

积极 稳健 进取  
Positive Solidity Enterprising



质量第一 • 信誉至上

## 公司简介

### COMPANY PROFILE

浙江国力工具有限公司是一家集冶炼、电渣重熔、锻造、轧制、热处理及机械加工为一体的综合性专业生产制造企业。位于中国原材料及带锯床基地——壶镇工业区，享有独特的原材料采购优势。浙江省机床工具商标品牌基地成员企业，并通过了ISO9000质量管理体系认证。

公司专业生产各种高速工具钢、冷作模具钢、热作模具钢及各种特种钢材。此外，公司还拥有高速钢圆锯片、木工刨刀等全套切割工具生产线。

公司的主要产品包括：各种工具钢圆钢、扁钢、冷轧或热轧钢板、钢带、各种锻件和半成品坯料以及高速钢圆锯片、三面刃铣刀、锯片铣刀、木工刨刀等切割工具。

本公司始终坚持以质量第一，信誉至上的经营宗旨。愿与海内外客商建立长期友好合作关系！

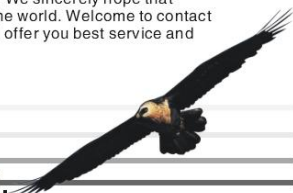
Zhejiang Guoli Tools that is a professional manufactory gathers smelting, refining, forging, steel rolling, heat treatment and machining. We are located in "The base of Chinese material and cutting tools" -- Hu Town Industrial Zone. It has an extraordinary advantage to offer high quality and competitive price for all the clients in the world. Member enterprise of the famous machine tool brand base of Zhejiang province and have been awarded ISO 9000 system.

We specialize in all kinds of high speed steel, cool work steel, hot work steel, and other special steel. Besides, we hold entire product line for hss circular saw, planer knife and other cutting tools.

Our main products including all kinds of tool steel round bar, flat bar, cold / hot rolled steel sheet, steel strips, forged tool material, semi-manufactured material for circular saw blank, hob, side and face cutter, din standard slitting saws, chipper knife, planer knife and other cutting tools.

We insist on "Quality is first, Credit is first" all the time. We sincerely hope that establish a good long term cooperation with clients all over the world. Welcome to contact us if you have any requirements about our products. GLT will offer you best service and hope to become your credible cooperative partner.

ZHEJIANG GUOLI TOOLS CO., LTD.



## Management System & Company Vision 管理体系&公司愿景



我司为ISO9001:2000质量体系认证企业，多年来一直秉承着“质量上乘，服务至上，信誉第一”的经营理念，改革创新是我们永恒的主题。放眼未来，我们将在不断发展力争成为世界最优秀的高速钢、工模具钢的制造商之一。

We are ISO9001:2000 quality certified company. We pursue the management tenet of "Quality is superior, Service is supreme and Reputation is first". Innovation is our eternal motif all the years. Looking forward to the future, we will keep continuously development and try our best to become one of the most excellent manufacturers of high speed steel and mould steel in the world.



## 现代化的生产设备和检测设备确保了生产效率和产品质量 Modernized producing equipment and testing equipment To guarantee efficiency production and good quality

- ① 金相显微镜  
Microscope
- ② 洛氏硬度计  
Rockwell Hardness
- ③ 布氏硬度计  
Brinell Hardness
- ④ 激光打标机  
Laser Marking Machine
- ⑤ 意大利进口-直读光谱仪  
Imported from Italy.  
- Direct Reading Spectrometer







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现代化的生产设备和检测设备确保了生产效率和产品质量  
Modernized producing equipment and testing equipment  
To guarantee efficiency production and good quality



800轧板机  
800 Rolling Mill



校直机  
Straightener



校直机  
Straightener



带锯床  
Sawing Machine



250轧机  
250 Rolling Mill



车床  
Lathe Machinery



Electro Slag Remelting(ESR)



