



中山市欧宝钢材有限公司

— Euro-Steels(ZhongShan)Co.Ltd. —

企业概略

COMPANY PROFILE
2022



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企业简介

Introduction

公司成立于1998年,为港资企业,我们从事模具相关产品及服务。公司座落广东省中山市北部,南往珠海,北至广州,东延东莞,车程大约需时1小时。2020年公司全职员工80余名,主要分为模胚生产及钢材销售。

钢材方面,本司代理日本日立钢材超过10年;分别服务:五金、塑胶及压铸行业,并配套光板、粗/精成形加工以及热处理服务。

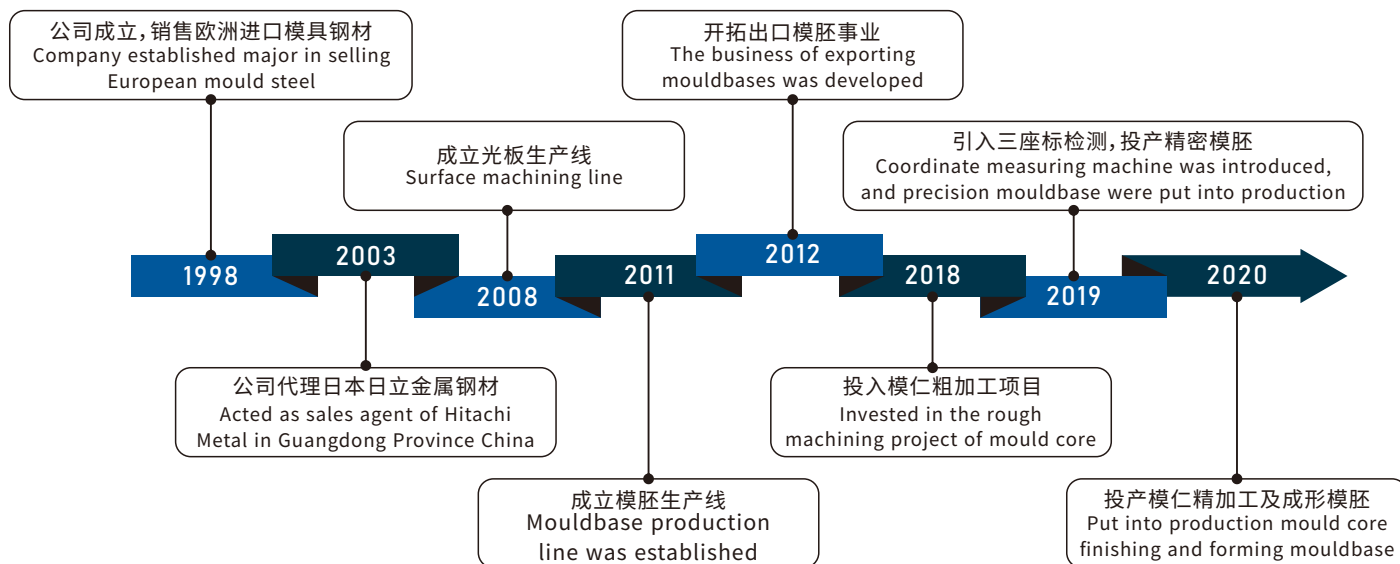
模胚方面,本司可按客户图档生产非标模胚,客户亦可来图生产成形模胚;我们的客户遍布广东以至海外;2020年模胚出口占比35%,加工能力1500mm x 2000mm。

Our company was established in 1998 and is a Hong Kong-funded enterprise. We are engaged in mould-related products and services. The company is located in the north of Zhongshan City, Guangdong Province, south to Zhuhai, north to Guangzhou, and east to Dongguan. It takes about 1 hour to drive to the above areas. In 2020, the company has more than 80 full-time employees, Mainly divided into mouldbases production and steel sales.

In terms of steel, our company has been acting as an agent for Hitachi Metal for more than 10 years; We serve to stamping, plastic and die-casting industries, as well as supporting surface finished block, rough/accurate 3D processing and heat treatment services.

In terms of mouldbases, our company can produce non-standard mouldbases according to customer drawings, and customized forming mouldbases; our customers are located in Guangdong and even overseas. In 2020, mouldbases exports is account for 35%, with a processing capacity of 1500mm x 2000mm.





经营理念- 诚

Philosophy - sincerity

公司于上世纪90年代代理开业销售进口模具钢材, 考虑到模具钢行业良莠不齐, 希望凭借诚信经营, 长远立足于市场。

通过20多年的耕耘, 我司已得到众多客户信任, 为进一步满足市场需求, 我们投放了大批加工生产设备, 我们深信可为客户提供更便捷的配套服务。

于生产方面, 我们很清楚目前面对的优质客户群, 他们对质量的重视, 使我们不敢怠慢; 我们的目标, 是产品的质量稳定性, 定要高于客户的要求, 同时巩固国外客户对中国制造的信心, 稳定的质量是我们生存的必然目标。

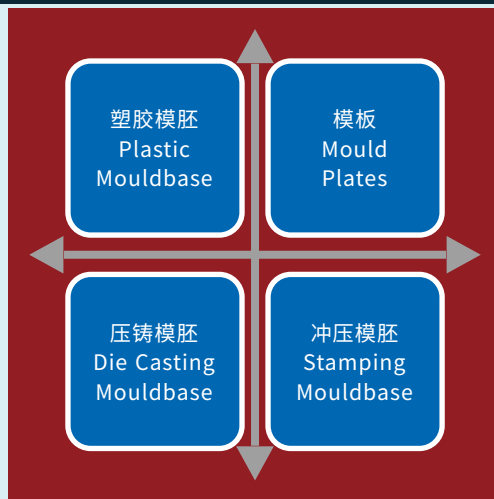
Our company started to sell imported mould steel as an agent in the 1990s. Considering the good and the bad in the mould steel industry, we hope to rely on honest management and be based on the market in the long run.

Through more than 20 years of hard work, our company has won the trust of many customers. In order to further meet the market demand, we have invested in a large number of processing and production equipment. We are convinced that we can provide customers with more convenient supporting services.

In terms of production, we are very aware of the high-quality customer groups we are currently facing. Their emphasis on quality makes us not dare to neglect; our goal is the quality stability of products, which must be higher than the requirements of customers, and at the same time consolidate foreign customers' confidence in Chinese manufacturing, stable quality is the inevitable goal of our survival.

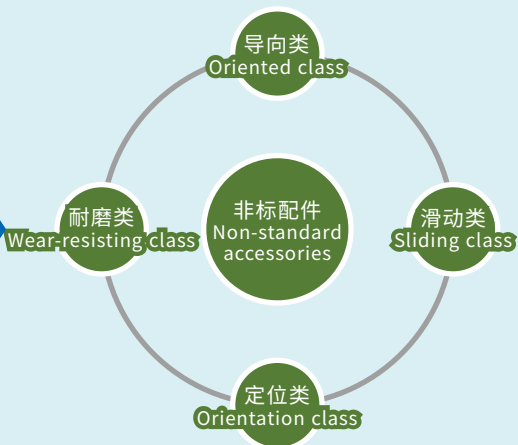
模胚系列 Mouldbase

客户来图订造
3D drawing from customer

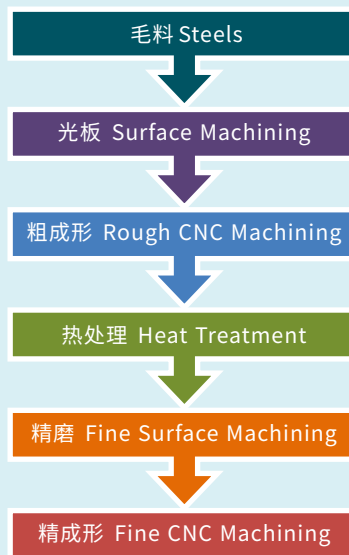
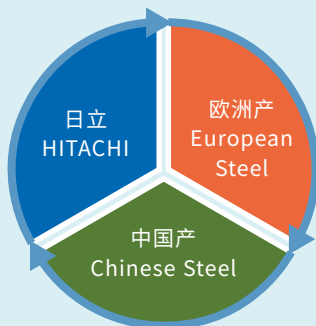


