

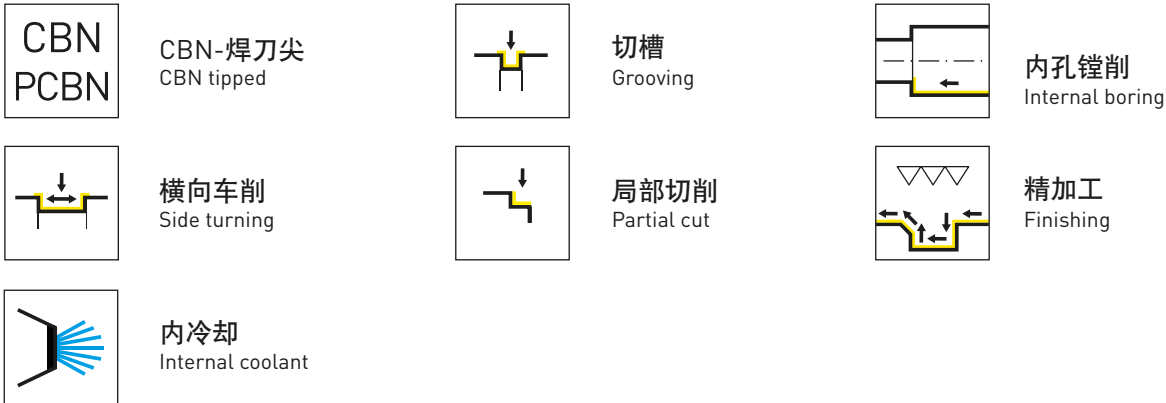


CBN刀具的产品拓展

烧结材料、粉末冶金和超级合金的加工

EXTENSION OF CBN TOOLS

MACHINING OF SINTERED MATERIALS, PM
STEELS AND SUPERALLOYS



除非另有说明，所有尺寸的单位是毫米。

All dimensions are in mm, unless otherwise stated.

交货期:

用于材料组:

- ▲ 库存产品
- △ 4周

- 推荐
- 选择性推荐
- 不合适

Delivery times:

- ▲ on stock
- △ 4 weeks

Use for material groups:

- recommended
- alternative recommendation
- not suitable

HORN的连接代码--需要它做什么？

连接代码确保你总是能找到合适的刀具，并显示在刀柄和刀片上。如果代码相符，刀片可以在相应的刀柄上使用。这也适用于我们的模块化刀柄系统，连接代码表示导杆和刀夹之间的接口。

The HORN connection interface code - what is it needed for?

The connection interface code ensures that you will always find the appropriate tools and is shown on toolholders and inserts. If the codes match, the insert can be used in the corresponding toolholder. This also applies to our modular holder system, where the connection code indicates the interface between the holder and the cassette.

HORN连接代码和可能的组合：

HORN connection interface codes and possible combinations:

- HIS** = 刀片座 / Insert seat
- HWS** = 工件端接口 / Interface workpiece side
- HMS** = 机床端接口 / Interface machine side

HIS	↔	HWS
HMS	↔	HWS

刀片型号举例

Example insert

产品名称 Part number	r	f	a	d	b	l_2	l_5	t_{max}	D_{min}	α	HIS	CB10	CB35
R105.1813.00.1.2.B	0,05	1,3	1,7	1,4	7	5	25	0,2	2	18°	105125	▲	▲

刀杆举例

Example toolholder

产品名称 Part number	d	l_1	h	l_4	HWS
B105.0010.01	10	75	9	50	105123 • 105124 • 105125

不同之处： 更多可能

THE DIFFERENCE: MORE POSSIBILITIES

- **超级合金和粉末冶金钢的高切削性能**

High cutting performance in super-alloys and powder metallurgical steels

- **硬切削刀具广泛的产品范围**

Wide range of tools for hard machining

- **完美的几何形状适用于广泛的应用**

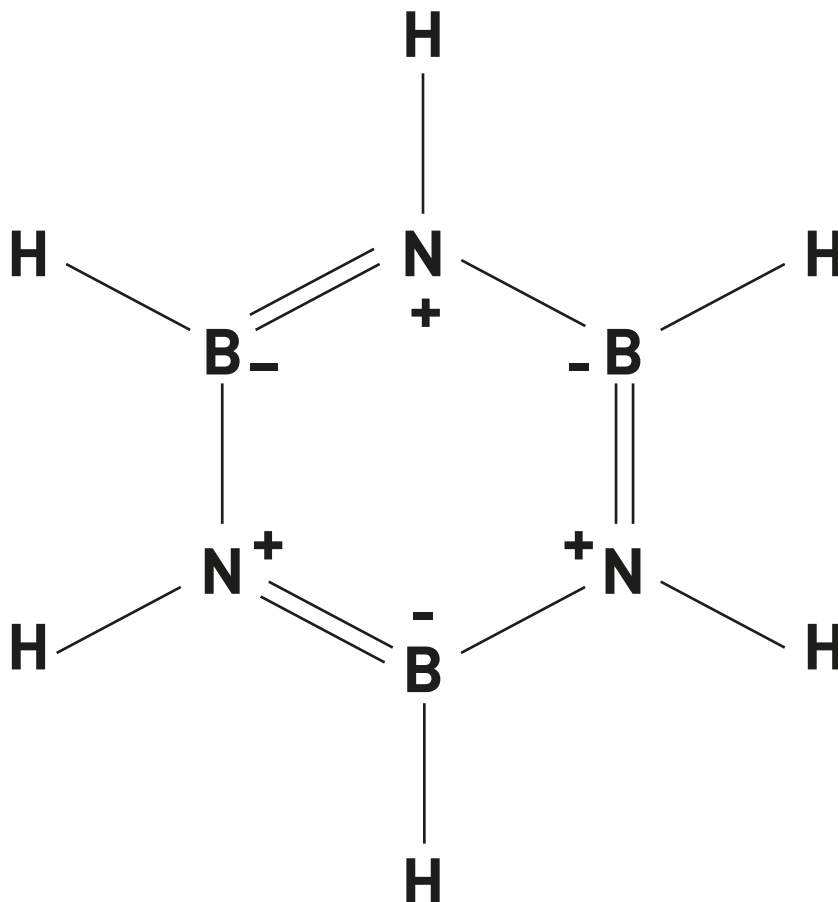
Perfectly adapted geometries for a wide range of applications

聚晶立方氮化硼 (CBN)

CBN是一个总称，指的是范围广泛的、具有广泛不同特性的不同基体。不仅是氮化硼的比例，最重要的是CBN颗粒的质量、大小和分布，都是HORN的CBN刀具的高性能和稳定性的原因。至少同样重要的是有效切割，主要是陶瓷粘合剂。这些“填料”的种类和效果取决于百分比范围，从40%开始到几乎100%结束。刀具切削刃的几何定义，包括微观和宏观几何，影响到性能和应用领域。这导致了一个具有广泛性能和复杂性的切削材料系列。

Polycrystalline Cubic Boron Nitride (PCBN)

CBN is an umbrella term for an extensive range of different substrates with widely varying properties. Not only the proportion of boron nitride, but above all the quality, size and distribution of the CBN grains, are responsible for the high and consistent performance of HORN CBN tools. At least as important is the actively cutting, mostly ceramic binder. The variety and effect of these „fillers“ is dependent upon the percentage range, starting at 40 percent and ending at almost 100 percent. The geometric definition of the tool cutting edge, both the micro- and macro-geometry, influences the performance and areas of application. This results in a cutting material family with a wide spectrum of performance and complexity.



