具

装备能力 Equipment capability

投影面积 m^2
Umbriferous area



部件



袖颈



空气导管

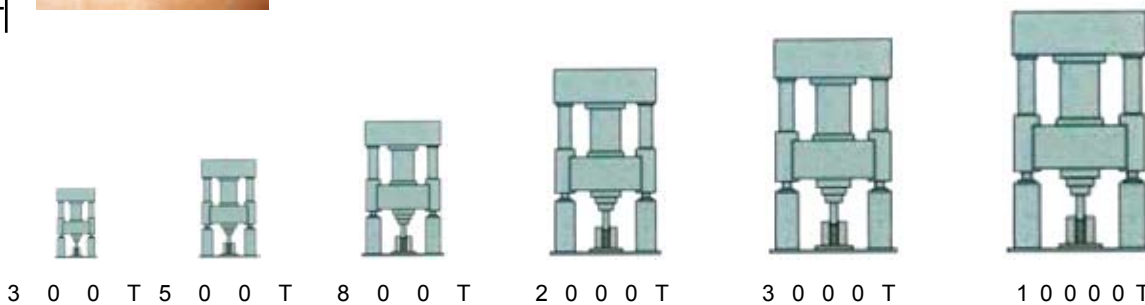
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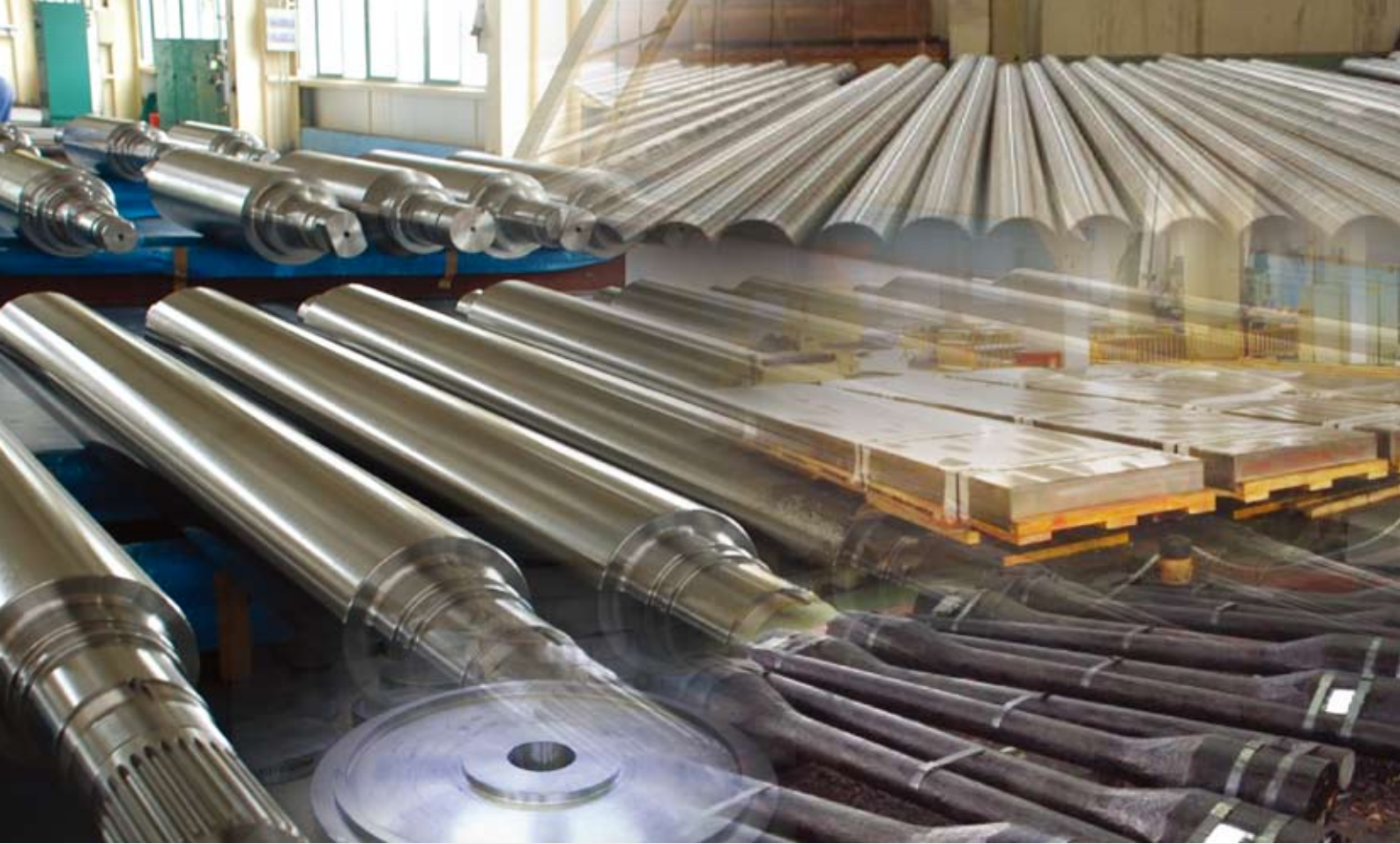