模具配件 Components

客户来图订造
3D drawing from customer

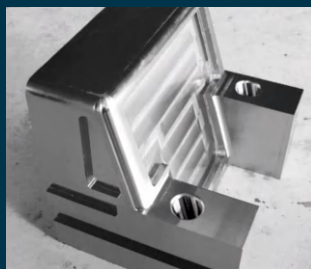


模具钢材 Tool Steel



客户采购材料 ,我们可以因应要求 ,提供各种交货状态 ,这种一站式加工 ,能为客户省却大量周转时间。

One-stop completion of tool steel save a lot of working time



我司业务主要分为3类：模具钢材，非标准模架，配件制做

Our business is mainly divided into 3 categories: mould steel, non-standard mouldbases, accessories manufacturing

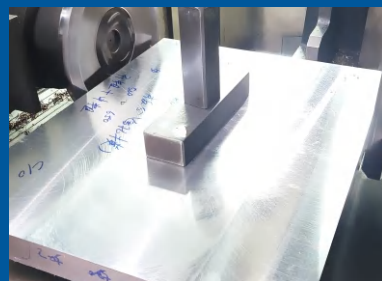
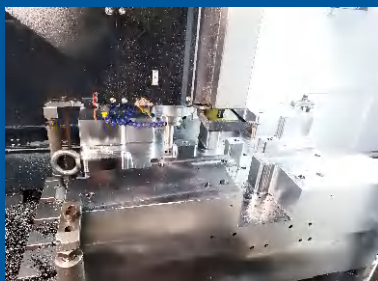
1) 模具钢材

- 我司代理日立钢材已10多年,我们能为客户提供专业的原厂售前售后服务,为配套客户需求,我们基本提供光板及热处理服务
- 我们的光板加工,最大能做到(W)1000mm x (L)2000mm
- 从2020年,我们开始投入模仁加工
- 我们从毛料至完成加工,一站式配套,确实可省回3-4天时间

毛料 → 光板 → 粗加工 → 热处理 → 精磨 → CNC精加工

1) Tool Steels

- Our company has involved in selling Hitachi steel for more than 10 years, we provide customers with professional original factory pre-sales and after-sales services.
- In order to meet the needs of customers, we provide machined plates and heat treatment services
Our surface machining can achieve (W)1000mm x (L)2000mm(Max.)
- From 2020, we started to invest in mould core processing
- Our one-stop package from cutting steels to finished processing can indeed save 3-4 days
Steels cutting→Surface machining→CNC roughing →Heat treatment →Fine grinding→ CNC finishing



2) 非标准模架

- 我司于2010年投入模胚生产,目前配套卧式机,立式机,龙门机,高速机;
最大能加工(W)1200mm x (L)2000mm
- 主要产品包括:多色模,多腔圆吼模,原身成形模,五金冲压模及压铸模胚
- 配备三次元检测,保证精密模胚的高质要求



2) Non Standard Mouldbase

- Our company has been engaged in mouldbase production since 2010. Supporting horizontal machine, vertical machine, gantry machine, high-speed machine. We can process up to (W)1200mm x (L)2000mm
- Our products mainly include: multi-color moulds, multi-cavity round moulds, forming moulds, metal stamping moulds and die-casting mouldbases
- We are equipped with CMM inspection to ensure the high quality requirements of precision mouldbases

3) 非标模具配件

- 客户订做模胚,我们可配套全部配件
- 客户亦可单独来图订做非标配件

3) Accessories in special production

- Our tailor-made mouldbase can support all accessories
We can produce components to suit your specific requirements



▼生产设备加工范围 Production machine and capacity

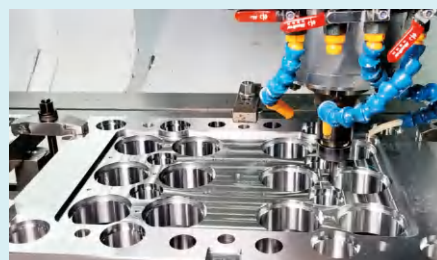
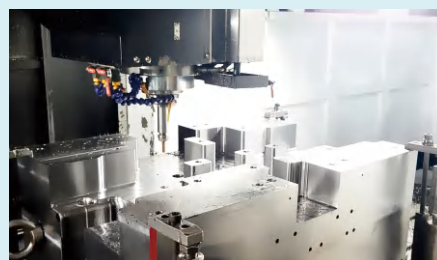
●光板加工 Surface machining

NO.	设备 Machine	加工极限 Capacity (mm)		
		L	W	T
1	锯床 Band Saws	—	1350	1000
2	龙门铣床 NC gantry milling machine (Rough)	2000	1200	460
3	精龙门铣 NC gantry milling machine (Fine)	2000	1200	330
4	龙门铣磨机 NC gantry milling & glinding machine (Fine)	2000	1200	370
5	双头侧铣床 NC Horizontal twin headed milling machine (Fine)	1300	1300	300
6	磨床 Surface glinding machine	1500	600	360
7	侧铣床 Horizontal milling machine (Rough)	1500	600	300
8	精侧铣床 Horizontal milling machine (Fine)	1500	800	560
9	倒角机 Trinity ganged chamfering machine	1400	800	300



●模胚加工 Mouldbase production

NO.	设备 Machine	加工极限 Capacity (mm)		
		L	W	T
1	粗框机 Horizontal CNC (Roughing)	1700	1350	700
2	卧式加工中心 Horizontal CNC (Precision)	2000	1200	460
3	立式加工中心 Vertical CNC machine	1700	850	330
4	龙门加工中心 Gantry CNC machine	2000	1200	370
5	高速龙门加工中心 Gantry High Speed CNC machine	1600	1300	300
6	三次元检测 CMM	1000	800	600
7	卧式深孔鑽 Horizontal gun drill	1600	1600	1100
8	立式深孔鑽 Vertical gun drill	1500	800	560
9	摇臂鑽床 Radial drill press	1400	800	300

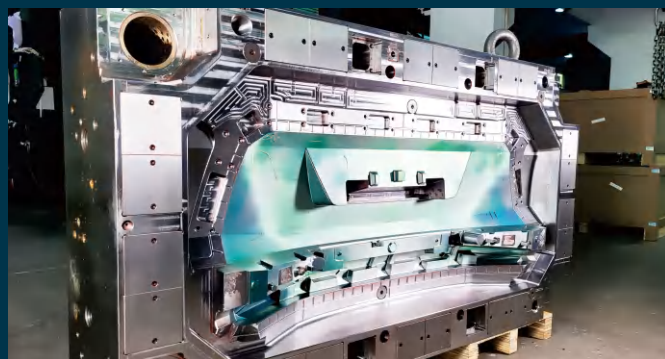


▼加工产品 Our Products

规格(Size) : 400 x 980 x 1770mm

汽车保险杠前模全精加工

Automobile bumper mould fine machining



规格 (Size) : 450 x 550mm

P20 模胚

P20 Mouldbase

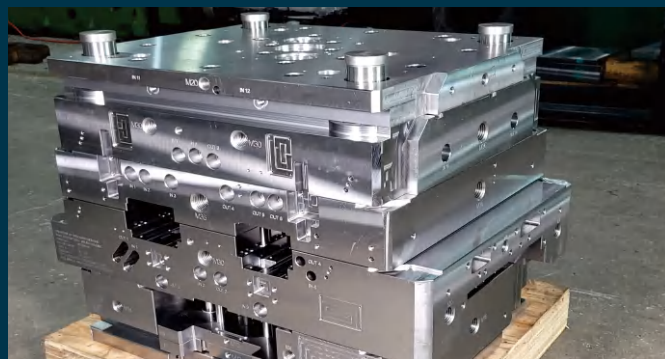


规格(Size) : 600 x 880mm

吸尘器模胚(P20材料出口产品)

