晶须陶瓷切削刀具

Whisker Ceramics Cutting Tools

AKO CARBIDE

株洲奥凯彤新材料有限公司

Aokai Tong New Material Co.,Ltd.

晶须陶瓷/Whisker Ceramics

我们新开发的晶须增强陶瓷切削刀具，专为粗加工和半精加工的大余量材料去除而设计。
它们为耐热超级合金（HRSA）的高速加工提供完美解决方案——包括
Inconel、Waspaloy、Haynes、Monel、Rene、Incoloy A-286、Nimonic Udimet等。
新研究的晶须增强陶瓷 CW25牌号提供全面先进的高速切削解决方案，适用于：
1.提升速度能力（相较于硬质合金刀具提高10倍以上).实现更高产量与 更短周期2.提增强韧性和抗断裂性，支持更高进给率
3.增加多样性锋利刃口的处理
4.高效切削
5.更长的刀具寿命
6.在连续切削下有优越的性能
7. 可以干湿加工
随着机加工制造行业对轻量化材料需求的增新开发的晶须增强陶瓷可开发门用于难切削材料加工的新型牌号与刀具。 凭借更高的速度和进给率新开发的晶须增强陶瓷刀具在以下应用中提供稳定 结果和更长的刀具寿命：(粗车削（外圆与内孔） 半精加工（外圆与内孔） 铣削 切槽)

Our Newceramic whisker reinforced ceramic cutting tools are designed for heavy material removal in roughing and semi-finishing applications.
They offer the perfect solution for high-speed machining of heat resistant super alloys (HRSA) – Inconel, Waspaloy, Haynes, Monel, Rene, Incoloy A-286, Nimonic, Udimet, etc.
The Newceramic CW-25 Grade offers a comprehensive and advanced range of high-speed cutting tool solutions for:
1.ncreased speed capability（more than ten times compared to carbide cutting tools) for higher throughput and shorter cycle times
2.Increased toughness and fracture resistance for higher feed rate capability
3.Increased variety and sharper edge preparation
4.Efficient cutting
5.Longer tool life
6.Superior performance in continuous cutting conditions
7.Capable of both wet and dry machining
As demand for lightweight materials in the aerospace industry increases, Newceramic can manufacture new grades and tooling that specialize in machining hard-to-cut materials.
With higher speed and feed rates, Newceramic cutting tools deliver consistent results and longer tool life in applications for:
(Rough turning (O.D. & I.D.) Semi finishing (O.D. & I.D.) Milling Grooving)

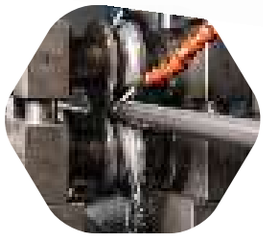
Uses

Aerospace – Jet Engin Cases & Components (Nozzles, Vanes, Shaft Turbines, Cases, etc.).

Energy – Machining of Stea Turbines & Components for Power Generation.

Heavy Turning – Steel Mill Work Rolls, Back-up Rolls, Paper Machine Rolls, Calendar Rolls, Super-Calendar Rolls, Tube & Pipe Forming Rolls, etc.

Automotive – Cast Iron, Ductile Iron, CGI, Hardened Steels, White Iron, Chilled Iron, and Powdered Metals.



Cutting Tools for Aerospace

The Need for Speed – Aerospace Inserts

Our Newcermets® whisker reinforced ceramic cutting tools are designed for heavy material removal in roughing and semi-finishing applications
They offer the perfect solution for high-speed machining of heat resistant super alloys (HRSA) – Inconel, Waspaloy, Haynes, Monel, Rene, Incoloy A-286, Nimonic, Udimet, etc.

The Newcermets® CT-25 Grade offers a comprehensive and advanced range of high-speed cutting tool solutions for:

- Increased speed capability (more than ten times compared to carbide cutting tools) for higher throughput and shorter cycle times
- Increased toughness and fracture resistance for higher feed rate capability
- Increased variety and sharper edge preparation
- Efficient cutting
- Longer tool life
- Superior performance in continuous cutting conditions
- Capable of both wet and dry machining
- Ideal for heavily interrupted cutting

As demand for lightweight materials in the aerospace industry increases, Newcermets can manufacture new grades and tooling that specialize in machining hard-to-cut materials.

