



Zhengda Metal Korea Co.,Ltd Zhejiang Zhengcheng Imp&Exp Co.,Ltd

高标准 严要求 创一流

High standards and strict requirements
to create first-class



Brief introduction

Zhejiang Zhengda Mold Co., Ltd. was founded in 2003, located in Jinyun County, Zhejiang Province, The factory covers an area of more than 80,000 square meters. gathering the process of smelting, electroslag re-melting, forging, hot-rolled, drawing, heat treatment and finish machining, professional producing various tool and die steel for round bar, flat bar, cold drawn steel wire, hot-rolled steel strip, also producing for HSS mold product and plane cutter white steel knife.etc.

The company has advanced equipment, including electric arc furnace, LF ladle refining furnace, vacuum degassing furnace, rapid solidification electroslag remelting furnace, electroslag ingot direct rolling and rolling production line, four roll cold drawing machine, high vacuum annealing furnace, Instrument, eddy current detector and other production and testing equipment. Passed the ISO9001: 2008 quality management system certification and set up a strict quality assurance measures to ensure the high quality of our products.

Zhejiang Zhengcheng Import & Export Co., Ltd. is directly affiliated to the overseas marketing department of Zhejiang Zhengda Mould Co., Ltd., Specializing in the development of abroad export markets, dedicated to the high-end positioning of China's quality, Professionally responsible for product export, providing high quality and high cost-effective products and services.

Zhengda Metal Korea Co.,Ltd IS a branch company established IN Korea, specializing in the sales and service of high speed steel,



基本信息Basic Information

基本 信 息Basic informati on	成立时间Date of establishment	2003	公司性质 Nature of Business	股份制企业Joint- stock enterprise	Joint-stock enterprise
	占地面积Floor space	80000m ²	年产能Annual capacity:1500 0t=10000t mould steel+5000t HSS	2020产出 2020Annual Output	13580t,42% 模具钢, 40% HSS, 喷射钢5%, 马氏体不锈钢13%
	员 工 数Staff number	338 staffs		2021销 售 额 2021 Sales amount	3.1亿人民币 330million RMB



WHY CHOOSE US?

正心诚意，达诚申信，正确达到服务客户的宗旨：

We are sincere and honest to achieve the purpose of serving customers

1、质量：竞争欧美日本品牌质量

Quality: competition for the quality of European, American and Japanese brands

2、价格：优越于欧美日本高性价比

Price: superior to Europe, America and Japan with high cost performance

3、交期：大货周期40天准时交货

Delivery time: the mass production period shall be delivered on time within 40 days

4、拿望远镜看别人，拿放大镜看自己

Take telescope to see others, take magnifying glass to see ourself



特别荣誉

Special honor

十三五国家重点研发计划—

“高性能工模具钢及应用”

攻关小组成员

National key research and development
plan of the 13th five-year plan —
"High performance die steel and its
application"

(项目编号Item member: 2016YFB0300400)



技术力量Technical force

1、我司研发团队:科技部“十三五”工模具材料重点攻关项目组成员，享有国家政府支持，财政补贴的研究经费， **Our company research and development team:**

Our company is one Member of the key project of "the 13th five-year plan "of the National ministry of science and technology,

Our company enjoys National government support and financial subsidies ,

2、高速钢(HSS)/Martensite stainless steel: 联合上海大学和北京钢铁研究总院 研发了国内独创快速凝固电渣重溶工艺。

our company Joint with Shanghai university and Beijing iron steel research institute have developed a domestic unique rapid solidification electroslag resolvent process

用独特的快速凝固电渣重熔技术，纯净度及碳化物分布更均匀，有效的提高了材料的使用寿命。Base on this technology process can make material good purity and carbide distribution are more uniform, and the material work life been improved effectively.

3、喷射成型Spray forming HSS:与上海宝钢集团官方合作粉末喷射成型的研发，达成技术合作，研发中国**唯一**一家能自我研

发与生产设备的喷射HSS。 Official cooperated with Shanghai baosteel group and together with our technology engineers to research and development powder injection molding of Spray forming HSS, which only our factory have this

unique technical and equipment in China



荣誉证书Honorary certificate





产品分四大板块 4types for product

高速钢

HSS:M2/M35/
M42/T1 etc.



1



2

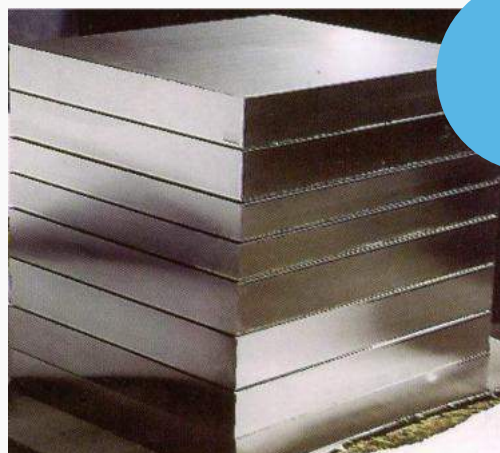
喷射高速钢

SPRAY
FORMING
HSS

新型模具钢

New type die steel

1.2367,
1.2631,
1.2344,
1.2379
etc.



3



4

马氏体不锈钢

Martensite
stainless
steel
SUS440B
SUS440C
VG-10
etc.



行业方向Direction of the industry



航天轴承 汽车发动机配件 气门芯

Aerospace bearing. automobile engine parts . valve core



滚刀 拉刀 立铣刀 钻头 等金属机床加工行业

Hob broach end milling cutter bit and other metal
machine tool processing industry



菜刀 户外刀 理发剪 行业

Kitchen knife outdoor knife
barber scissors industry



先进技术设备

Advanced technical equipment

公司技术力量雄厚，成功研发了国内独创的快速凝固电渣重熔新工艺及高速钢长圆棒三压三拔新工艺。稀土元素变质处理方法获国家发明专利。争优创品，争创中国2025中国质造的先锋企业。The company has strong technical force, and has successfully developed the domestic original new technology of rapid solidification electroslag remelting and the new technology of high speed steel round rod three pressing and three drawing. Rare earth element modification method won the national invention patent. Strive for excellent products, strive for China 2025 China made in the vanguard of quality enterprises.

独一无二的快速凝固电渣重熔，钢锭具有一次碳化物细小，均匀，组织致密，晶界结合力更强的特性，用该钢锭制成的材料耐磨性，红硬性，韧性明显优于国内同类产品，碳化物形态与分布，好于多家进口材料。Unique Rapid solidification electroslag remelting(RS ESR), ingot has a carbide size small, uniform and compact structure, the characteristics of grain boundary binding force is stronger, made of the steel ingot material which have good abrasion resistance, red hardness, toughness much better than the domestic same type products, carbide grain size and distribution better than imported(Japan and Europe) materials





先进技术设备 Advanced technical equipment

性能明显优于国内同类产品，碳化物形态与分布，好于多家进口材料。

The performance is obviously better than domestic similar products, carbide shape and distribution, better than many imported materials.



炉外精炼
LF



三压三拔
Three pressure pull



真空退火炉 Vacuum
annealing furnace

1	2
3	4

1.微显硬度计

Micro-durometer

2.光谱分析仪

optical spectrum analyzer

3.金相显微镜

Metallurgical microscope

4.氧氮测试仪

Oxygen-nitrogen analyzer





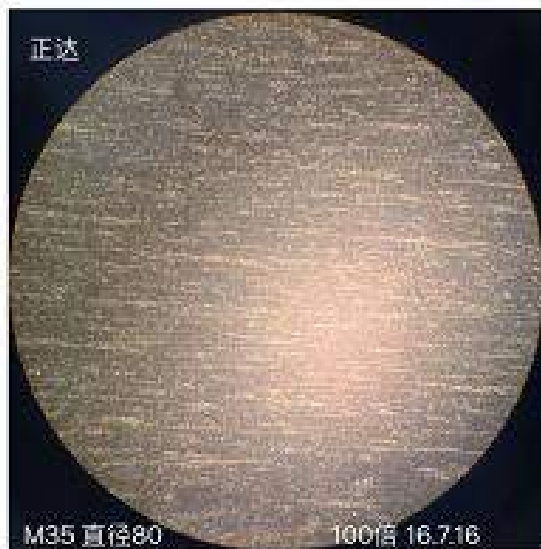
原材料选材优势

- 1) 原材料优势：我们不是废料回收，我们的HSS坯料来源于：合金元素（W、Cr、Mo、V、Si、Mn、Co）+低含碳量，低杂质，优质冷轧板（接近纯铁），边角料冶炼，这样的坯料成本比回收废料成本高，但炼出的HSS纯净度更好；
-
- 2) 冶炼优势：一般厂家用的是中频炉冶炼，而我们用的是电弧炉冶炼，提高纯净度
- Our raw material advantages: we don't use scrap recycling,our HSS raw material components :
- 1) high alloy elements (W, Cr, Mo, V, Si, Mn, Co) + High purity low alloy steel (low carbon content, low impurities, high quality cold rolled sheet) which is close to pure iron,
- So our raw material cost higher than HSS scrap recycling and our

