



山纳工具



哈尔滨山纳工具制造有限公司
HARBIN SHANNA TOOLS MANUFACTURE CO.,LTD

企业简介

COMPANY PROFILES

哈尔滨山纳工具制造有限公司（原：哈尔滨工具厂第一分厂）是一家以生产精密复杂齿轮刀具为主的现代企业。公司现有员工近百人，年产值达到 3000 万元，实现利税 300 万元以上，产品国内用户有几百家，同时出口到德国、意大利、美国、韩国、波兰、俄罗斯、乌克兰、台湾等十几个国家和地区，深受用户的好评。经过近 30 年的发展，公司拥有了雄厚的技术能力和设备加工能力，关键工序均配有从德国、瑞士、意大利和日本等国进口的生产、检测设备。2015-2018 年期间，哈尔滨市市长和副市长等领导，先后多次到我厂视察指导工作，极大地鼓舞了我们创新和精密制造的干劲和动力，公司现已获得多项发明及实用新型专利、获得了众多的荣誉。

主要产品可转位硬质合金齿轮滚刀、可转位齿轮粗精加工盘铣刀、克林贝尔格软硬切刀和可转位铣削刀具等。

可转位（镶硬质合金刀片）齿轮滚刀和盘铣刀，是针对现代高效滚齿机、高效铣齿机缺乏相应刀具而设计的一种既能提高加工效率，又能反复使用的长寿滚刀，主要应用于中大齿轮加工行业，广泛应用于风电、工程机械和回转支承等领域；克林贝尔格硬切刀主要应用于克林贝尔格机床对螺旋伞齿轮淬火后的精加工；可转位铣削刀具主要应用于航空航天、铁路、风电、机床、模具等领域，深受用户好评。

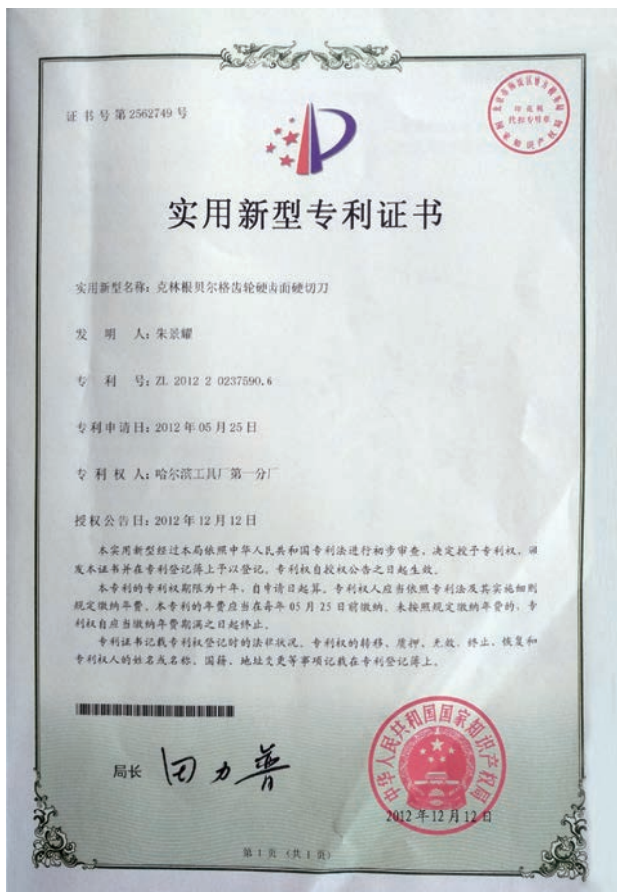
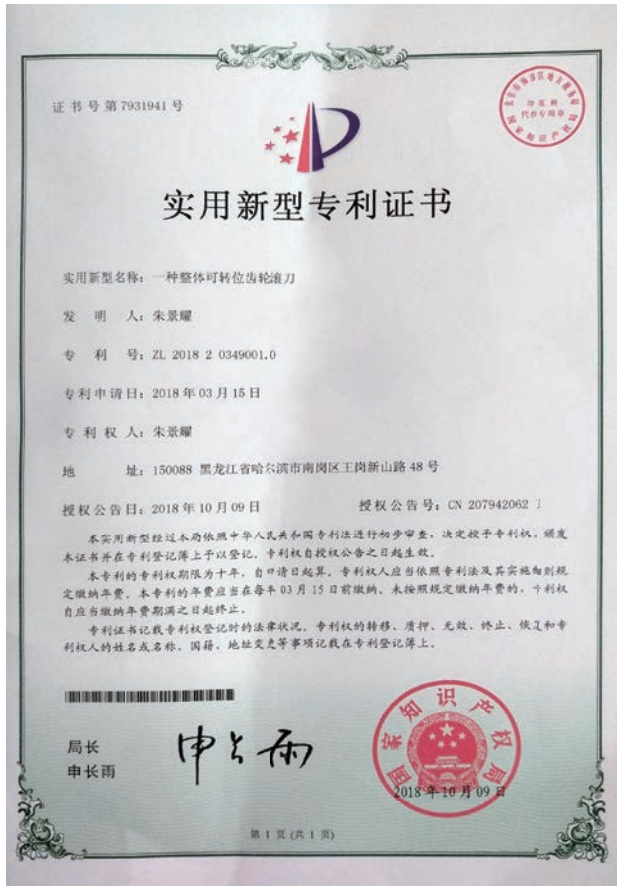
公司已通过了 ISO9001:2008 标准质量管理体系认证。

Harbin shanna tools manufacturer co., LTD. (originally: Harbin tool factory first branch) is a modern enterprise mainly engaged in the production of sophisticated gear tools. The company has nearly 100 employees, the annual output value reaches 30 million yuan, the realization profit tax more than 3 million yuan, the product domestic user has several hundred, simultaneously exports to Germany, Italy, the United States, South Korea, Poland, Russia, Ukraine, Taiwan and so on more than ten countries and the region, deeply user's high praise. After nearly 30 years of development, the company has strong technical capacity and equipment processing capacity, the key processes are equipped with production and testing equipment imported from Germany, Switzerland, Italy and Japan and other countries. During the period of 2015-2018, the mayor and deputy mayor of Harbin and other leaders visited our factory many times to inspect and guide our work, which greatly inspired our motivation and power of innovation and precision manufacturing. Now the company has won a number of invention and utility model patents, and won many honors.

The main products are indexable carbide gear hobs, indexable gear roughing and finishing disc milling cutters, klingberg soft and hard cutters and indexable milling cutters.