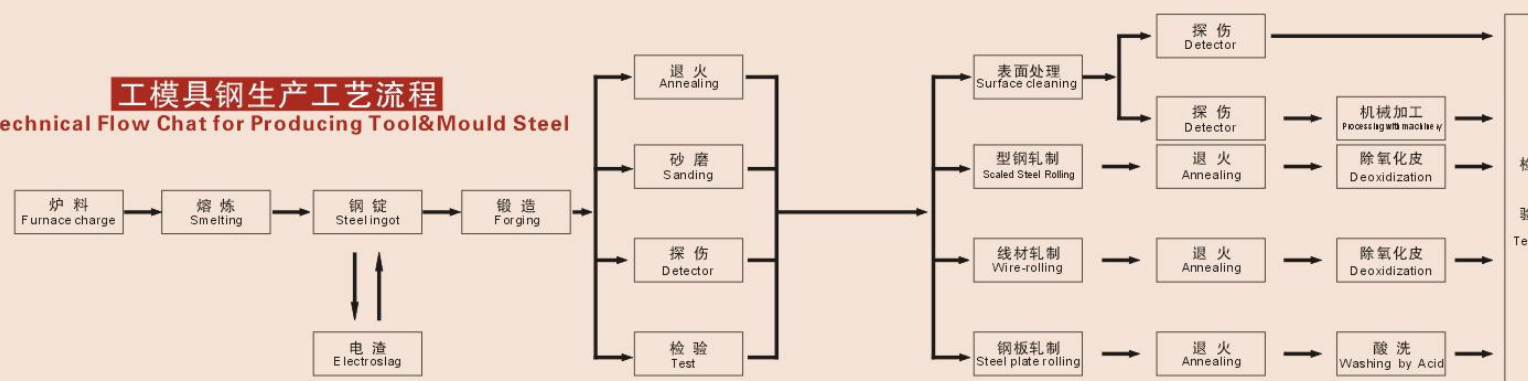
A.Rolling Mill  
轧机

B.Salt Bath Heat  
Treatment Line  
盐浴热处理线

C.D.  
Annealing  
Furnace  
退火炉



## 工模具钢生产工艺流程 Technical Flow Chat for Producing Tool&Mould Steel





产品篇 I  
Production Introduction



银亮材 Ground Round Bar



扁钢 Flat Bar



方钢 Square Bar



钢板 Steel Sheet



冷拔钢丝 Cold-drawn steel wire

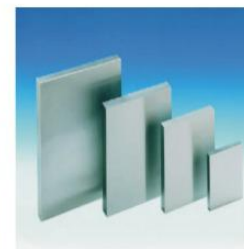


圆钢 Round Bar

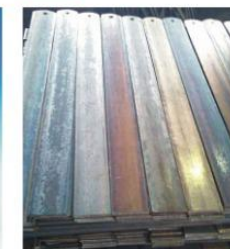
产品篇 I  
Production Introduction



精锻刀具坯料 Forged Tool Materials



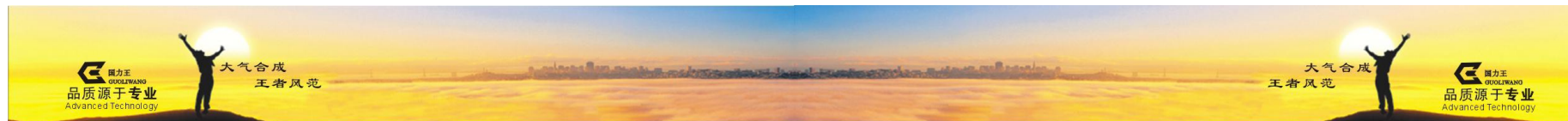
精制模板 Precise Mould



机用锯条坯 Semi-Products For Hacksaw

PRODUCTS&SPECIFICATIONS 产品名称 规格

Description	名称	Specifications(mm)
Precisely-forged square bar	精锻方钢	20~150
Precisely-forged round bar	精锻圆钢	φ 50~φ 220
Forged flat bar	精锻扁钢	(T25~70) × (W30~300)
Forged tool materials	精锻刀具坯料	(φ 40~φ 350) × (T4~15)
Hot-rolled round bar	热轧圆钢	φ 8~φ 60
Hot-rolled square bar	热轧方钢	7.5 × 7.5~50 × 50
Hot-rolled flat bar	热轧扁钢	(T2~25) × (W16~150)
Hot-rolled steel strips	热轧钢带	(T1.5~4) × (W27~300)
Hot-rolled steel sheet	热轧钢板	T:2.5~12
Cold-rolled steel strips	冷轧钢带	(T1~2.5) × (W27~260)
Cold-drawn steel wire	冷拔钢丝	φ 1~φ 12
Cold-rolled steel sheet	冷轧钢板	T:1.0~2.5
Precise mould	精制模板	(T1.0~40) × (W10~300) × (L500~1000)
Ground round bar	银亮钢材	φ 2.0~200