With higher speed and feed rates, Newcermets® cutting tools deliver consistent results and longer tool life in applications for:

- Rough turning (O.D. & I.D.)
- Semi finishing (O.D. & I.D.)
- Milling
- Grooving

应用方向

航空航天 –喷气发动机外壳和部件(喷嘴、叶片、轴涡轮机、外壳等)。
能源 – 发电用汽轮机及部件的加工。
重型车削 – 轧钢工作辊，支撑辊，纸机辊，压延辊，超级压延辊，管材成型辊等。
汽车行业 – 铸铁、球墨铸铁、蠕墨铸铁、高硬钢、白口铁、冷硬铁和粉末冶金钢。

航空航天用切削刀具

对速度的需求 – 航天刀片

我们的Newcermets®晶须增韧陶瓷刀具专为粗加工和半精加工应用中的重型材料去除而设计。

它们为耐热超级合金（HRSA）的高速加工提供了完美的解决方案——铬镍铁合金、Waspaloy、Haynes、Monel、Rene、Incoloy A-286、Nimonic、Udimet等。

Newcermets® CT-25级可以提供全面而先进的高速切削刀具解决方案：

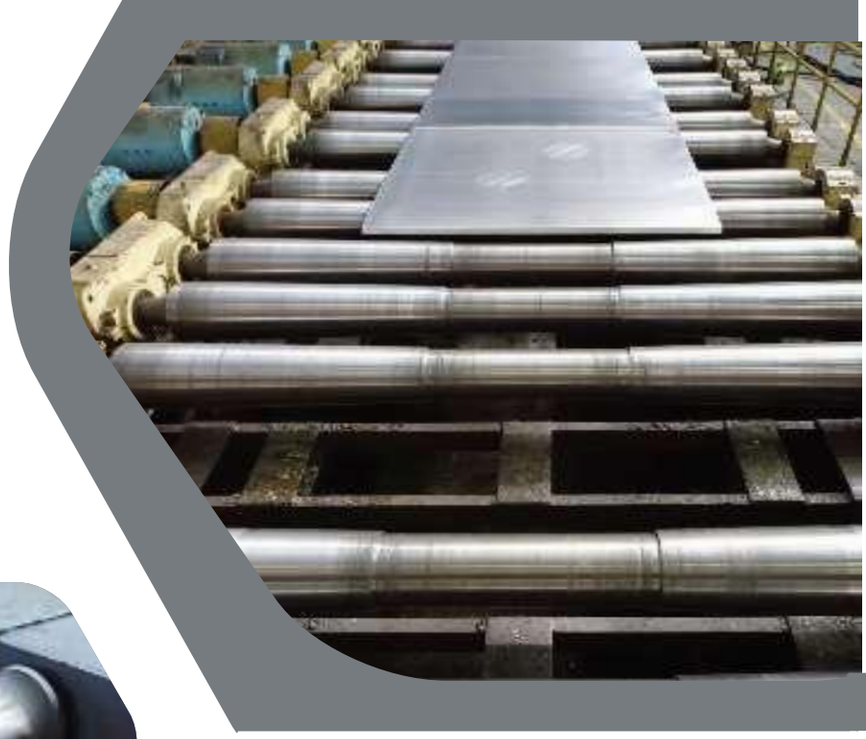
- 提高了速度能力(比硬质合金刀具快十倍以上)，实现更高的产量和更短的周期时间
- 提高韧性和抗断裂能力，提高进给速度
- 增加多样性锋利边缘的处理
- 高效切削
- 更长的刀具寿命
- 在连续切削下有优越的性能
- 可以干湿加工
- 理想的重型中断切削

随着航空航天工业对轻质材料需求的增加， Newcermets®可以制造专门用于加工难切削材料的新材质和刀具。

凭借更高的速度和进给率，Newcermets®刀具在以下应用中提供了一致的结果和更长的刀具寿命：

- 粗加工（外径和内径）
- 半精加工（外径和内径）
- 铣削
- 切槽

Cutting Tools for the Steel Mill Industry



The quality of inserts is as important as the machinery and workpiece.

Designed to protect your workpiece from damage caused by extreme heat and force and ensuring longer tool life, Newcermets's steel mill inserts offer an optimal choice for milling fracking blocks and for milling flats on mill roll necks.

Steel mill geometries are used to remove heavy material in the most demanding rough turning conditions. Inserts are available for:

- Nodular iron mill rolls
- Hardened steel mill rolls
- Ductile iron mill rolls
- Stainless steel weld overlays / repair work on mill rolls
- Back up rolls
- D2 hardened tool steel

An alternative milling option to cermet and carbide tools, steel mill inserts are the first choice for:

- High speed hard milling
- High speed milling of mild steels commonly used for mill roll necks
- High speed milling of mild steels widely used in fracking block manufacturing
- Positive geometries for burr reduction in hard milling
- Unique edge prep geometries
- Increased productivity due to high speed and feed rates
- Rough turning (30 HRC +)
- Milling (30 HRC +)
- Tube milling scarfing tools for a wide range of pipe diameters, mill roll turning (both work rolls and back up rolls)