机闸



框架





产品大纲

Product Mix





产品大纲

Product Mix

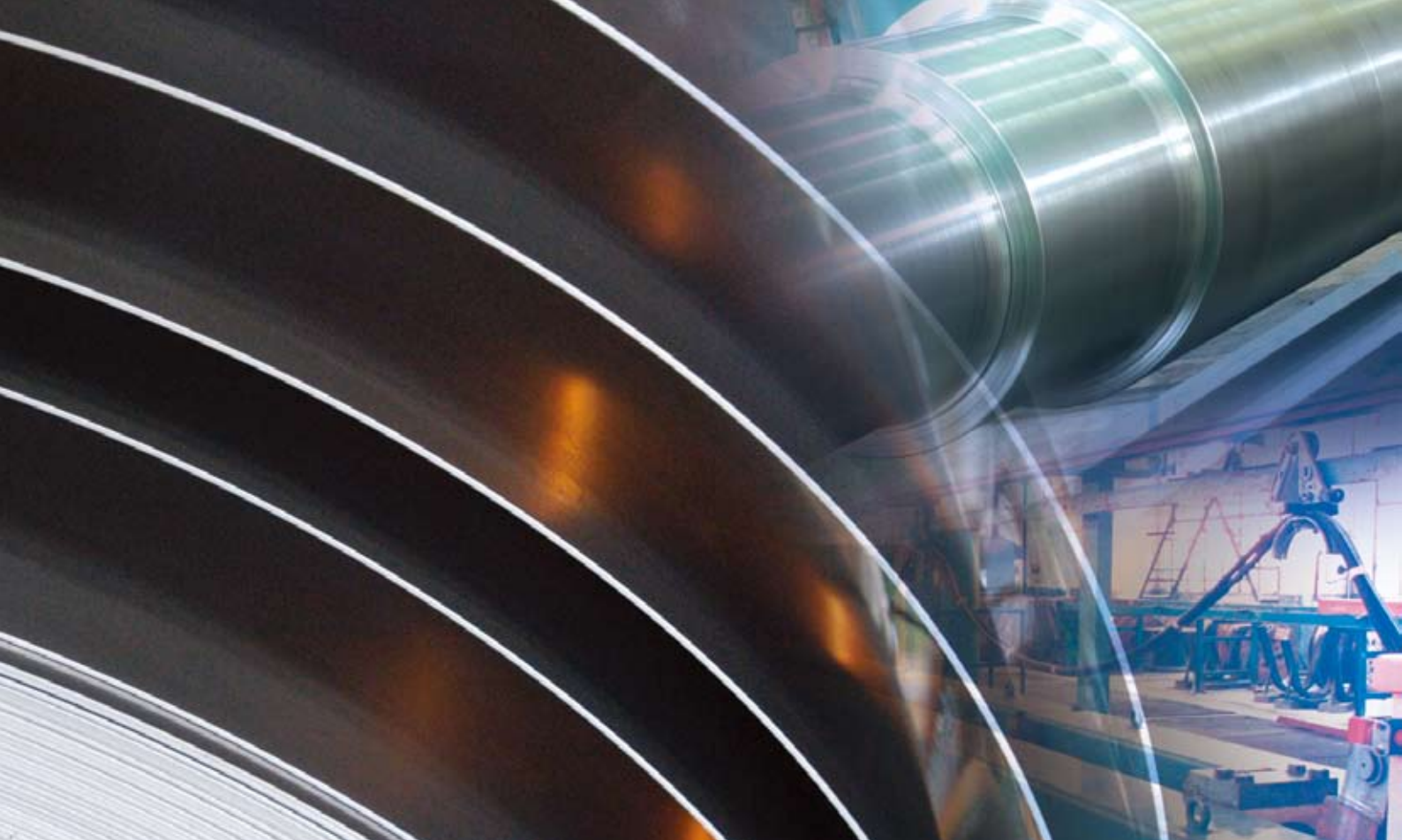
序号 No.	产品大类 Product Categories	执行标准 Standards	代表钢种 Type of Grades	产品规格 Specifications mm
1	纯钛 Ti	GB/T3620ASTMB337、 ASTMB338 ASTMB348、ASTMB861、 ASTMB863、ASTMF67企标	TA1~TA4、GR1~GR4	棒材: $\phi 90 - \phi 500\text{mm}$ 扁钢: 厚 (最小) 100mm 宽 (最大) 1200mm 饼环: $\phi 400 - \phi 2000\text{mm}$ (外径) 轧棒: $\phi 14 - \phi 130\text{mm}$ 银亮材: $\phi 14 - \phi 40\text{mm}$ 板管见板管手册
2	合金钛 Ti Alloy	GB/T3620、GJB1538、 GJB2218、GJB2220、 ASTMB348、 ASTMB381、AMS4928 AMS4931、AMS4965、 AMS4967、ASTMF136、 企标	TA7、TA10、TA15(BT20)、TA18、 TA19(Ti6242)、TC3、TC4 (GR5)、 TC4ELI、TC6、TC11、TC17、TC18、 TC19、TC20、TC25、TB2、TB6、 7715D、Sti80	棒材: $\phi 90 - \phi 500\text{mm}$ 扁钢: 厚 (最小) 100mm 宽 (最大) 1200mm 饼环: $\phi 400 - \phi 2000\text{mm}$ (外径) 轧棒: $\phi 14 - \phi 130\text{mm}$ 银亮材: $\phi 14 - \phi 40\text{mm}$ 等温锻 板管见板管手册
3	高温合金 Superalloy	GB/T14993、GB/T14994、 GB/T14998、YB/T4069、 YB/T5245、YB/T5247、 YB/5248、YB/5249、 YB/T5351、GJB1953、 GJB713、AMS5662、企标	GH1015、GH1016、GH1040、GH1131、 GH1140、GH2036、GH2132、GH2901、 GH2903、GH2907、GH2909、GH2984、 GH2696、GH2706、GH2761、GH3030、 GH3039、GH3044、GH3128、GH3536、 GH4169(INCONEL 718)、GH4133B、 GH4033、GH4037、GH4049、GH4090、 GH4098、GH4099、GH4105、GH4141、 GH4163、GH4500、GH4742、GH4648、 GH4586、GH4080A(NiCr20TiAl)、 GH4145(InconelX-750)、GH4698、 GH4738、GH6783、GH5188、GH5605、 R-26、K3、K18、K9、HGH	棒材: $\phi 90 - \phi 500\text{mm}$ 扁钢: 厚 (最小) 100mm 宽 (最大) 1200mm 饼环: $\phi 400 - \phi 2200\text{mm}$ (外径) 轧棒: $\phi 14 - \phi 130\text{mm}$ 银亮材: $\phi 8 - \phi 40\text{mm}$ 丝: $\phi 0.1 - \phi 7\text{mm}$ 热模锻产品 母合金 $\phi 80\text{mm}$ 、 $\phi 120\text{mm}$ 板管见板管分册
4	耐蚀合金 Corrosion resistant alloy	GB/T15008、GB/T5264、 SB425、SB446、企标	In800(H)、In825、In718、In600、In601、 In690、In625、In925、Hastelloy-c(276)、 Hastelloy B、Hastelloy G、Monel系列	棒材: $\phi 90 - \phi 1500\text{mm}$ 扁钢: 厚 (最小) 100mm 宽 (最大) 1200mm 饼环: $\phi 400 - \phi 2200\text{mm}$ (外径) 轧棒: $\phi 14 - \phi 130\text{mm}$ 银亮材: $\phi 8 - \phi 40\text{mm}$ 丝: $\phi 0.1 - \phi 7\text{mm}$ 锻件 板管见板管分册
5	精密合金 Precision Alloy		弹性合金: 3J1、3J21、3J53 膨胀合金: 4J28、4J29、4J36 高电阻电热合金: Cr20Ni35、Cr20Ni30	棒材: $\phi 90 - \phi 1500\text{mm}$ 扁钢: 厚 (最小) 100mm 宽 (最大) 1200mm 饼环: $\phi 400 - \phi 2000\text{mm}$ (外径) 轧棒: $\phi 14 - \phi 130\text{mm}$ 银亮材: $\phi 8 - \phi 40\text{mm}$ 丝: $\phi 0.1 - \phi 7\text{mm}$ 锻件 板管见板管分册