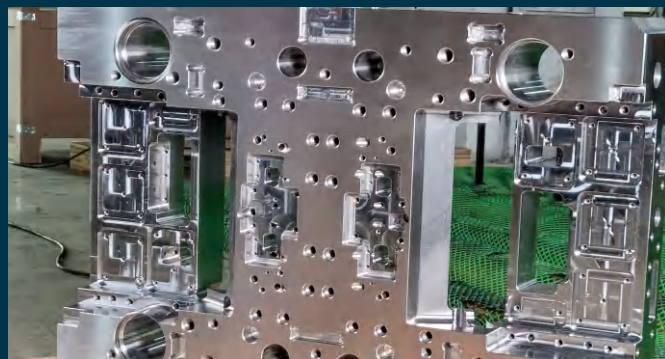
Vacuum cleaner mouldbase

(product for export)



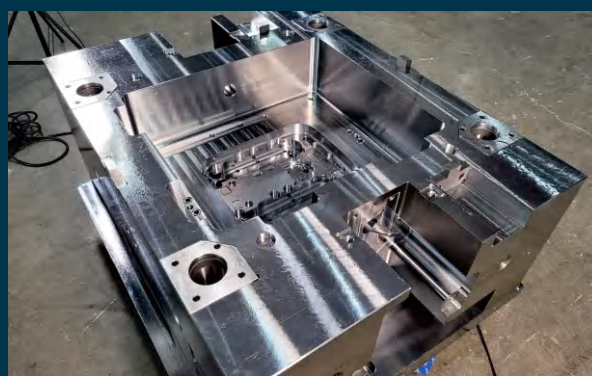
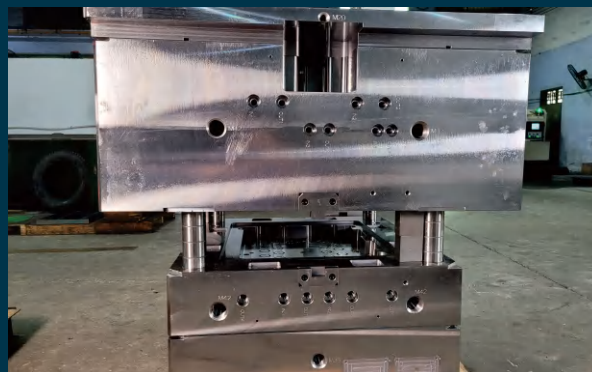
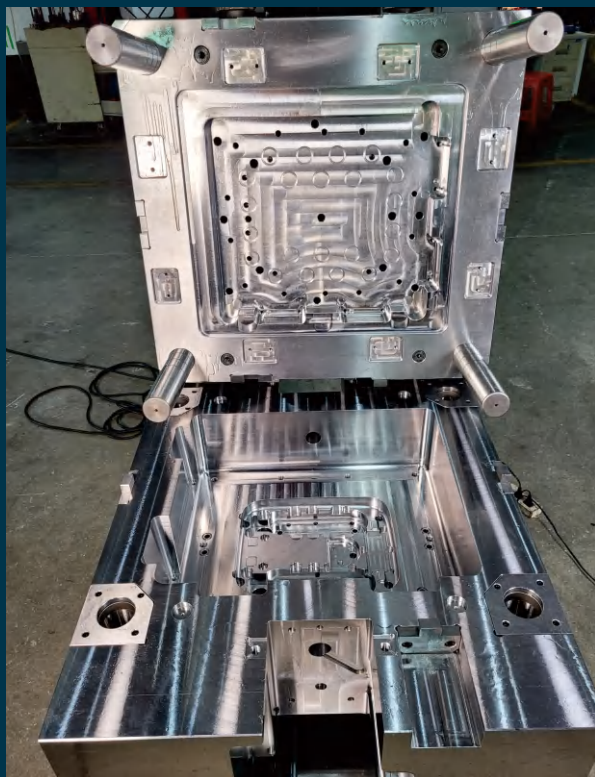
吸尘器模胚(A板)

Vacuum cleaner mouldbase(Cavity Plate)



籍著先进的管理体系, 我司能有效降低运作以至生产成本, 我们生产的模胚及加工产品, 于同等质量之下, 能为客户提供更便宜的出厂价格
Thanks to the advanced management system, our company can effectively reduce the operation and production costs, so our mouldbases and processed products can maintain the same quality with cheaper ex-factory prices

▼加工产品
Our Products



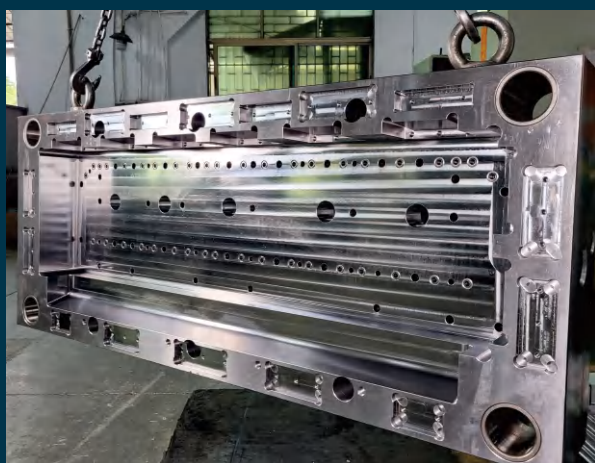
规格(Size) : 1050 x 900mm
前后模板异常规格
A/B Plate with difference diamention



规格(Size) : 700 x 1700mm
前模板 Cavity Plate



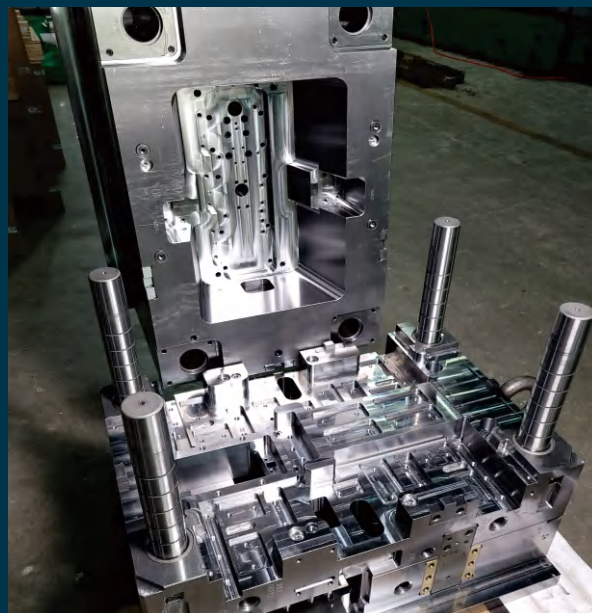
压铸模架
Die casting mouldbase



我们精通生产各种不同标准的模胚, 包括公制, 英制, DME, Hasco, Progressive, Meusburger 等, 我司可以按照客户的要求进行加工, 为客户度身定做实际所需的模胚及配件

We are proficient in the production of mouldbases with various standard , including metric, imperial, DME, Hasco, Progressive, Meusburger , etc. Our company can process according to customer requirements, and tailor-made mouldbases and accessories for customers.