硬加工

立方氮化硼是仅次于金刚石的第二硬的切削材料，其特点是具有综合的物理、机械和化学特性。最重要的是，它的高耐热性和高硬度使得使用几何形状的切削刃加工硬化钢变得经济。CBN基体用于切削复合材料。通过改变体积比例、颗粒大小和粘结剂系列，可以设定不同的属性，这可以有利地应用于各自的应用。通过CBN基体、切削刃的几何设计、合适的切削值和稳定的刀具系统的相互作用，可以实现优于磨削的金属去除率、精度和高表面质量。

举例:

20MnCr5 / 1.7147 (59-61HRC)	X210CrW12 / 1.2436 (60-62HRC)	HS6-5-2C / 1.3343 (60-64HRC)
$v_c =$ 最大至 180m/min	$v_c =$ 最大至 140m/min	$v_c =$ 最大至 125m/min

加工铸件

立方氮化硼的高硬度和耐热性使这种切削材料组成为经济加工铸造材料的理想选择，这些材料的范围和它们各自的特性一样广泛--所有的材料都可以用CBN加工。与硬质合金或陶瓷刀具相比，使用数倍的切削速度，其性能可高出10倍。

举例:

GG25 (EN-GJL-250 / 0.6025)	GGG40 (EN-GJS-400-15 / 0.7040)	GGG-NiCr 20-3 (EN-GJSA-XNiCr20-2 / 0.7660)
$v_c =$ 最大至 1.800m/min	$v_c =$ 最大至 1.200m/min	$v_c =$ 最大至 600m/min

Hard machining

Cubic boron nitride, the second hardest cutting material after diamond, is characterised by a combination of physical, mechanical and chemical properties. Above all, its high thermal resistance and hardness enable economical machining of hardened steel using geometrically defined cutting edge. CBN substrates are used for cutting composite materials. By varying the volume fraction, grain size and binder system, different properties can be set, that can be advantageously applied to the respective application. Through the interaction of the CBN substrate, the geometric design of the cutting edge, adapted cutting values and a stable tool system, metal removal rates, accuracies and high surface quality can be achieved that are superior to grinding. Special machines are only needed in rare cases.

Examples:

20MnCr5 / 1.7147 (59-61HRC)	X210CrW12 / 1.2436 (60-62HRC)	HS6-5-2C / 1.3343 (60-64HRC)
$v_c =$ up to 180m/min	$v_c =$ up to 140m/min	$v_c =$ up to 125m/min

Machining castings

The high hardness of cubic boron nitride and its heat resistance make this cutting material group ideal for the economical machining of cast materials whose range is as wide as their respective properties — all of them can be machined with CBN. The performance compared to carbide or ceramic tools can be up to 10 time higher using several times the cutting speed.

Examples:

GG25 (EN-GJL-250 / 0.6025)	GGG40 (EN-GJS-400-15 / 0.7040)	GGG-NiCr 20-3 (EN-GJSA-XNiCr20-2 / 0.7660)
$v_c =$ up to 1.800m/min	$v_c =$ up to 1.200m/min	$v_c =$ up to 600m/min

烧结钢的加工

形状复杂、数量大、刀具磨损大：这些只是描述烧结或粉末冶金生产部件的总称的一些关键词。磨损主要是由于嵌入相对较软的金属基体中的坚硬 (>70 HRC) 和细小的陶瓷颗粒造成的。由于CBN的高硬度，它能抵抗磨损。与硬质合金相比，不仅可实现的刀具寿命高出数倍，而且切削速度可以而且应该提高两到三倍。切削刃的几何形状是为应用而设计的。这与传统的硬加工不同，主要是为了确保工件没有毛刺，这是一个经常性的要求。

举例:

SINT D11 (120HB)	SINT D39 (150HB)	SINT C42 (170HB)
$v_c = \text{最大至 } 390 \text{ m/min}$	$v_c = \text{最大至 } 260 \text{ m/min}$	$v_c = \text{最大至 } 220 \text{ m/min}$

镍基和超级耐热合金的加工

镍基和其他超合金的加工在制造业中发展迅速。这些材料的特殊机械、化学和热性能往往导致了可加工性差、刀具磨损大和切削速度低。这些材料的经济性加工有时会给用户带来巨大的挑战。CBN切削材料可以作为一个问题的解决方法。特别是在精加工时，它可以缩短加工时间，提高精度，改善表面质量。

精加工举例:

Inconel 718 (NiCr19NbMo / 2.4668)	X6NiCrTiMoV26-15 (1.4944)
$v_c = \text{最大至 } 300 \text{ m/min}$	$v_c = \text{最大至 } 400 \text{ m/min}$

Sintered steel machining

Complex shapes, large quantities and high tool wear: These are just some of the keywords that describe the umbrella term for sintered or powder metallurgically produced components. The wear is primarily due to hard (>70 HRC) and fine ceramic particles that are embedded in the relatively soft metal matrix. CBN opposes abrasion wear due to its high hardness. Compared to carbide, not only is the achievable tool life several times higher, but also the cutting speed can and should be increased by a factor of two to three. The cutting edge geometry is designed for the application. This differs from classic hard machining, not least to ensure that components are free of burrs, which a frequent requirement.

Examples:

SINT D11 (120HB)	SINT D39 (150HB)	SINT C42 (170HB)
$v_c = \text{up to } 390 \text{ m/min}$	$v_c = \text{up to } 260 \text{ m/min}$	$v_c = \text{up to } 220 \text{ m/min}$

Machining of Nickel-based and Superalloys

The machining of nickel-based and other superalloys is growing rapidly in the manufacturing industry. The special mechanical, chemical and thermal properties of these materials are often associated with poor machinability, high tool wear and low cutting speeds. The economical machining of these materials sometimes presents users with great challenges. The CBN cutting material can be used as a problem solver. Particularly when finishing, it enables shorter machining times, greater precision and higher surface quality.