轧钢行业用切削工具

刀片的质量与机械和工件一样重要。

为了保护您的工件免受极端高温和外力造成的损坏，并确保更长的刀具寿命，Newcermets®的轧钢刀片为铣削压裂块和铣削轧辊颈上的平面提供了最佳选择。

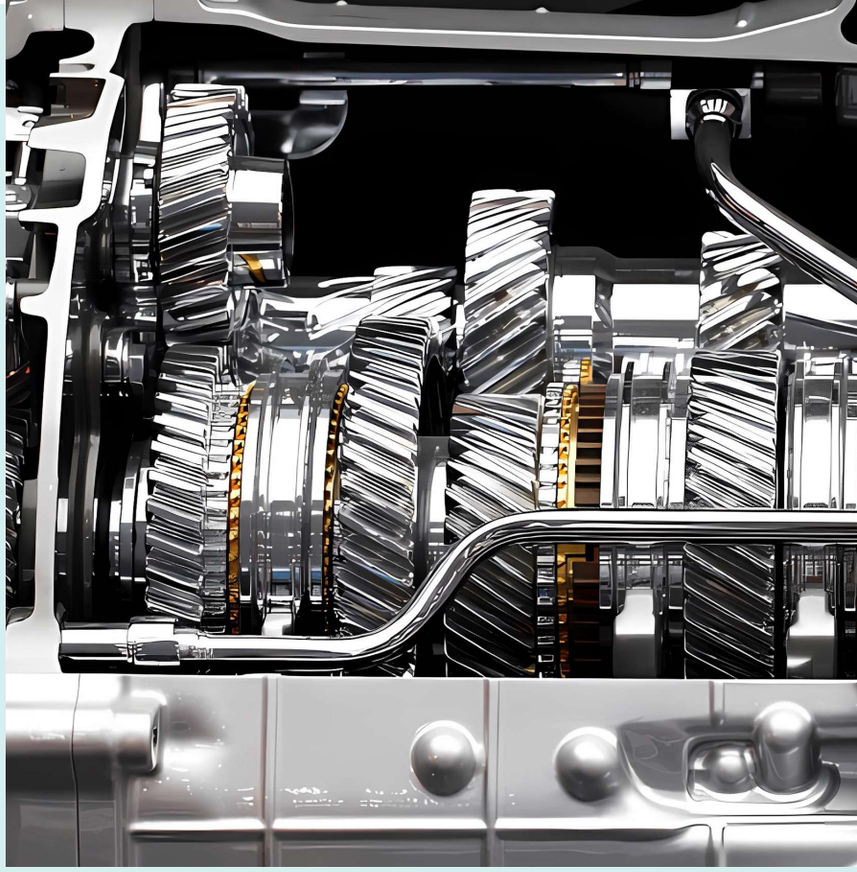
轧钢曲轴用于在最苛刻的粗车削条件下去除重型材料。可用于：

- 球墨铸铁轧辊
- 高硬钢轧辊
- 球墨铸铁轧辊
- 不锈钢焊接覆盖/修复工作轧辊
- 承压辊
- 淬火工具钢

作为金属陶瓷和硬质合金刀具的替代铣削选项，轧钢铣削刀片是以下方面的首选：

- 高速硬质铣削
- 低碳钢轧辊轴颈的高速铣削
- 用于压裂块制造的软钢的高速铣削
- 正角刀片在高硬铣削中减少毛刺
- 特殊曲轴的边缘处理
- 由于高转速和高进给提高了生产率
- 粗车削（30 HRC+）
- 铣削（30 HRC +)
- 管材铣削工具，适用于各种管径，轧辊车削(包括工作辊和支撑辊)

Cutting Tools for Automotive Applications



It is essential for turning and milling tools in automotive applications to wear evenly with minimal maintenance in the most demanding applications.

To meet the workflow and high output demands, Newcermets has a range of inserts for the automotive industry using SiC whiskers that are long-lasting and deliver consistent and reliable results as well as

- High Fracture resistance for consistent cutting in interrupted andcontinuous operations
- High DOC capability (Max .100 ”)
- Speed capability of 2,400+ SFM in cast iron
- Feed rate capability of .018 ” + IPR

Our Newcermets® inserts are designed for heavy DOC material removal in cast iron, compacted graphite iron (CGI), ductile iron, nodular iron, hardened steels (transmission components), white iron , chilled iron,and powdered metals. Our high hardness allows us to machine these extremely abrasive materials with extended tool life vs. traditional ceramics. We offer several types and grades of materials for a range of products to suit specific automotive applications including:

- Brake rotors and ductile iron brake drums
- Carriers
- Dampers
- Pulleys
- Gear boxes
- Transmission covers
- Cylinder liner sleeves
- Flywheels, etc.