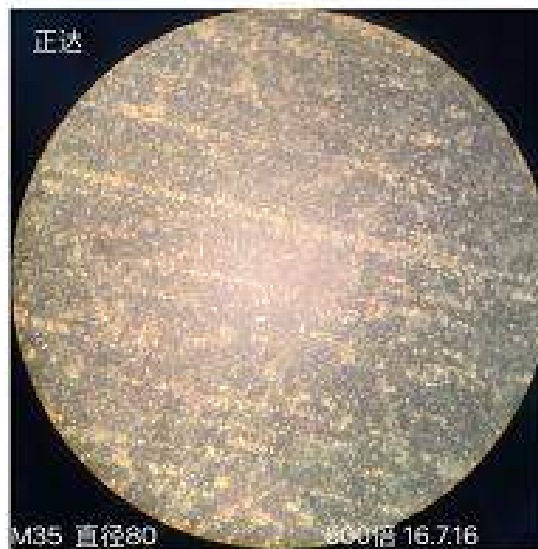


RS-ESR 作用：碳化物颗粒小，莱氏体碳化物网小，降低材料的偏析度，提高材料的质量。The special process can make carbide grain size much smaller, ledeburite carbide network much smaller to reduce material segregation. and improve material quality.

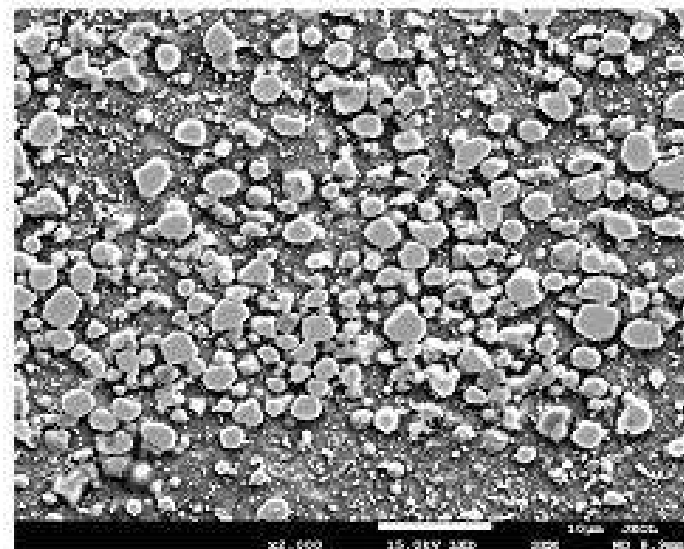
The technology has been researched and developed by ourself, it's unique technology in China



M35 (100倍)



M35 (500倍)



M35 (2000倍)

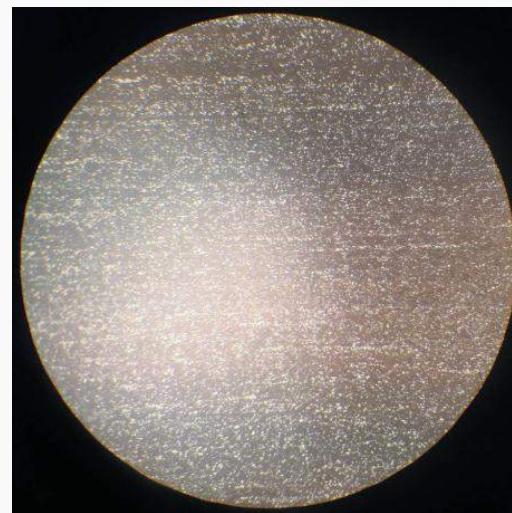
核心工艺原理

RS ESR principles

快速凝固，冷却速度快，从而熔池浅，碳化物来不及长大就凝固；(The rapid solidification, and fast speed cooling , lead to shallow melting pool, and the carbide will solidify when it is too late to grow up)

快冷 → 快凝 → 碳化物颗粒长不大（缩短碳化物成长时间，故长不大）

(fast cooling) (rapid solidification) (Shorten the growth time of carbide size, so it never grow up to big size)





RS ESR核心工艺

钢锭的尺寸steel ingot size

1) 增加锻压比提高内部组织
To increase the forging ratio
to improve internal
organization.



steel ingot for HSS Φ80-Φ100mm

2) 碳化物颗粒更细小，分布
更均匀，碳化物分布达到4级
Make the carbide size more
smaller and distribution more
even, Which can make
carbide distribution achieve
grade 4



Steel ingot for HSS Φ100-Φ120mm



Steel ingot for HSS Φ120-Φ130mm and
above

质量管控 Quality Control

质量管控Quality control:

1、化学成分检测: 元素光谱分析+可追溯试样留底+出厂检测

Chemical composition testing: Elemental spectral analysis + traceable sample retention + ex-factory testing

2、表面裂纹检测: 有3道检测: (电渣锭、中间坯、圆钢)

Surface Crack testing: 3times to test as below:

1) After RS ESR (or ESR)+annealing , **Sand grinding** to test the steel ingot, (砂磨时, 同时检测)

2) After forging +**Annealing** to get the billet to test (**Before start rolling**). 锻造完退火后, (轧钢之间)

3) After finish the rolling bar to test 轧钢后

3、内部裂纹, 探伤一次, 电渣锭, (砂磨之后, 锻打之前)

Internal crack testing: Flaw detection: , 1time, (After sand grinding, before forging)

4、混钢: 颜色色标区分, 2次火花鉴别

Avoid steel mix to test:

1) Color marking (Each worker have one color card to correctly distinguish)

2) 2times Spark Discrimination after rolling the bar 电渣锭(锻造之前), 轧钢时 (轧钢之后)

1st time: Before forging , 2nd time: After rolling bar

5、退火态硬度检测: 出厂前质检报告的检测

HB annealing Hardness testing: Inspection report before delivery

6、金相检测: 光谱分析, 碳化物级别, 碳化物颗粒

Microstructure inspection: Spectral analysis, carbide grade distribution, carbide size to test

****内在质量:** 只要定向工艺做的出来就是质量好的

PS: Internal quality: as long as the directional process(RS ESR) is done out which will be good quality



权威检测报告

Authoritative test report

ZYS
轴研科技

洛阳轴承研究所有限公司 检验分析报告

报告编号: JK (2018) WS05087

G102Cr18Mo 棒材冶金质量检验

委托单位: 浙江正达模具有限公司

分析单位: 洛阳轴承研究所有限公司

分析人: 王姗姗、梅亚莉、张延芳

审核: 

2018 年 5 月 11 日

ZYS

G102Cr18Mo 棒材冶金质量检验

共 2 页 / 第 1 页

一、概况

浙江正达模具有限公司送检 1 根 G102Cr18Mo 的棒料, 规格为 $\phi 35\text{mm}$, 要求按照《高碳铬不锈钢》(GB/T3086-2008) 标准对送检材料的化学成分、非金属夹杂物、碳化物不均匀性和低倍组织等冶金质量指标进行检验。

二、检验结果

1、化学成分

采用直读光谱仪进行检测, 结果见表 1, 符合相关标准要求。

元素	C	Cr	Mo	表 1 化学成分 %						
				Si	Mn	P	S	Ni	Cu	Ni+Cu
实测值	1.09	17.09	0.49	0.56	0.57	0.023	0.001	0.20	0.05	0.25
标准要求	0.95~1.10	16.00~18.00	0.40~0.70	0.80	0.80	0.035	0.030	0.30	0.25	0.50

2、非金属夹杂物和碳化物不均匀性

非金属夹杂物及碳化物不均匀性检验结果见表 2, 结果均符合相关标准要求。

表 2 非金属夹杂物及碳化物不均匀性

试样 规格	非金属夹杂物/级								Ds	碳化物不 均匀性 /级	碳化物最 大颗粒尺 寸/μm
	A 类		B 类		C 类		D 类				
	细系	粗系	细系	粗系	细系	粗系	细系	粗系			
φ35mm	0	0	0.5	0	0	0	0.5	0	0	1.0 (见图 1)	25 (见图 2)
标准要求	≤2.0	≤1.0	≤1.5	≤1.0	≤0.5	≤0.5	≤1.0	≤1.0	≤1.0	≤3.0	