Indexable carbide tipped blade gear hob and disc cutter, is for the modern high gear hobbing machine, lack of efficient milling tooth machine tool and design a corresponding can not only improve the machining efficiency, and can use repeatedly the longevity of hob, is mainly used in large gear processing industry, widely used in wind power, engineering machinery and slewing bearing, etc; Klingberg hard cutting tool is mainly used in the klingberg machine tool for the machining of spiral bevel gear after quenching; Indexable milling tools are mainly used in aerospace, railway, wind power, machine tools, molds and other fields, by the user.

The company has passed ISO9001:2008 standard quality management system certification.



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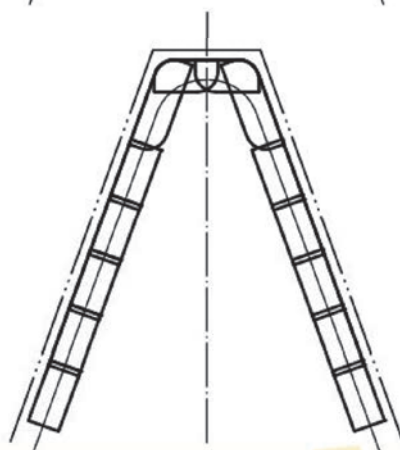
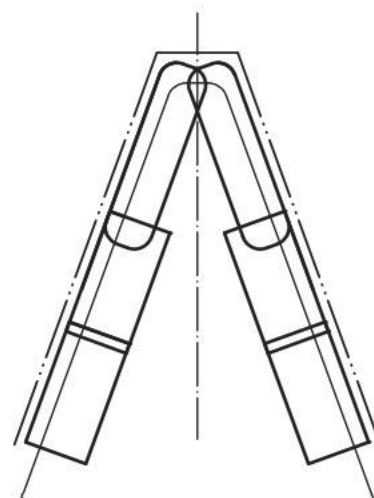
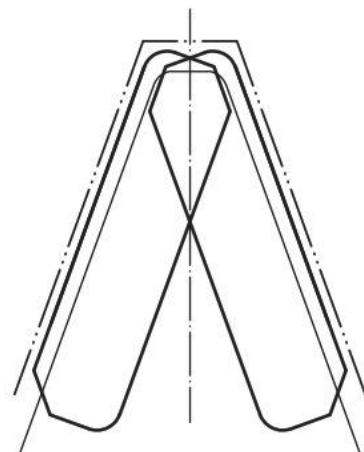
齿轮粗加工刀具

GEAR ROUGHING CUTTER



- ◆适用于 M6 以上工件的粗加工
- ◆适用于内齿轮、外齿轮和齿条的粗加工
- ◆刀片搭接形式，齿型留量不均匀
- ◆适用于产品种类多，单件小批量生产

- ◆ Suitable for rough machining of workpiece above M6
- ◆ Suitable for rough machining of inner gear, outer gear and rack
- ◆ Blade lap type, the tooth shape allowance is uneven
- ◆ Suitable for many kinds of products, single small batch production

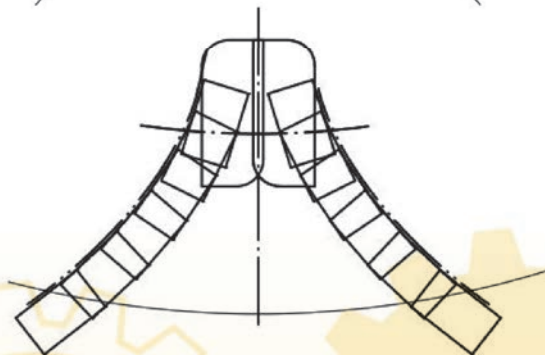
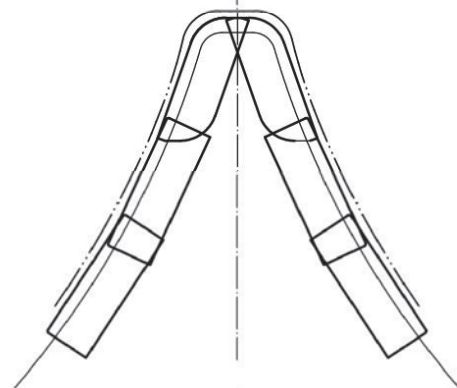
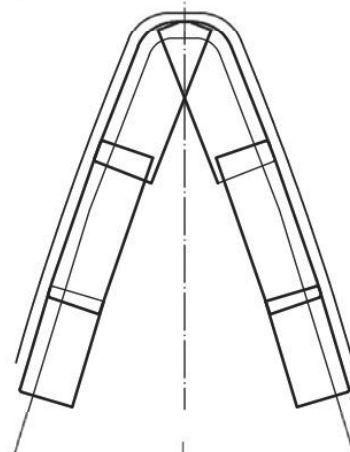
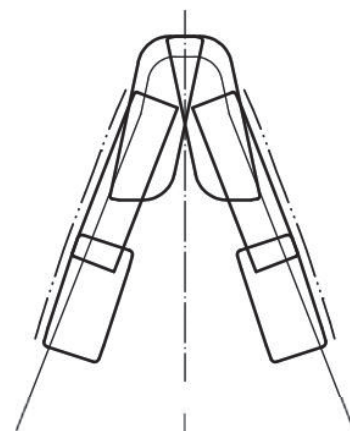


齿轮半精加工刀具

GEAR SEMI-FINISHING CUTTER



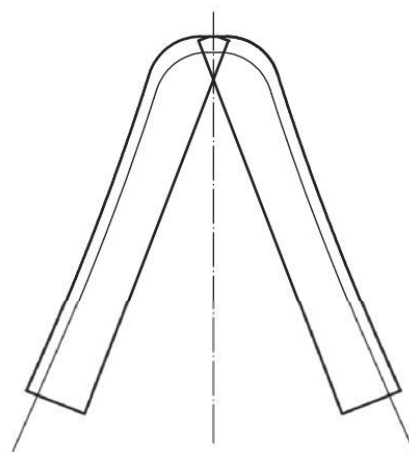
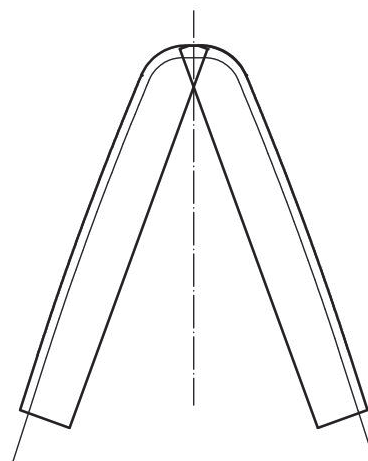
- ◆适用于 M6 以上工件
 - ◆加工不同的工件刀具需单独定制
 - ◆可制作挖根，齿型留量均匀
 - ◆适用于齿型精度要求较高的工件的半精加工
-
- ◆ Suitable for workpiece above M6
 - ◆ Machining different workpiece tools need to be customized
 - ◆ Can produce protuberance, the tooth shape allowance is even
 - ◆ It is suitable for the semi-finishing of the workpiece with high profile accuracy





