

ph HORN ph



NEW

扩展的CBN刀具

烧结材料、淬火钢和超耐热合金的加工

EXTENSION OF CBN TOOLS

Machining of sintered materials, hardened steels and superalloys



不同之处： 更多可能

THE DIFFERENCE: MORE POSSIBILITIES

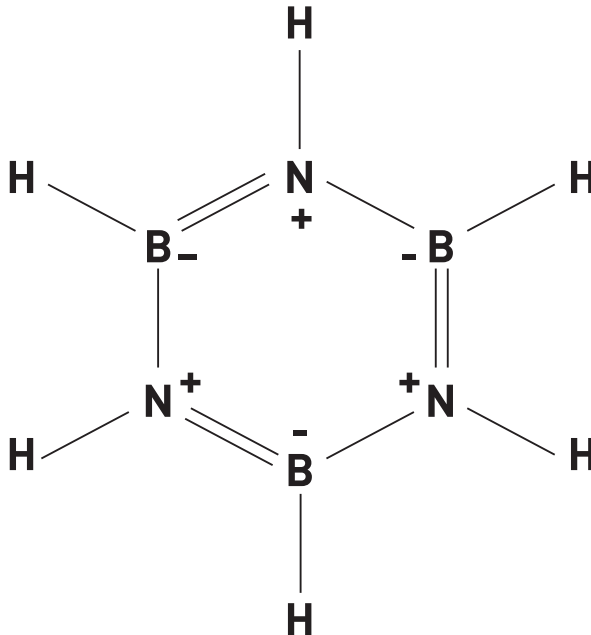
- **超耐热合金和粉末冶金钢的高切削性能**
High cutting performance in super-alloys and powder metallurgical steels
- **大范围用于硬质加工的刀具选择**
Wide range of tools for hard machining
- **完美匹配的槽型, 应用范围广泛**
Perfectly adapted geometries for a wide range of applications

多晶体立方氮化硼 (CBN)

CBN是一个总称，范围广泛，指的是具有多性能的各种基材。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，控制HORN CBN刀具的高性能和稳定的性能。正确切割和陶瓷粘合剂也非常重要。“填充物”的种类多，其含量从40%到几乎100%。刀具切削刃几何定义，包括微观和宏观的几何形状，其影响加工性能和应用范围。这造就了一个具有广泛应用范围和复杂的切削基材。

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.



硬材料加工

立方氮化硼是仅次于金刚石的第二硬的切割材料，其特点是综合了各种物理，机械和化学性能。最重要的是，高耐热性和高硬度能够以特定几何形状的切削刃对淬火钢进行经济地加工。CBN基材被用作切割复合材料。通过改变体积分数、颗粒大小和粘合剂系统，可以设定不同的性能，这可以有利地适用于各自的应用领域。通过CBN基材、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，金属去除率、精度和高表面质量都优于磨削技术。只有在极少数情况下才需要特殊机床。

实例:

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

铸造材料加工

立方氮化硼的高硬度和高耐热性，也适用于铸造材料的经济加工。铸造材料的领域和各自的特性一样广泛。所有这些都可以用CBN加工。与硬质合金或陶瓷刀具相比，按几倍切削速度，可以提升效率10倍以上。

实例:

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

烧结钢加工

复杂的形状，高产量和刀具磨损快：这只是一些关键术语来描述烧结或粉末冶金部件的生产和制造。磨损主要是由于硬度 (>70 HRC) 和细小的陶瓷颗粒嵌入到相对柔软的金属基体中造成的。由于CBN的高硬度，它能抑制磨料磨损。与硬质合金相比，不仅可实现更高的刀具寿命，而且切削速度也可以提高，切削速度可以相应提高两到三倍。为此，切削刃的几何形状需要按这个应用而设计。这与常规经典的硬加工不同，通常需求是，要确保部件没有毛刺。

实例:

SINT D11 (120HB)	SINT D39 (150HB)	SINT C42 (170HB)
$v_c =$ 至 390 m/min	$v_c =$ 至 260 m/min	$v_c =$ 至 220 m/min

镍基合金和超级合金的加工

镍基合金和其他超级合金的加工在制造业中迅速增长。这些材料特殊的机械、化学和热性能往往导致其可加工性差、刀具磨损大和切削速度低。这些材料的加工有时会给用户带来巨大的挑战。CBN切削材料可以作为这个问题的解决者。特别是在精加工时，它能够缩短加工时间，提高尺寸精度和提升表面质量。

精加工实例:

Inconel 718 (NiCr19NbMo / 2.4668)	X6NiCrTiMoV26-15 (1.4944)
$v_c =$ 至 300 m/min	$v_c =$ 至 400 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)
$v_c =$ up to 390 m/min	$v_c =$ up to 260 m/min	$v_c =$ up to 220 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)
$v_c =$ up to 300 m/min	$v_c =$ up to 400 m/min