产品大纲 Product Mix

序号 No.	产品大类 Product Categories	执行标准 Standards	代表钢种 Type of Grades	产品规格 Specifications mm
6	特种不锈钢 special stainless steel	军工标准：GJB2294、企标 Agreement	00Cr19Ni10, 0Cr18Ni10Ti, 0Cr18Ni9, 18Mn12Cr18Ni2N, 1Cr11Ni2W2MoV, 1~4Cr13, 1Cr17Ni2, 1Cr18Ni11Si4AlTi, 1Cr18Ni9 (Ti), 1Cr21Ni5Ti, 9Cr18 (Mo), 1Cr16Co5Ni2Mo1WVNbN, 0Cr17Ni7Al, 0Cr15Ni7Mo2Al	棒材：ø90-ø500mm 扁钢：厚（最小）100mm 宽（最大）1200mm 轧棒：ø14-ø150mm 银亮材：ø8-ø70mm 丝：ø0.1-ø7mm 锻件 板管见板管分册
	叶片钢 Turbine blade steel	GB/T8732-2004	1Cr13, 2Cr13, 1Cr12Mo, 1Cr11MoV, 1Cr12W1MoV, 2Cr12MoV, 2Cr11NiMoNbVN, 2Cr12NiMo1W1V, 0Cr17Ni4Cu4Nb	棒材：ø90-ø500mm 饼环：ø400-ø2000mm（外径） 轧棒：ø14-ø160mm
		国外企标 Agreement	X4CrNiMo16-5-1, X5CrNiCuNb16-4, X10CrNiMoV12-2-2, X12CrNiMoV12-2, X12CrMoWVNbN10-1-1, X12CrNiMo12, X18CrMoNbVN11- 1+QT, X22CrMoV12-1, X20Cr13, X19CrMoNbVN11-1	棒材：ø90-ø500mm 饼环：ø400-ø2000mm（外径） 轧棒：ø14-ø1300mm
			B50A789 (GTD-450), B50A790 (403Cb), B50A947A4, B50A947B2, B50A948, B50A789G	
			10705BP, 10705BAA/10705AG, 10705BU, 10705MBU	
			K11C64A, K11C79E, K11C77E, K11C88A	
KT5325BS12, KT5330AS0, KT5331AS0 KT5300AS5, KT5301HS20				
航空用材 Aviation materials	斯贝标准	1Cr12Ni3MoVN, 1Cr12Ni2MoV, 1Cr12Ni3Mo2VN, 1Cr12Ni3Mo2VNBn	棒材：ø90-ø500mm 饼环：ø400-ø2000mm（外径） 轧棒：ø14-ø130mm 板管见板管分册	
核电材料 Nuclear power materials	RCCM核电标准	Z2CN19-10NS, Z6CN17-12, Z2CND 18-12NS, X6 CrNiCu 17-04	棒材：ø90-ø500mm 饼环：ø400-ø2200mm（外径） 轧棒：ø14-ø130mm 板管见板管分册	
	ASME核电标准	304, 316, 410	棒材：ø90-ø500mm 饼环：ø400-ø2200mm（外径） 轧棒：ø14-ø130mm	

序号 No.	产品大类 Product Categories	执行标准 Standards	代表钢种 Type of Grades	产品规格 Specifications mm
6	汽阀钢 Valve steel	企标 Agreement	4Cr10Si2Mo、4Cr14Ni14W2Mo、 BT85Cr18Mo2VZ、BTZ3Cr23Ni8Mn3N、 NCF751、Nimonic 80a	棒材: $\phi 90 - \phi 400\text{mm}$ 轧棒: $\phi 14 - \phi 130\text{mm}$ 银亮材: $\phi 8 - \phi 40\text{mm}$ 丝: $\phi 0.8 - \phi 7\text{mm}$
	低磁钢等其 他 Low magnetic steel	企标 Agreement	45Mn17Al3、50Mn18Cr4V、N1310B、 SMF166	棒材: $\phi 90 - \phi 1200\text{mm}$ 轧棒: $\phi 14 - \phi 130\text{mm}$
7	高强度 High- strength steel	企标 Agreement	300M、Aermet100、 30CrNi4MoA(30NCD16)、 35Cr2Ni4MoA(E)、30CrMnSiNi2A、18%Ni 马氏体时效钢、F175、16Co14Ni10Cr2Mo	锻棒: $\phi 90 - \phi 650\text{mm}$ 轧棒: $\phi 14 - \phi 120\text{mm}$ 银亮材: $\phi 8 - \phi 80\text{mm}$ 丝: $\phi 0.1 - \phi 7\text{mm}$ 板管见板管分册
8	特种轴承 Bearings	B/T 3086、GJB 6484、 WS9-6015-96、YB 4105-4107-2000、YB688-76	9Cr18、GCr15、ZGCr15SiMn、 8Cr4Mo4V、W18Cr5V(S/HSW)、 16Cr2Ni4MoA、G13Cr4Mo4Ni4V、 W9Cr4V2Mo	锻棒: $\phi 90 - \phi 400\text{mm}$ 轧棒: $\phi 14 - \phi 130\text{mm}$ 银亮材: $\phi 8 - \phi 40\text{mm}$ 丝: $\phi 1.0 - \phi 7\text{mm}$