▼加工产品 Our Products

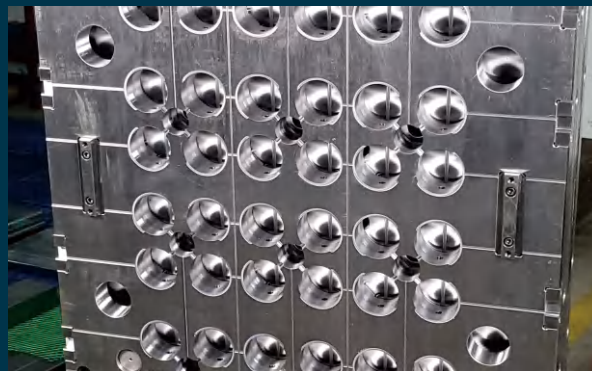


规格(Size) : 475 x 750mm



48腔多孔模胚(材料420H), 板厚, 圆径, 定位公差 : < 0.015mm

48 cavity multi bores 420H mouldbase ,Thickness, Diameter, Location tolerance : < 0.015mm



我司采用的软件有Pro/e,UG, AutoCAD, Solidworks ,客户可提供不同格式的图档如Step, X_t, IGS, DWG等给我们进行报价, 绘图及加工; (这样能为客户提供更大方便)

The software we are using included : Pro/e, UG, AutoCAD, Solidworks, customers can provide drawings in different formats such as Step, X_t, IGS, DWG, etc. for us to make a quote, to draw and to process/ (It provides more convenient to customers.)

▼加工产品 Our Products



规格(Size) : 650 x 800mm 2738H

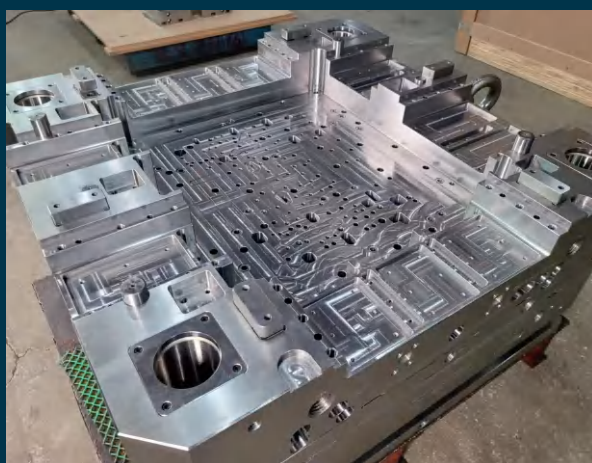
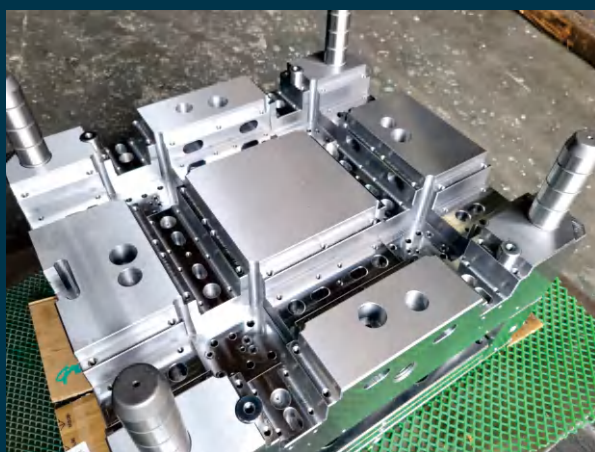
CNC及EDM 精成形出口模胚

CNC & EDM fine machining

Product for export



对于精密模胚或模仁，我们会通过CMM检测出厂，并能提供报告，我们的产品精度能做到 $<0.015\text{mm}$
For precision mouldbases or mold cores, we will deliver after passing the CMM inspection with report. Our product accuracy can be achieved $<0.015\text{mm}$



对于每张生产订单，我们会派员紧贴跟踪，若客户设计有变动，我们会迅速反应，灵活配合调整加工；此外，我们会适时为客户提供加工进度，让客户更清楚交期状况

For each production order, we will assign a staff to follow up closely. When the customer change his design, we can respond quickly and flexibly to adjust the processing work. In addition, we will provide the processing progress to customers in a timely manner, so that they can have a better understand about the delivery status.

▼加工产品 Our Products



我司客户遍布国外, 拥有10年以上的出口经验, 我们的货运团队能为客户提供一站式的门对门海运及空运服务
Our customers came from all over the world, with more than 10 years export experience, our logistics team can provide one-stop door-to-door sea and air delivery services to customers.

材质(Material) : P21

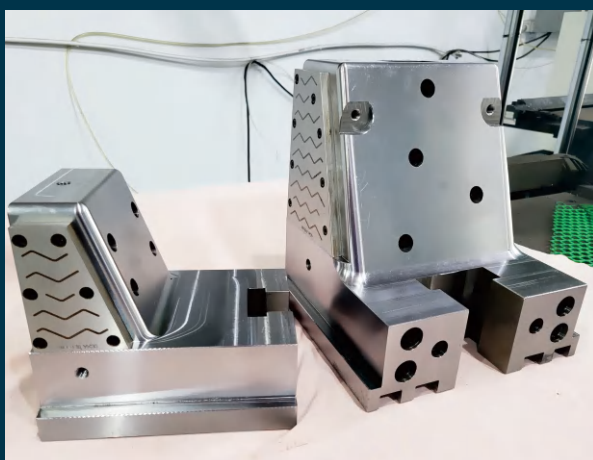


行位座 slide stopper Wedge
出口产品 Product for export

塑胶模胚 (倒装设计)

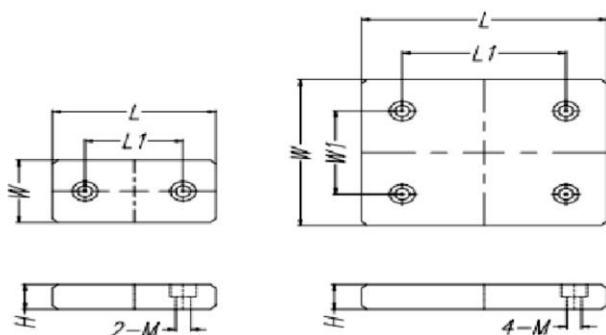


Plastic mouldbase (Inverted installation design)
出口产品 Product for export



模胚的品质方面, 我们无论镗孔, 精框, 均设有现场测量, 生产完成后, 我们会100%QC检查, 测量工具包括日本三丰量具, 还有三次元等设备, 检测合格再进行组装

In terms of the quality of the mouldbase, we have on-site measurement such as boring and milling pocket. After completion of the production process, our QC will conduct full inspection. The measurement tools include Japanese Mitutoyo measuring tools and coordinate measuring machine, product will be assembled upon passing the QC test.



● 耐磨块 Wear Resistance Plate H=6mm

W \ L	40	50	60	70	80
30	20	30	40	50	
40			40	50	60
50				50	60
60					60

材料 Material	硬度 Hardness
40 Cr	HRC 50-55



● 耐磨块 Wear Resistance Plate H=10mm

W \ L	50	60	70	80	90	100	W1 \ L1
30	30	30	40	50	60		
40	30	30	40	50	60	70	
50			40	50	60	70	
60			40	50	60	70	
70					40	60	70
80						50	70



● 耐磨块 Wear Resistance Plate H=12mm

W \ L	40	50	60	70	80	90	100	120	130	140	150	W1 \ L1
20	20	32	36	40	50							
30		32	36	40	50	60	70	80				
40		32	36	40	50	60	70	80				
50			36	40	50	60	70	80		100		
60			36	40	50	60	70	80	90	100	110	
70				40	50	60	70	80		100		
80					50	60	70	80	90	100	110	
90						60	70	80				
100							70	80		100	110	
120								80				