齿轮精加工刀具 (全主齿结构)

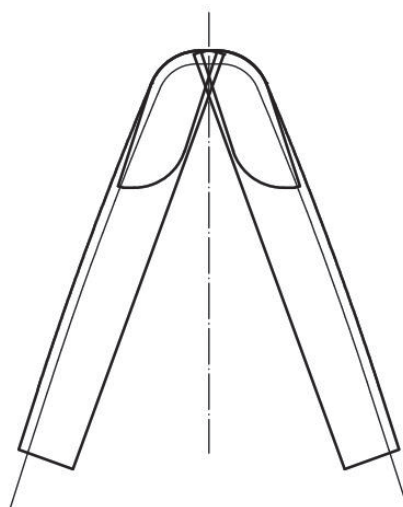
GEAR FINISHING CUTTER (ALL MAIN TEETH FORM)



- ◆适用于 M4 以上内外齿圈
- ◆适用于 M2.5 以上齿条的精加工
- ◆齿型直接精铣成型
- ◆全部主齿形式
- ◆适用于风电、回转支承、工程机械等领域的精加工
- ◆ Suitable for M4 above inner and outer tooth ring
- ◆ It is suitable for finishing the rack above M2.5
- ◆ Direct fine milling of tooth shape
- ◆ All main teeth form
- ◆ For wind power, slewing support, construction machinery and other fields of finishing

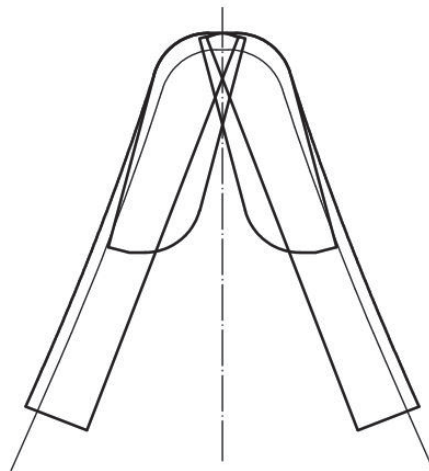
齿轮精加工刀具 (主副齿结构)

GEAR FINISHING CUTTER (MAIN AND MINOR TEETH FORM)



- ◆适用于 M8 以上工件
- ◆适用于内齿轮、外齿轮和齿条的精加工
- ◆齿型直接精铣成型
- ◆一个主齿一个副齿的形式
- ◆适用于风电、回转支承、工程机械等领域的精加工

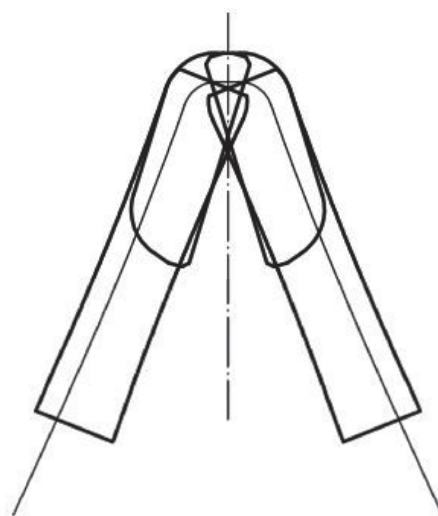
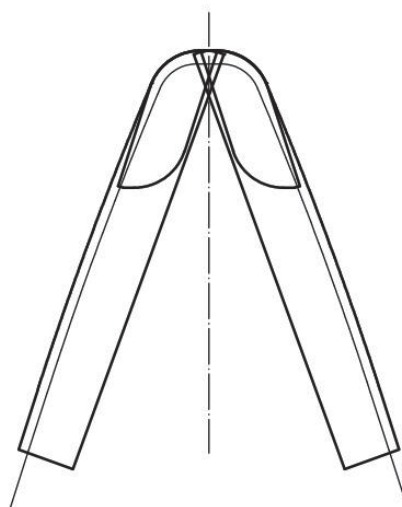
- ◆ Suitable for workpiece above M8
- ◆ It is suitable for finishing inner gear, outer gear and rack
- ◆ Direct fine milling of tooth shape
- ◆ The form of one main tooth and one accessory tooth
- ◆ For wind power, slewing support, construction machinery and other fields of finishing





四转位齿轮精加工刀具

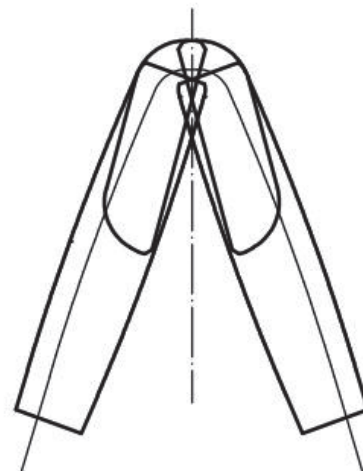
GEAR FINISHING CUTTER OF FOUR TRANSPOSED INVOLUTE INSERTS



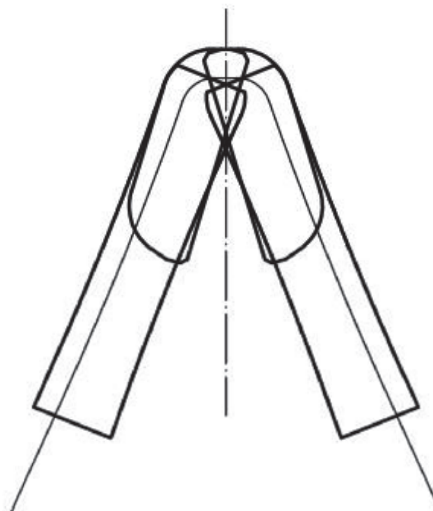
- ◆适用于 M6 以上工件
 - ◆适用于内齿轮、外齿轮的精加工
 - ◆齿型直接精铣成型
 - ◆两个副齿一个主齿形式
 - ◆齿型刀片四次转位
-
- ◆ suitable for workpieces above M6
 - ◆ It is suitable for finishing inner and outer gears
 - ◆ Direct fine milling of tooth shape
 - ◆ Two secondary teeth and one main tooth form
 - ◆ The toothed blade is transposed four times