图 1 棒料碳化物不均匀性



图 2 棒料大颗粒碳化物

报告编号: JK (2018) WS05087

分析人: 王姗姗

ZYS

G102Cr18Mo 棒材冶金质量检验

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3、低倍组织

低倍组织检验未见疏松和偏析, 见图 3。

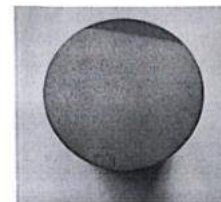


图 3 低倍组织形貌

三、结论

送检棒料的化学成分、非金属夹杂物、碳化物不均匀性和低倍组织均符合相关标准要求。

报告编号: JK (2018) WS05087

分析人: 王姗姗

权威检测报告

Authoritative test report



钢研纳克检测技术有限公司

国家钢铁材料测试中心/国家钢铁产品质量监督检验中心

分析测试报告

(2017)钢测(C)字第 23050 号

委托单位	浙江正达模具有限公司		
联系人(电话)	吕广奇(0578-3197888)		
试样中心编号	17SW003136-3137	送样日期	2017 年 08 月 30 日
检验项目	共晶碳化物不均匀度和大块碳化物最大尺寸	报告日期	2017 年 09 月 05 日
样品名称	M35 高速钢	试样原号	见表 1
检验标准	GB/T 4462-1984, GB/T 14979-1994		
样品说明	/		

检验结果: 试样磨制抛光浸蚀后检验共晶碳化物不均匀度和大块碳化物,

结果见表 1, 碳化物形貌如图 1 所示。

表 1 检验结果

试样原号	共晶碳化物 不均匀度	大块碳化物 最大尺寸	碳化物网直径
M35-Φ86-2-1	4 级(参考第二评级图)	11μm	/
M35-Φ370 铸锭中心	7 级(参考第三评级图)	39μm	大部分在 50μm ~200μm 之间

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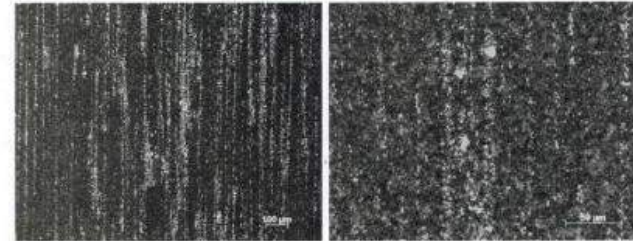
签发人:

杨新

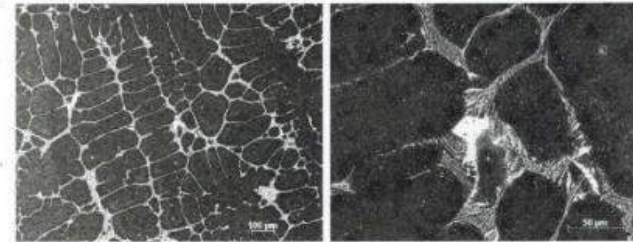
签发日期:

2017.9.5

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电子邮箱: lab@nacschina.com 网址: www.nacs-cn.com



M35-Φ86-2-1



M35-Φ370 铸锭中心

图 1 碳化物形貌

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电子邮箱: lab@nacschina.com 网址: www.nacs-cn.com

High-end quality for
Martensite stainless steel



Professional production of the following martensite stainless steel for
high-end quality material of outdoor knife, Kitchen knife, hair scissor etc. :

International Grade	China Grade	C Carbon	Cr Chromium	Mn Manganese	Si Silicon	Mo Molybdenum	V Vanadium	Co Cobalt	S Sulphur	P Phosphorus	Ni Nickel	Ni m
SUS440A	7Cr17MoV	0.65~0.70	16.40~17.10	0.40~0.80	≤1.00	0.50~0.60	0.10~0.30		≤0.01	≤0.02	<0.40	
SUS440B	8Cr14MoV	0.75~0.80	13.50~14.50	0.20~0.80	≤0.80	0.40~0.50	0.10~0.30		≤0.04	≤0.03	≤0.60	
	9Cr14MoV	0.88~0.92	13.50~14.50	0.20~0.80	≤0.80	0.40~0.50	0.10~0.30		≤0.04	≤0.03	≤0.60	
	9Cr14MoV+Co	0.88~0.92	13.50~14.50	0.20~0.80	≤0.80	0.40~0.50	0.10~0.30	0.20~0.30	≤0.04	≤0.03	≤0.60	
SUS440C	9Cr18MoV (SUS440C) Kitchen knife	0.85~0.95	17.00~19.00	0.20~0.80	≤0.80	1.00~1.30	0.07~0.12		≤0.04	≤0.03	<0.40	
SUS440C	9Cr18Mo (SUS440C) hair scissor	0.95~1.10	16.00~18.00	0.30~0.70	≤0.80	0.40~0.70			≤0.03	≤0.04	<0.40	
SUS440C or 440F	11Cr17 (linear guideway)	0.95~1.2	16.00~18.00	<1.00	≤1.00	<0.75			≤0.025	≤0.025	<0.60	
	85Cr18Mo2V	0.80~0.90	16.50~18.50	0.90~1.40	≤0.80	2.00~2.50	0.30~0.60		≤0.03	≤0.04	<0.40	
VG10	VG10	0.95~1.05	14.50~15.5	0.30~0.50	≤0.80	0.80~1.20	0.25~0.35	1.30~1.80	≤0.025	≤0.025	<0.50	

BG-42
≤0.020 ≤0.020

BG-42

1.13~1.20

14.5~15.5

0.20~0.60

0.2~0.4

3.95~4.1

1.10~1.20

≤0.010

行业方向 Direction of the industry



航天轴承 汽车发动机配件 气门芯

Aerospace bearing. automobile engine parts . valve core



滚刀 拉刀 立铣刀 钻头 等金属机床加工行业

Hob broach end milling cutter bit and other metal machine tool processing industry



菜刀 户外刀 理发剪 行业

Kitchen knife outdoor knife barber scissors industry

Products been used for SUS440C and VG-10 .BG-42 제품 소개



图 1 X光管用联轴轴承

high temperature bearing
M2/9Cr18Mo 고온용 베어링



汽车发动机气门Automobile engine valve 엔진 밸브



发动机气门嘴 (Engine valve port.) 图片

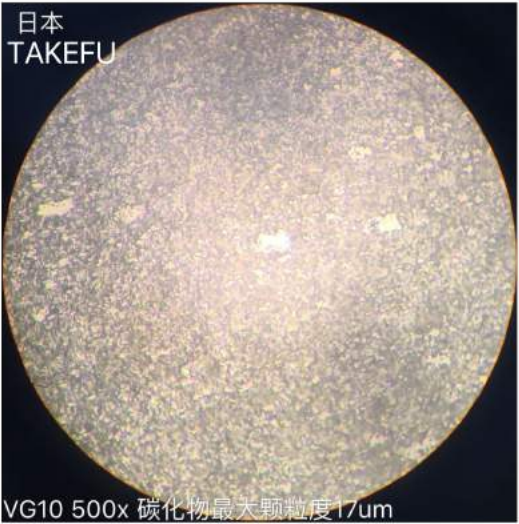
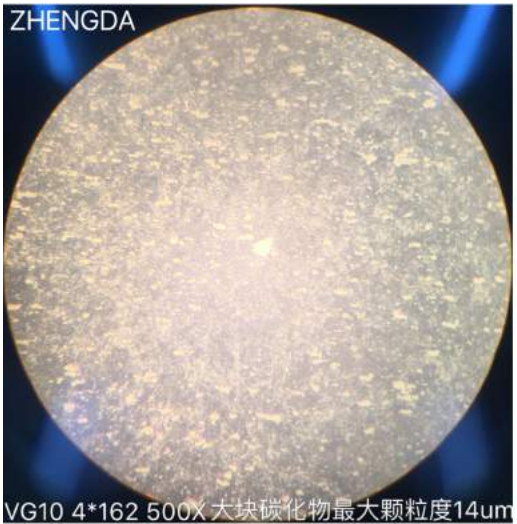
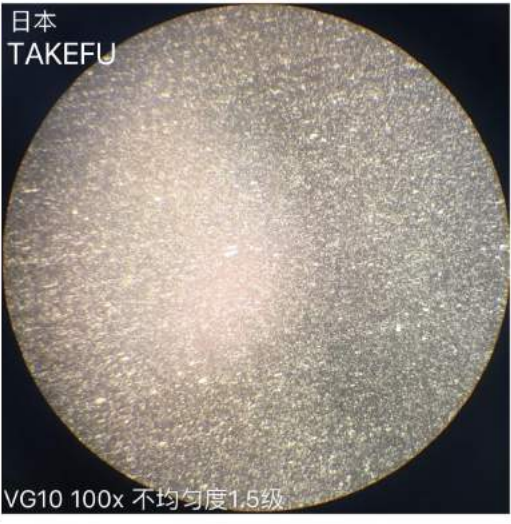
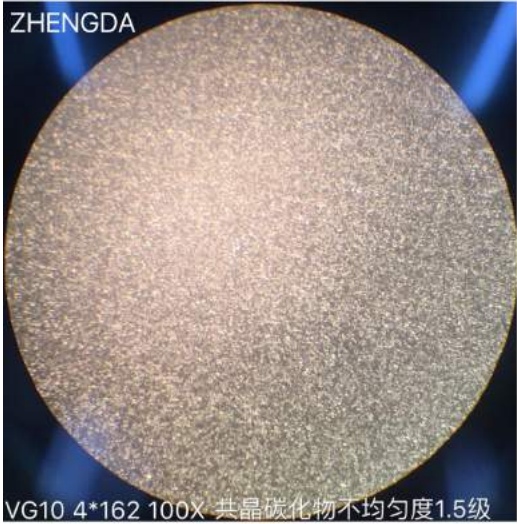
高端质量的剪刀,户外刀和菜刀等

High-end quality for scissors, outdoor knife, and kitchen knife etc...