● 平衡块 Balance Plate H=12mm

W \ L	50	60	70	80	90	100	120
30	32		40		60		
40	32	36		50		70	80
50			40	50		70	
60				50	60	70	80



● 压条 Clamping Block H=15mm

W \ L	50	60	70	80	90	100	120	130	140	150	W1 \ L1
20	8 30	8 30	8 35	8 40	8 50	8 60					M6
25			10 35	10 40	10 55	10 60	10 70	10 75	10 85	10 95	M8

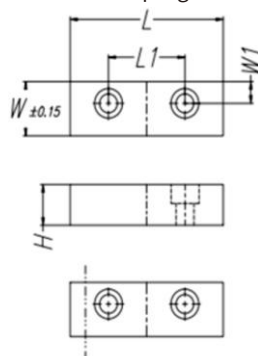
● 压条 Clamping Block H=20mm

W \ L	60	70	80	90	100	110	120	130	140	150	W1 \ L1
20	8 30	8 35	8 40	8 50	8 60	8 70	8 80				M6
25		10 35	10 44	10 50	10 60	10 70	10 75	10 85	10 95	10 100	M8
30					12 50	12 60	12 70	12 80	12 90		M10

● 压条 Clamping Block H=25mm

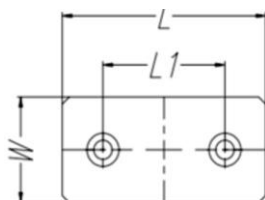
W \ L	80	90	100	110	120	130	140	150	W1 \ L1
25	10 40	10 50	10 60	10 70	10 75	10 85	10 95	10 100	M8
30			12 50	12 60	12 70	12 80	12 90	12 100	M10

● 压条 Clamping Block

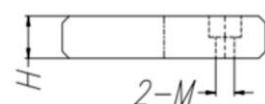
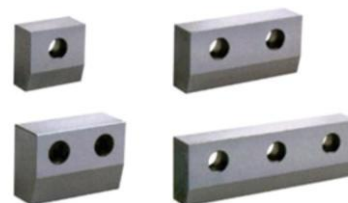


材料 Material	硬度 Hardness
40 Cr	HRC 50-55

● 锁模块 Locking Block

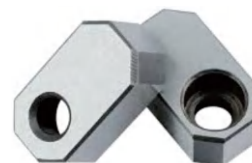


L	W	H	L1
60	18	8	40
80	25	12	50
100	32	15	60



● 丝筒针压块 Sleeve Pin Cover

L	W	H
32	20	12
23	13	10



公司产品-模具钢材

Company Products-Mold Steel

日立金属 - 原产日本安来钢厂

本公司于2003年开始销售代理日立金属特殊钢材, 通过正规途径合法引进, 保障产品的真确及原厂售后服务。

我们主要供应塑胶, 冷衝, 压铸, 及挤压模具行业, 客户主要广东省范围, 终端产品幅盖电子, 医疗, 家电及汽车行业。

Hitachi Metal Special Steel-Original YSS Factory ,Japan

We have been appointed as sales agent for Hitachi Metal Special Steel since 2003. To guarantee genuine products and ensure that customers can receive original after-sales service, we import our products directly from the manufacturer through proper and lawful channels.

Our customers mainly come from plastic, cold stamping, die casting, and extrusion dies industries, located in Guangdong Province. Their products included electronics goods, medical / home appliances and automobiles.

日本安来工厂
Anlai Factory, Japan



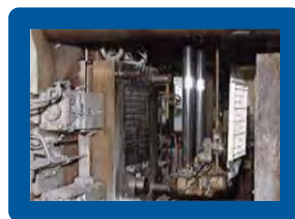
钢厂位置
Location



冷作模具用钢
Steels for Cold Working Molds



高性能冷作工具钢SLD-MAGIC™
High Performance Cold Working
SLD-MAGIC™



压铸模具用钢
Steels For Diecast Molds



先进的压铸模具钢DAC-MAGIC™
Advanced Die Steel For Die
Casting DAC-MAGIC™

日立安来工厂及工艺特点

Hitachi YSS Factory and Process characteristics

日立安来工厂已有百余年的悠久历史,通过精心筛选各类原料,秉承传统的制钢技术,不断创新,专业制造品质优良的模具钢厂通过特殊工艺,名为“各向同性”冶炼产品

各向同性



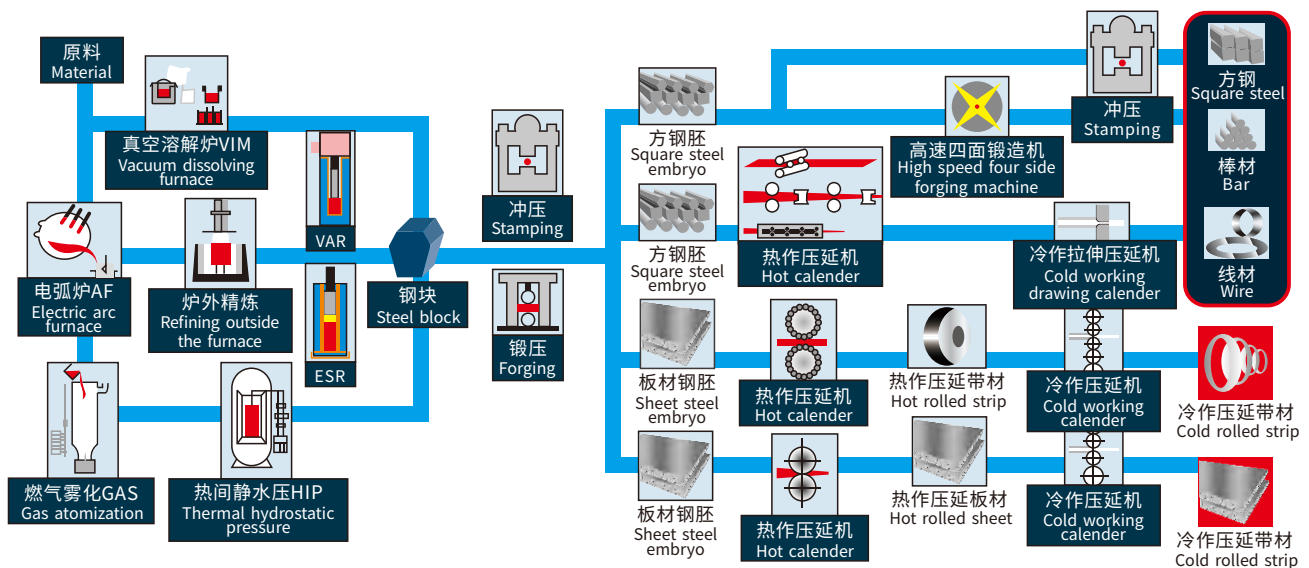
模具钢可以减少钢材的纵向(压延方向)、横向机械性质的差异,具备各向同性的特征。

这种技术思想受到各界模具钢用户的高度评价,已广泛用于所有的日立制钢,对日立模具钢特性的稳定和高寿命化作出了极大贡献。

YSS Factory has a long history of more than 100 years. Through careful selection of various raw materials, adhering to the traditional steelmaking technology, continuous innovation, and professional manufacturing of high-quality die steel.