Example of finishing:

Inconel 718 (NiCr19NbMo / 2.4668)	X6NiCrTiMoV26-15 (1.4944)
$v_c = \text{up to } 300 \text{ m/min}$	$v_c = \text{up to } 400 \text{ m/min}$

Supermini

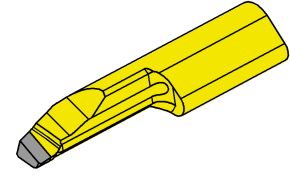
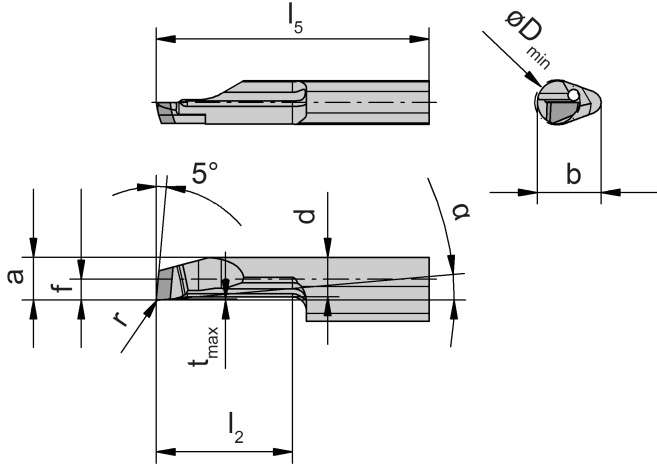
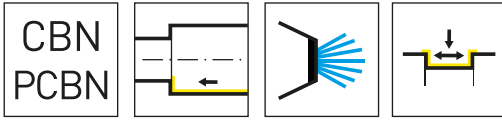


CBN刀具的镗孔 及仿形

- 硬车削
- 加工铸件
- 烧结钢/超级合金

Boring and Profiling with PCBN

- Hard Turning
- Machining castings
- Sintered steel and Superalloys



ISO Mat. Code



切削参数见 24页
Cutting data page 24

硬质合金牌号
Carbide grades

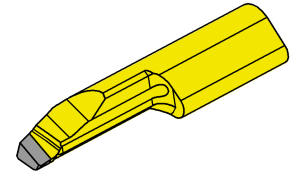
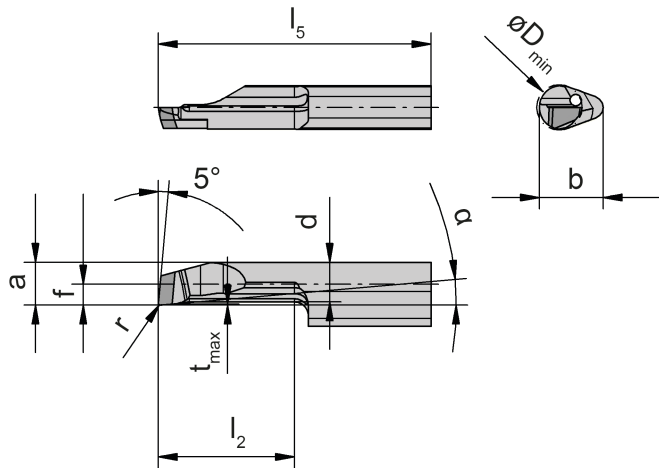
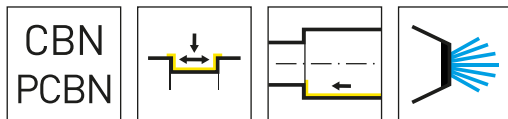
R = 右手型-如图
R = right hand version shown

L = 左手型
L = left hand version

▲ 库存
on stock

△ 4周
4 weeks

产品型号 Part number	r	f	a	d	b	l_2	l_5	t_{max}	D_{min}	α	HIS	CB10	CB35
R105.1813.00.1.2.B	0,05	1,3	1,7	1,4	7	5	25	0,2	2	18°	105125	▲	▲
R105.1813.01.1.2.B	0,1	1,3	1,7	1,4	7	5	25	0,2	2	18°	105125	▲	▲
R105.0513.0.3.B	0,15	1,3	2,7	2,5	7	7	25	0,1	3	5°	105125	▲	▲
R105.1813.01.0.3.B	0,1	1,3	2,7	2,4	7	7	25	0,2	3	18°	105125	▲	▲
R105.1813.02.0.3.B	0,2	1,3	2,7	2,4	7	7	25	0,2	3	18°	105125	▲	▲
R105.1813.01.1.3.B	0,1	1,3	2,7	2,4	7	12	30	0,2	3	18°	105125	▲	▲
R105.1813.02.1.3.B	0,2	1,3	2,7	2,4	7	12	30	0,2	3	18°	105125	▲	▲
R105.0519.1.4.B	0,2	1,5	3,7	3,4	7	10	25	0,1	4	5°	105125	▲	▲
R105.1815.01.1.4.B	0,1	1,5	3,7	3,4	7	10	25	0,2	4	18°	105125	▲	▲
R105.1815.02.1.4.B	0,2	1,5	3,7	3,4	7	10	25	0,2	4	18°	105125	▲	▲
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L105.1813.01.1.2.B	0,1	1,3	1,7	1,4	7	5	25	0,2	2	18°	105125	△	△
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L105.1813.01.1.3.B	0,1	1,3	2,7	2,4	7	12	30	0,2	3	18°	105125	△	△
L105.1813.02.1.3.B	0,2	1,3	2,7	2,4	7	12	30	0,2	3	18°	105125	△	△
L105.1815.01.1.4.B	0,1	1,5	3,7	3,4	7	10	25	0,2	4	18°	105125	△	△
L105.1815.02.1.4.B	0,2	1,5	3,7	3,4	7	10	25	0,2	4	18°	105125	△	△
L105.1815.01.2.4.B	0,1	1,5	3,7	3,4	7	15	30	0,2	4	18°	105125	△	△



ISO Mat. Code



切削参数见 24页
Cutting data page 24

硬质合金牌号

Carbide grades

▲ 库存
on stock

△ 4周
4 weeks

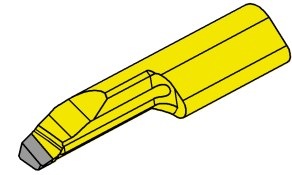
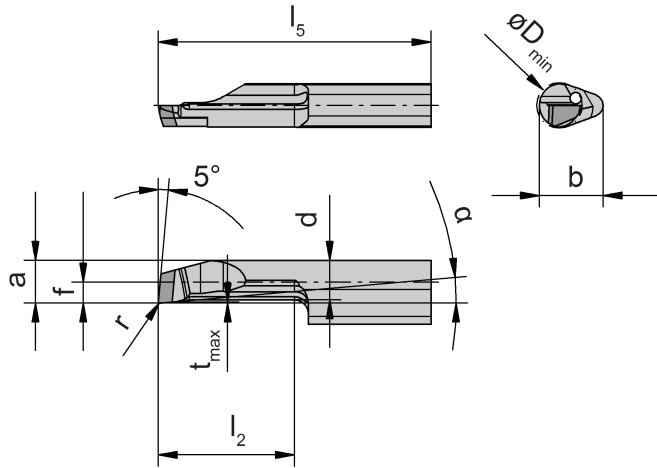
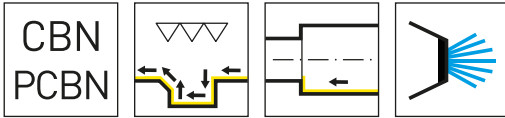
R = 右手型-如图