## 高速工具钢钢号对照 HIGH SPEED STEEL

编号 No.	近似钢号 Similar steel grade				用 途 Application	退火状态 (参考) ≤ Annealed Hardness	化学成分 (%) Chemical composition										热处理温度 (°C) Heat treatment temp		回火硬度 HRC Secondary hardness
	中国 China	日本 Japan	美国 USA	德国 Germany			C	Si	Mn	S	Cr	W	Mo	V			淬火 Hardening	回火 Tempering	
1	W18Cr4V	SKH2	T1	1.3355	高速切削刀具、各种钻头、拉刀、铣刀、 高速精密压模、冲压模	HB255	0.75	0.35	0.35	0.015	4.05	18.00	--	1.10			1270-1285	550	62-65
2	W6Mo5Cr4V2	SKH51	M2	1.3343		HB255	0.85	0.38	0.35	0.012	4.10	6.00	4.80	1.85			1210-1230	550	63-66
3	W9Mo3Cr4V					HB255	0.83	0.35	0.35	0.012	4.05	8.90	2.90	1.45			1220-1240	550	63-66
4	W6Mo5Cr4V2Co5	SKH55	M35	1.3243	难切削和高速切削。通用刀具，偏重耐磨性。	HB269	0.93	0.38	0.35	0.015	4.10	6.30	4.80	1.86	Co 4.90		1200-1220	550	64-67
5	W2Mo9Cr4VCo8	SKH59	M42	1.3247	难切削和高速切削。通用刀具，偏重韧性。	HB269	1.10	0.55	0.35	0.015	4.05	1.50	9.50	1.05	Co 8.10		1170-1190	540	66-68
6	W6Mo5Cr4V2Al				性能接近M42、M35之高速切削刀具	HB269	1.13	0.35	0.35	0.015	4.10	6.00	4.90	1.90	Al 1.00		1210-1230	550	65-67
7	W4Mo3Cr4VSi				用于低速切削之刀具	HB255	0.89	0.80	0.32	0.015	4.05	3.80	2.70	1.32			1160-1180	550	62-65

## 冷作模具钢钢号对照 COLD WORK STEEL

编号 No.	近似钢号 Similar steel grade				用 途 Application	退火状态 (参考) ≤ Annealed Hardness	化学成分 (%) Chemical composition										热处理温度 (°C) Heat treatment temp		回火硬度 HRC Secondary hardness
	中国 China	日本 Japan	美国 USA	德国 Germany			C	Si	Mn	S	Cr	W	Mo	V			淬火 Hardening	回火 Tempering	
1	Cr12Mo1V1		D2	1.2379	高产量冲压模、搓丝模、陶瓷制品模、 电触板模及高产量型腔模	HB255	1.50	0.35	0.40	0.015	12.10	<0.40	0.85	0.80			1010-1050	200 550	62-63 56
2	Cr12	SKD1	D3	1.2080	硅钢片、不锈钢薄板冲压模、拉伸模、冷挤压模	HB255	2.10	0.40	0.50	0.015	12.40	<1.00	--	0.15			950-1000	200	61-62
3	Cr12MoV	SKD11		1.2601	耐磨冲压模、深拉模、陶瓷制品模等	HB255	1.60	0.35	0.35	0.015	12.00	--	0.50	0.20			1000-1020	200 550	62-63 56
4	9CrWMn		01		薄板冲压模具、手锤压模	HB217	0.93	0.40	1.20	0.012	0.58	0.50	--	--			800-850	200	60-62
5	9CrWMnMoV		02			HB217	0.93	0.40	1.60	0.012	0.40	<0.30	<0.30	--			800-850	200	60-62
6	Cr5MoIV	SKD12	A2	1.2363	重承载及形状复杂冲压模、压印模、剪切刀具	HB235	1.00	0.40	0.75	0.012	5.10	--	1.05	0.25			940-960	200	60-62
7	5Cr8MoVSi		MODIFIED A8		综合性能好、主要用于刀具类	HB241	0.52	0.95	0.45	0.012	8.00	<1.75	1.45	0.35			1020-1050	200	58-60
8	7Cr7Mo2V2Si				冲压模、挤压模、拉伸模	HB255	0.74	1.10	0.43	0.015	7.10	<0.50	2.15	1.80			1100-1150	530	61-63

