SHINE

SHINE

S H I N E VACUUMTECHNOLOGY

上 研 真 空 科 技

深圳市上研真空科技有限公司
Shine Vacuum Technology Co., Ltd
联系电话：185-1195-9500
公司邮箱：1365324895@qq.com
公司地址：深圳市宝安区松岗街道潭头社区松岗大道7号汉海达大厦916
916, Hanhaida Building,No. 7 Songgang Avenue, Bao'an District, Shenzhen

上研・工业等离子体设备制造

Shangyan ・ industrial plasma equipment manufacturing

关于上研真空科技

我们专业提供多种气相沉积（PVD）

等离子体辅助化学气相沉积（PECVD）

技术和渗氮层的沉积，并将这项技术

融入我们的工业级批量和在线设备中

我们为客户源源不断地供应定制化

设备方案

关于上研

About Shangyan Vacuum Technology

We specialize in providing a wide range of

vapor deposition(PVD), plasma-assisted

chemical vapor phasedeposition of the

Depositary Layer (PECVD)and nitriding

layers,And incorporate this technology

into our industrial-grade batchesand

online devices. We have a steady stream

of customersCustomized equipment solutions.

上研
Equipment 1550

技术规格

Metal film pro

体积：
1180mm X 1550mm

最大荷载质量
1000kg

上研equipment

上研
Equipment 1080

技术规格

Metal film

体积：
1050mm X 1080mm

最大荷载质量
1000kg

上研
Equipment 1150

TAC

技术规格

体积：
1050mm X 1150mm

最大荷载质量
1000kg

上研
Equipment 1050

DLC

技术规格

体积：
1000mm X 1050mm

最大荷载质量
1000kg


Shine
Shine
设备状态管理标识

脉冲复合电弧系列
III代-SYD160

特点：

后电磁+永磁场

触发式引弧，电磁场独立可调节

靶材隔膜水压式贴合冷却

有效减少颗粒和热量

适合材料：钛铝、铬铝、钛硅等材料

适合工艺：常规工具涂层、五金高端装饰镀

脉冲复合电弧系列
V代-SYW160

特点：

三级电永磁独立控制，远程自动可调

适合各种金属材料及部分非金属材料

的沉积旋转触发式引弧可选配独立挡板

减少维护周期，稳定性高脉冲复合

电弧系列Ⅴ代-SYW160适用各类高端

工模具涂层国内唯一

可达国际同类水平的产品

脉冲复合电弧系列
IV代-SYD160

特点：

脉冲电磁+永磁磁场三级可调后电磁提高

能量，增加离化率旋转触发式引弧减少维

护周期，水冷式辅助阳极稳定性高可实现

铬铝、钛铝、铝硅等材料脉冲复合电弧系列

IV代-SYD160主要用于特殊军工产品，

如枪支部件轮船发动机叶片等

主要优势

脉冲复合电弧系列
III代-SYD100

特点：

双电磁+永磁磁场

后电磁提高能量，增加离化率前电磁扫描，

增加绕射性非触发式引弧，引弧时不产生

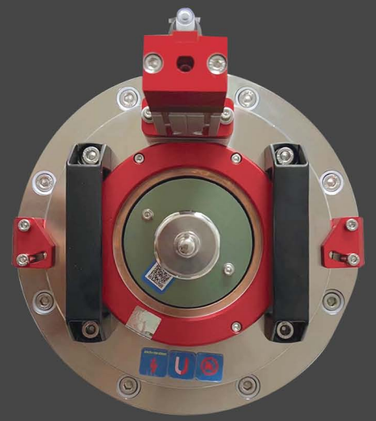
液滴减少维护周期，稳定性高脉冲复合

电弧系列III代-SYD100可实现铬铝、钛铝、

铝硅等材料主要用于汽车零部件涂层或

超厚涂层

脉冲复合电弧系列
石墨专用弧-SYD100



特点：

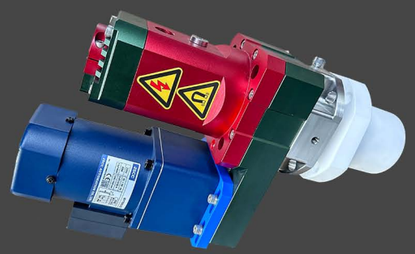