R = right hand version shown

L = 左手型

L = left hand version

产品型号 Part number	r	f	a	d	b	l ₂	l ₅	t _{max}	D _{min}	α	HIS	CB10	CB35
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R105.1823.02.2.5.B	0,2	2,3	4,4	4,4	7	15	30	0,2	5	18°	105125	▲	▲
R105.1823.15.3.5.B	0,15	2,3	4,4	4,4	7	20	35	0,3	5	18°	105125	▲	▲
R105.0533.2.6.B	0,2	3,3	5,7	5,3	7	15	30	0,15	6	5°	105125	▲	
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R105.1833.02.2.6.B	0,2	3,3	5,7	5,3	7	15	30	0,3	6	18°	105125	▲	▲
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ISO Mat. Code



切削参数见 24页
Cutting data page 24

硬质合金牌号

Carbide grades

▲ 库存
on stock

△ 4周
4 weeks

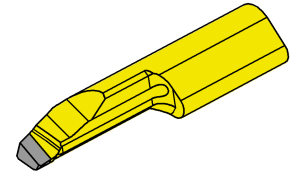
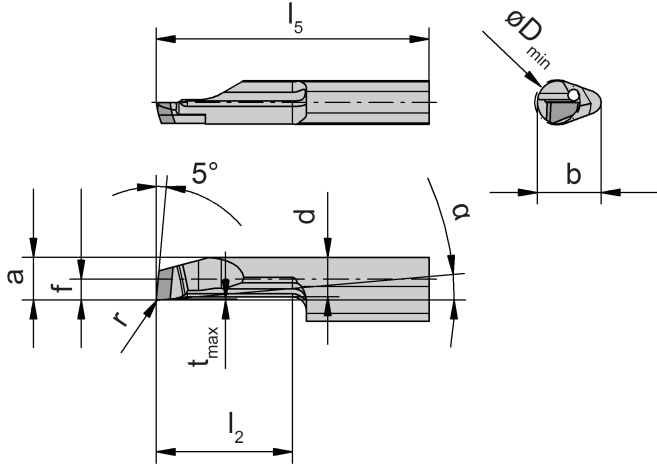
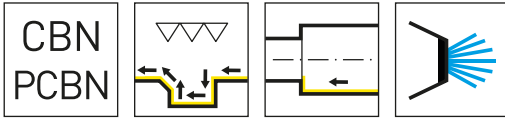
R = 右手型-如图

R = right hand version shown

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L = left hand version

产品型号 Part number	r	f	a	d	b	l ₂	l ₅	t _{max}	D _{min}	α	HIS	CH1G
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L105.1813.01.1.2.BA	0,1	1,3	1,7	1,4	7	5	25	0,2	2	18°	105125	△
L105.1813.01.0.3.BA	0,1	1,3	2,7	2,4	7	7	25	0,2	3	18°	105125	△
L105.1813.01.1.3.BA	0,1	1,3	2,7	2,4	7	12	30	0,2	3	18°	105125	△
L105.1813.02.0.3.BA	0,2	1,3	2,7	2,4	7	7	25	0,2	3	18°	105125	△
L105.1813.02.1.3.BA	0,2	1,3	2,7	2,4	7	12	30	0,2	3	18°	105125	△
L105.1815.01.1.4.BA	0,1	1,5	3,7	3,4	7	10	25	0,2	4	18°	105125	△
L105.1815.02.1.4.BA	0,2	1,5	3,7	3,4	7	10	25	0,2	4	18°	105125	△
L105.1815.01.2.4.BA	0,1	1,5	3,7	3,4	7	15	30	0,2	4	18°	105125	△
L105.1815.02.2.4.BA	0,2	1,5	3,7	3,4	7	15	30	0,2	4	18°	105125	△



ISO Mat. Code



切削参数见 24页
Cutting data page 24

硬质合金牌号

Carbide grades

▲ 库存
on stock

△ 4周
4 weeks

R = 右手型-如图

R = right hand version shown

L = 左手型

L = left hand version

产品型号 Part number	r	f	a	d	b	l ₂	l ₅	t _{max}	D _{min}	a	HIS	CH16
R105.1823.01.1.5.BA	0,1	2,3	4,4	4,4	7	10	25	0,2	5	18°	105125	▲
R105.1823.02.1.5.BA	0,2	2,3	4,4	4,4	7	10	25	0,2	5	18°	105125	▲
R105.1823.01.2.5.BA	0,1	2,3	4,4	4,4	7	15	30	0,2	5	18°	105125	▲
R105.1823.02.2.5.BA	0,2	2,3	4,4	4,4	7	15	30	0,2	5	18°	105125	▲
R105.1823.15.3.5.BA	0,15	2,3	4,4	4,4	7	20	35	0,3	5	18°	105125	▲
R105.1833.01.2.6.BA	0,1	3,3	5,7	5,3	7	15	30	0,3	6	18°	105125	▲
L105.1823.01.1.5.BA	0,1	2,3	4,4	4,4	7	10	25	0,2	5	18°	105125	△
L105.1823.02.1.5.BA	0,2	2,3	4,4	4,4	7	10	25	0,2	5	18°	105125	△
L105.1823.01.2.5.BA	0,1	2,3	4,4	4,4	7	15	30	0,2	5	18°	105125	△
L105.1823.02.2.5.BA	0,2	2,3	4,4	4,4	7	15	30	0,2	5	18°	105125	△
L105.1823.15.3.5.BA	0,15	2,3	4,4	4,4	7	20	35	0,3	5	18°	105125	△
L105.1833.01.2.6.BA	0,1	3,3	5,7	5,3	7	15	30	0,3	6	18°	105125	△

刀片
Insert
107/108/111/11P
114

CBN
PCBN

页码/Page
14-15

切削参数
Cutting Data

页码/Page
24

Mini

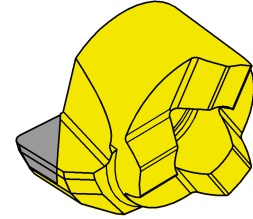
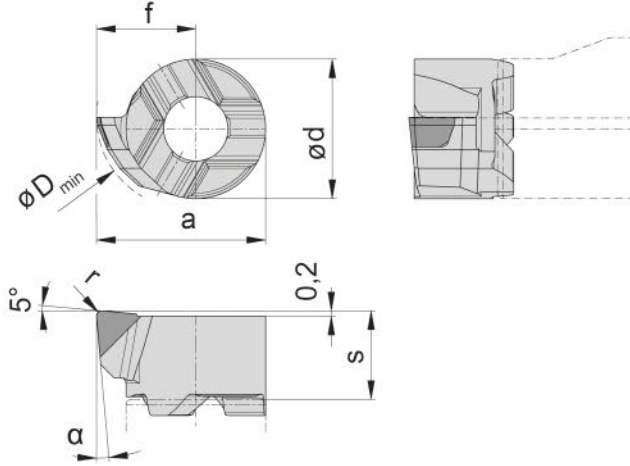
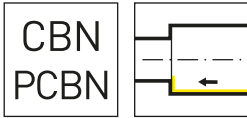