四转位齿轮精加工刀具（带刀垫）

GEAR FINISHING CUTTER OF FOUR TRANSPOSED INVOLUTE INSERTS (WITH GASKET)



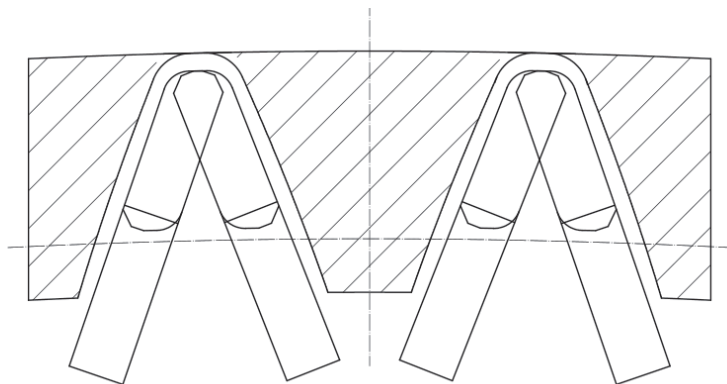
- ◆适用于 M12 以上工件
- ◆适用于内齿轮、外齿轮的精加工
- ◆齿型直接精铣成型
- ◆一个副齿一个主齿形式
- ◆齿型刀片四次转位
- ◆ suitable for workpieces above M12
- ◆ It is suitable for finishing inner and outer gears
- ◆ Direct fine milling of tooth shape
- ◆ A secondary tooth and a primary tooth form
- ◆ The toothed blade is transposed four times





可转位双盘齿轮粗铣刀

DUPLEX-ROUGHING TOOLS

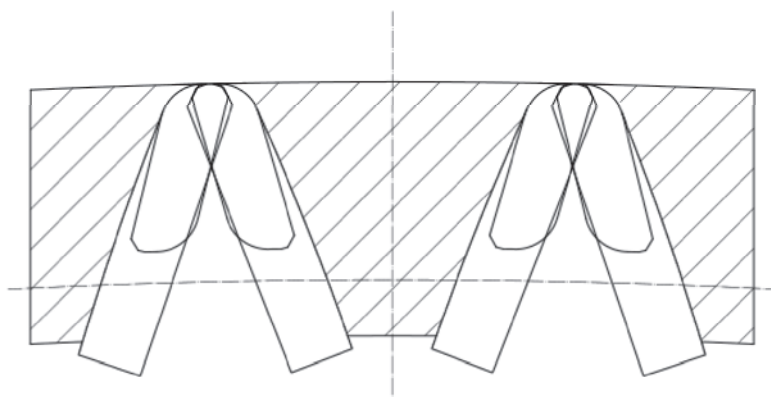


双盘粗铣刀可同时加工两个齿槽，刀片交错排列，使得粗加工的效率大大提升

Duples-roughing tools can process two tooth at the same trme the blade staggered,to enhance the machining efficiency

可转位双盘齿轮精铣刀

DUPLEX-FINISHING TOOLS

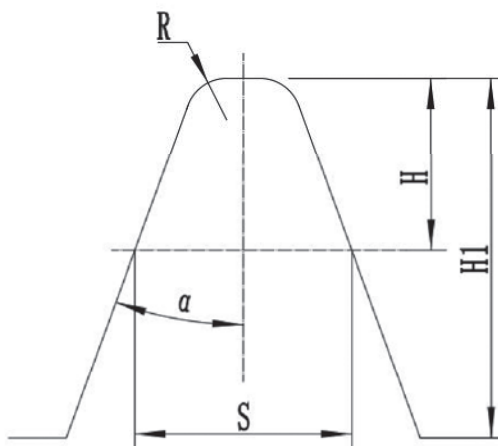
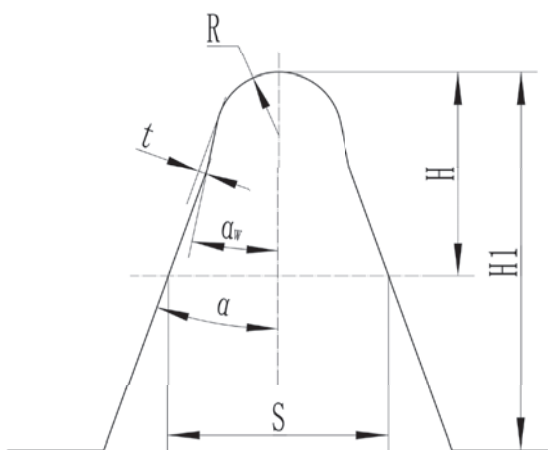


双盘精铣刀可同时加工两个渐开线齿槽，主齿的特殊渐开线设计搭配副齿的齿顶加工，更高效、更经济。

It can machine two involute tooth at the same time,the sprcial design of twolute,more efficient and more economic