Supermini®



镗孔和仿形加工 使用 CBN

- 硬材料车削
- 铸造材料加工
- 烧结钢和超级合金

Boring and Profiling with PCBN

- Hard Turning
- Machining castings
- Sintered steel and Superalloys

刀片 Insert

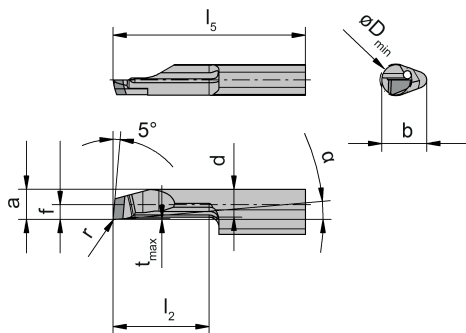
105

孔径Ø 自

Bore Ø from

2 mm

CBN刀片
PCBN tipped

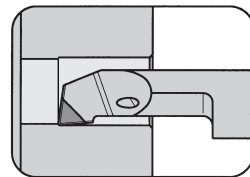


R=右手型-如图

R = right hand version shown

L=左手型

L = left hand version



配合刀杆
for Toolholder

型号 H105
Type HC105
B105
VDI
B105C
B105TS
IR105
AIH
N

ISO 材料代码
ISO Mat. Code



切削参数 页 116

Cutting data page 116

产品型号 Part number	r	f	a	d	b	l ₂	l ₅	t _{max}	D _{min}	α	CB10	CB35
R/L105.1813.00.1.2.B	0.05	1.3	1.7	1.4	7	5	25	0.2	2	18°	▲/△	▲/△
R/L105.1813.01.1.2.B	0.10	1.3	1.7	1.4	7	5	25	0.2	2	18°	▲/△	▲/△
R105.0513.0.3.B	0.15	1.3	2.7	2.5	7	7	25	0.1	3	5°	▲	
R/L105.1813.01.0.3.B	0.10	1.3	2.7	2.4	7	7	25	0.2	3	18°	▲/△	▲/△
R/L105.1813.02.0.3.B	0.20	1.3	2.7	2.4	7	7	25	0.2	3	18°	▲/△	▲/△
R/L105.1813.01.1.3.B	0.10	1.3	2.7	2.4	7	12	30	0.2	3	18°	▲/△	▲/△
R/L105.1813.02.1.3.B	0.20	1.3	2.7	2.4	7	12	30	0.2	3	18°	▲/△	▲/△
R105.0519.1.4.B	0.20	1.5	3.7	3.4	7	10	25	0.1	4	5°	▲	
R/L105.1815.01.1.4.B	0.10	1.5	3.7	3.4	7	10	25	0.2	4	18°	▲/△	▲/△
R/L105.1815.02.1.4.B	0.20	1.5	3.7	3.4	7	10	25	0.2	4	18°	▲/△	▲/△
R/L105.1815.01.2.4.B	0.10	1.5	3.7	3.4	7	15	30	0.2	4	18°	▲/△	▲/△

▲ 库存 / 库存 △ 4周 / 4周 x 根据要求 / 根据要求

尺寸单位 : mm

Dimensions in mm

注明R或L型

State R or L version

按需提供更多尺寸

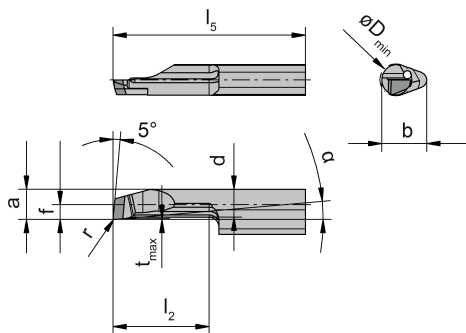
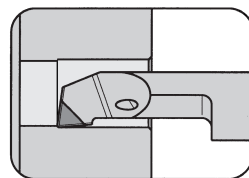
Further sizes upon request

刀片 Insert

105

孔径 Ø 自 Bore Ø from 5 mm

CBN刀片
PCBN tipped



R=右手型-如图
R = right hand version shown

L=左手型
L = left hand version

配合刀杆
for Toolholder

型号 H105
Type HC105
B105
VDI
B105C
B105TS
IR105
AIH
N

ISO 材料代码
ISO Mat. Code



切削参数页 116
Cutting data page 116

产品型号 Part number	r	f	a	d	b	l ₂	l ₅	t _{max}	D _{min}	α	CB10	CB35
R105.0523.2.5.B	0.20	2.3	4.7	4.4	7	15	30	0.10	5.0	5°	▲	▲
R/L105.1823.01.1.5.B	0.10	2.3	4.4	4.4	7	10	25	0.20	5.0	18°	▲/△	▲/△
R/L105.1823.01.2.5.B	0.10	2.3	4.4	4.4	7	15	30	0.20	5.0	18°	▲/△	▲/△
R/L105.1823.02.1.5.B	0.20	2.3	4.4	4.4	7	10	25	0.20	5.0	18°	▲/△	▲/△
R/L105.1823.02.2.5.B	0.20	2.3	4.4	4.4	7	15	30	0.20	5.0	18°	▲/△	▲/△
R/L105.1823.15.3.5.B	0.15	2.3	4.4	4.4	7	20	35	0.30	5.0	18°	▲/△	▲/△
R105.0533.2.6.B	0.20	3.3	5.7	5.3	7	15	30	0.15	6.0	5°	▲	▲
R/L105.1833.15.1.6.B	0.15	3.3	5.7	5.3	7	10	25	0.30	6.0	18°	▲/△	▲/△
R/L105.1833.01.2.6.B	0.10	3.3	5.7	5.3	7	15	30	0.20	6.0	18°	▲/△	▲/△
R/L105.1833.02.2.6.B	0.20	3.3	5.7	5.3	7	15	30	0.30	6.0	18°	▲/△	▲/△
R/L105.0533.3.6.B	0.20	3.3	5.7	5.3	7	20	35	0.15	6.0	5°	▲/▲	▲/▲
R/L105.1833.15.3.6.B	0.15	3.3	5.7	5.3	7	20	35	0.30	6.0	18°	▲/△	▲/△
R/L105.1833.15.4.6.B	0.15	3.3	5.7	5.3	7	25	40	0.30	6.0	18°	▲/△	▲/△
R105.0540.2.7.B	0.20	4.0	6.4	6.0	7	15	30	0.15	6.8	5°	▲	▲
R/L105.1840.02.2.7.B	0.20	4.0	6.4	6.0	7	15	30	0.30	6.8	18°	▲/△	▲/△
R/L105.1840.02.3.7.B	0.20	4.0	6.4	6.0	7	20	35	0.30	6.8	18°	▲/△	▲/△
R/L105.1840.15.4.7.B	0.15	4.0	6.4	6.0	7	25	40	0.30	6.8	18°	▲/△	▲/△