电磁+永磁磁场

触发式引弧，石墨弧专用

常规金属材料

主要用于TAC系列

圆柱型旋转阴极



圆柱型旋转阴极

型号:D70 D100 D125

用于磁控光学、半导体、DLC、燃料电

池双极板、五金塑胶类等表面的镀膜。

磁钢采用封闭式结构，不会被锈蚀，均匀

性可达2%。由动密封转化为轴静密封的特性，

具备良好的水密封、真空密

封特性，可达1000H的超长时间免维护

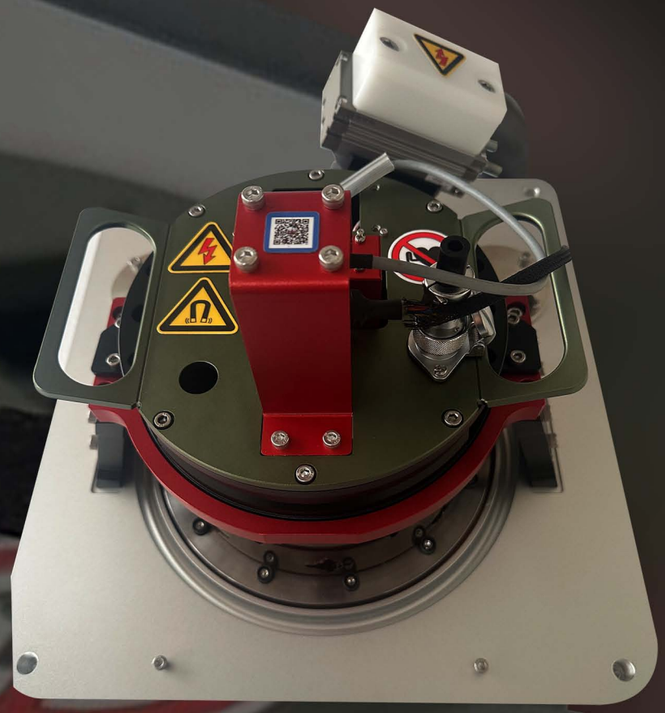
上 研 技 术 研 究

针对160mm的大弧源，弧斑运动出现在垂直磁场强度为0Gs附近，跃动范围为0~10Gs左右;在不存在0Gs区域的情况下，弧斑会出现在垂直 磁场强度最小的区域。随着靶材刻蚀深度的增加，靶材表面的0Gs位置会向边缘移动，导致弧斑运动位置向边缘移动，相应调整永磁体位置以增加永磁体距靶材表面 的距离靶材表面的0Gs位置会向中心移动，使弧斑运动向中心收缩。施加动态轴对称磁场能够有效地降低靶面的热量累积，减少大颗粒的喷发提高薄膜光洁度和质量

电磁线圈对弧斑运动的研究

特点

三级电永磁独立控制，远程自动可调适合各种金属材料及部分非金属材料的沉积旋转触发式引弧,可选配独立挡板,减少维护周期稳定性高适用各类高端工模具涂层国内唯一可达国际同类水平的产品



Shine Technical research

For a large arc source of 160 mm, the arc spot motion occurs in a vertical magnetic field with a strength of 0 Gs Nearby, the jumping range is about 0~10Gs; In the absence of a 0Gs region . arc spots appear in areas where the vertical magnetic field strength is minimal. WithAs the etching depth of the target increases, the 0Gs position on the surface of the target will be edged edge shifts, causing the arc spot to move towards the edge, correspondinglyAdjust the position of the permanent magnet to increase the distance of the permanent magnet from the target surface The 0Gs position from the surface of the target will move towards the center, resulting in an arc spot The movement contracts toward the center. Applying a dynamic axisymmetric magnetic field can Effectively reduce the heat accumulation of the target surface and reduce large particles The eruption improves the film finish and quality

peculiarity

Three-stage electric permanent magnet independent control, remote automatic adjustable It is suitable for the deposition of various metal materials and some non-metallic materials Optional individual bezel Reduced maintenance intervals and high stability