牌号对照

Contrast of Grades

已有四十余年工模具钢生产历史的特钢精品基地---宝钢股份特钢事业部，拥有具有国际先进水平的装备、工艺技术和检测能力，具有雄厚的技术力量和丰富的工模具钢研究、开发和生产经验，按照GB、ASTM、DIN、JIS等标准及本公司参照国际先进标准制订的高要求企业标准生产各种牌号的高质量工模具钢。

产品可以根据用户的需求采用退火态、正火态、预硬化态交货，产品外观也可以根据不同用户的需求采用黑皮、剥皮、车光及铣光等状态交货。材料交货长度可以根据用户需求采用定尺和定倍尺，尺寸精度严格按照国家相应标准执行。

Silver stripping the professional line is composed of three peeling machine, straightening three grind-ray machine, 19 sets non-core cylindrical grinder and a composition of ultrasonic flaw detector. Production line can be produced through the combination of different processes peeling, peeling grind light, peeling polished delivery status of a variety of materials.

Drawing the professional line is composed of a single, two-headed disk round wire drawing machine, straightening machine, strong convection annealing furnace, bright continuous annealing furnace, plates composed of a round baler. Product specifications $\varnothing 0.1-13\text{mm}$. Product appearance are set round, straight, silver and bright steel wire and so on.



牌号对照 Contrast of Grades

钛及钛合金 Ti and Ti Alloy

钢种大类 Type	牌号 Grades	美国 ANSI	俄罗斯 RUSSIA	日本 JIS
纯钛 Ti	TA1	GR1	BT1-00	1级
	TA2	GR2	BT1-0	2级
	TA3	GR3	BT1-0	3级
	TA4	GR4	BT1-0	4级
钛合金 Ti Alloy	TA7	GR6	BT5-1	YTAB525
	TA7ELI	GR6	BT5-1	YTAB525
	TA9			12级
	TA10	GR12		
	TA15		BT20	
	TA18	GR9		
	TA19	Ti-6242S		
	TC3	GRF-5	BT6C	YATB640E
	TC4	GR5	BT6	YATB640
	TC4ELI	GR23		
	TC6		BT3-1	
	TC11		BT9	
	TC17			
	TC18		BT22	
	TC19	Ti-6246		
	TC20			
	TC25			
	TB2			
	TB6	Ti-10-2-3		
	7715D			
STi80				



牌号对照 Contrast of Grades

高温合金 Super Alloy

钢种大类 Type	牌号 Grades	美国 ANSI	俄罗斯 RUSSIA
铁基高温合金 Fe-based Super Alloy	GH2132	A 286	
	GH2036		Э И 481
	GH2901	Incoloy901	
	GH2903	Incoloy903	
	GH2907	Incoloy907	
	GH2696		Э И 696M
	GH2706	Inconel706	
	GH1131		Э И 126
镍基高温合金 Nickel-based Super Alloy	GH4145	Incoloy-750	
	GH3536	Hastelloy-X	
	GH4141	Rene-41	
	GH4033		Э И 437 В
	GH4037		Э И 617
	GH4049		Э И 929
	GH4080A	英: Nimonic80A	
	GH4738	Waspaloy	
	GH4500	Udimet500	
	GH4169	In718	
	GH3030		Э И 435
	GH3039		Э И 602
	GH3044		Э И 868
	GH4099		Э И 693
	GH4163	英: C263	
	GH4105	英: Nimonic105	
	GH4648	俄:	Э П 648
	GH4698		Э И 698
钴基高温合金 Cobalt-base superalloy	GH5188	Hastelloy188	
	GH5605	Hayness-25	

耐蚀合金 Corrosion resistand Alloy

合金牌号 Grdaes	相近国外牌号 Common Name	材料特点 Feature
NS111	Incoloy800	适合在F ⁻ 、Cl ⁻ 、氨性酸介质冷凝条件下时用，在H ₂ SO ₄ 、HNO ₃ 及其混合溶液中也有良好的耐蚀性。具有耐压力腐蚀和聚乙烯腐蚀。主要用于核发生器、水加热器、气体冷却器、废汽锅炉。
NS112	Incoloy800H	具有优良的机械性能和抗腐蚀性能、加工性能及焊接性能，是具有广泛用途的耐综合腐蚀性能较好的合金。耐蒸汽、软水、蒸汽-空气-CO ₂ 混合物、各种酸溶液、盐类、H ₂ S腐蚀。
NS142	Incoloy825	耐氧化物应力腐蚀及氧化-还原性复合介质腐蚀,具有良好的耐硫酸、磷酸性，对各种酸液均有一定的耐蚀性。普遍用于输油、汽的管道，油、汽的冷却器，核废料处置装置，在酸性气体中应用的部件。
NS311		除对氧化性介质如硝酸和氢氟酸的高温混合酸以及温度较低的氟气等有良好的耐蚀性以外，还有高强度抗氧化的特点。适合于制造高温硝酸环境极强腐蚀条件的无磁构件。
NS312	Inconel600	固溶强化的耐热耐蚀合金，具有良好的抗高温腐蚀性能、抗氧化性能、冷热加工性能、低温机械性能、冷热疲劳性能。650℃下具有较高的强度，成型性好，易于焊接。适合于热处理及化学加工工业装置
NS315	Inconel690	抗氯化物及高温高压水应力腐蚀，耐强氧化性介质及HNO ₂ -HF混合腐蚀。普遍用于核废料处理装置，蒸汽发生器，耐硝酸部件。
NS321	HastelloyB	耐还原性介质腐蚀，适合于制造在热浓盐酸及氯化氢气体装置。应用于老式内燃机及火箭发动机部件，在1095℃时仍有很好的强度。
NS322	HastelloyB2	对盐酸、氯化铝催化剂等强还原性化学物质具有极好的耐蚀性，具有良好的抗晶间腐蚀性能。适合在盐酸及中等浓度硫酸环境（特别是在高温条件下）的装置。
NS331		具有良好的耐高温、氟化氢、氯化氢气体及氟气腐蚀，并且易于焊接。主要用于原子能、化工、有色金属冶炼设备上。
NS333	Hastelloy C	基本耐蚀性能与NS334合金相同，耐辐照性能更优越一些。
NS334	HastelloyC276	具有很多优异性能的耐蚀合金，对氧化性和中等还原性腐蚀有很好的抵抗能力，具有优异的抗应力腐蚀开裂能力和好的耐局部腐蚀能力在很多化工工艺介质中有满意的耐蚀特性，包括侵蚀性很强的无机酸溶液、氯气和含氯化物的各种介质、干燥氯气、甲酸和醋酸、酸酐、海水和盐水等。
NS335	Hastelloy C4	耐含氯离子的氧化-还原复合腐蚀，组织热稳定性好，适合湿氯、次氯酸、硫酸、盐酸、混合酸、氯化物装置、焊后直接应用。合金在650℃~1040℃温度范围内具有好的高温稳定性，好的韧性和耐蚀性，其基本耐蚀性能与NS334相同。