▲ 库存 / 库存 Δ 4周 / 4周 x 根据要求 / 根据要求

尺寸单位 : mm

Dimensions in mm

注明R或L型

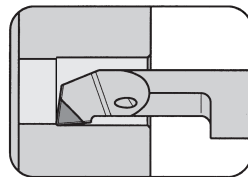
State R or L version

按需提供更多尺寸

Further sizes upon request

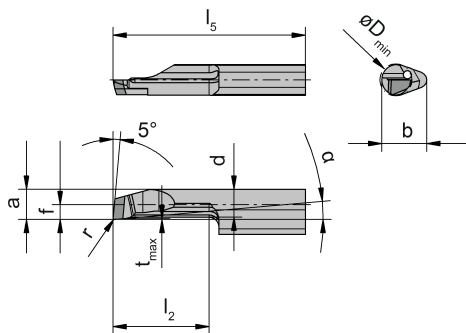
刀片 Insert

105



孔径Ø自 Bore Ø from 2 mm

CBN刀片
PCBN tipped



R=右手型-如图

R = right hand version shown

L=左手型

L = left hand version

配合刀杆

for Toolholder

型号 H105
Type HC105
B105
VDI
B105C
B105TS
IR105
AIH
N

ISO 材料代码
ISO Mat. Code



切削参数 页 116

Cutting data page 116

产品型号 Part number	r	f	a	d	b	l_2	l_5	t_{max}	D_{min}	α	CH1G
R/L105.1813.00.1.2.BA	0.05	1.3	1.7	1.4	7	5	25	0.2	2	18°	▲/△
R/L105.1813.01.1.2.BA	0.10	1.3	1.7	1.4	7	5	25	0.2	2	18°	▲/△
R/L105.1813.01.0.3.BA	0.10	1.3	2.7	2.4	7	7	25	0.2	3	18°	▲/△
R/L105.1813.01.1.3.BA	0.10	1.3	2.7	2.4	7	12	30	0.2	3	18°	▲/△
R/L105.1813.02.0.3.BA	0.20	1.3	2.7	2.4	7	7	25	0.2	3	18°	▲/△
R/L105.1813.02.1.3.BA	0.20	1.3	2.7	2.4	7	12	30	0.2	3	18°	▲/△
R/L105.1815.01.1.4.BA	0.10	1.5	3.7	3.4	7	10	25	0.2	4	18°	▲/△
R/L105.1815.02.1.4.BA	0.20	1.5	3.7	3.4	7	10	25	0.2	4	18°	▲/△
R/L105.1815.01.2.4.BA	0.10	1.5	3.7	3.4	7	15	30	0.2	4	18°	▲/△
R/L105.1815.02.2.4.BA	0.20	1.5	3.7	3.4	7	15	30	0.2	4	18°	▲/△

▲ 库存 / 库存 △ 4周 / 4周 x 根据要求 / 根据要求

尺寸单位: mm

Dimensions in mm

注明R或L型

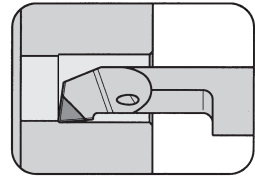
State R or L version

按需提供更多尺寸

Further sizes upon request

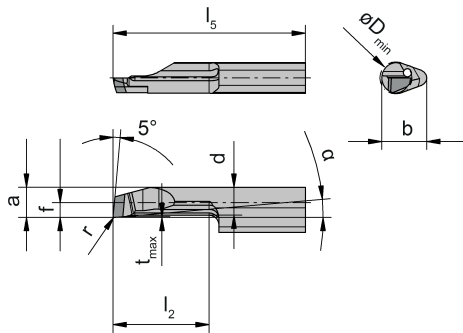
刀片 Insert

105



孔径Ø自 Bore Ø from 5 mm

CBN刀片
PCBN tipped



R=右手型-如图
R = right hand version shown

L=左手型
L = left hand version

配合刀杆
for Toolholder

型号 H105
Type HC105
B105
VDI
B105C
B105TS
IR105
AIH
N

ISO 材料代码
ISO Mat. Code



切削参数 页 116
Cutting data page 116

产品型号 Part number	r	f	a	d	b	l_2	l_5	t_{max}	D_{min}	α	CH1G
R/L105.1823.01.1.5.BA	0.10	2.3	4.4	4.4	7	10	25	0.2	5.0	18°	▲/△
R/L105.1823.02.1.5.BA	0.20	2.3	4.4	4.4	7	10	25	0.2	5.0	18°	▲/△
R/L105.1823.01.2.5.BA	0.10	2.3	4.4	4.4	7	15	30	0.2	5.0	18°	▲/△
R/L105.1823.02.2.5.BA	0.20	2.3	4.4	4.4	7	15	30	0.2	5.0	18°	▲/△
R/L105.1823.15.3.5.BA	0.15	2.3	4.4	4.4	7	20	35	0.3	5.0	18°	▲/△
R/L105.1833.15.1.6.BA	0.15	3.3	5.7	5.3	7	10	25	0.3	6.0	18°	▲/△
R/L105.1833.01.2.6.BA	0.10	3.3	5.7	5.3	7	15	30	0.3	6.0	18°	▲/△
R/L105.1833.02.2.6.BA	0.20	3.3	5.7	5.3	7	15	30	0.3	6.0	18°	▲/△
R/L105.1833.15.3.6.BA	0.15	3.3	5.7	5.3	7	20	35	0.3	6.0	18°	▲/△
R/L105.1833.15.4.6.BA	0.15	3.3	5.7	5.3	7	25	40	0.3	6.0	18°	▲/△
R/L105.1840.02.2.7.BA	0.20	4.0	6.4	6.0	7	15	30	0.2	6.8	18°	▲/△
R/L105.1840.02.3.7.BA	0.20	4.0	6.4	6.0	7	20	35	0.3	6.8	18°	▲/△
R/L105.1840.15.4.7.BA	0.15	4.0	6.4	6.0	7	25	40	0.3	6.8	18°	▲/△