미용가위와 식품용 나이프



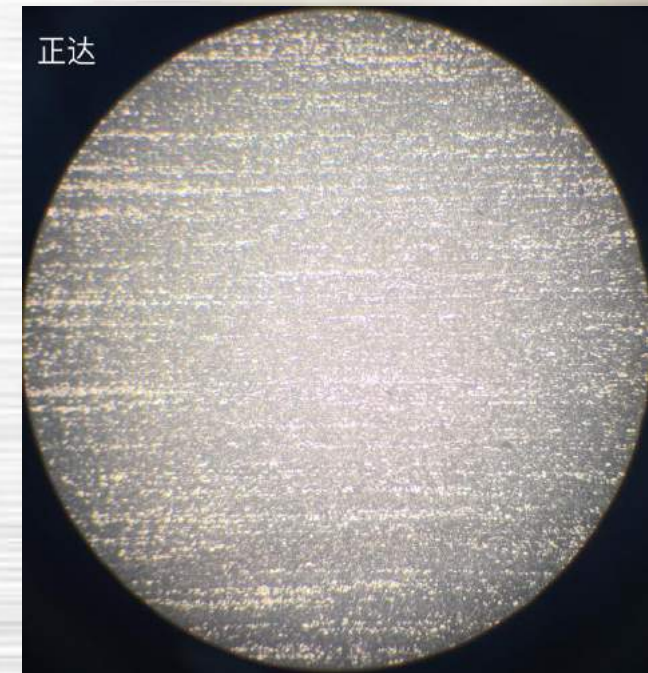
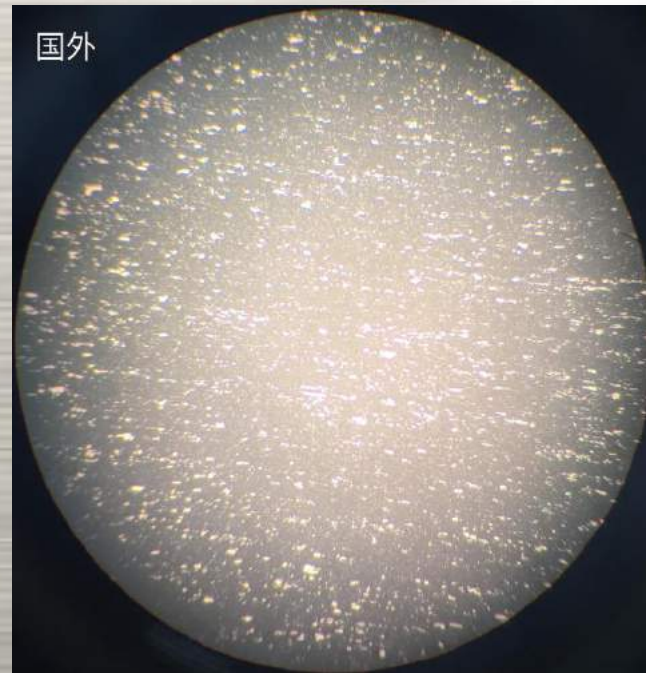
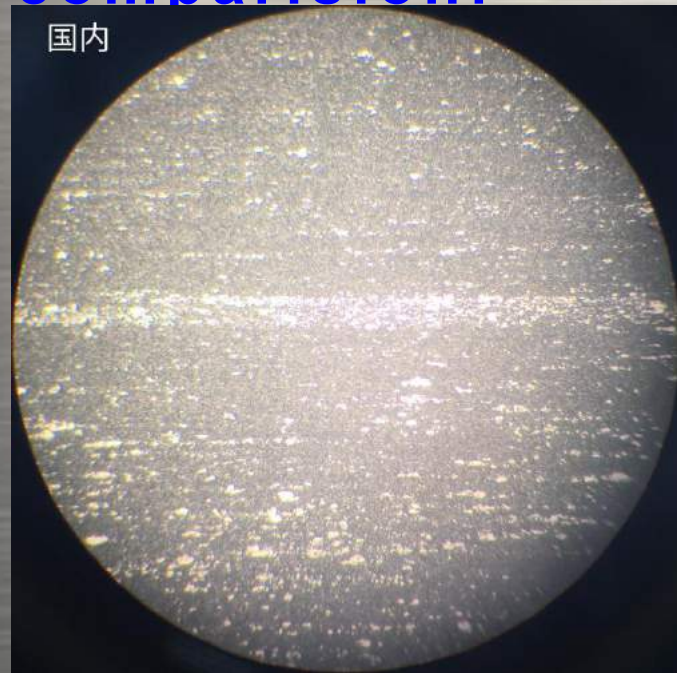
ZD=ZEICIN PK TAKEFU QUALITY



Be used for the product as below:



六、金相组织对比 Metallographic organization comparision:



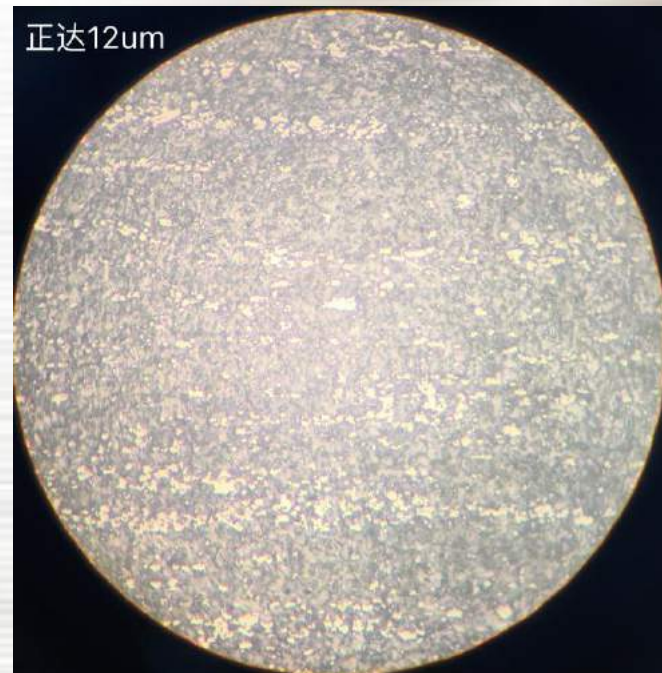
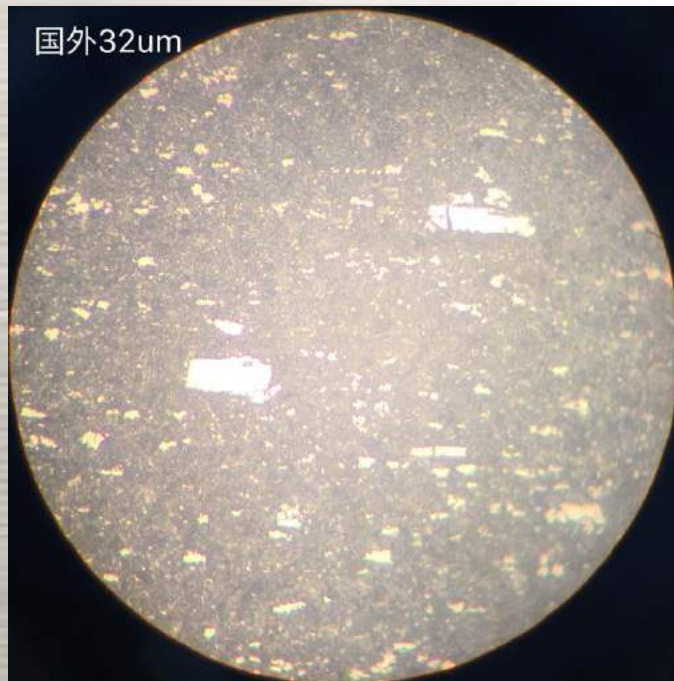
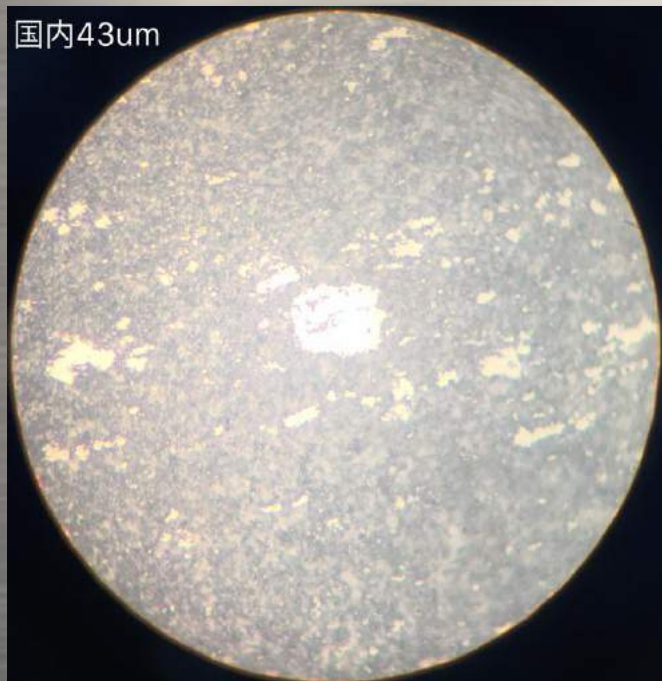
图片说明: 9Cr18Mo X100倍下碳化物分析 Image description: 9Cr18Mo X100 times carbide analysis.