ISOTROPY

Isotropy tool steels are so named because the difference in mechanical properties between its longitudinal (forging or rolling direction) processed steels. This technological concept, which is highly evaluated by users of tool steels, is applied for the production of all the steels and contributes significantly to stabilizing their characteristics and enhance their service life



热挤压模具材料/挤压工具
Hot Extrusion Die Materials / Extrusion Tools



热加工用钢
Steels For Hot Working



塑料模具用钢
Steels For Plastic Molds



高品质刀片用钢
Steels For High Quality Blades

▼安来塑胶模具钢系列

YSS Plastic Mould Steel

分类 Group	使用硬度 Hardness Employed (HRC)	钢种 Grade	化学成分类型 Material Type	用途类型 Application Example
预硬钢 Prehardened	29~33	HPM7	P20改良 AISI P20 improved	用于对焊接性及切削性要求高的产品 (汽车, 家电, 住宅设备等) Mold required good weldability and machinability (Autoparts, Home appliances, House equipment)
		HPM38	SUS420改良 AISI 420 improved	用于添加阻燃剂之塑料, 日用透明产品 (家电, 医疗, 食品), 橡胶 Flame retardant resin, Transparent parts, Rubber
		HPM77	SUS420改良 (快削) AISI 420 improved Free-cutting by adding Sulfur	耐腐蚀模架, 橡胶等模具 Corrosion resistant mold bases, Rubber mold
	37~42	CENA1	含CrNiAl析出硬化研 Chromium contained low Carbon grade	耐腐蚀性, 重视镜面性, 咬花性, 电火花加工表面, 高光无痕成型模具 Rust resistance mould & Steam mould with sensitive surface polishing, creping, EDM
	35~41	CENA-G CENA-V	低C含Cr系 Chromium contained low Carbon grade	耐锈性、重视精加工表面 (抛光低要求CENA-G, 高要求抛光CENA-V) Rust resistant mold with good polishing properties
	37~41	HPM-MAGIC	P20改良 AISI P20 improved	常用量产模具 (汽车, OA机器, 各种家电) General Mass-Production Mold (Autoparts, OA equipment, Home appliances)
		HPM-PRO	P21改良 AISI P21 improved and Free-cutting by adding Sulfur	汽车灯相关部件, 手机框体 Mold for general use (Home appliances etc)
	38~42	FDAC	SKD61 (快削) AISI-H13 improved and Free-cutting by adding Sulfur	工程树脂, 滑动模块 Engineering resin, Slide core
淬火回火钢 For Quench and Temper	45~53	DAC-S	H13 (2344) 改良 H13 Improved	耐磨损, 镜面加工用 (各种家电, 热硬化性树脂等) With good balance of toughness, hardness and mirror polish
	50~55	HPM38	SUS420J2 改良 AISI 420 improved	耐腐蚀镜面加工用 (磁带外壳, 医疗机器, 碗碟) Mold for Anti-corrosion, Mirror polish (Medical instruments, Food container, etc)
		HPM38S	SUS420J2 改良 SUS420J2 Improved	超镜面加工用 (光碟, 非球面镜片) Mould for super mirror polish (Optical, lens)
	54~58	YXR33	基质高速钢 Matrix HSS	接插件, 顶杆等对韧性要求高的产品 High speed steel with most superior toughness (core pin, thin wall)
	56~62	HPM31	SKD11 改良 AISI D2 improved	耐磨损, 精密工种树脂用 (齿轮, 接插件, IC 模具) Wear resistant mold for engineering resin (Gear, Connector, IC)
	63~67	HAP40	粉末高速钢 SKH 40	工种树脂提高耐食性, IC 模具 P/M high speed steel with excellence wear resistance
处理钢时效 Aging of treated steel	40~45	HPM75	高硬度非磁性快削钢 High hardness, non-magnetic	磁场成形用 (磁性塑料) Molding in magnetic field (Plastic magnet)

▼特性比较表

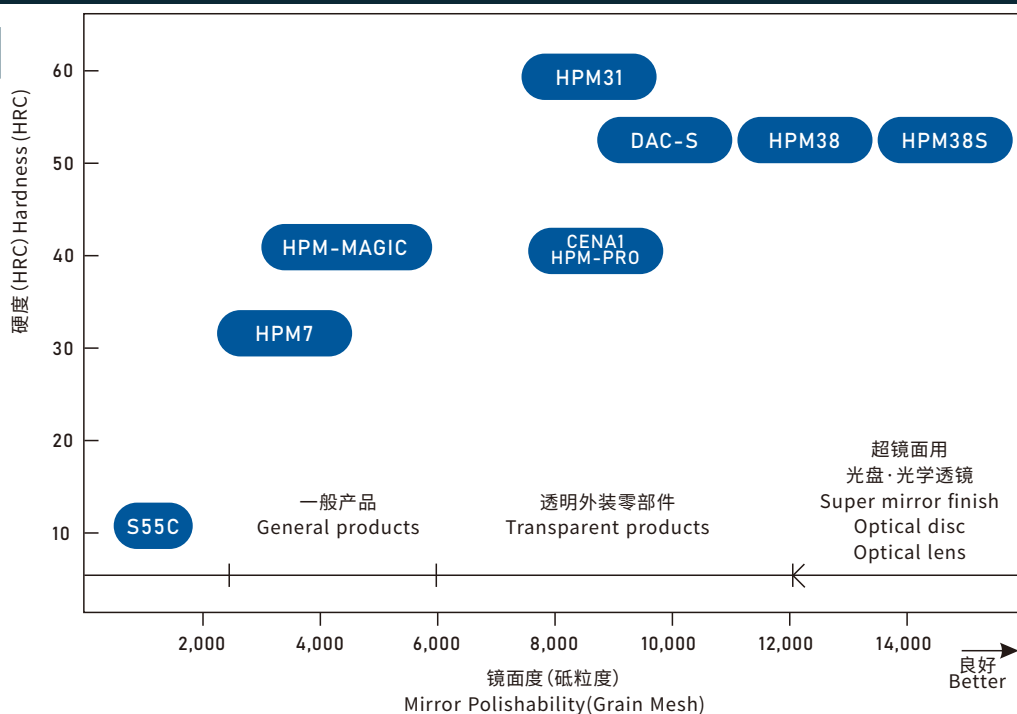
Properties Comparison Table

钢种 Grade	切削性 Machinability	热处理性 Heat treatability	电火花加工 表面咬花 EDM Texture Surface	镜面性 Mirror Polishability	焊接性 Weldability	耐腐蚀性 Corrosion Resistance	耐磨损性 Wear resistance	韧性 Toughness
HPM7	A	-	C	C	A	D	D	B
HPM77	B	-	D	D	C	B	D	C
CENA1	C	-	A	B	C	C	D	C
HPM-MAGIC	B	-	B	C ⁺	A	D	D	B
HPM-PRO	B	-	A	B	B	D	D	C
FDAC	C	-	D	D	C	D	C	C
CENA-G	C	-	B	B	A	C	D	B
CENA-V	C	-	A	A	A	C	D	B
DAC-S	C	B	A	B	C	D	C	B
HPM38	C	A	A	A	C	B	C	C
HPM38S	C	A	A	A ⁺	C	B	C	C
HPM31	C	B	A	B	D	C	B	C
YXR33	C	C	A	B	C	C	B	B
HAP40	D	C	B	C	E	D	A	D
HPM75	E	B	D	D	E	B	C	C
S55C	A	-	C	E	C	E	E	C

*位置图标 (优A 中C 差E)

Ratings: A--Best C--Ordinary D,E--Poor

镜面加工性(概念图)
Polishing Property(Schematic Diagram)



机械性能
Mechanical Properties

钢种 Grade	硬度 Hardness (HRC)	拉伸强度 Tensile Strength (N/mm ²)	0.2%耐力 0.2% Yield Strength (N/mm ²)	伸长率 Elongation (%)	断面缩减率 Reduction of Area (%)
HPM7	32	975	855	20	55
DAC-S	48	1,635	1,470	16	56
HPM38	52	1,910	1,620	13	35
HPM77	32	990	845	16	41
CENA1	40	1,225	1,250	15	50
HPM-MAGIC	40	1,200	1,020	18	45
HPM-PRO	40	1,200	1,020	17	45
HPM75	42	1,305	1,110	11	28