▲ 库存 / 库存 △ 4周 / 4周 x 根据要求 / 根据要求

尺寸单位: mm

Dimensions in mm

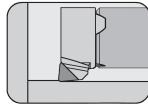
注明R或L型

State R or L version

按需提供更多尺寸

Further sizes upon request

刀片
Insert
107/108/111/11P/114



页/Page
106-107

切削参数
Cutting Data

页/Page
116

Mini



镗孔和仿形加工 使用 CBN

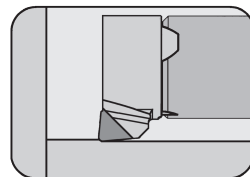
- 硬材料车削
- 铸造材料加工
- 烧结钢和超级合金

Boring and Profiling with PCBN

- Hard Turning
- Machining castings
- Sintered steel and Superalloys

刀片
Insert

107/108/111/11P/114

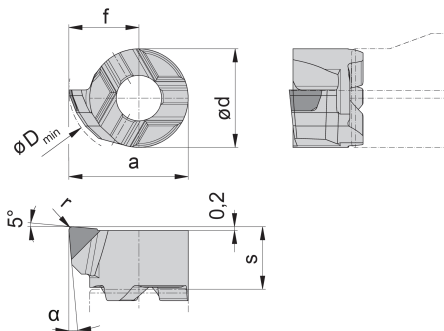


孔径 Ø 自

Bore Ø from

6.8 mm

CBN刀片
PCBN tipped



R=右手型-如图

R = right hand version shown

L=左手型

L = left hand version

配合刀杆
for Toolholder

型号 B107
Type B108
B111
B11P
B114
HC114

ISO 材料代码
ISO Mat. Code

H

K

切削参数 页 116

Cutting data page 116

产品型号 Part number	s	f	a	r	d	D _{min}	α	CB10	CB35
R107.0537.02.B	3.30	3.70	6.30	0.20	5.2	6.8	5°	▲	
R/L107.1837.01.B	3.30	3.70	6.30	0.10	5.2	6.8	18°	▲/△	▲/△
R/L107.1837.02.B	3.30	3.70	6.30	0.20	5.2	6.8	18°	▲/△	▲/△
R108.0547.03.B	3.50	4.65	7.65	0.30	6.0	7.8	5°	▲	
R/L108.1847.03.B	3.50	4.65	7.65	0.30	6.0	7.8	18°	▲/▲	▲/▲
R/L108.1847.15.B	3.50	4.65	7.65	0.15	6.0	7.8	18°	▲/△	▲/△
R111.0557.03.B	3.95	5.70	9.70	0.30	8.0	10.0	5°	▲	
R111.0567.03.B	3.95	6.70	10.70	0.30	8.0	11.0	5°	▲	
R/L11P.1859.03.B	4.20	5.90	9.40	0.30	7.0	9.8	18°	▲/△	▲/△
R/L11P.1859.15.B	4.20	5.90	9.40	0.15	7.0	9.8	18°	▲/△	▲/△
R114.0572.04.B	5.30	7.25	11.75	0.40	9.0	12.5	5°	▲	
R/L114.1872.02.B	5.30	7.25	11.75	0.20	9.0	12.5	18°	▲/▲	▲/▲
R/L114.1872.04.B	5.30	7.25	11.75	0.40	9.0	12.5	18°	▲/▲	▲/▲

▲ 库存 / 库存 △ 4周 / 4周 x 根据要求 / 根据要求

尺寸单位: mm

Dimensions in mm

注明R或L型

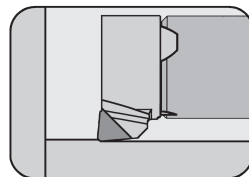
State R or L version

按需提供更多尺寸

Further sizes upon request

刀片
Insert

107/108/11P/114

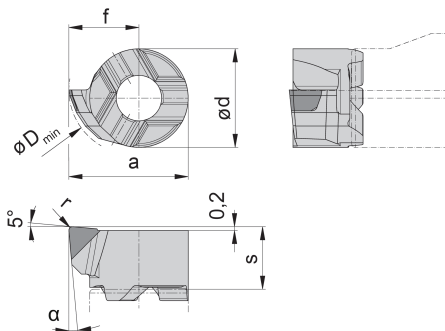


孔径Ø自

Bore Ø from

6.8 mm

CBN刀片
PCBN tipped



R=右手型-如图

R = right hand version shown

L=左手型

L = left hand version

配合刀杆
for Toolholder

型号 B107
Type B108
B11P
B114
HC114

ISO 材料代码
ISO Mat. Code



切削参数 页 116

Cutting data page 116

产品型号 Part number	s	f	a	r	d	D _{min}	α	CH1G
R/L107.1837.01.BA	3.3	3.70	6.30	0.10	5.2	6.8	18°	▲/△
R/L107.1837.02.BA	3.3	3.70	6.30	0.20	5.2	6.8	18°	▲/△
R/L108.1847.15.BA	3.5	4.65	7.65	0.15	6.0	7.8	18°	▲/△
R/L108.1847.03.BA	3.5	4.65	7.65	0.30	6.0	7.8	18°	▲/△
R/L11P.1859.15.BA	4.2	5.90	9.40	0.15	7.0	9.8	18°	▲/△
R/L11P.1859.03.BA	4.2	5.90	9.40	0.30	7.0	9.8	18°	▲/△
R/L114.1872.02.BA	5.3	7.25	11.75	0.20	9.0	12.5	18°	▲/▲
R/L114.1872.04.BA	5.3	7.25	11.75	0.40	9.0	12.5	18°	▲/▲