CBN刀具的镗孔及仿形

- 硬车削
- 加工铸件
- 烧结钢和超级合金

Boring and Profiling with PCBN

- Hard Turning
- Machining castings
- Sintered steel and Superalloys



ISO Mat. Code



切削参数见 24页
Cutting data page 24

硬质合金牌号

Carbide grades

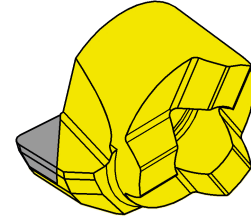
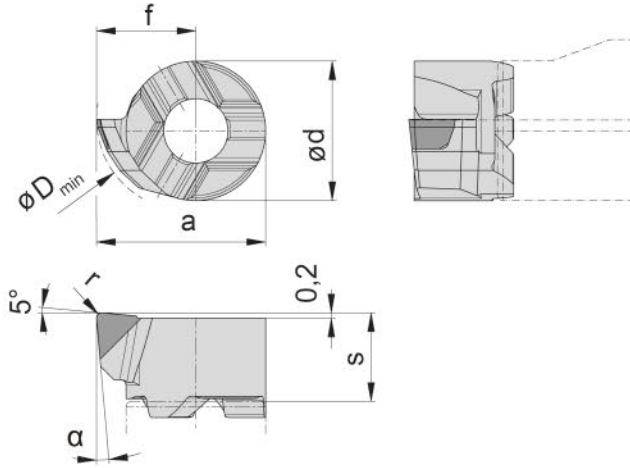
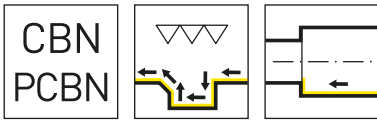
▲ 库存
on stock

△ 4周
4 weeks

R = 右手型-如图
R = right hand version shown

L = 左手型
L = left hand version

产品型号 Part number	s	f	a	r	d	D _{min}	α	HIS	CB10	CB35
R107.0537.02.B	3,3	3,7	6,3	0,2	5,2	6,8	5°	107052R	▲	
R107.1837.01.B	3,3	3,7	6,3	0,1	5,2	6,8	18°	107052R	▲	▲
R107.1837.02.B	3,3	3,7	6,3	0,2	5,2	6,8	18°	107052R	▲	▲
R108.0547.03.B	3,5	4,65	7,65	0,3	6	7,8	5°	306060R	▲	
R108.1847.03.B	3,5	4,65	7,65	0,3	6	7,8	18°	306060R	▲	▲
R108.1847.15.B	3,5	4,65	7,65	0,15	6	7,8	18°	306060R	▲	▲
R111.0557.03.B	3,95	5,7	9,7	0,3	8	10	5°	308080R	▲	
R111.0567.03.B	3,95	6,7	10,7	0,3	8	11	5°	308080R	▲	
R11P.1859.03.B	4,2	5,9	9,4	0,3	7	9,8	18°	11P070R	▲	▲
R11P.1859.15.B	4,2	5,9	9,4	0,15	7	9,8	18°	11P070R	▲	▲
R114.0572.04.B	5,3	7,25	11,75	0,4	9	12,5	5°	311090R	▲	
R114.1872.02.B	5,3	7,25	11,75	0,2	9	12,5	18°	311090R	▲	▲
R114.1872.04.B	5,3	7,25	11,75	0,4	9	12,5	18°	311090R	▲	▲
L107.1837.01.B	3,3	3,7	6,3	0,1	5,2	6,8	18°	107052L	△	△
L107.1837.02.B	3,3	3,7	6,3	0,2	5,2	6,8	18°	107052L	△	△
L108.1847.03.B	3,5	4,65	7,65	0,3	6	7,8	18°	306060L	△	△
L108.1847.15.B	3,5	4,65	7,65	0,15	6	7,8	18°	306060L	△	△
L11P.1859.03.B	4,2	5,9	9,4	0,3	7	9,8	18°	11P070L	△	
L11P.1859.15.B	4,2	5,9	9,4	0,15	7	9,8	18°	11P070L	△	△
L114.1872.02.B	5,3	7,25	11,75	0,2	9	12,5	18°	311090L	▲	▲
L114.1872.04.B	5,3	7,25	11,75	0,4	9	12,5	18°	311090L	▲	▲



ISO Mat. Code



切削参数见 24页
Cutting data page 24

硬质合金牌号

Carbide grades

R = 右手型-如图

R = right hand version shown

L = 左手型

L = left hand version

▲ 库存
on stock

△ 4周
4 weeks

产品型号 Part number	s	f	a	r	d	D _{min}	α	HIS	CH1G
R107.1837.01.BA	3,3	3,7	6,3	0,1	5,2	6,8	18°	107052R	▲
R107.1837.02.BA	3,3	3,7	6,3	0,2	5,2	6,8	18°	107052R	▲
R108.1847.15.BA	3,5	4,65	7,65	0,15	6	7,8	18°	306060R	▲
R108.1847.03.BA	3,5	4,65	7,65	0,3	6	7,8	18°	306060R	▲
R11P.1859.15.BA	4,2	5,9	9,4	0,15	7	9,8	18°	11P070R	▲
R11P.1859.03.BA	4,2	5,9	9,4	0,3	7	9,8	18°	11P070R	▲
R114.1872.02.BA	5,3	7,25	11,75	0,2	9	12,5	18°	311090R	▲
R114.1872.04.BA	5,3	7,25	11,75	0,4	9	12,5	18°	311090R	▲
L107.1837.01.BA	3,3	3,7	6,3	0,1	5,2	6,8	18°	107052L	△
L107.1837.02.BA	3,3	3,7	6,3	0,2	5,2	6,8	18°	107052L	△
L108.1847.15.BA	3,5	4,65	7,65	0,15	6	7,8	18°	306060L	△
L108.1847.03.BA	3,5	4,65	7,65	0,3	6	7,8	18°	306060L	△
L11P.1859.15.BA	4,2	5,9	9,4	0,15	7	9,8	18°	11P070L	△
L11P.1859.03.BA	4,2	5,9	9,4	0,3	7	9,8	18°	11P070L	△
L114.1872.02.BA	5,3	7,25	11,75	0,2	9	12,5	18°	311090L	▲
L114.1872.04.BA	5,3	7,25	11,75	0,4	9	12,5	18°	311090L	▲