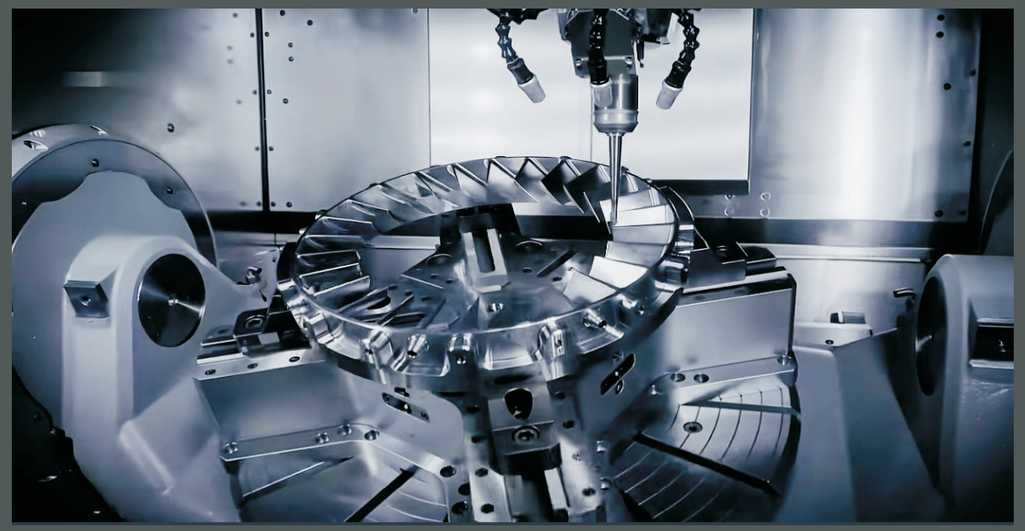
PVD涂层应用

切削刀具涂层

PVD涂层可大幅提高刀具耐磨性,显著改善切削加工效率和质量。随着高速切削和干式切削应用的增多,PVD涂层得益于其超高的热稳定性和红硬性,可在极端切削条件下进一步提升刀具耐磨性。涂层的抗粘附性优异,可减少难加工金属的附着,确保切削过程稳定和一致性。

Cutting tool coating

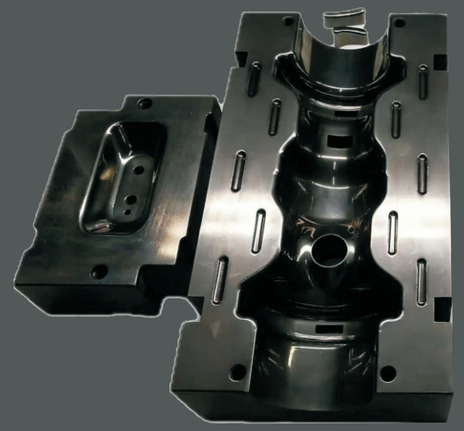
PVD coating can significantly improve tool wear resistance, significantly improve cutting efficiency and quality.
With the increasing application of high-speed cutting and dry cutting, PVD coatings benefit from their ultra-highThermal stability and red hardness can further enhance tool wear resistance under extreme cutting conditions.The coating has excellent anti adhesion properties, which can reduce the adhesion of difficult to machine metals and ensure stable cutting processesConsistency and consistency.