齿轮滚刀

GEAR HOBS



M6-M40

非标定制留磨齿型滚刀与标准滚刀
标准滚刀可定制 A 级

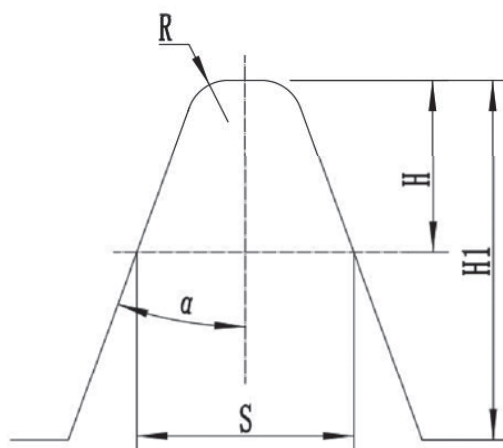
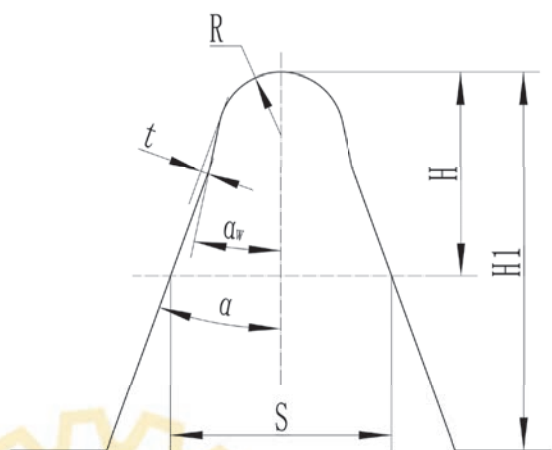
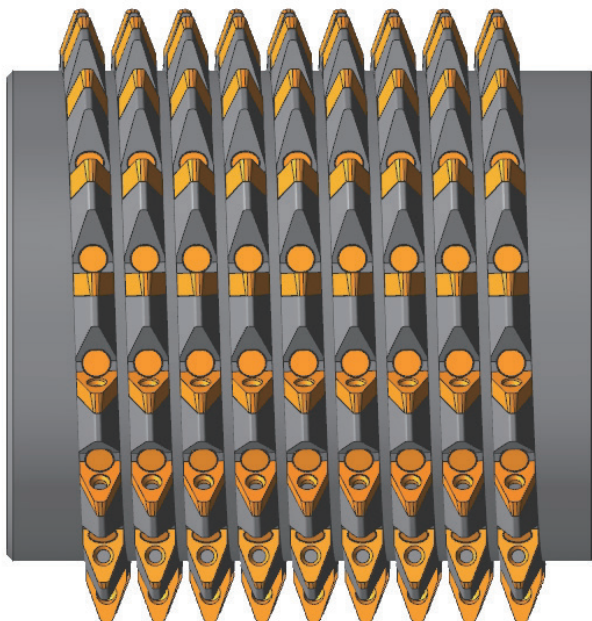
M6-M40

Non - standard custom grinding tooth type hob and standard hob
Standard hob can be customized A class



小模数齿轮滚刀

GEAR HOBS



M4-M8

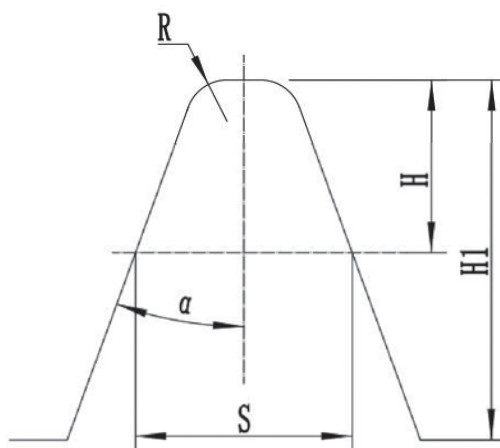
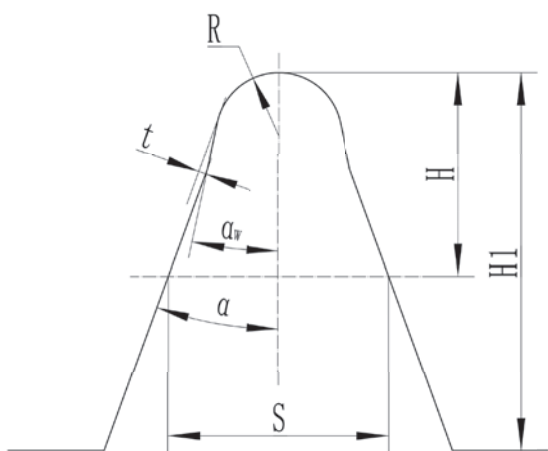
非标定制留磨齿型滚刀与标准滚刀
标准滚刀可定制 A 级

M4-M8

Non - standard custom grinding tooth type hob and standard hob
Standard hob can be customized A class