交货状态 Delivery State

根据国标GB 702、GB 908等对材料尺寸、外形、重量及允许偏差标准，也可按国标、美标、日标、德标等相关标准执行，或根据用户需求协商确定。

产品交付状态要求Corrosion resistand Alloy

序号	特征及用途 Feature
1	表面不处理 Non-treatment
2	退火 Annealed
3	砂剥（车光） abrasive wheel ground (peeled)
4	退火+砂剥（车光） Annealing+ abrasive wheel ground (peeled)
5	固溶 solution treated
6	固溶+砂剥（车光） solution treated+ abrasive wheel ground (peeled)
7	固溶+时效 solution treated+ aging
8	固溶+时效+砂剥（车光） solution treated+ aging+ abrasive wheel ground (peeled)
9	磨光 polished
10	退火+磨光 Annealed+ polished
....	



质量保证

Quality assurance





质量认证 Quality Certificates

- 特钢事业部从1995年开始逐步按照ISO9001、AS9100B、GJB9001A、HAF003、ISO/TS16949标准以及顾客的特殊要求，建立航空航天、军工、核电及汽车质量管理体系，并形成一整套质量体系文件。
- 特钢事业部确定并运行的质量体系过程共有21个，包括：管理策划过程、管理评审过程、内部审核过程、纠正预防措施改进过程、数据分析和利用过程、顾客满意度监视和测量过程、需求识别和评审过程、设计和开发过程、生产过程、交付过程、服务过程、生产计划过程、设备和工装管理过程、文件管理过程、人力资源管理过程、采购和供方管理过程、产品防护过程、检验和试验管理过程、测量设备管理过程、标识和可追溯性管理过程、不合格品控制过程。
- 特钢事业部通过制定和落实质量目标、定期开展内部质量审核和管理评审等，持续改进质量体系。
- 特钢事业部的各类质量体系均通过了第三方的认证。
- Since 1995, Baosteel Special Steel Business Unit has established aviation and aerospace, military, nuclear and automotive quality management system and formed a complete set of quality system documents in accordance with ISO9001, AS9100B, GJB9001A, HAF003, ISO/TS16949 standard and specific requirements of customer
- Special Steel Business also determines and runs a quality system which has totally 21 processes, including: Management planning process, management review process, internal checking process, corrective and preventive measures to improve the process, data analysis and use processes, customer satisfaction monitoring and measurement process, needs identification and assessment process, the design and development process, production process, delivery process, service process, production planning process, equipment and tooling management processes, document management process, human resource management processes, procurement and supplier management processes, product protection, process, inspection and test management processes, measuring equipment management processes, identification and traceability management process and nonconforming product control process.
- Through the development and implementation of quality objectives, regularly carrying out internal quality checking and management reviews, etc., Special Steel Business Unit continues to improve the quality system
- All kinds of quality system had gotten certificates given by the third-party.



必维国际检验集团(ANAB)AS9100-B航空航天质量管理体系认证
It has been certificated by ANAB:AS9100-B



中启计量体系认证中心
ISO 10012:2003测量管理体系认证
Certificate of conformity for measurement management systems, ISO 10012:2003;



2003年获得了国家武器装备科研和生产许可证
2003 research and manufacturing license of arms



中国新时代认证中心
GJB9001A-2001军工质量管理体系认证
It has been certificated by China Xinshidai Quality System Certification Center , GJB9001A-2001;



质量认证 Quality Certificates



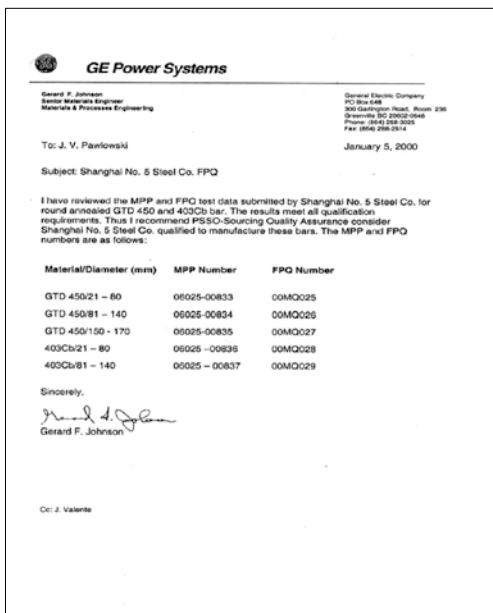
中国冶金质量认证中心ISO9001:2000质量管理体系认证
It has been certified by China Metallurgy Quality System Certification Center
ISO9001:2000 Quality Management System