PVD涂层应用

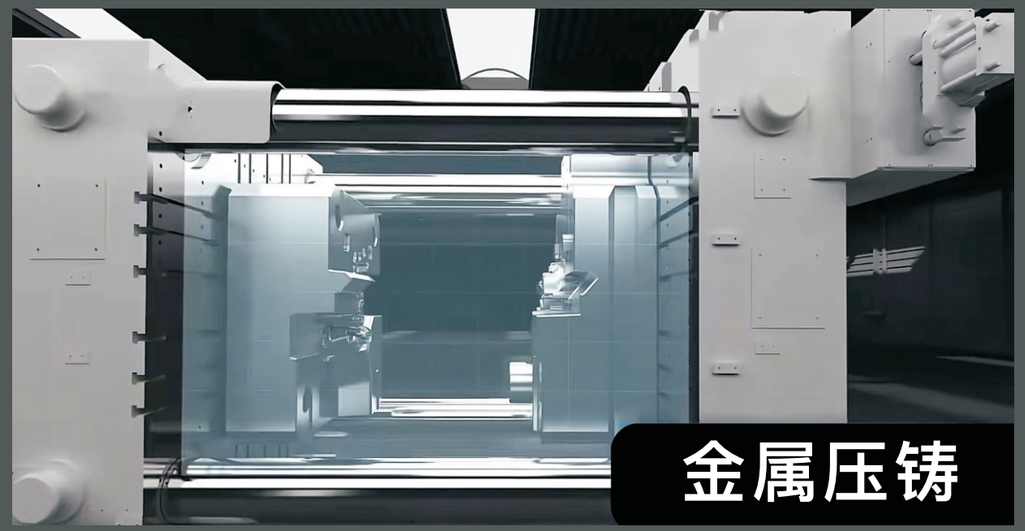
模具涂层

PVD涂层技术在压铸冲压拉伸模具中的应用通过提高模具的表面硬度从而提升耐磨性,有效减少磨粒磨损。涂层特有的低摩擦系数,可减少粘着磨损和拉毛等、从而保证成品的表面质量。PVD涂层结合等离子体氮化,可进一步增强基材强度,减少模具材料的塑性变形,进一步提升模具寿命。



Mold coating

The application of PVD coating technology in die-casting, stamping, and stretching molds improves The surface hardness of the mold enhances wear resistance and effectively reduces abrasive wear. The unique low friction coefficient of the coating can reduce adhesive wear and pulling, etcAnd ensure the surface quality of the finished product. PVD coating combined with plasma nitriding,It can further enhance the strength of the substrate, reduce the plastic deformation of the mold material, and improveStep by step to extend the lifespan of the mold.



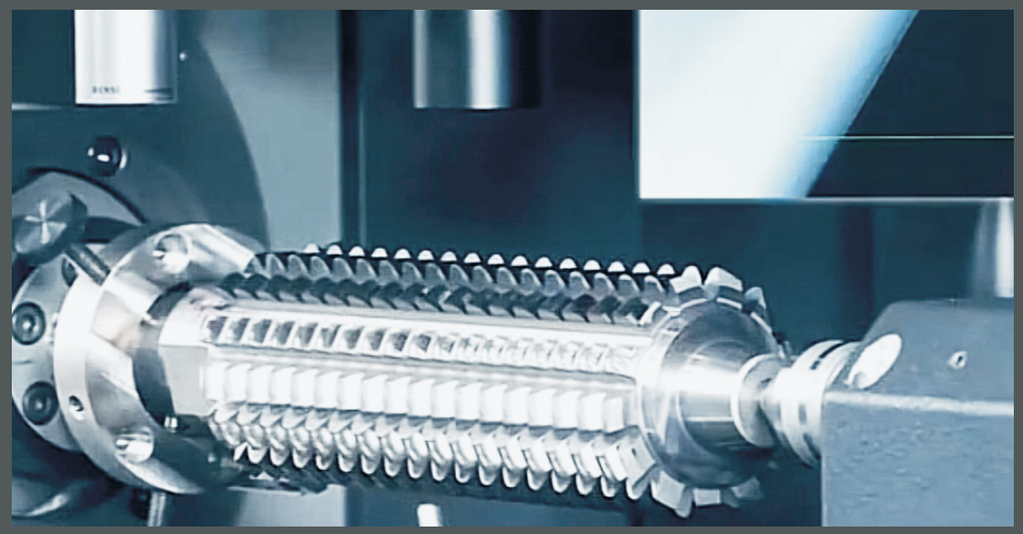
PVD涂层应用

滚齿刀涂层

涂层后增加工件表面硬度
薄膜耐磨性好，最少化月牙洼磨损，
后工件表面光泽好，不粘梢，保证尺寸均一性
多次重涂，减少成本，增加使用次数延长寿命
重涂后退钛再返涂保持工件尺寸精度，再次增加使用同期性