图一(国内)带状碳化物明显, 碳化物颗粒较大 Photo1(Domestic). carbon carbide size Obvious appear big size.

图二 (国外) 碳化物分布不均匀, 个体偏大。原因分析: 冶炼过程中未能对碳化物进行很好的控制, 后期锻造中, 虽然锻造比增大, 但是未能弥补冶炼的缺陷。 Photo2 (abroad) the carbide distribution is uneven and the individual is large. Reason analysis: during the smelting process, the carbide can not be controlled well. In the late forging, although the forging ratio increases, it fails to make up for the defects of the smelting.

图三、正达产9Cr18Mo采用快电弧炉冶炼+LF+VD、快速凝固电渣重熔工艺、变相锻造 三个工艺的改变, 源头开始碳化物明显优于进口。碳化物呈现细小、均匀。 Photo3(ZhengDa=Zeicin) the modification of three technological processes of 1)EAF+LF+VD, 2) Special innovation smelting process of RS ESR, 3) transformation forging of the 9Cr18Mo ,

So that keep obviously better than the imported ones. The carbide is small and uniform.



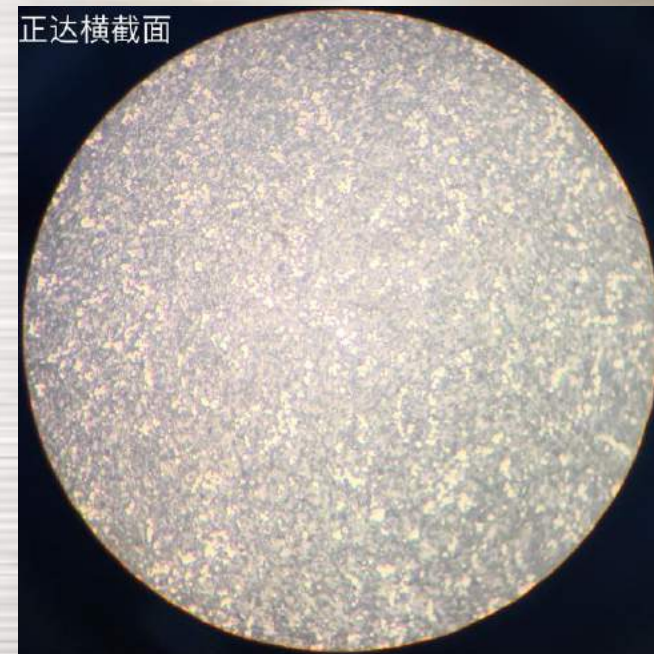
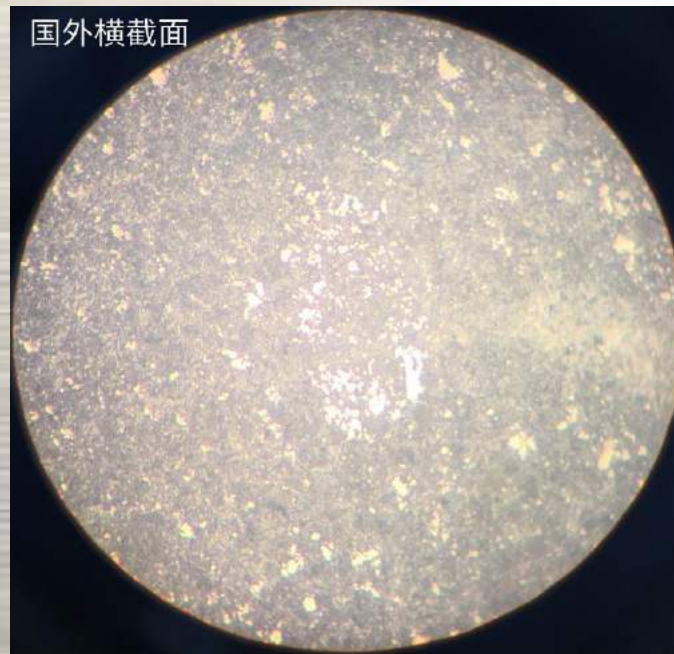
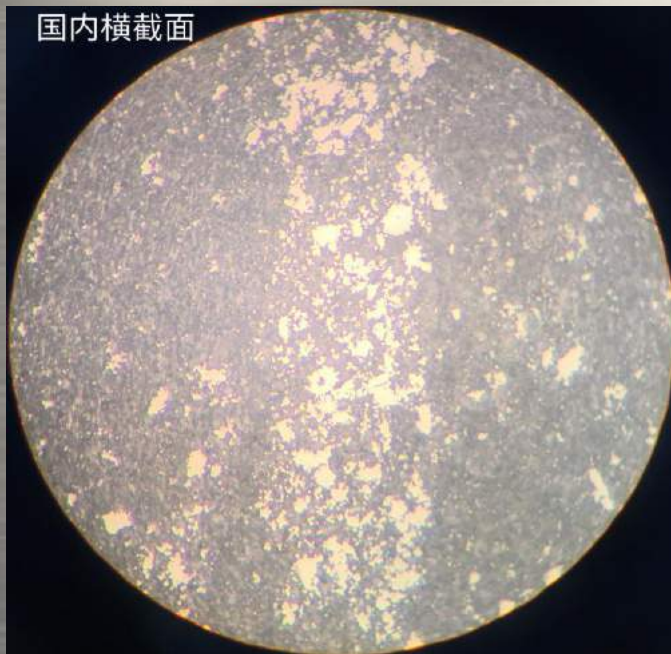
图片说明：9Cr18Mo X500倍下碳化物个体分析 Image description: 9Cr18Mo X500 times carbide analysis

图一、碳化物个体明显偏大，加工中会出现脱块现象Photo1(domestic), the carbide individual is obviously large, the processing will appear the phenomenon of detachment.

图二、碳化物优于国产，但是出现较多尖角型碳化物，使用中容易出现裂纹、应力集中点导致提早失效。Photo2(abroad), The carbides are superior to domestic ones, but there are more angular carbide, and cracks and stress concentrations are easy to occur in use, leading to early failure.

图三、正达产9Cr18Mo通过冶炼和锻造的改变，碳化物的级别明显优于进口。

Photo3(ZhengDa=Zeicin) the modification of 9Cr18Mo in the process of smelting and forging, the level of carbide is obviously superior to the imports.



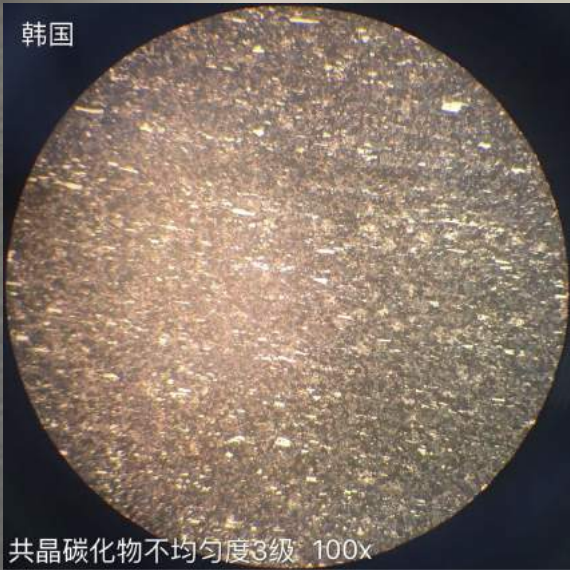
图片说明：9Cr18Mo X100倍下 横截面碳化物分析Image description: 9Cr18Mo X100 times cross section carbide analysis.

图一、带状碳化物明显，碳化物颗粒明显大于纵向，原因分析：未进行改向锻造，直接进行轧制。Photo1(domestic), Zonal carbides are obvious, the carbide particles are obviously larger than the longitudinal ones, cause analysis: no make modified forging, Just make rolling directly.

图二、碳化物分布不均匀，个体偏大。原因分析：冶炼过程中未能对碳化物进行很好的控制，后期锻造中，虽然锻造比增大，但是未能弥补冶炼的缺陷。Photo2(abroad) the distribution of carbides is not uniform and the individual is large. Reason analysis: during the smelting process, the carbide can not be controlled well. In the late forging, although the forging ratio increases, it fails to make up for the defects of the smelting.