物理性能
Physical Properties

钢种 Grade	热膨胀系数(×10-6/℃) 从30℃到各温度的平均值 Thermal Expansion Coef.(×10-6/℃) Averaged value from 30℃ to each temp.				热传导率(W/m·k) Thermal Conductivity(W/m-K)				
	100℃	200℃	300℃	400℃	20℃	100℃	200℃	300℃	400℃
HPM7	11.6	12.2	12.8	13.4	34.3	38.3	39.8	40.4	40.6
DAC-S		11.3		12.2	24.6		29.1		31.0
HPM38	10.4	11.1	11.5	11.8	22.1	25.5	26.7	28.5	29.6
HPM77	10.1	10.7	11.1	11.5	22.3	24.9	26.3	27.9	29.5
CENA1	10.8	10.5	12.0	12.4	20.5	22.9	25.9	28.2	30.5
HPM-MAGIC	11.5	12.3	12.9	13.4	31.4	34.1	37.7	40.2	41.1
HPM-PRO	10.4	13.0	13.3	—	28.3	31.9	35.4	38.3	—
HPM31	12.4	13.1	13.6	14.1	26.5	—	34.4	—	39.8
HPM75	16.1	17.2	18.0	18.6	12.3	14.5	16.4	18.7	20.4

▼安来冷作模具钢系列 YSS Cold Work Mould Steel

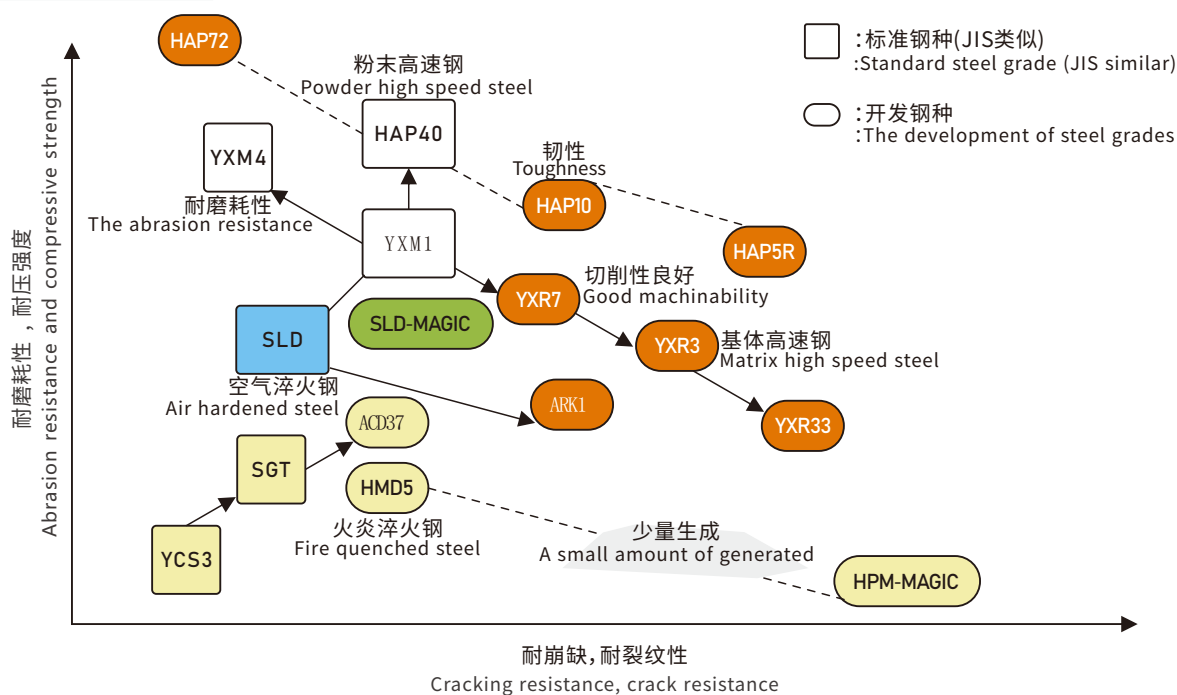
分类 Group	钢种 Grade	JIS类似 JIS Equivalent	特长 Characteristics	主要用途 Main Application
冷间模具用钢 Cold work tool steels	SLD-MAGIC	开发钢种 Development steel	兼备于提高模具寿命作简易的高性能冷作模具钢 High-performance cold work tool steel attaining both extended die life and easy die fabrication.	高强度钢板等高负荷成形用冲压模具，冷作模具等。 Cold work dies for high-tensile steels, SUS, mass production, and general use.
	SLD	SKD11	耐磨性大的通用冷作模具钢，有优良的淬火性，并且淬火变形小。 Cold work die steel with high abrasion resistance for general	一般冷作模具，成形轧辊，剪切机。 Cold work dies for general use, forming roll, shear blade.
	SGT	SKS3	有优良切削性的通用冷作模具钢。对大件的淬火及电火花加工需要注意。 Cold work die steel with superior machinability for general use; Special care is required for quenching large-size dies or wire electric discharge machining.	板金用模具，量规 Dies for deep drawing, gauges.
	HMD5	开发钢种 Development steel	火焰淬火用，空冷时硬度高及变形也小，焊接性良好。 Steel for flame hardening, resulting in high hardness and	板金用模具 Dies for deep drawing.
溶制高速工具钢 High speed tool steels	YXM1	SKH51	耐磨性，韧性大的通用高速钢。 High speed steel with high abrasion resistance and toughness for general use.	冷锻模，锻锻工具，纵剪切机 Cold forging dies, cold heading dies, slitter.
	YXR3	基质高速钢 Matrix HSS	58~61HRC，最高的韧性，通用基本高速钢。 Matrix high speed steel for general use, extremely highest toughness in 58-61HRC.	避免裂纹，缺口用模具 Dies to be used for cracking or chipping resistance.
	YXR33		在高速钢中显示出最高韧性的基本高速钢，使用硬度54~58HRC。 Matrix high speed steel highest toughness in high speed steels. Standard hardness 54-58HRC.	冷间模，中温锻模 Cold forging dies, warm forging dies.
粉末高速工具钢 P/M High speed tool steels	HAP10	粉末高速钢 Process High Speed	高韧性粉末高速钢 Extremely tough Powder Metallurgy process high speed steel.	精密冲压模 Cold forging dies, fine blanking dies.
	HAP40	SKH40	耐磨性，韧性兼备的通用粉末高速钢。 P/M high speed steel with high abrasion resistance and toughness for general use.	大量生产用冲压模，轧辊 Press forming dies for mass production, roll.

▼YSS冷间加工用工具钢的特征

Features of YSS tool steels for cold room processing

各种钢种的特殊关系图

Special relation diagram of various steel grades



▼安来冷作模具钢系列

YSS Cold Work Mould Steel

耐磨耗性

Wear resistance

大越式磨耗试验
对应材:SCM415
磨耗距离:400m
摩擦速度:0.76m/s
荷重:67N

Ohgoshi-method wear test
Work material:SCM415
Friction distance:400m
Friction speed:0.76m/s
Load:67N

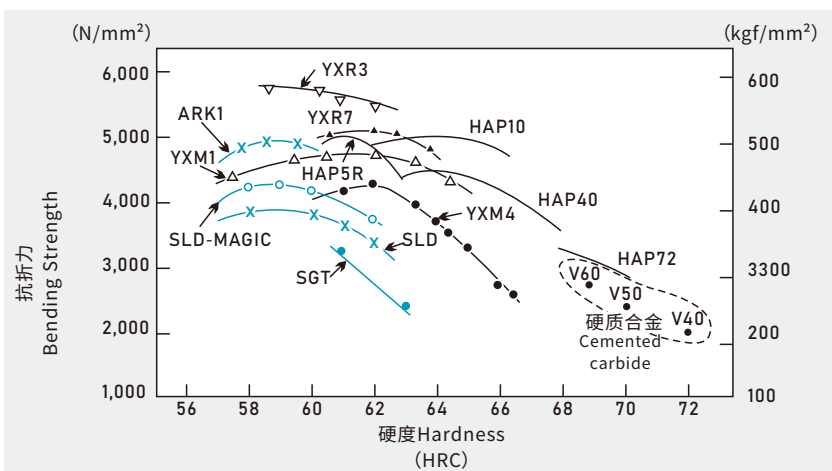
钢种 Grade	硬度 Hardness (HRC)	磨耗量比 Specific abrasion volume (mm ³ /mm ² ·mm) x 10 ⁻⁷			
		0.5	1.0	1.5	2.0
SLD-MAGIC	62.0				
SLD	60.0				
ARK1	59.0				
SGT	60.0				
YCS3	60.0				
ACD37	60.0				
YXM1	65.5				
YXM4	66.0				
YXR7	65.0				
YXR3	59.0				
YXR33	58.0				
HAP5R	60.0				
HAP10	64.0				
HAP40	67.0				
HAP72	70.0				