刀片
Insert
229

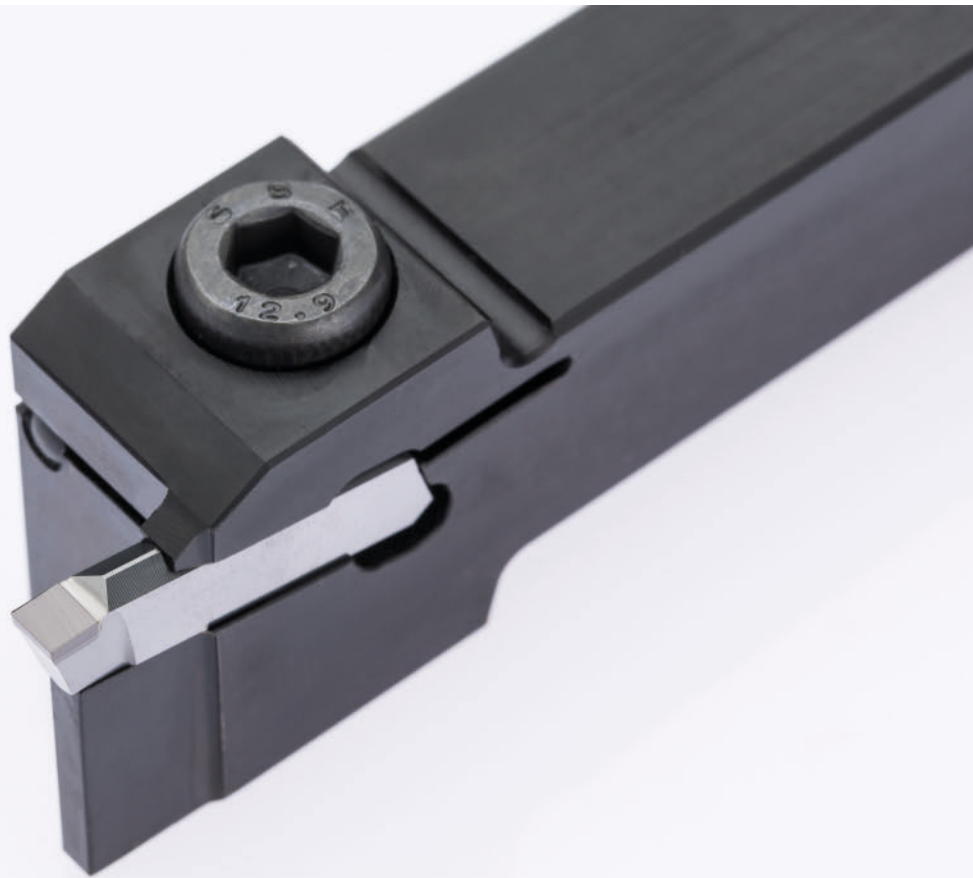
CBN
PCBN

页码/Page
18-19

切削参数
Cutting Data

页码/Page
25

229

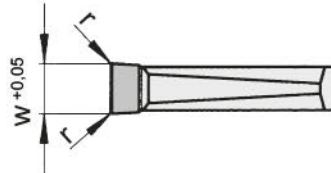
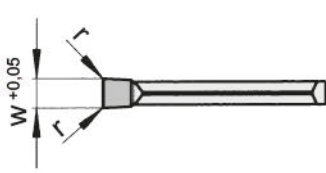
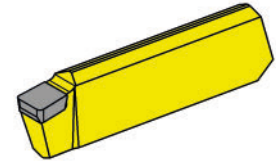
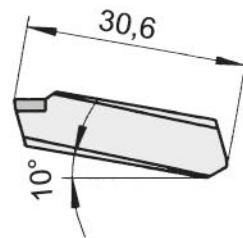
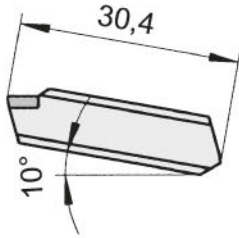
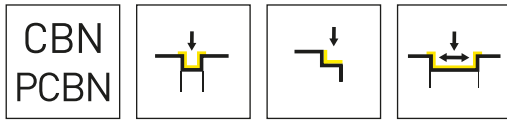


CBN车削

- 硬车削
- 加工铸件
- 烧结钢和超级合金

Turning with PCBN

- Hard Turning
- Machining castings
- Sintered steel and Superalloys



ISO Mat. Code



切削参数见 25页
Cutting data page 25

硬质合金牌号

Carbide grades

▲ 库存
on stock

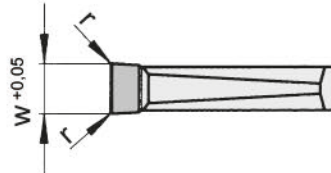
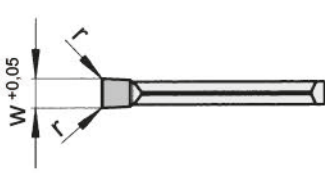
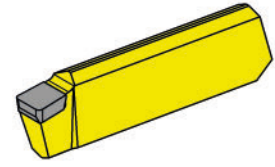
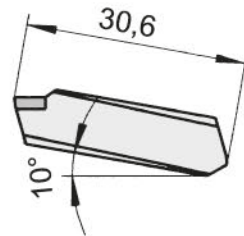
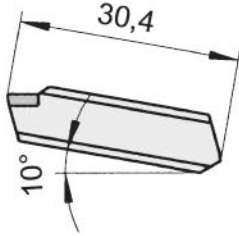
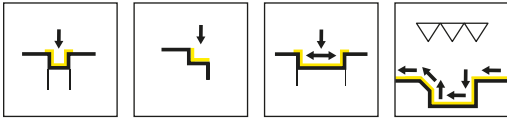
△ 4周
4 weeks

宽度 3 - 5 mm
Width 3 - 5 mm

宽度 6 mm
Width 6 mm

产品型号 Part number	w	r	HIS	CB10	CB35
229.0300.22.B	3	0,2	229030	▲	▲
229.0300.24.B	3	0,4	229030	▲	▲
229.0400.22.B	4	0,2	229040	▲	▲
229.0400.24.B	4	0,4	229040	▲	▲
229.0500.22.B	5	0,2	229040	△	▲
229.0500.24.B	5	0,4	229040	▲	▲
229.0600.24.B	6	0,4	229050	△	▲
229.0600.26.B	6	0,6	229050	△	▲

CBN
PCBN



ISO Mat. Code



切削参数见25页
Cutting data page 25

硬质合金牌号

Carbide grades

▲ 库存
on stock

△ 4周
4 weeks

宽度 3 - 5 mm
Width 3 - 5 mm

宽度 6 mm
Width 6 mm

产品型号 Part number	w	r	HIS	CH1G
229.0300.22.BA	3	0,2	229030	△
229.0300.24.BA	3	0,4	229030	△
229.0400.22.BA	4	0,2	229040	△
229.0400.24.BA	4	0,4	229040	△
229.0500.22.BA	5	0,2	229050	△
229.0500.24.BA	5	0,4	229050	△
229.0600.24.BA	6	0,4	229060	△
229.0600.26.BA	6	0,6	229060	△

刀片
Insert

CBN
PCBN

页码/Page
22-23

切削参数
Cutting Data

页码/Page
25

315

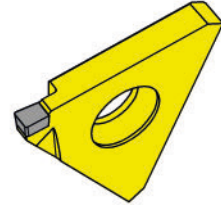
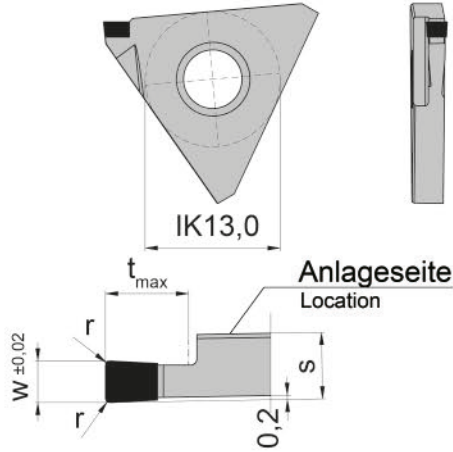
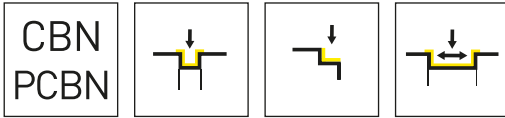