▲ 库存 / 库存 △ 4周 / 4周 x 根据要求 / 根据要求

尺寸单位 : mm

Dimensions in mm

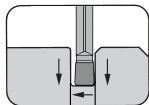
注明R或L型

State R or L version

按需提供更多尺寸

Further sizes upon request

刀片
Insert
229

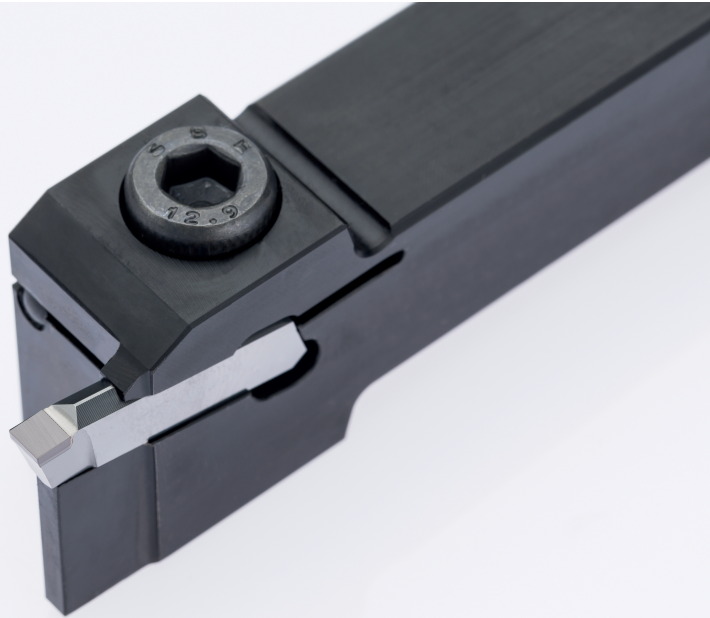


页/Page
110-111

切削参数
Cutting Data

页/Page
117

229



使用CBN

- 硬材料车削
- 铸造材料加工
- 烧结钢和超级合金

Turning with PCBN

- Hard Turning
- Machining castings
- Sintered steel and Superalloys

切槽 Grooving



刀片 Insert

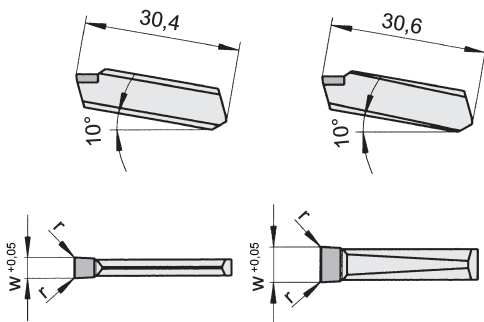
229

槽深可达
槽宽

Depth of groove up to
Width of groove

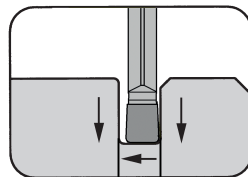
18 mm
3-6 mm

CBN刀片
PCBN tipped



宽度 3 - 5 mm
Width 3 - 5 mm

宽度 6 mm
Width 6 mm



配合刀杆
for Toolholder

型号 210
Type 218
226
219
213
214
849
R/LA210
R/LA226
225
257

ISO 材料代码
ISO Mat. Code

H K

切削参数 页 117
Cutting data page 117

产品型号 Part number	w	r	尺寸规格 Size	CB10	CB35
229.0300.22.B	3	0.2	03	▲	▲
229.0300.24.B	3	0.4	03	▲	▲
229.0400.22.B	4	0.2	04	▲	▲
229.0400.24.B	4	0.4	04	▲	▲
229.0500.22.B	5	0.2	04	△	▲
229.0500.24.B	5	0.4	04	▲	▲
229.0600.24.B	6	0.4	05	△	▲
229.0600.26.B	6	0.6	05	△	▲

▲ 库存 / 库存 △ 4周 / 4周 x 根据要求 / 根据要求

尺寸单位 : mm

Dimensions in mm

此可转位刀片可用于右手和左手型刀杆

Indexable inserts can be used in right and left hand toolholders.

按需提供更多尺寸

Further sizes upon request

切槽 Grooving



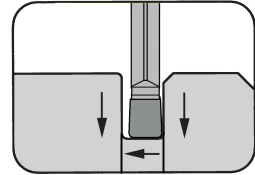
刀片 Insert

229

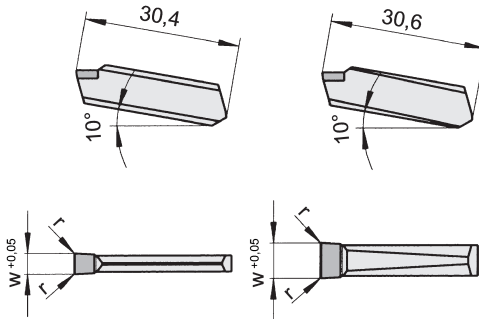
槽深可达
槽宽

Depth of groove up to
Width of groove

18 mm
3-6 mm



CBN刀片
PCBN tipped



宽度 3 - 5 mm
Width 3 - 5 mm

宽度 6 mm
Width 6 mm

配合刀杆
for Toolholder

型号 210
Type 218
226
219
213
214
849
R/LA210
R/LA226
225
257

ISO 材料代码
ISO Mat. Code



切削参数 页 117
Cutting data page 117

产品型号 Part number	w	r	尺寸规格 Size	CH1G
229.0300.22.BA	3	0.2	03	Δ
229.0300.24.BA	3	0.4	03	Δ
229.0400.22.BA	4	0.2	03	Δ
229.0400.24.BA	4	0.4	03	Δ
229.0500.22.BA	5	0.2	04	Δ
229.0500.24.BA	5	0.4	04	Δ
229.0600.24.BA	6	0.4	05	Δ
229.0600.26.BA	6	0.6	05	Δ

▲ 库存 / 库存 Δ 4周 / 4周 x 根据要求 / 根据要求

尺寸单位 : mm

Dimensions in mm

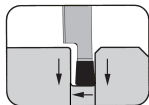
此可转位刀片可用于右手和左手型刀杆

Indexable inserts can be used in right and left hand toolholders.