韧性

Toughness

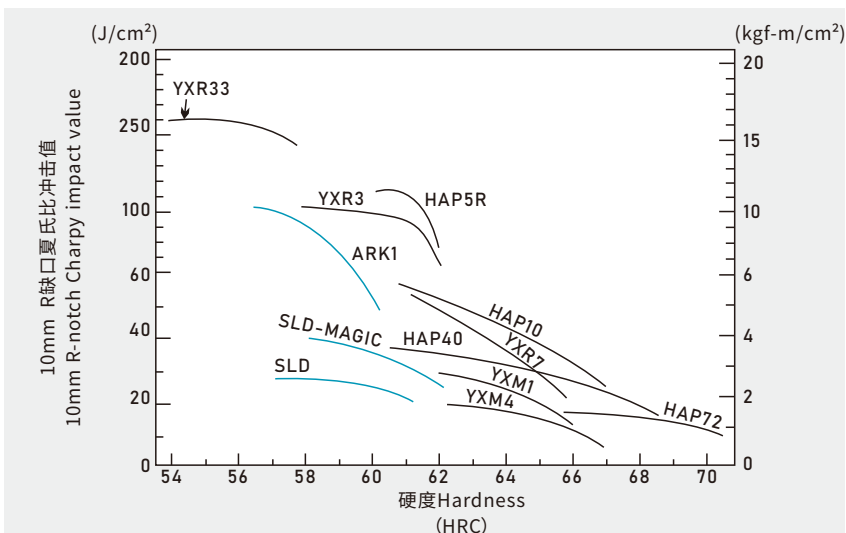
抗折力

Bending strength



夏氏比冲击值

Charpy impact value



YSS Hot Work Mould Steel

▼YSS热间加工用工具钢的特征

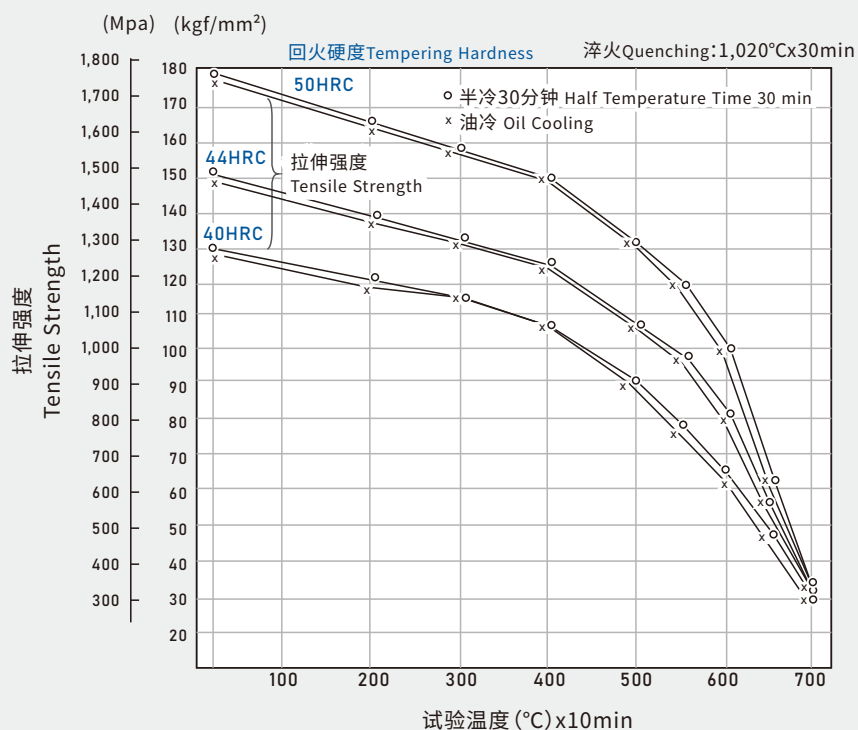
Characteristics of YSS hot work tool steels



机械性能
Mechanical Properties

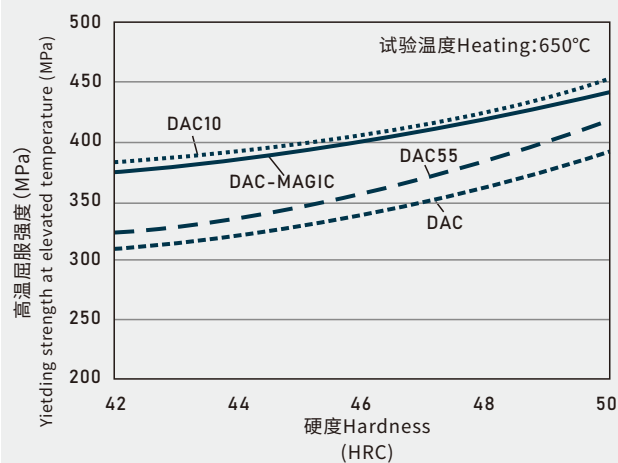
●DAC的高温拉伸强度

Tensile Strength at elevated temperature



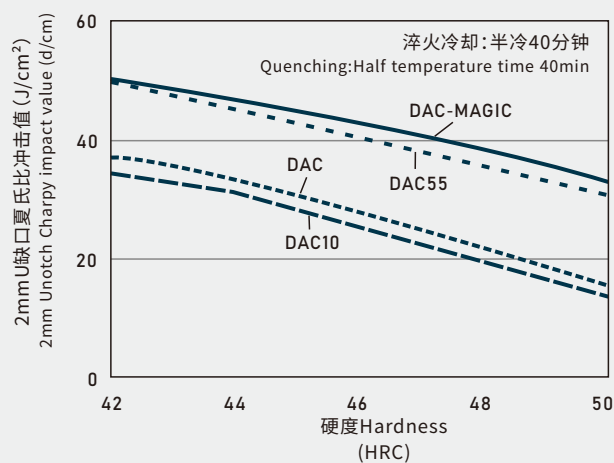
●回火硬度和高温强度

Tempered hardness vs Yielding Strength at elevated temperature



●回火硬度和夏氏比值

Tempered hardness vs Charpy I-Value



●物理性质

钢种 YSS Grade	热膨胀系数 (x10 ⁻⁶ /°C) 从 20°C 到各温度的平均值 Thermal expansion coefficient (x10 ⁻⁶ /°C) Average value from 20°C to each temperature			热传导率 Thermal conductivity (W/m·K)				杨氏率 Young's modulus (GPa)
	200°C	400°C	600°C	20°C	200°C	400°C	600°C	
DAC	11.3	12.2	12.8	24.6	29.1	31.0	32.6	210
DAC-MAGIC	11.3	12.3	13.1	25.7	30.9	34.8	35.8	210
DAC55	11.3	12.1	12.8	26.2	29.8	32.7	34.1	210
DAC10	11.3	12.0	12.7	26.1	31.1	33.0	34.5	210
YXR33	11.3	12.2	12.9	25.0	32.4	34.8	35.5	210



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