图三、正达产9Cr18Mo采用电弧炉冶炼+LF+VD、快速凝固电渣重熔工艺、变相锻造 三个工艺的改变，源头开始碳化物明显优于进口。碳化物呈现细小、均匀。Photo3(ZhengDa=Zeicin) the modification of three technological processes of 1) EAF +LF+VD, 2) Special innovation smelting process of RS ESR, 3) transformation forging of the 9Cr18Mo , So that keep obviously better than the imported ones. The carbide is small and uniform.

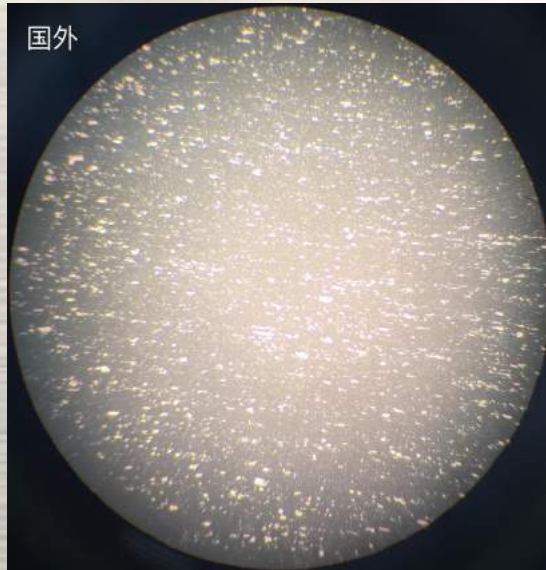
韩国



共晶碳化物不均匀度3级 100x

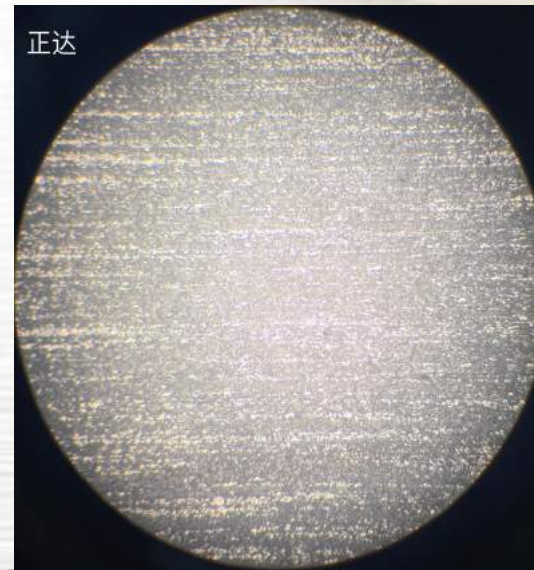
Korea SUS440C dia20mm
100times
carbide size: **62 μ m**,

国外



Japan SUS440C dia20mm
100times
carbide size: **32 μ m**,

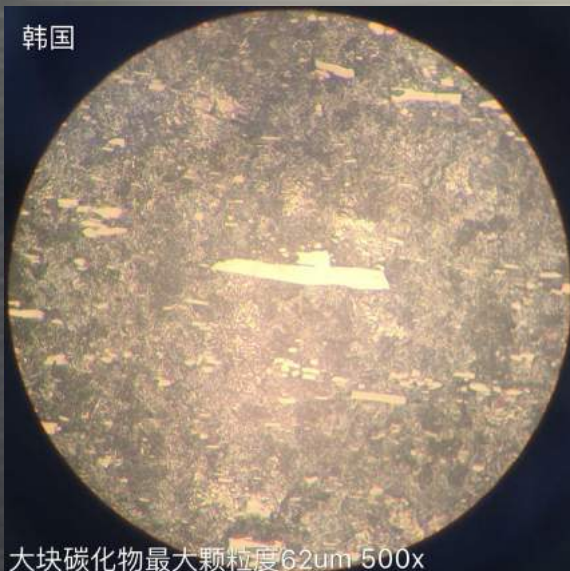
正达



Zeicin SUS440C dia20mm 100times
carbide size: **12 μ m**,
carbide distribution:2 **정다물드**

SUS440C 조직 분석

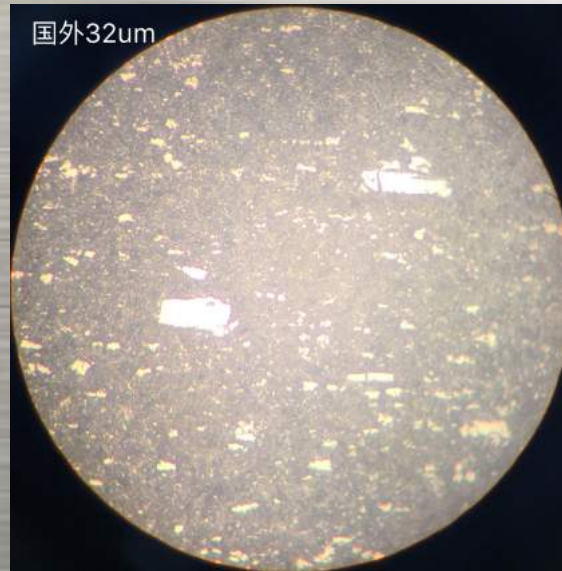
韩国



大块碳化物最大颗粒度62 μ m 500x

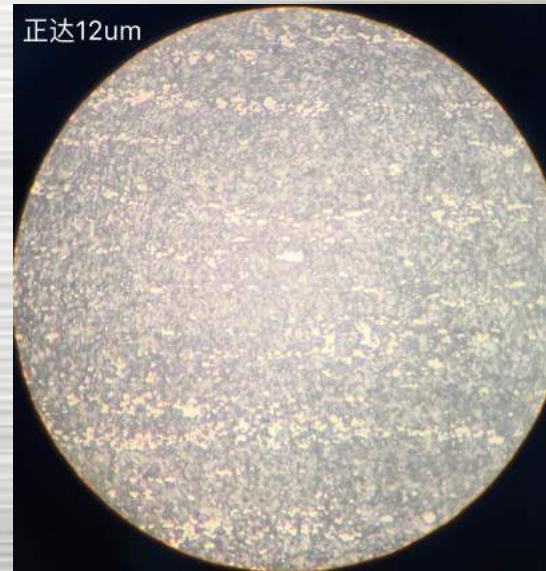
Korea SUS440C dia20mm
500times
carbide size: **62 μ m**,

国外32 μ m



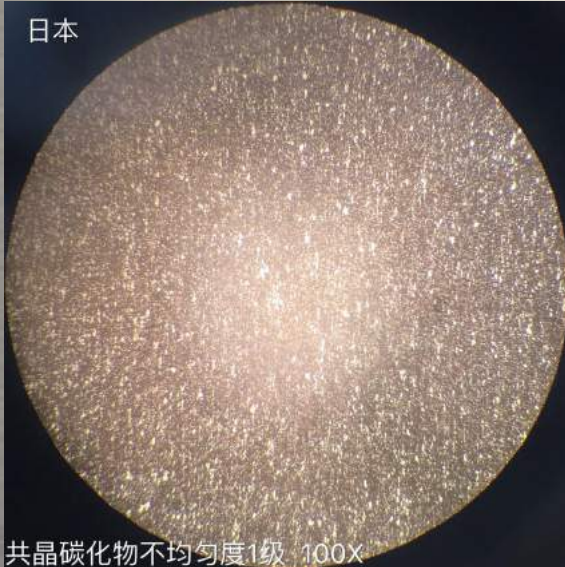
Japan SUS440C dia20mm
500times
carbide size: **32 μ m**,

正达12 μ m



Zeicin SUS440C dia20mm 500times
carbide size: **12 μ m**,
carbide distribution:2 **정다물드**

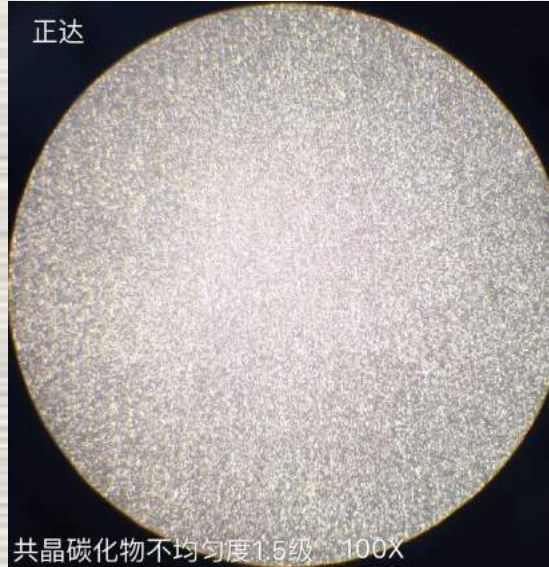
日本



共晶碳化物不均匀度1级 100X

Japan VG-10 dia22mm 100times
carbide size: **16 μ m**,
carbide distribution:1 **일본**