按需提供更多尺寸

Further sizes upon request

刀片
Insert



页/Page
114-115

切削参数
Cutting Data

页/Page
117

315



切槽 使用 CBN

- 硬材料车削
- 铸造材料加工
- 烧结钢和超级合金

Turning with PCBN

- Hard Turning
- Machining castings
- Sintered steel and Superalloys

切槽 Grooving



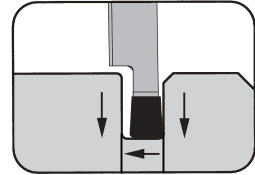
刀片
Insert

315

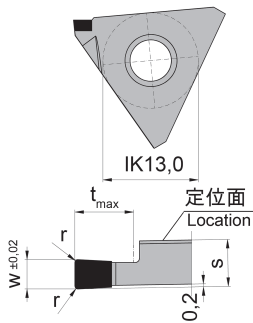
槽深可达
槽宽

Depth of groove up to
Width of groove

5 mm
0.5-4 mm



CBN刀片
PCBN tipped



R=右手型-如图

R = right hand version shown

L=左手型

L = left hand version

配合刀杆
for Toolholder

型号 356
Type 333

ISO 材料代码
ISO Mat. Code



切削参数 页 117

Cutting data page 117

产品型号 Part number	w	r	t _{max}	s	尺寸规格	CB10	CB35
						▲/▲	▲/▲
R/L315.0532.01.B	0.5	0.10	1.1	3.2	03	▲/▲	▲/▲
R/L315.1032.01.B	1.0	0.10	2.0	3.2	03	▲/▲	▲/▲
R/L315.1532.15.B	1.5	0.15	3.0	3.2	03	▲/▲	▲/▲
R/L315.2032.02.B	2.0	0.20	4.0	3.2	03	▲/▲	▲/▲
R/L315.2532.02.B	2.5	0.20	5.0	3.2	03	▲/▲	▲/▲
R/L315.3032.02.B	3.0	0.20	5.0	3.2	03	▲/▲	▲/▲
R/L315.4054.02.B	4.0	0.20	5.0	3.2	03	▲/▲	▲/▲

▲ 库存 / 库存 Δ 4周 / 4周 x 根据要求 / 根据要求

尺寸单位 : mm

Dimensions in mm

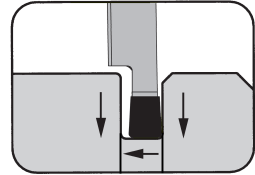
按需提供更多尺寸
Further sizes upon request

切槽 Grooving



刀片
Insert

315



槽深可达
槽宽

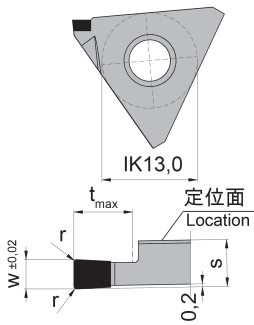
Depth of groove up to
Width of groove

5 mm
0.5-4 mm

CBN刀片
PCBN tipped

配合刀杆
for Toolholder

型号 356
Type 333



R=右手型-如图

R = right hand version shown

L=左手型

L = left hand version

ISO 材料代码
ISO Mat. Code



切削参数 页 117

Cutting data page 117

产品型号 Part number	w	r	t _{max}	s	尺寸规格	CH1G
R/L315.0532.01.BA	0.5	0.10	1.1	3.2	03	▲/▲
R/L315.1032.01.BA	1.0	0.10	2.0	3.2	03	▲/▲
R/L315.1532.15.BA	1.5	0.15	3.0	3.2	03	▲/▲
R/L315.2032.02.BA	2.0	0.20	4.0	3.2	03	▲/▲
R/L315.2532.02.BA	2.5	0.20	5.0	3.2	03	▲/▲
R/L315.3032.02.BA	3.0	0.20	5.0	3.2	03	▲/▲
R/L315.4054.02.BA	4.0	0.20	5.0	3.2	03	▲/▲