CBN车削

- 硬车削
- 加工铸件
- 烧结钢和超级合金

Turning with PCBN

- Hard Turning
- Machining castings
- Sintered steel and Superalloys



ISO Mat. Code



切削参数见 25页
Cutting data page 25

硬质合金牌号

Carbide grades

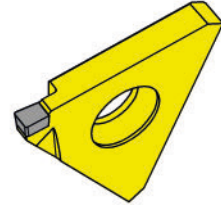
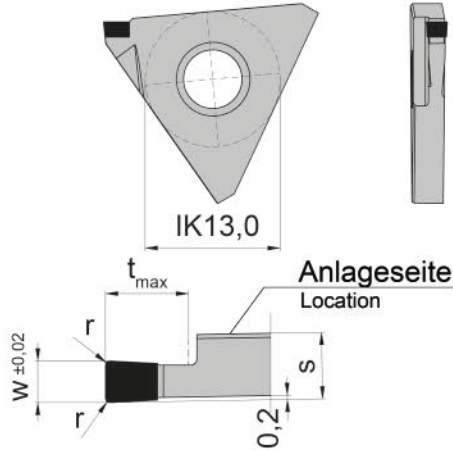
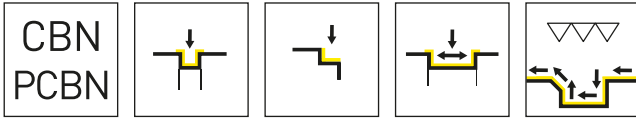
▲ 库存
on stock

△ 4周
4 weeks

R = 右手型-如图
R = right hand version shown

L = 左手型
L = left hand version

产品型号 Part number	w	r	t _{max}	s	HIS	CB10	CB35
R315.0532.01.B	0,5	0,1	1,1	3,2	31503R	▲	▲
R315.1032.01.B	1	0,1	2	3,2	31503R	▲	▲
R315.1532.15.B	1,5	0,15	3	3,2	31503R	▲	▲
R315.2032.02.B	2	0,2	4	3,2	31503R	▲	▲
R315.2532.02.B	2,5	0,2	5	3,2	31503R	▲	▲
R315.3032.02.B	3	0,2	5	3,2	31503R	▲	▲
R315.4054.02.B	4	0,2	5	3,2	31503R	▲	▲
L315.0532.01.B	0,5	0,1	1,1	3,2	31503L	▲	▲
L315.1032.01.B	1	0,1	2	3,2	31503L	▲	▲
L315.1532.15.B	1,5	0,15	3	3,2	31503L	▲	▲
L315.2032.02.B	2	0,2	4	3,2	31503L	▲	▲
L315.2532.02.B	2,5	0,2	5	3,2	31503L	▲	▲
L315.3032.02.B	3	0,2	5	3,2	31503L	▲	▲
L315.4054.02.B	4	0,2	5	3,2	31503L	▲	▲



ISO Mat. Code



切削参数见 25页
Cutting data page 25

硬质合金牌号

Carbide grades

▲ 库存
on stock

△ 4周
4 weeks

R = 右手型-如图
R = right hand version shown

L = 左手型
L = left hand version

产品型号 Part number	w	r	t _{max}	s	HIS	CH16
R315.0532.01.BA	0,5	0,1	1,1	3,2	31503R	▲
R315.1032.01.BA	1	0,1	2	3,2	31503R	▲
R315.1532.15.BA	1,5	0,15	3	3,2	31503R	▲
R315.2032.02.BA	2	0,2	4	3,2	31503R	▲
R315.2532.02.BA	2,5	0,2	5	3,2	31503R	▲
R315.3032.02.BA	3	0,2	5	3,2	31503R	▲
R315.4054.02.BA	4	0,2	5	3,2	31503R	▲
L315.0532.01.BA	0,5	0,1	1,1	3,2	31503L	▲
L315.1032.01.BA	1	0,1	2	3,2	31503L	▲
L315.1532.15.BA	1,5	0,15	3	3,2	31503L	▲
L315.2032.02.BA	2	0,2	4	3,2	31503L	▲
L315.2532.02.BA	2,5	0,2	5	3,2	31503L	▲
L315.3032.02.BA	3	0,2	5	3,2	31503L	▲
L315.4054.02.BA	4	0,2	5	3,2	31503L	▲

Supermini 和 Mini 切削参数

Cutting Data Supermini and Mini



材料 Material	基体 Substrate	应用 Application	v_c m/min	f_n (mm/trs) (mm/giro)	a_p (mm)	冷却液 Coolant
H 硬化钢 - 无断续切削 Hardened Steel - <u>without</u> interrupted cut 45-65 HRC	CB10	$\varnothing 2,0 - \varnothing 4,0$	80-140	0,01-0,03	0,01-0,05	气冷/乳化液 Air/Emulsion
		$> \varnothing 4,0$	90-150	0,02-0,05	0,02-0,15	
	CB35	$\varnothing 2,0 - \varnothing 4,0$	90-150	0,01-0,03	0,01-0,05	气冷 Air
		$> \varnothing 4,0$	100-160	0,02-0,05	0,02-0,15	
P 烧结钢, 软 Sintered steel, soft < 220 HB	CH1G	$\varnothing 2,0 - \varnothing 4,0$	80-280	0,02-0,10	0,02-0,12	乳化液 Emulsion
	CB35	$> \varnothing 4,0$	100-390	0,02-0,18	0,02-0,40	
K	CB35	$\varnothing 2,0 - \varnothing 4,0$	300-1000	0,02-0,10	0,02-0,15	乳化液/气冷 Emulsion/Air
		$> \varnothing 4,0$	400-1200	0,03-0,18	0,02-0,40	
	CB35	$\varnothing 2,0 - \varnothing 4,0$	150-650	0,02-0,07	0,02-0,12	乳化液/气冷 Emulsion/Air
		$> \varnothing 4,0$	200-700	0,02-0,13	0,02-0,35	
	CH1G CB35	$\varnothing 2,0 - \varnothing 4,0$	140-400	0,01-0,05	0,01-0,25	乳化液/气冷 Emulsion/Air
		$> \varnothing 4,0$	180-550	0,02-0,11	0,02-0,32	
CH1G	$\varnothing 2,0 - \varnothing 4,0$	50-110	0,01-0,025	0,01-0,05	乳化液 Emulsion	
	$> \varnothing 4,0$	80-130	0,01-0,06	0,015-0,25		
S	CH1G	$\varnothing 2,0 - \varnothing 4,0$	140-250	0,01-0,03	0,01-0,06	乳化液 高压 Emulsion (High pressure)
		$> \varnothing 4,0$	180-350	0,01-0,045	0,01-0,18	
	CH1G	$\varnothing 2,0 - \varnothing 4,0$	60-200	0,01-0,025	0,01-0,04	乳化液 高压 Emulsion (High pressure)
		$> \varnothing 4,0$	100-300	0,01-0,05	0,01-0,08	