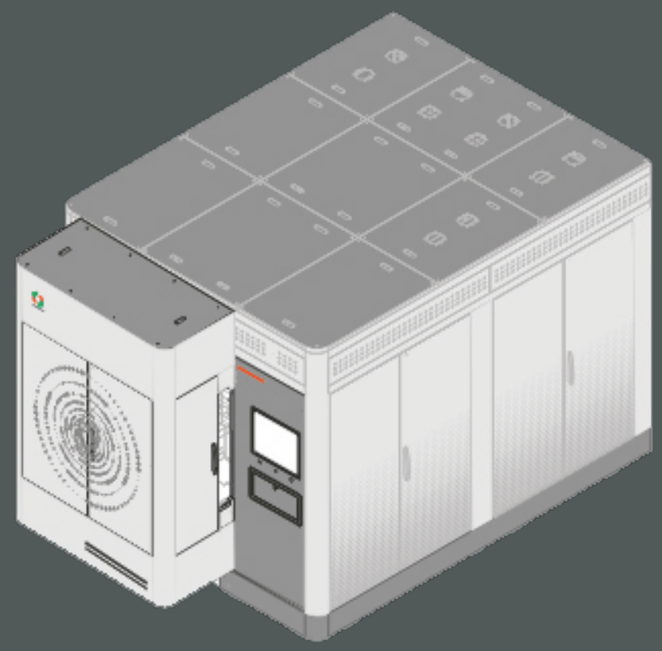
Cutting tool coating

Increase the surface hardness of the workpiece after coating
The film has good wear resistance and minimizes crescent wear,
The surface of the workpiece has good gloss, does not stick to the tip, and ensures dimensional uniformity
Multiple recoating to reduce costs, increase usage frequency, and extend lifespan
Re coating with titanium and then re coating to maintain the dimensional accuracy of the workpiece, increasing the synchronicity of use again



上研真空科技PN系列，上研真空开发了一项新技术，PN炉内氮化技术，这项技术炉内氮化+涂层一体化，使工件在涂层前，直接提高1-2倍硬度，氮化后在进行涂层，使产品的使用寿命超强度的提高。

Shangyan Vacuum Technology PN series, Shangyan Vacuum has developed a new technology,PN furnace nitriding technology, which integrates furnace nitriding and coating, Directly increase the hardness of the workpiece by 1-2 times before coating, and after nitriding Coating enhances the service life of the product beyond its strength.