▲ 库存 / 库存 Δ 4周 / 4周 x 根据要求 / 根据要求

尺寸单位 : mm
Dimensions in mm

按需提供更多尺寸
Further sizes upon request

切削参数 Supermini 和 Mini

Cutting Data Supermini and Mini



材料 Material	材质 Substrate	应用 Application	v_c m/min	f_n (mm/trs) (mm/giro)	a_p (mm)	冷却 Coolant	
H	淬硬钢 - 连续切削 Hardened Steel - <u>without</u> interrupted cut 45-65 HRC	$\varnothing 2 - \varnothing 4$	80-140	0,01-0,03	0,01-0,05	吹气/ 切削液 Emulsion/Air	
		$> \varnothing 4$	90-150	0,02-0,05	0,02-0,15		
	淬硬钢 - 断续切削 Hardened Steel - <u>with</u> interrupted cut 45-65 HRC	$\varnothing 2 - \varnothing 4$	90-150	0,01-0,03	0,01-0,05	吹气 Air	
		$> \varnothing 4$	100-160	0,02-0,05	0,02-0,15		
P	烧结, 软 (例如: Sint D11) Sintered steel, soft < 220 HB	$\varnothing 2 - \varnothing 4$	80-280	0,02-0,10	0,02-0,12	切削液 Emulsion	
		$> \varnothing 4$	100-390	0,02-0,18	0,02-0,40		
K	灰铁 "GG" (GJL) Grey cast iron < 240 HB	$\varnothing 2 - \varnothing 4$	300-1000	0,02-0,10	0,02-0,15	切削液/ 吹气 Emulsion/Air	
		$> \varnothing 4$	400-1200	0,03-0,18	0,02-0,40		
	灰铁 „GGV“ (GJV) Grey cast iron 220-300 HB	$\varnothing 2 - \varnothing 4$	150-650	0,02-0,07	0,02-0,12	切削液/ 吹气 Emulsion/Air	
		$> \varnothing 4$	200-700	0,02-0,13	0,02-0,35		
	灰铁 „GGG“ (GJS) Grey cast iron 220-300 HB	$\varnothing 2 - \varnothing 4$	140-400	0,01-0,05	0,01-0,25	切削液/ 吹气 Emulsion/Air	
		$> \varnothing 4$	180-550	0,02-0,11	0,02-0,32		
ADI (硬化 / hardened)	CH1G	$\varnothing 2 - \varnothing 4$	50-110	0,01-0,025	0,01-0,05	切削液 Emulsion	
		$> \varnothing 4$	80-130	0,01-0,06	0,015-0,25		
S	镍基合金和超级合金的 Nickel based and Superalloys 精加工 / Finishing	$\varnothing 2 - \varnothing 4$	140-250	0,01-0,03	0,01-0,06	切削液 (高压) Emulsion (High pressure)	
		$> \varnothing 4$	180-350	0,01-0,045	0,01-0,18		
	钛 (纯), 钛合金 Titanium (pure), Titanium alloys	CH1G	$\varnothing 2 - \varnothing 4$	60-200	0,01-0,025	0,01-0,04	切削液 (高压) Emulsion (High pressure)
			$> \varnothing 4$	100-300	0,01-0,05	0,01-0,08	