## 热作模具钢钢号对照 HOT WORK STEEL

编号 No.	近似钢号 Similar steel grade				用 途 Application	退火状态 (参考) ≤ Annealed Hardness	化学成分 (%) Chemical composition										热处理温度 (°C) Heat treatment temp		回火硬度 HRC Secondary hardness
	中国 China	日本 Japan	美国 USA	德国 Germany			C	Si	Mn	S	Cr	W	Mo	V			淬火 Hardening	回火 Tempering	
1	3Cr2W6V	SKD5	H21	1.2581	铜、铝、锌合金压铸及压铸模	HB241	0.36	0.35	0.30	0.012	2.50	8.00	--	0.30			1070-1150	200	53
2	4Cr5MoSiV1	SKD61	H13	1.2344	铝、锌合金压铸及挤压机、热锻模、高产量型腔模	HB235	0.39	1.10	0.45	0.012	5.10	<0.30	1.35	0.90			1020-1050	200	54
3	4Cr5MoSiV	SKD62	H11	1.2343		HB235	0.39	1.10	0.45	0.012	5.10	<0.30	1.30	0.45			1020-1050	200	54



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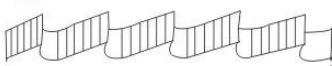
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## 产品篇 I Production Introduction

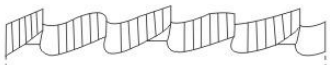
### HSS Circular Saw 高速钢圆锯片



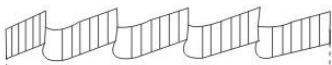
#### Type of Teeth 齿型



A-toothform



AW-toothform



B-toothform



BW-toothform

#### Material of HSS Circular Saw (高速钢圆锯片的材质):

- HSS-DM05=M2=DIN 1.3343.  
It is molybdenum series, so it has excellent tenacity.  
它属于钼系高速钢有很好的韧性
- HSS-DM05Co=M35=DIN 1.3243  
It contains 5% cobalt. It has excellent wear-resistance.  
它含有5%钴,有良好的耐磨性。
- Other material其它材质:  
W9 and W5

#### The Usage of Hss circular saw 高速钢圆锯片的用途

Our Hss circular saw are used on manual, semi-automatic and fully automatic sawing machines to cut various material such as solid bar, pipe and nonferrous metals such as aluminium bar, plate, pipe and copper pipe, bar, plate.

高速钢圆锯片可用于手动,半自动和全自动的锯片机器上,切割各种材料例如,整体的棒材,管材以及有色金属如铝(铜)棒,铝(铜)板,铝(铜)管,

Based on the processing of different materials and thickness of pipe size, type teeth, teeth different. 根据加工不同材料及管材厚度,齿型,齿数不同。



#### Surface Treatment (表面处理)

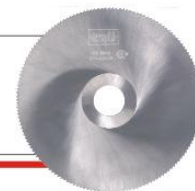
Our HSS saw blades can be supplied in among other things bright, steam-treated, Tin (Titanium)-coated an Multicolor coated  
我们的高速钢圆锯片有亮面的,蒸汽处理的,镀钛的以及七彩的。

## 产品篇 I Production Introduction

#### Bright= original colour (亮面即本色)

本色

The saw blade is used as ground face. It is appropriate for cutting pipe, bar, heat sink, sash of copper and aluminium etc.  
锯片体现研磨后的本色,适合切割管材,棒材,散热器及铜制或铝制窗格。