Deposition methood of thin film

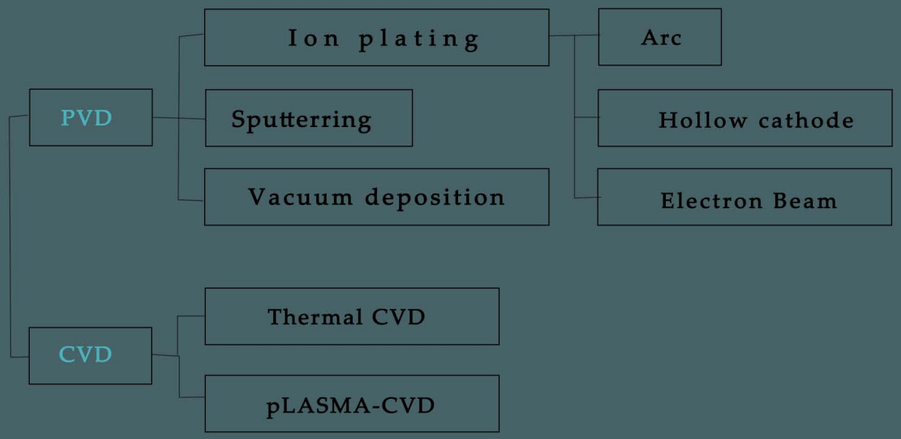
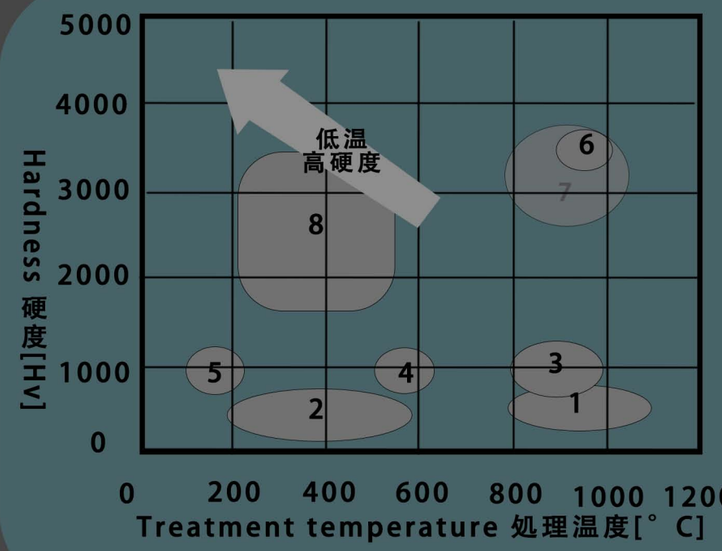
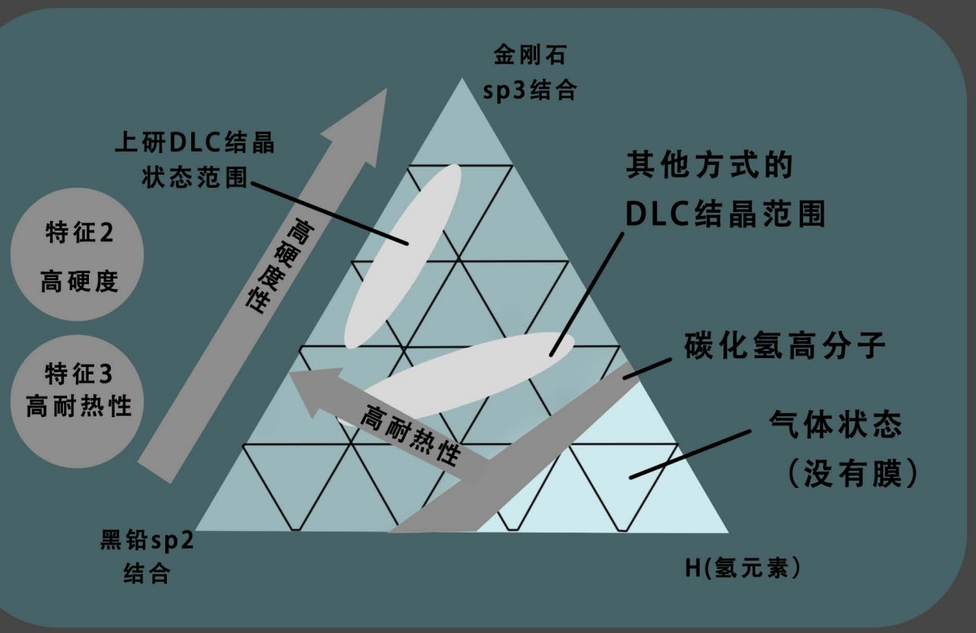