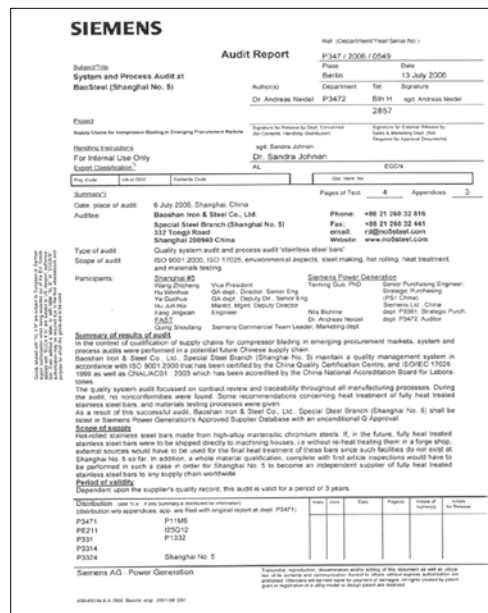
中国商检质量认证中心ISO9001:2000质量管理体系认证
ISO9001:2000 Quality Management system of China Commdty Inspection Quality
Certification Center



中国实验室国家认可委员会
China National Accreditation Board for Laboratories
ISO/IEC17025:1999国家实验室认证
National Laboratory Certification



汽轮机叶片用不锈钢通过GE公司的质量认证
GE power systems



汽轮机叶片用不锈钢通过西门子的
质量认证
SIEMENS



质量检测

Quality inspection

特钢事业部设有独立的冶金产品及其原料的理化性能检测、无损检测和相应测试技术研究开发的综合性检验部门，配有先进、精确的检测设备和合格的检测人员，承担着事业部汽车用钢、轴承钢、不锈钢、工模具钢、高温合金、精密合金和钛及钛合金等棒、无缝管、丝、饼、环、盘圆及异型材等中间坯料、成品材的检测能力，可进行化学仪器分析、湿法分析、金相高倍检测、金相低倍检测、力学性能、物理性能检测及无损在线检测等。同时，产品检验实验室于2005年4月顺利通过了实验室国家认可。

近年来，随着事业部热轧炉卷、热挤压管等新项目的逐步上马，检测中心引进了MTS810型低周疲劳试验机、HFP150型高频疲劳试验机、5585H型高温拉伸试验机、1000HDX大型液压高精度拉伸试验机、BPU200型杯图试验机等检测设备，具备了断裂韧性、轴向疲劳等项目的检测能力，有效地填补了检测中心在物理性能试验领域中的不足。同时，通过对精密仪器的功能开发，使等离子荧光仪、气体分析仪、X射线荧光仪等分析仪器的检测精度得到了进一步的提升，痕量元素的检测精度达到了ppm级。

Products can be used according to the needs of users annealing, normalizing state, pre-hardened state of delivery, the product appearance can also be used according to the needs of different users Black, peeling, vehicles such as the status light and light milling delivery. Material delivery length can be used according to user demand and fixed-length double length, size, precision in strict accordance with corresponding national standard. Hot Work Die Steel P-class material the use of advanced micro-based organizations to address the ball of annealing process of delivery of its materials, carbide band, microstructure, grain size and impact the value of the value of the key quality characteristics to reach the North American Die Casting Association NADCA207 # specification. Large-sized pre-hardened plastic mold steel corrosion resistant stainless steel module and expansion modules using advanced hydrogen annealing + quenching + tempering process, its internal structure uniformity compact module, which delivery of the material hardness can be based on user demand at the HRC28-HRC36 context, the user can directly use our module to provide pre-hardening materials the corresponding mold, without further heat treatment.



质量检测 Quality examination

检测项目 Detection	设备类型 Equipment	主要型号 Model	数量
化学检测 Chemical testing	X射线荧光分析仪 X-ray fluorescence spectrometer	PW2600、PW2440、PW2404、ARL ADVANT XP	4
	光电直读光谱仪 Photoelectric Direct-reading spectrometer	ARL-4460	5
	红外碳硫分析仪 Infrared carbon and sulfur analyzer	EMIA-820V	4
	氧氮联测仪 Oxygen and nitrogen analyzer	EMGA-620W	4
	氢分析仪 Hydrogen Analyzer	EMGA-621W	2
	电感耦合等离子体发射光谱仪 Inductively coupled plasma emission spectrometer	IRIS、iCAP6300	2
	石墨炉原子吸收光谱仪 Graphite ove atomic absorption spectrometer	AA-600、SOLAAR MQZe	2
物理检测 Physical testing	布、洛、维三用硬度计 brinell,rockwell, Vickers hardness tester	ZHU2.5、BTC-HZHU250、ZOOM TESTOR	3
	液压压力试验机 Hydraulic pressure testing machine	YAW6106	1
	高温拉伸试验机 Electronic elevated temperature tensile tester	Z150、5585H	3
	杯突试验机 Cupping Machine	BUP200	1
	低周疲劳试验机 Electrohydraulic servo lowcycle fatigue tester	MTS.810-318.25	1
	高周疲劳试验机 High-frequency fatigue tester	HFP150	1
	冲击试验机 Impact testing machine	JB-W300	2
	电子蠕变试验机 Electronic Creep Test Machine	CSS-3905	10
金相分析 Metallographic detection	膨胀仪 Dilatometer	DIL 402C	2
	金相显微镜 Metallurgical Microscope	JENAVERT、AXIOPLAN2、METALLUX- II	5
	显微硬度仪 Micro Hardness Tester	FM-700D、SERIES200	2
	自动磨样设备 Automatic specimen grinding machine	ABRAPOL-2	1



质量检测 Quality examination

无损检测 Metallographic analysis

无损检测作为特钢产品检测不可缺少的手段之一，在产品质量保证中起着至关重要的作用。

近年来，公司先后建立了多条无损检测生产线，产品无损检测的应用范围不断扩大，检测精度在同行业中处于领先水平。其中超声波探伤生产线主要用于裂纹、缩孔、夹渣、白点等内部缺陷的探伤；涡流、漏磁、磁粉、渗透探伤生产线主要用于裂纹、折叠等表面、近表面缺陷的探伤。在产品质量保证过程中，无损检测技术已成为最有效的检测方法之一，产品探伤能力达到80%以上。

Nondestructive test is one of the indispensable test means for special steel products, which plays a very important role in product quality assurance.