双头可转位齿轮滚刀

DOUBLE GEAR HOBS



M6-M12

留磨滚刀可定制双头
标准滚刀精度可达 B 级

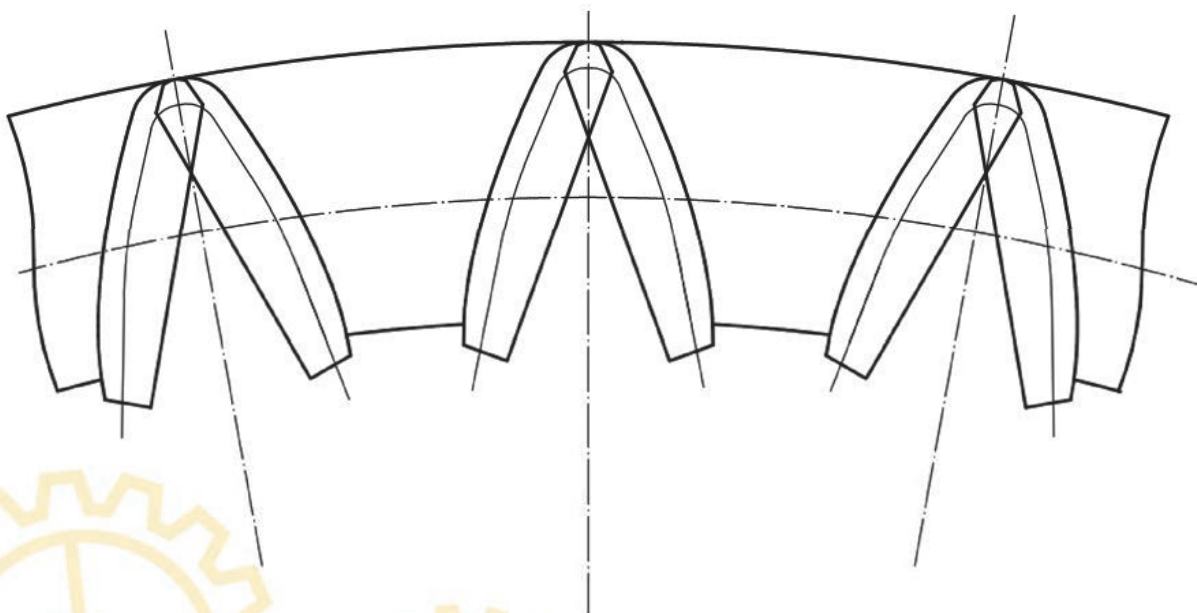
M6-M12

Double hob can be made for roughing hobs
Standard hob reach B Class



内齿滚刀

INNER GEAR HOBS



内齿圈加工专用滚刀
根据需求定制

Special hob for inner gear ring processing
Customized according to requirements

可转位齿轮铣刀订购参数

ORDERING INFORMATION

刀具参数 /tools data

刀具外径 /Outside diameter/D _____

孔径 /Bore diameter/d _____

轮毂直径 /Hub diameter/D1 _____

铣刀厚度 /Cutter Width/H _____

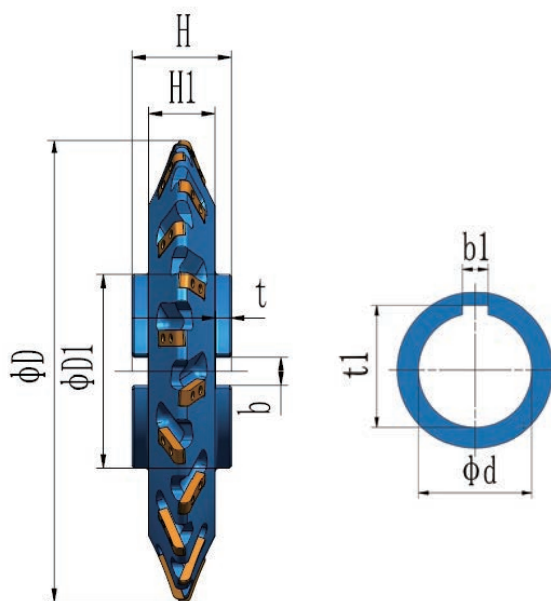
轮毂厚度 /Hub width/H1 _____

端键宽度 /Radial keyway width/b _____

端键深度 /Radial keyway depth/t _____

轴键宽度 /Axial Keyway width/b1 _____

轴键深度 /Axial Keyway depth/t1 _____



齿轮参数 /gear information

齿轮类型 /Gear Type 内齿轮 /Internal 外齿轮 /External 齿条 /Rack

模数 /Module/Mn _____

齿数 /No.of teeth/z _____

压力角 /Pressure angle/a _____

螺旋升角 /Helix angle/β _____

齿顶变位系数 /Addendum modification coefficient/Xn _____

齿顶圆直径 /Tip diameter/Da _____

齿根圆直径 /Root diameter/Df _____

齿根圆角 /Root radius/Rf _____

精加工后公法线长度 /After finishing base tangent length/Wk _____

跨齿数 /Given number of teeth/k _____

精加工后跨棒距 /After finishing over pin distance/Md _____

量棒直径 /Pin diameter/d _____

精加工后法向分度圆弧齿厚 /Normal Circular thickness for finishing/ \widehat{S}_n _____

齿轮精度等级 /Gear quality class _____

加工工艺 /Process 粗铣 /Roughing 半精铣 /Semi-finishing 精铣 /Finishing

精加工余量 /Stock for finishing _____



可转位齿轮滚刀订购参数

ORDERING INFORMATION

刀具参数 /tools data

刀具外径 /Outside diameter/D _____

孔径 /Bore diameter/d _____

轮毂直径 /Hub diameter/D1 _____

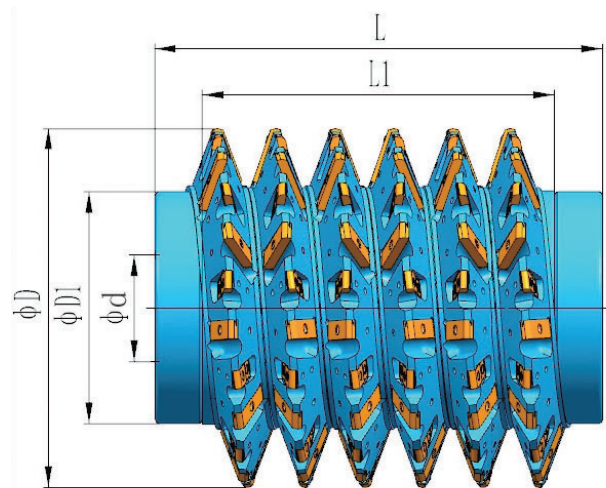
滚刀总长度 /Tool length/L _____

切削长度 /Cutting length/L1 _____

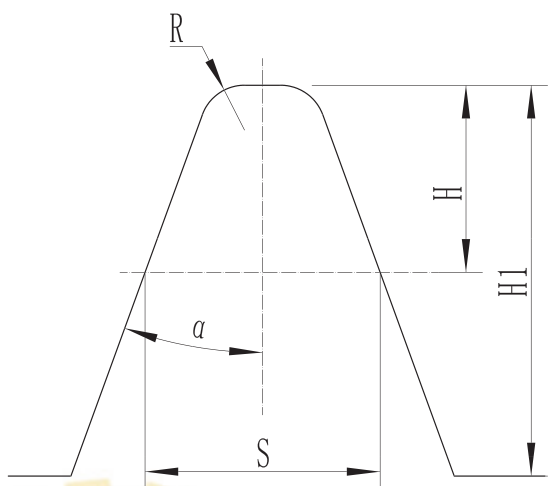
轴键宽度 /Axial keyway width/b1 _____

轴键深度 /Axial keyway depth/t1 _____

滚刀精度等级 /Quality class _____



齿轮参数 /gear information



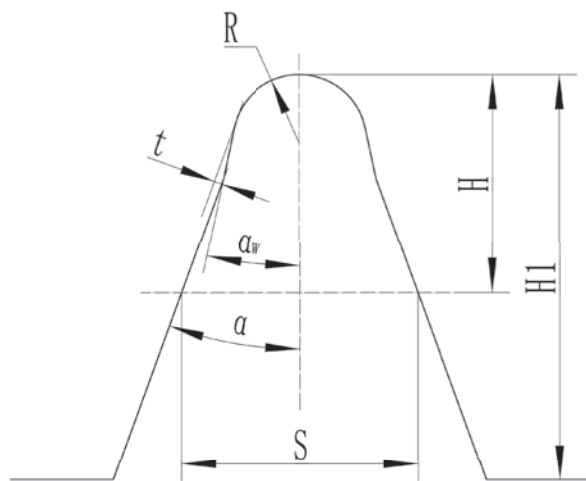
齿高 /Tooth depth/H1 _____

齿顶高 /Addendum/H _____

法向齿厚 /Normal tooth thickness/S _____

齿顶半径 /Tip radius/R _____

压力角 /Pressure angle/a _____