表 面 硬 化 技 术

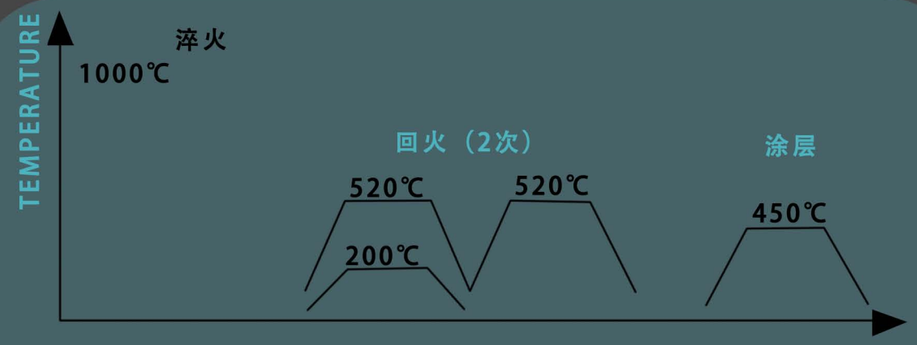


高精度的基材的表面处理应当选择较低温较高硬度的PVD涂层

非 晶 制 碳 素 分 类 例



工具钢及模具用钢的热处理



钢的热处理时首先加热到将近1000℃，一下子急冷使金属组织发生变化给予一定硬度。仅如此会韧性不足导致龟裂，所以有必要进行回火处理。回火有高温回火(520℃)与低温回火(200℃)会发生问题的就是低温回合的情况。我司涂层在450℃下进行，所以如果回火温度低于此温度会发生基材尺寸变形或者硬度降低等问题。所以如果考虑到涂层因素需要回火温度高于涂层温度并且最好能够进行2次回

应用领域

铣 刀		模 具		丝 锥	零部件	螺纹铣刀
WC/Co	HSS	WC/Co	HSS	WC/Co-HSS	WC/Co-HSS	WC/Co-HSS
AlCrN	AlCrN	—	AlCrN	TiCN-ML	TiCN	TiN
AlCrN/ TiSiN	N.a	AlCrN/ TiSiN	DLC	TiCN-ML	TiCN	AlCrN/TiSiN
TiCN-ML	TiCN-ML	AlCrN	AlCrN	TiCN-ML	TiCN	TiN
AlCrN	AlCrN	AlCrN	AlCrN	TiCN-ML	TiCN	TiN
AlTiN	AlTiN	AlCrN	AlTiN	TiCN-ML	TiCN	—
AlCrN	AlCrN	AlCrN	AlTiN	TiCN-ML	TiCN	—

铣削	车削	铣削	
WC/Co	WC/Co	WC/Co	HSS
AlTiN	AlTiN	AlCrN	AlCrN
AlCrN/TiSiN	AlCrN/TiSiN	AlCrN	AlCrN
—	AlTiN	AlCrN	AlCrN
AlTiN	AlTiN	—	—
AlTiN	AlTiN	—	—
AlCrN	AlTiN	AlCrN	AlCrN

应用领域

file		drill bit		Tap	parts and components	Screw file
WC/Co	HSS	WC/Co	HSS	WC/Co-HSS	WC/Co-HSS	WC/Co-HSS
AlCrN	AlCrN	—	AlCrN	TiCN-ML	TiCN	TiN
AlCrN/ TiSiN	N.a	AlCrN/ TiSiN	DLC	TiCN-ML	TiCN	AlCrN/TiSiN
TiCN-ML	TiCN-ML	AlCrN	AlCrN	TiCN-ML	TiCN	TiN
AlCrN	AlCrN	AlCrN	AlCrN	TiCN-ML	TiCN	TiN
AlTiN	AlTiN	AlCrN	AlTiN	TiCN-ML	TiCN	—
AlCrN	AlCrN	AlCrN	AlTiN	TiCN-ML	TiCN	—

milling	turning	milling	
WC/Co	WC/Co	WC/Co	HSS
AlTiN	AlTiN	AlCrN	AlCrN
AlCrN/TiSiN	AlCrN/TiSiN	AlCrN	AlCrN
—	AlTiN	AlCrN	AlCrN
AlTiN	AlTiN	—	—
AlTiN	AlTiN	—	—
AlCrN	AlTiN	AlCrN	AlCrN