切削参数 系列 229 和 315

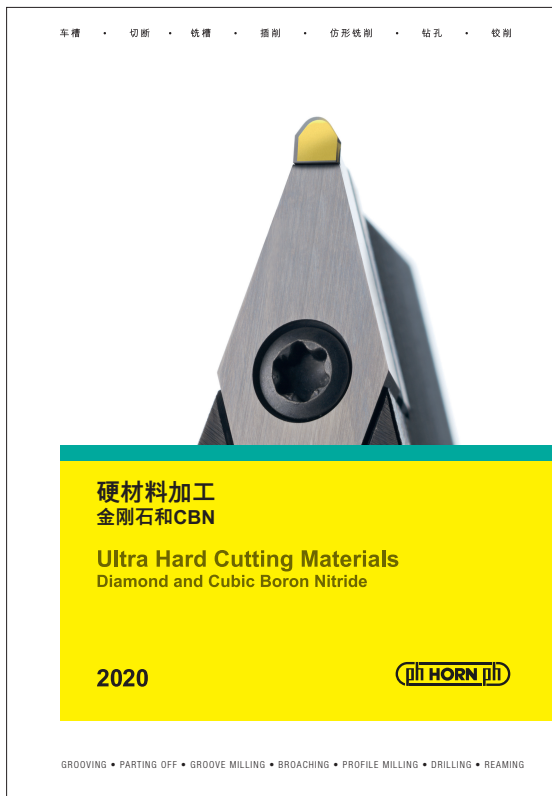
Cutting Data Systems 229 and 315

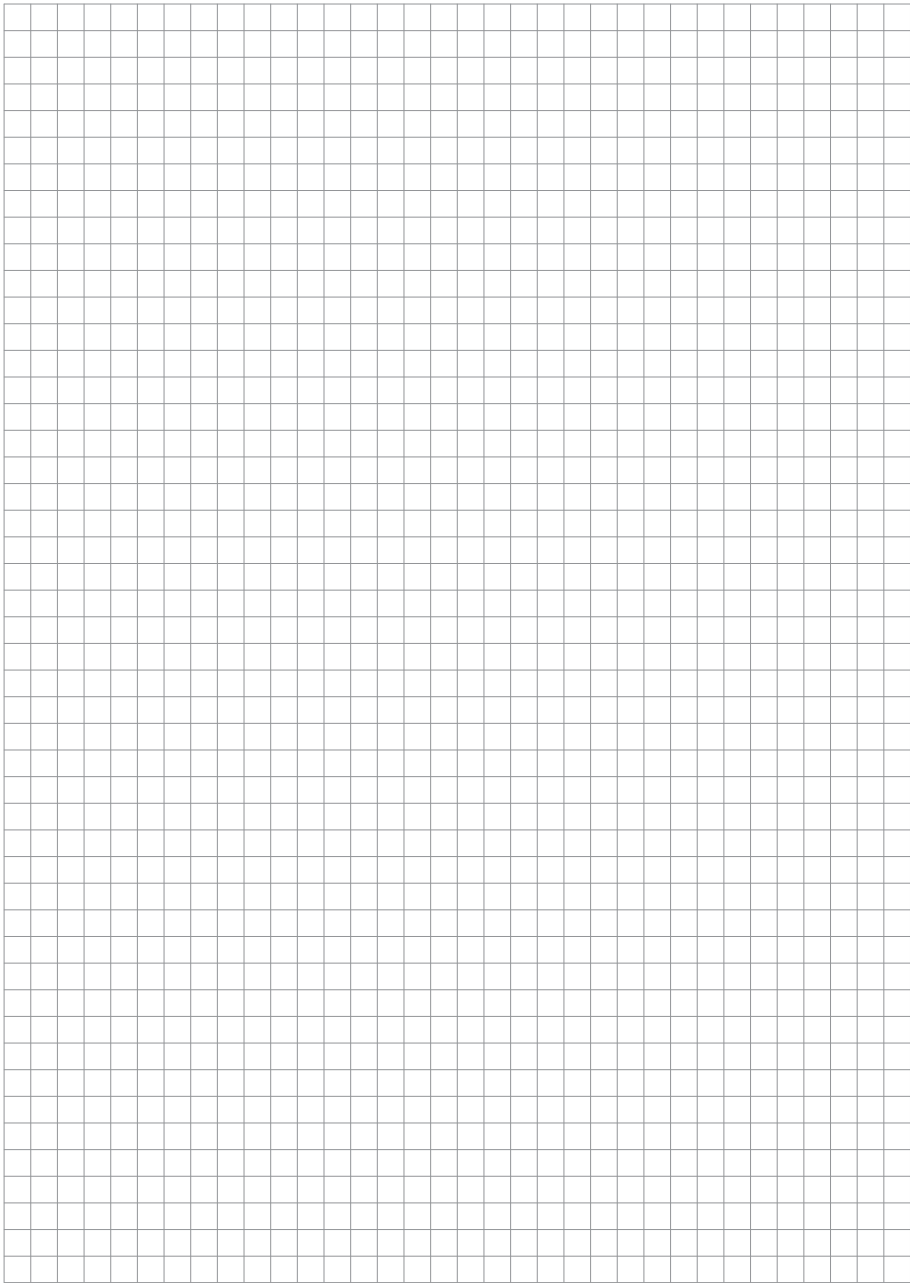


材料 Material	材质 Substrate	应用 Application	v_c m/min	f_n (mm/trs) (mm/giro)	a_p (mm)	冷却 Coolant
H 淬硬钢 - 连续切削 Hardened Steel - <u>without</u> interrupted cut	CB10	切槽用于所有材料 Grooving in solid	80-140	0,02-0,06	-	吹气/ 切削液 Emulsion/Air
		局部切削, 侧面加工 Partial cut, Side turning	90-150	0,03-0,08	0,10- 0,25	
淬硬钢 - 断续切削 Hardened Steel - <u>with</u> inter- rupted cut	CB35	切槽用于所有材料 Grooving in solid	90-150	0,02-0,06	-	吹气 Air
		局部切削, 侧面加工 Partial cut, Side turning	100-160	0,03-0,08	0,10- 0,25	
P 烧结, 软 (例如: Sint D11) Sintered steel, soft < 220 HB	CH1G	切槽用于所有材料 Grooving in solid	100-280	0,03-0,15	-	切削液 Emulsion
	CB35	局部切削, 侧面加工 Partial cut, Side turning	100-390	0,03-0,20	0,10- 0,65	
K 灰铁 "GG" (GJL) Grey cast iron < 240 HB	CB35	切槽用于所有材料 Grooving in solid	400- 1000	0,05-0,30	-	切削液/ 吹气 Emulsion/Air
		局部切削, 侧面加工 Partial cut, Side turning	400- 1200	0,05-0,45	0,10-1,0	
	CB35	切槽用于所有材料 Grooving in solid	200-650	0,03-0,15	-	切削液/ 吹气 Emulsion/Air
		局部切削, 侧面加工 Partial cut, Side turning	200-700	0,03-0,20	0,05- 0,75	
	CH1G	切槽用于所有材料 Grooving in solid	180-450	0,03-0,15	-	切削液/ 吹气 Emulsion/Air
		局部切削, 侧面加工 Partial cut, Side turning	180-600	0,03-0,20	0,05- 0,70	
CB35	切槽用于所有材料 Grooving in solid	180-450	0,03-0,15	-	切削液/ 吹气 Emulsion/Air	
	局部切削, 侧面加工 Partial cut, Side turning	180-600	0,03-0,20	0,05- 0,70		
ADI (硬化 / hardened)	CH1G	切槽用于所有材料 Grooving in solid	70-110	0,02-0,04	-	切削液 Emulsion
		局部切削, 侧面加工 Partial cut, Side turning	80-130	0,03-0,10	0,05- 0,65	
S 镍基合金和超级合金的 Nickel based and Superalloys 精加工 Finishing	CH1G	切槽用于所有材料 Grooving in solid	-	-	-	切削液 (高压) Emulsion (High pressure)
		局部切削, 侧面加工 Partial cut, Side turning	180-350	0,02-0,07	0,02- 0,20	
钛 (纯), 钛合金 Titanium (pure), Titanium alloys	CH1G	切槽用于所有材料 Grooving in solid	80-250	0,02-0,04	-	切削液 (高压) Emulsion (High pressure)
		局部切削, 侧面加工 Partial cut, Side turning	100-300	0,02-0,08	0,03- 0,30	

更多信息详见‘硬材料加工’样本

Further information can be found in our catalogue
Ultra Hard Cutting Materials.







找到您合适的刀具解决方案.

FIND YOUR RIGHT
TOOLING SOLUTION NOW.

www.PHorn.de

DEUTSCHLAND, STAMMSITZ

GERMANY, HEADQUARTERS

—

Hartmetall Werkzeugfabrik
Paul Horn GmbH
Horn-Straße 1
D-72072 Tübingen

Tel +49 7071 / 70040
Fax +49 7071 / 72893

info@PHorn.de
www.PHorn.de

CHINA

—

HORN (Shanghai) Trading Co. Ltd.
Room 905, No. 518 Anyuan Road, P.R. of China
Putuo District, Shanghai 200060
上海市安远路518号905室 邮编:200060

Tel +86 21 52833505;52833205
Fax +86 21 52832562

info@phorn.cn
www.phorn.cn

Find your country:
www.PHorn.com/countries