#### Steam Treatment= Azoted Coated (蒸汽处理即氮化处理)

氮化

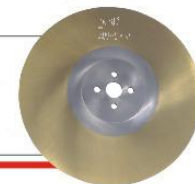
The saw blade treated with steam. It is appropriate for cutting metal and non-ferrous metal.  
锯片被氮化处理,适合切割金属及低碳金属。



#### Tin Coated (镀钛处理)

镀钛

The saw blade treated with Titanium. It is efficient to prolong tool life and reduce cutting time in certain extent  
锯片镀钛处理,在某种程度上增加锯片寿命,缩短切割时间。

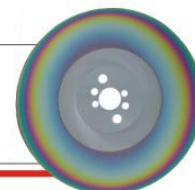


#### Multicolor coated (七彩处理)

彩色

Similar as Tin Coated  
与镀钛处理相类似。

Metal-cutting circular saw blades have the top-performance coating for metal-cutting circular saw blades.  
经过最顶级的涂层处理,具有优异的耐磨性能。







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## 产品篇 I Production Introduction



### Producing Range of Hss Circular Saw 高速钢圆锯片的生产范围

Diameter (mm) 直径	Bore (mm) 内孔	Thickness (mm) 厚度
160	32	1.2/1.5/2.0
200	32	1.2/1.5/1.8/2.0/2.5
220	32	1.2/1.5/1.8/2.0/2.5
250	32	1.2/1.5/2.0/2.5/3.0
250	40	2.0/2.5/3.0
275	32	1.6/2.0/2.5/3.0
275	40	1.6/2.0/2.5/3.0
300	32	1.6/2.0/2.5/3.0
300	40	1.6/2.0/2.5/3.0
315	32	1.6/2.0/2.5/3.0/3.5
315	40	1.6/2.0/2.5/3.0/3.5
325	32	2.0/2.5/3.0
325	40	2.0/2.5/3.0
350	32	2.0/2.5/3.0/3.5
350	40	2.0/2.5/3.0/3.5
350	50	2.0/2.5/3.0/3.5
400	40	2.5/3.0/3.5
400	50	2.5/3.0/3.5
425	40	2.5/3.0/3.5
425	50	2.5/3.0/3.5
450	40	2.5/3.0/3.5
450	50	2.5/3.0/3.5

Pin hole: 4 pin hole, 6 pin hole or as detailed requirements.  
定位孔: 4个定位孔, 6个定位孔或按客户的要求生产

#### Mark: 注释

The delivery program consists of a range of standard saw blades which can be delivered from stock and a range of special saw blades to be produced to customer specifications and drawing.  
对于通用的规格, 我司准备了大量库存, 对于特殊规格, 我们可以按照客户的规格及图纸生产。

## SIDE AND FACE CUTTER 三面刃铣刀

## 产品篇 I Production Introduction



#### 规格尺寸

外径  $\Phi 50 \sim 200 \text{mm}$ , 厚度  $5 \sim 32 \text{mm}$

#### 材料

W18, M2及超硬材料。

#### 用途

主要用于中等硬度, 强度的金属材料  
的台阶面和槽形面的铣削加工, 也可  
用于非金属材料加工。超硬材料  
三面刃铣刀用于难切削材料的台阶面  
和槽形面的铣削加工。

注: 可根据客户需要进行加工

#### Specification

Out diameter:  $\Phi 50 \sim 200 \text{mm}$

Thickness:  $5 \sim 32 \text{mm}$

#### Material

T1, M2 or super-hard material

#### Application:

Hss side and face cutter which is  
used for cutting metal materials  
of mid-hard or high-strength material,  
and can be for nonmetal processing.  
Super-hard material Hss side and face  
cutter, which is used for cutting  
material of high difficulty.