229 和 315系列切削参数

Cutting Data Systems 229 and 315

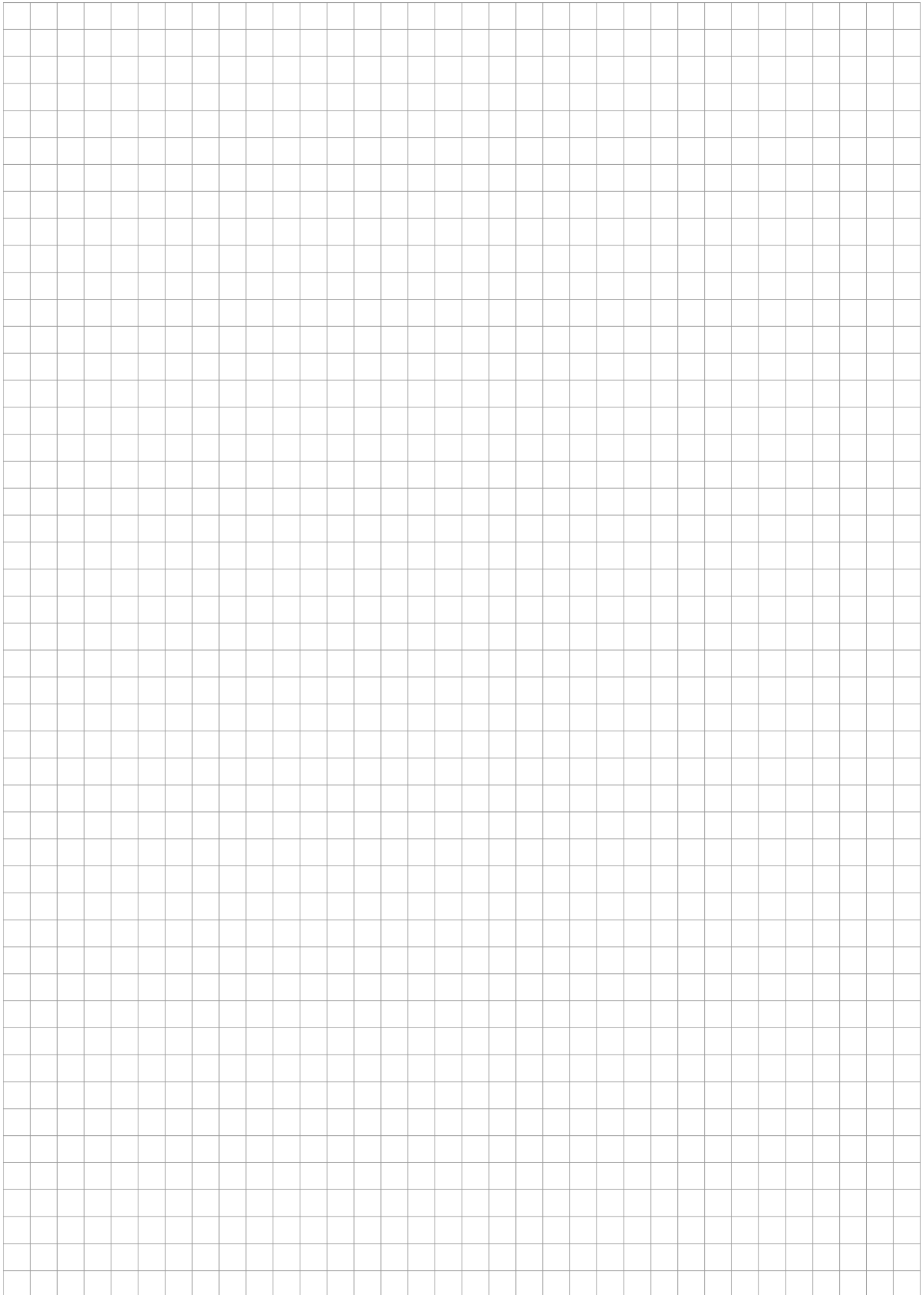


材料 Material	基体 Substrate	应用 Application	v_c m/min	f_n (mm/trs) (mm/giro)	a_p (mm)	冷却液 Coolant
H 硬化钢 - 无断续切削 Hardened Steel - without interrupted cut 45-65 HRC	CB10	整体切槽 Grooving in solid	80-140	0,02-0,06	-	气冷/乳化液 Air/Emulsion
		局部切削, 横向车削 Partial cut, Side turning	90-150	0,03-0,08	0,10-0,25	
	CB35	整体切槽 Grooving in solid	90-150	0,02-0,06	-	气冷 Air
		局部切削, 横向车削 Partial cut, Side turning	100-160	0,03-0,08	0,10-0,25	
P 烧结钢, 软 (z.B. Sint D11) Sintered steel, soft < 220 HB	CH1G	整体切槽 Grooving in solid	100-280	0,03-0,15	-	乳化液 Emulsion
	CB35	局部切削, 横向车削 Partial cut, Side turning	100-390	0,03-0,20	0,10-0,65	
K	CB35	整体切槽 Grooving in solid	400-1000	0,05-0,30	-	乳化液/气冷 Emulsion/Air
		局部切削, 横向车削 Partial cut, Side turning	400-1200	0,05-0,45	0,10-1,0	
	CB35	整体切槽 Grooving in solid	200-650	0,03-0,15	-	乳化液/气冷 Emulsion/Air
		局部切削, 横向车削 Partial cut, Side turning	200-700	0,03-0,20	0,05-0,75	
	CH1G CB35	整体切槽 Grooving in solid	180-450	0,03-0,15	-	乳化液/气冷 Emulsion/Air
		局部切削, 横向车削 Partial cut, Side turning	180-600	0,03-0,20	0,05-0,70	
CH1G	整体切槽 Grooving in solid	70-110	0,02-0,04	-	乳化液 Emulsion	
	局部切削, 横向车削 Partial cut, Side turning	80-130	0,03-0,10	0,05-0,65		
S 镍基和超级合金 Nickel based and Superalloys 精加工 Finishing	CH1G	整体切槽 Grooving in solid	-	-	-	乳化液 高压 Emulsion (High pressure)
		局部切削, 横向车削 Partial cut, Side turning	180-350	0,02-0,07	0,02-0,20	
钛(纯), 钛合金 Titanium (pure), Titanium alloys	CH1G	整体切槽 Grooving in solid	80-250	0,02-0,04	-	乳化液 高压 Emulsion (High pressure)
		局部切削, 横向车削 Partial cut, Side turning	100-300	0,02-0,08	0,03-0,30	

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