正达

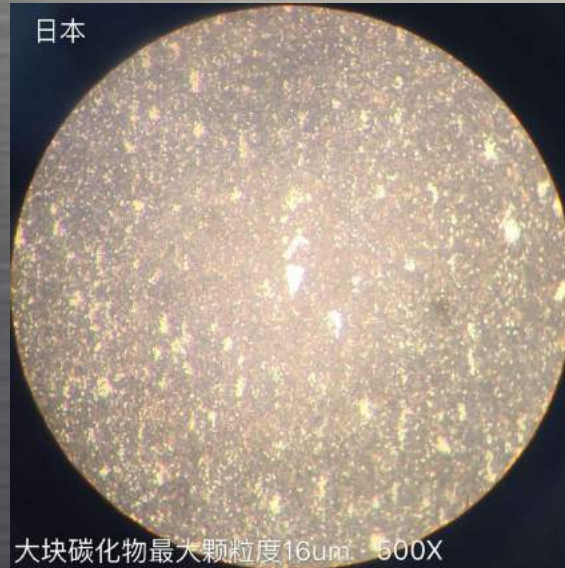


共晶碳化物不均匀度1.5级 100X

Zecin VG-10 dia22mm 100times
carbide size: **13 μ m**,
carbide distribution:1.5 **정다몰드**

VG-10 조직 분석 Microstructure comparision

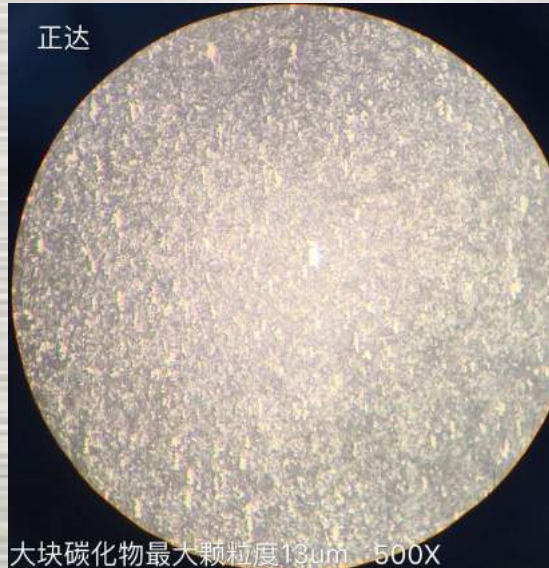
日本



大块碳化物最大颗粒度16 μ m 500X

Japan VG-10 dia22mm 500times
carbide size: **16 μ m**,
carbide distribution:1 **일본**

正达

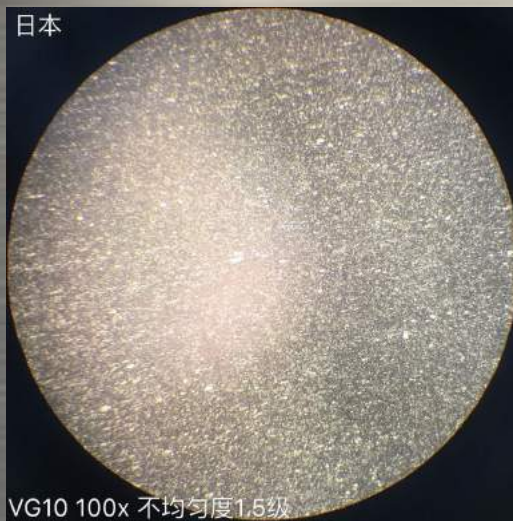


大块碳化物最大颗粒度13 μ m 500X

Zecin VG-10 dia22mm 500times
carbide size: **13 μ m**,
carbide distribution:1.5 **정다몰드**



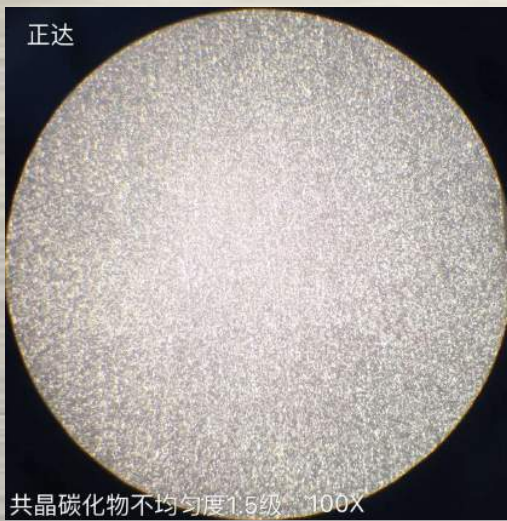
日本



VG10 100x 不均匀度1.5级

Takefu 440C dia3.3X105XLmm
100times
carbide size:17μm,
carbide distribution:1.5

正达

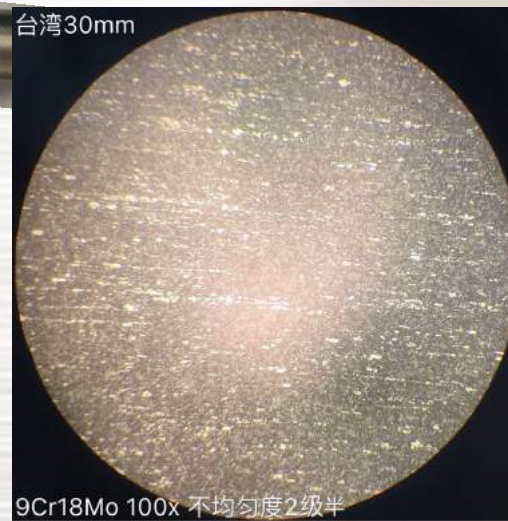


共晶碳化物不均匀度1.5级 100X

Zhengda=Zeicin VG-10
dia3.3X160XLmm 100times
carbide size:13μm,
carbide distribution:1.5



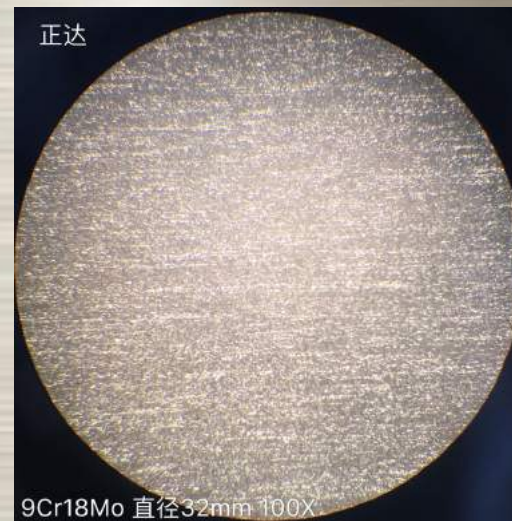
台湾30mm



9Cr18Mo 100x 不均匀度2级半

Gloria 440C dia30mm 100times
carbide size:32μm,
carbide distribution:2 .5

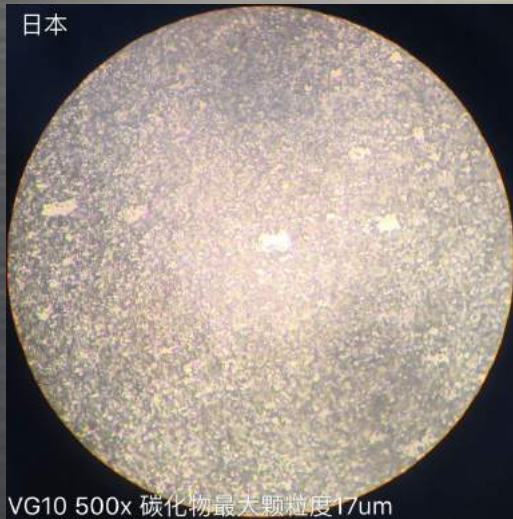
正达



9Cr18Mo 直径32mm 100X

Zhengda=Zeicin 440C dia32mm
100times
carbide size:14μm,

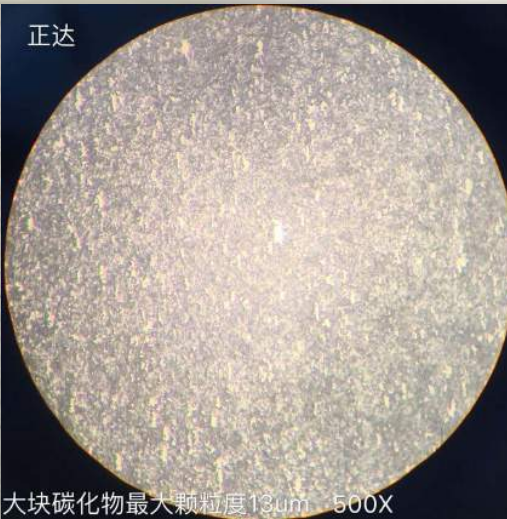
日本



VG10 500x 碳化物最大颗粒度17um

Takefu 440C dia3.3X105XLmm
500times
carbide size:17μm,
carbide distribution:1.5

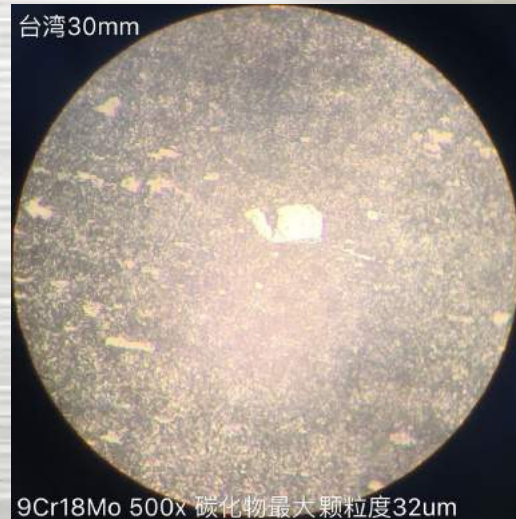
正达



大块碳化物最大颗粒度13um 500X

Zhengda=Zeicin VG-10
dia3.3X105XLmm 500times
carbide size:13μm,
carbide distribution:1.5