齿高 /Tooth depth/H1 _____

齿顶高 /Addendum/H _____

法向齿厚 /Normal tooth thickness/S _____

齿顶半径 /Tip radius/R _____

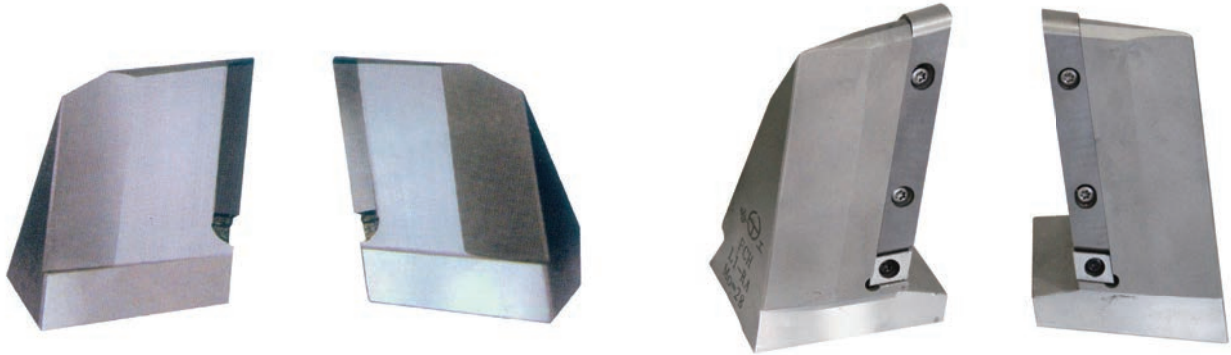
压力角 /Pressure angle/a _____

挖根量 /Protuberance amount/t _____

挖根处角度 /Protuberance angle/alpha_w _____

克林贝尔格硬切刀

INDEXABLE CYLINDRICAL GEAR
PRE-GRINDING HOB



型号 Type	模数 Module	型号 Type	模数 Module	型号 Type	模数 Module
R100	M2.6	R170	M7	R260	M8
	M3.2		M8		M10
	M4		M10		M12
	M5		M12		M14
R135	M4	R210	M8		M17
	M5		M10	M10	
	M6		M12	M12	
	M7		M14	M14	
				GMC160	M17
					M24
					M28

- ◆克林贝尔格硬切刀适用于克林贝尔格机床对螺旋伞齿轮淬火后的精加工。
- ◆刀刃采用 CBN 复合片与刀体整体焊接，具有刚性好、一致性好的特点。加工出的齿轮接触区好，光洁度高。
- ◆ Klingelnberg HPG cutting blade is for Klingelnberg cyclo palloid geometry finishing spiral bevel gear after heat treatment.
- ◆ Cutting edge with CNB and welded the whole body, with the features of consistency and rigidity. The gear area is good, finish high.

刀条

CARBIDE BLADE



近年来，我司生产制造了各种规格的硬质合金刀条，混料、膜压、烧结、磨削加工等都自主完成。针对被加工齿轮钢件，具有独特配方工艺；压制成型均为膜压成型工艺；烧结采用中高压真空烧结炉烧结；因此，我司生产供货的硬质合金刀体具有：内外密度均匀，抗弯强度高，耐磨性能强，使用寿命长的特点，经用户使用能满足螺旋伞齿轮加工的要求，性价比指标优异，满意度很高，深受用户的好评。

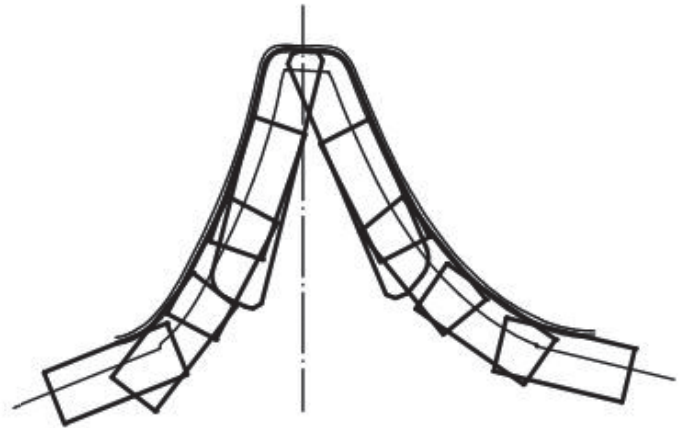
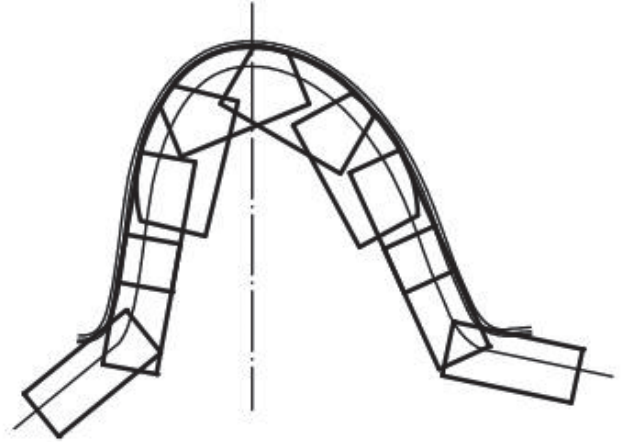
In recent years, our company has produced various specifications of carbide blade, mixing, film pressure, sintering, grinding processing and so on are completed independently. For the gear steel parts processed, with a unique formula process; All the pressing and forming processes are membrane pressing and forming processes. Sintering adopts medium and high pressure vacuum sintering furnace; Therefore, the carbide cutter body produced and supplied by our company has the characteristics of uniform internal and external density, high bending strength, strong wear resistance and long service life. It can meet the requirements of spiral bevel gear processing after being used by users, with excellent cost performance index and high satisfaction, and is well received by users.