During the past several years, the Company established several nondestructive test lines. Coverage of nondestructive tests on products has been extended with the test accuracy taking the leading position in the industry. Ultrasonic test lines mainly used for detection of internal flaws of products such as crack, shrinkage, slag inclusion, flake, etc. Eddy current, magnetic flux leakage, magnetic particle and penetrant flaw detection lines mainly used for detection of surface and subsurface flaws such as crack, pincher and others. Nondestructive test technology has become one of the most effective detection methods. Nondestructive test capability covers more than 80% percent of products.



A、B、C、D线棒材漏磁探伤设备
A, B, C, D wire and bar Magnetic flux leakage testing equipment



银亮棒材超声探伤设备
Yin-Liang bar ultrasonic flaw detection equipment



棒材涡流探伤设备
Rod Eddy Current Testing Equipment



用户服务

Customer Service





技术支撑 Technical support

客户代表

是用户使用宝钢特钢产品的技术联络人，负责为用户提供选材咨询、订货、物流跟踪、货款结算、质量异议处理、使用技术指导、信息沟通等全方位服务。

产品工程师

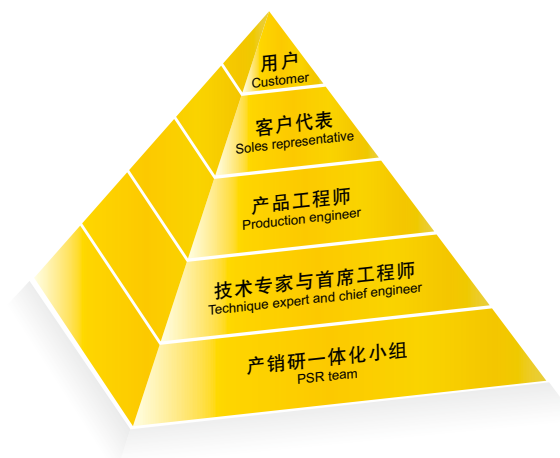
来自宝钢特钢制造单元的资深工程师，为用户提供各类产品的生产、使用技术服务，并根据用户的特殊需求进行个性化的质量设计，与客户代表共同解决技术难题，必要时提供现场服务。

技术专家与首席工程师

来自宝钢特钢研发部门、制造单元的专业技术专家与首席工程师，针对用户和市场的需求，研发特钢新产品，并提供产品检测、腐蚀、焊接、热处理等用户技术服务。

产销研一体化小组

由宝钢特钢制造、销售、研发等各单元的骨干力量组成，以专业的团队方式解决用户使用及生产、研发方面的问题，提高宝钢特钢产品的市场竞争力。



Sales representative

Technical contact person, to provide customer service concerning products advisory, order placing, logistic tracing, loan and accounts, objection handling, operation guide etc.

Production engineer

Senior engineers from special steel division, to provide technical support concerning production and quality design; onsite service available if necessary

Technique experts and chief engineer

Researching on developing of new products to meet the requirements of the market; provide post service such as inspection, corrosion test, welding, heat treatment etc.

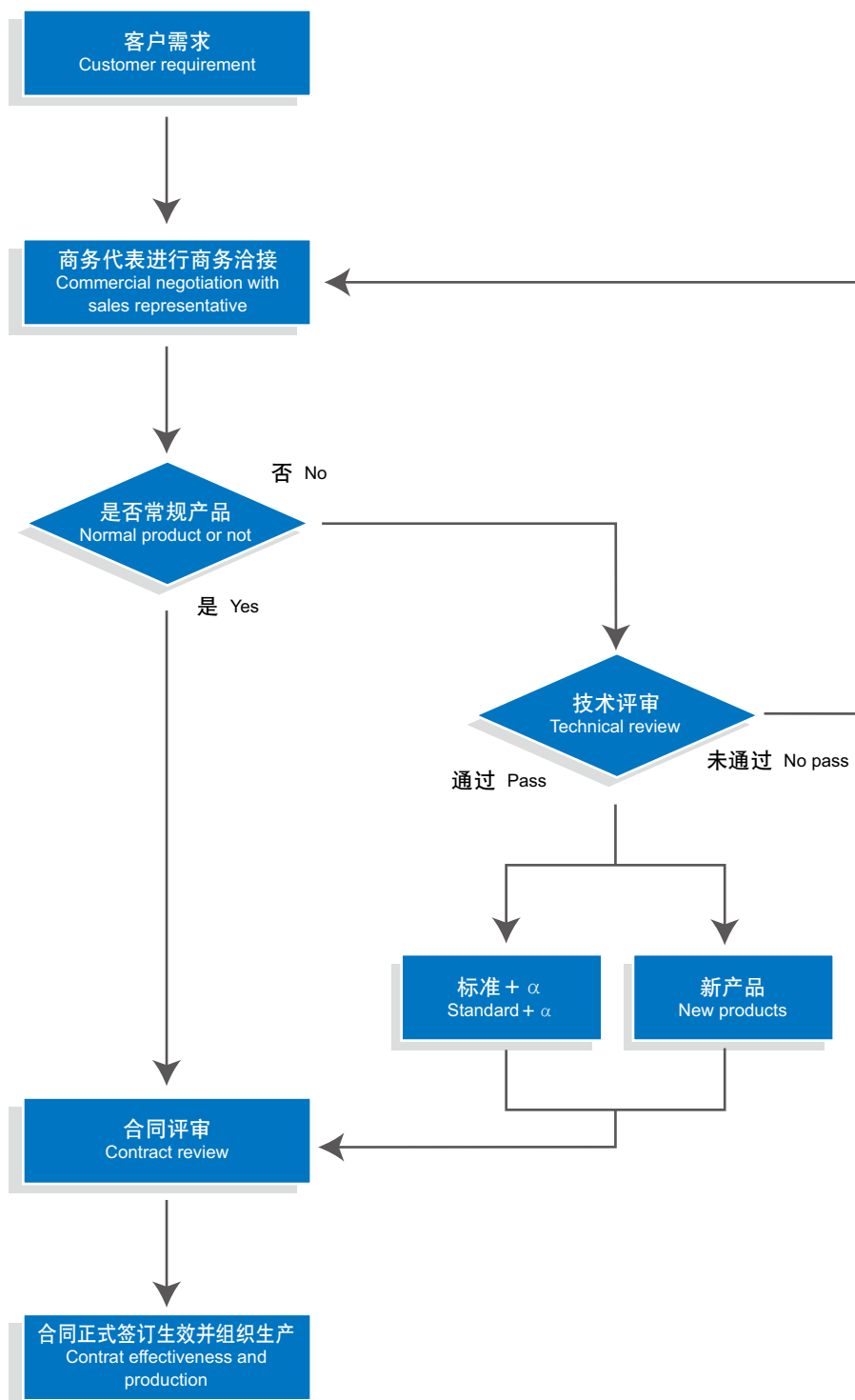
Production, sales, research team (PSRT)