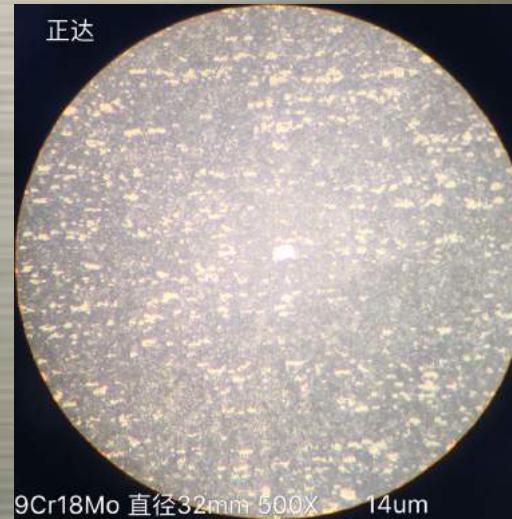
台湾30mm



9Cr18Mo 500x 碳化物最大颗粒度32um

Gloria 440C dia30mm 500times
carbide size:32μm,
carbide distribution:2 .5

正达



9Cr18Mo 直径32mm 500X 14um

Zhengda=Zeicin 440C dia32mm
500times
carbide size:14μm,

Martensite stainless steel:
마르텐사이트 스테인레스

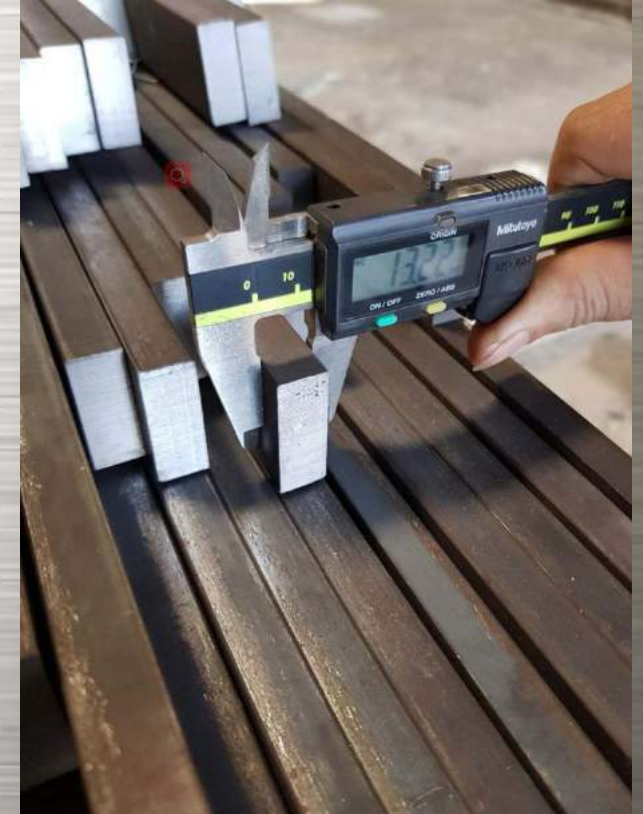
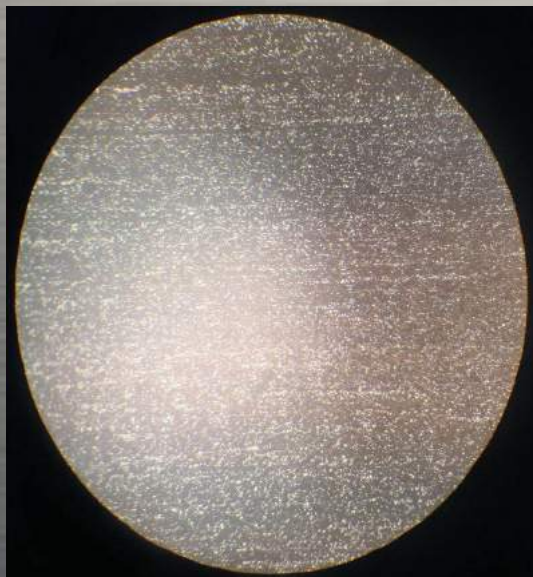




图1 X光管用联轴轴承

This is high temperature bearing used in industry of medical, airplane, high speed rail Which represents a symbol of high-end HSS, In China only our Zhengda=Zeicin company's quality to achieve customer confirmation to replace imported materials from Japan and Europe, It is also means our quality has been recognized by high-end customers and affirmation



M2 dia35mm 100times
microstructure
carbide grain size: **8 μm**
carbide distribution: **2**

技术协议

供方: 浙江正达模具有限公司

代表: 

日期: 2018.2.26

需方: 上海天安轴承有限公司

代表: 

日期: 3/2-2018

This company
produces for
Satellite bearing,
which are very
influential in China



ZYS
轴研科技

洛阳轴承研究所有限公司 检验分析报告

报告编号: JK (2018) WS05087

G102Cr18Mo 棒材冶金质量检验

委托单位: 浙江正达模具有限公司

分析单位: 洛阳轴承研究所有限公司

分析人: 王姗姗、梅亚莉、张延芳

审核:

2018 年 5 月 11 日

<http://www.zysbearing.com/>

This company is a military enterprise, specializing in the manufacture bear for rockets, satellites etc..

Below test report is from this customer to provide

ZYS

G102Cr18Mo 棒材冶金质量检验

共 2 页 / 第 1 页

一、概况

浙江正达模具有限公司送检 1 根 G102Cr18Mo 的棒料, 规格为 $\phi 35\text{mm}$, 要求按照《高碳铬不锈钢》(GB/T3086-2008) 标准对送检材料的化学成分、非金属夹杂物、碳化物不均匀性和低倍组织等冶金质量指标进行检验。

二、检验结果

1、化学成分

采用直读光谱仪进行检测, 结果见表 1, 符合相关标准要求。

表 1 化学成分 %

元素	C	Cr	Mo	Si	Mn	P	S	Ni	Cu	Ni+Cu
实测值	1.09	17.09	0.49	0.56	0.57	0.023	0.001	0.20	0.05	0.25
标准	0.95~1.10	16.00~18.00	0.40~0.70	0.80	0.80	0.035	0.030	0.30	0.25	0.50

2、非金属夹杂物和碳化物不均匀性

非金属夹杂物及碳化物不均匀性检验结果见表 2, 结果均符合相关标准要求。

表 2 非金属夹杂物及碳化物不均匀性

试样规格	非金属夹杂物									碳化物不均匀性/级	碳化物最大颗粒尺寸/ μm
	A类		B类		C类		D类		Ds		
	细系	粗系	细系	粗系	细系	粗系	细系	粗系			
$\phi 35\text{mm}$	0	0	0.5	0	0	0	0.5	0	0	1.0 (见图 1)	25 (见图 2)
标准要求	≤ 2.0	≤ 1.0	≤ 1.5	≤ 1.0	≤ 0.5	≤ 0.5	≤ 1.0	≤ 1.0	≤ 1.0	≤ 3.0	



图 1 棒料碳化物不均匀性



图 2 棒料大颗粒碳化物

报告编号: JK (2018) WS05087

分析人: 王姗姗

ZYS

G102Cr18Mo 棒材冶金质量检验

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3、低倍组织

低倍组织检验未见疏松和偏析, 见图 3。

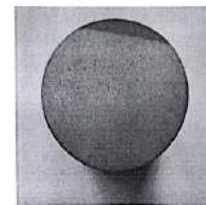


图 3 低倍组织形貌

三、结论

送检棒料的化学成分、非金属夹杂物、碳化物不均匀性和低倍组织均符合相关标准要求。

报告编号: JK (2018) WS05087

分析人: 王姗姗

This is one of our Korea custoers who purchase Japan before, but now he would like to purchase from us for the SUS440C and VG10.