#### Remark:

Also can be produced according to  
customer's requirements

## DIN STANDARD SLITTING SAW 锯片铣刀

尺寸规格: 外径  $\Phi 30 \sim 315 \text{mm}$ , 孔径  $\Phi 10 \sim 40 \text{mm}$ , 厚度  $0.2 \sim 6.0 \text{mm}$

齿数: 粗齿, 中齿, 细齿

开齿方式: 铣齿, 磨齿 (外圆  $\Phi 50$  以上, 齿距  $25$  以下, 厚度  $6$  以下)

齿形: 尖齿, 圆弧齿, 交错齿,

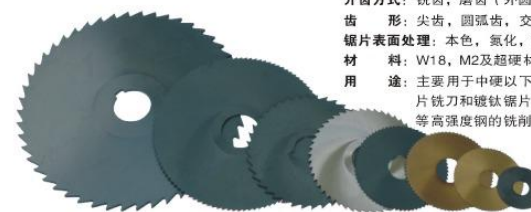
锯片表面处理: 本色, 氮化, 镀钛

材料: W18, M2及超硬材料

#### 用途

主要用于中硬以下金属材料窄而深的槽加工或切断。超硬材料锯  
片铣刀和镀钛锯片铣刀主要用于难切削材料, 如耐热钢及不锈钢  
等高硬度钢的铣削加工。

注: 可根据客户的需要定做。



Range: Diameter  $\Phi 30 \sim 315 \text{mm}$ , Bore  $\Phi 10 \sim 40 \text{mm}$ , Thickness:  $0.2 \sim 6.0 \text{mm}$

Number of Teeth: Thick teeth, middle teeth and thin teeth

Type of Making Teeth: Milling, Grinding (Cut Diameter  $> \Phi 50$ , spaces between teeth  $< 25$ , thickness  $< 6$ )

Surface of Cutter: Original colour, Tin coated, Steam treated

Material: T1, M2 or super-hard material

#### Application:

Slitting saw is used for producing average hardness material to make narrow and deep slot or cut off. Super-hard material  
and Tin-coated one is used for cutting hard difficulty material, such as refractory steel, stainless steel and high toughness  
steel.

#### Remark:

Also can be produced according to customer's requirements



产品篇 I  
Production Introduction

半成品  
Semi-Manufactured Goods



A. Blank of HSS Circular saw  
高速钢圆锯片的冲坯  
Hardness OR Non-hardness  
有无热处理均可

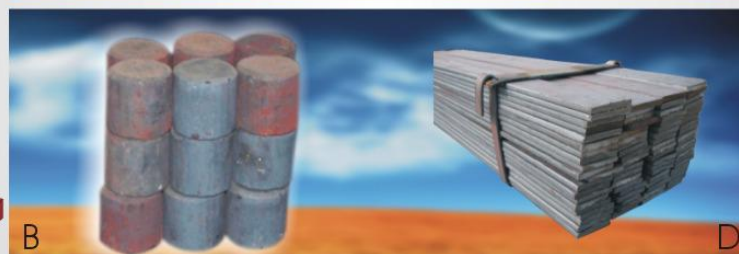


B. Material of Hob  
滚刀毛坯



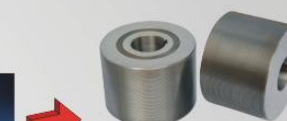
A

C



B

D

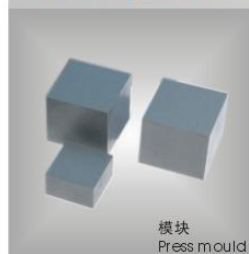


C. Material for Thread Rolling Wheel  
and Thread Rolling Die  
滚丝轮，搓丝板毛坯



高速钢滑块及叶片  
D. 用于加工各种规格高速钢  
滑块及叶片的扁钢。

其他应用  
Other Application



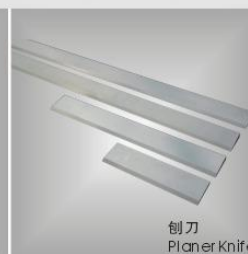
模块  
Press mould



钻头  
Drills



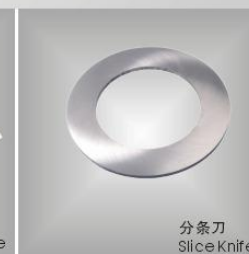
立铣刀  
End Mill



刨刀  
Planer Knife



削片刀  
Chipper Knife



分条刀  
Slice Knife



车刀  
Hss Square Tool Bits