硬质合金刀条的一般常用规格

序号	规格	备注
1	9×7.5×100	
2	10.16×12.7×05	
3	21.59×14.73×114	
4	15.24×15.24×114	
5	15.24×19.68×114	
6	17.78×12.7×110	
7	17×13.5×110	
8	19.68×13.97×114	
9	19.69×14.73×114	
10	22.86×14.73×114	
11	24.13×13.97×116	
12	27.9×19.05×111	

可转位螺杆铣刀

INDEXABLE SCREW ROTOR MILLS



- ◆可根据用户提供的螺杆转子的法向齿型制作粗加工铣刀
- ◆铣刀型线采用刀片搭接的形式，加工余量均匀
- ◆可制作直径 $\Phi 180-300$ 的铣刀

- ◆ The roughing cutter can be made according to the normal tooth shape of the screw rotor provided by the user
- ◆ The milling cutter profile adopts the form of blade lap, and the machining allowance is even
- ◆ $\Phi 180-360$ diameter milling cutters can be made



可转位平面铣刀、槽刀

INDEXABLE FACE MILLS、GROOVE MILLS

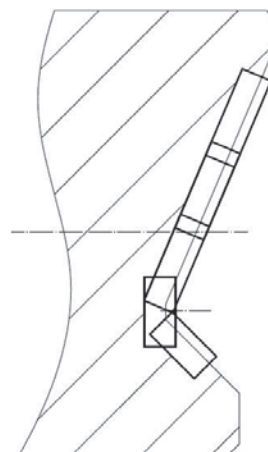
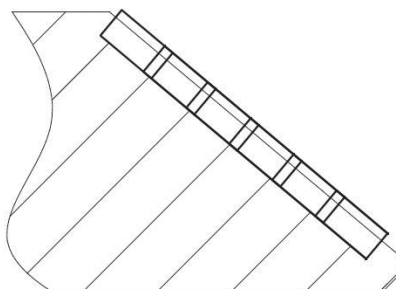
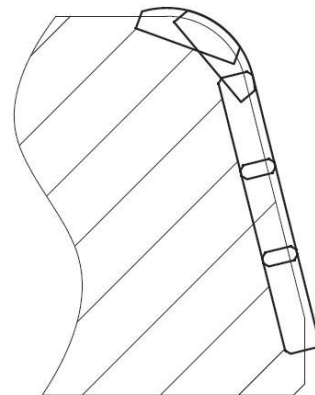
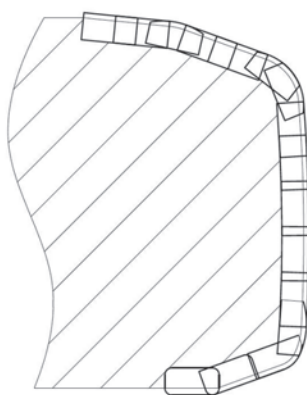


◆可根据用户提供的要求非标设计

◆ Non-standard design can be provided according to the requirements of users

可转位成型刀具

INDEXABLE COPYING MILLS



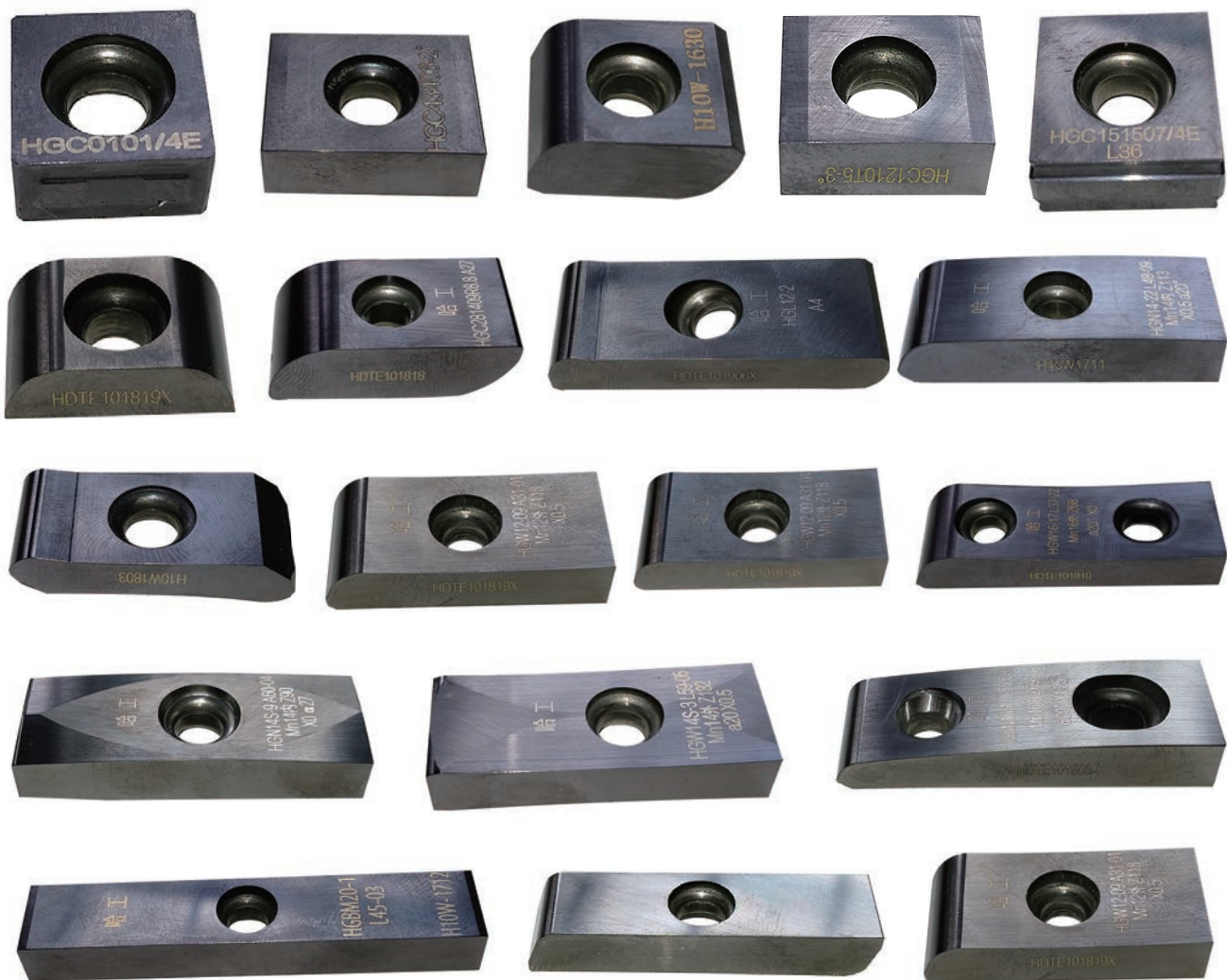
◆可根据用户提供的型线非标设计

◆ It can be designed according to the shape line provided by the user



刀片非标定制

CARBIDE BLADE NON-STANDARD CUSTOM



◆可根据用户提供的图纸或样品进行非标定制

◆ It can be customized according to the drawing or sample provided by the user



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