Consist of people from different departments of Production, sales, research; the team is to solve the problems of the customers on using, production and researching.



合同签订流程 Contract procedure

<http://www.baosteel.com>





异议处理 Objection handlings

1 产品投诉 Complaint

一旦您在使用宝钢特钢产品中出现问题的，请您将存在问题的产品尽量以供货状态保留，并在第一时间联系客户代表、商务代表或合同供货方。您的投诉将被及时反馈至宝钢特钢。投诉信息应包括合同号、交货量、异议量、问题描述、联系人、联系电话等内容。

Once you encounter any problem when using products of BSSBU, please retain them in original delivery state as much as possible, and contact our customer representatives, business representatives, or a contract supplier at the first time. Your complaint will be feed back to BSSBU in time. The complaint should include such information like contract number, delivery amount, objection amount , problem description, contact person and telephone number and so on.

2 投诉受理 Acceptance

我们接收到您的投诉后，客户代表或地区公司商务代表将会在第一时间对您的投诉进行初步确认，协助您解决问题。对于确系由宝钢特钢产品缺陷造成无法正常使用的情况，您的投诉将转入产品异议处理程序。

When received your complaint, our customer representative or region's business representatives will make a preliminary confirmation of your complain at the first time and help you to solve the problem. If it is certain that customer can not use our products because of our products's defects, your products will be transferred to the quality objection handling procedures.

3 异议立案 Case Retistration

对于确系宝钢特钢产品缺陷造成无法正常使用的情况，经特钢事业部立案确认，启动异议处理流程。

By the time that Baosteel Special Steel business Unit confirmed that it is because of products's defects that customer can not make normal use, objection handling procedures will be started.

4 实物确认 Object Confirmation

我们将在最短时间内派出服务人员到达现场，了解钢材使用情况，必要时进行相应取样检测和现场试验，与您充分沟通，共同对异议产生的原因进行判定达成一致意见。

We will send service personnel to site in shortest time to know what has happened . if necessary we will make appropriate sampling inspection and field test. We'd like to communicate with you as much as possible, and jointly find out the causes of objection and reach an agreement.

5 商务谈判 Business Negotiation

在实物确认的基础上，根据异议责任判定达成的共识，宝钢特钢将与您进行友好协商，在确定异议理赔处理方案后，形成《产品异议处理表》并邮寄给您开具《进货退出及索取折让证明》。

我们将根据《产品异议处理表》，对您的损失作出相应赔偿，异议结案。

On base of real object confirmation, in accordance with the abovementioned agreement, BSSBU will carry on friendly negotiation with you. When we determine the objection claims solution, a "product objection handling list" will be sent to you by post. Meanwhile we will issue you the " Purchse quit and Request discount Certificate".

6 异议结案 Objection Case Closed

我们将根据《产品异议处理表》，对您的损失作出相应赔偿，异议结案。

We will compensent some of your loss according to "product objection handling list" and the objection case closed.

7 整改反馈 Ectification ~ Feedback

宝钢特钢会根据异议产生的原因对相关责任单位进行内部整改，并将整改结果反馈给用户。

BSSBU will request responsible units to make internal rectification based on the cause of objection and feed back to customer.

8 异议处理回访 Return Visit

异议结案之后，宝钢特钢将对异议处理进行回访，并对回访中发现的问题进行跟踪落实。

After the objection case closed, BSSBU will process a return visit to customer and put the problem found out into practice.



必维国际检验集团ISO 14001:2004 环境体系认证证书
It has been certified by ANAB:AS9100-B

环境方针 Environment Policy

节约资源，减少排放，实行全过程污染控制，不断减轻环境负荷。持续改进，遵法守约，推行全方位清洁生产，努力建设绿色特钢。

Saving resources, Decreasing emissions, Carrying out pollution control, Reducing environmental load. Continuously improving, Persistently observing the law, Pursuing "clean production", Striving for "Green Special Steel".

环境目标 Environment Objective

推行清洁生产审计，建设“绿色特钢”，实现“世界一流清洁钢铁企业”。

Carrying out clean production audits, Buiding "Green Special Steel", Achieving "world-class clean iron and steel enterprises."



必维国际检验集团OHSAS 18001:2007职业健康和安全管理体系统认证证书
It has been certificated by ANAB:AS9100-B

宝山钢铁股份有限公司

http://www.baosteel.com

BAOSHAN IRON & STEEL CO., LTD.

http://www.baosteel.com

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 http://www.baosteel.net.cn

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 传真: 021-51266533

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 传真: 021-66932879

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 传真: 021-55382644

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BAOSHAN IRON & STEEL CO.,LTD.
Special Steel Business Unit



Special metallurgy products

特种冶金产品

Special metallurgy product manuals
特种冶金产品手册