汽车行业用切削工具

汽车应用中的车削和铣削刀具必须在最苛刻的应用中以最少的维护实现均匀磨损。

为了满足工作流程和高输出要求，Newcrsmets®为汽车行业提供了一系列使用SiC晶须的刀片，这些晶须刀片持久耐用，并提供可信赖的结果，以及:

- 在间断和连续作业中，具有高抗断裂性，可实现连续切削
- 高DOC能力(最高可达100 ")
- 加工铸铁时可加速达到2400 + SFM
- 进给量可达0.018 ” + IPR

我们的Newcrsmets®刀片专为铸铁，蠕墨铸铁，可锻铸铁球墨铸铁，淬火钢(传动部件)，白口铁，冷硬铁和粉末金属中的重型材料去除而设计。晶须刀片的高硬度能够加工这些极具磨蚀性的材料。与传统陶瓷相比，刀具寿命更长。我们为一系列产品提供多种类型和等级的材料，以适应特定的汽车行业切削应用，包括:

- 制动盘和球墨铸铁制动鼓
- 传送带
- 减震器
- 皮带轮
- 齿轮箱
- 变速箱盖
- 汽缸套
- 飞轮，等一系列产品。

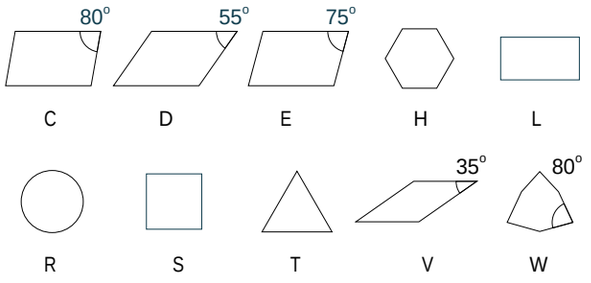
牌号编制/Grade establishment

牌号 Grade	ISO	材料特点 Material Characteristics	应用范围 Application Range
CW10	S10	高速加工时，卓越的后刀面耐磨损、沟槽耐磨损 Superior Flank Wear Resistance and Groove Wear Resistance in High-Speed Machining	高温合金、高硬钢、铸铁的中等加工，以铣削为主 Moderate Machining of Superalloys, High-Hardness Steels, and Cast Iron with Focus on Milling Operations
CW25	S25	高速加工时，卓越的后刀面耐磨损、沟槽耐磨损 Superior Flank Wear Resistance and Groove Wear Resistance in High-Speed Machining	镍基合金、钴基合金、铸铁和高硬钢的高速加工，连续或轻断续 High-Speed Machining of Nickel-Based,Cobalt-Based Alloys,Cast Iron and High-Hardness Steels in Continuous or Light Intermittent Cutting
CA10	K10,H10	卓越的耐磨性和耐热冲击性能 Outstanding Wear Resistance and Thermal Shock Resistance	铸铁和淬火钢的精加工 Finishing of Cast Iron and Hardened Steel
CA20	K20,H20	卓越的耐磨性和耐热冲击性能 Outstanding Wear Resistance and Thermal Shock Resistance	铸铁和淬火钢的半精加工 Semi-Finishing of Cast Iron and Hardened Steel
CS30	S30	卓越的耐磨性和耐热冲击性能 Outstanding Wear Resistance and Thermal Shock Resistance	镍基合金、钴基合金的中、高速加工，连续或轻断续 Medium-High Speed Machining of Nickel-Based and Cobalt-Based Alloys under Continuous or Light Intermittent Conditions
CS35	S35	卓越的耐磨性和耐热冲击性能 Outstanding Wear Resistance and Thermal Shock Resistance	镍基合金、钴基合金的中、高速加工，连续或重断续 Medium-High Speed Machining of Nickel-Based and Cobalt-Based Alloys under Continuous or Heavy Intermittent Conditions
CC05	K05,H05	卓越的耐磨性和耐热冲击性能 Outstanding Wear Resistance and Thermal Shock Resistance	适合铸铁、高硬钢、高温合金的高速连续切削 Suitable for High-Speed Continuous Machining of Cast Iron, Hardened Steel, and High-Temperature Alloys
CC10	K10,H10	卓越的耐磨性和耐热冲击性能 Outstanding Wear Resistance and Thermal Shock Resistance	适合铸铁、高硬钢、高温合金的高速连续或轻断续切削 Suitable for High-Speed Continuous or Light Intermittent Machining of Cast Iron, Hardened Steel, and High-Temperature Alloys
CN30	K30	优异的韧性和抗热冲击性能 Excellent Toughness and Thermal Shock Resistance	适合铸铁、高速连续或轻断续切削 Suitable for High-Speed Continuous or Light Intermittent Machining of Cast Iron

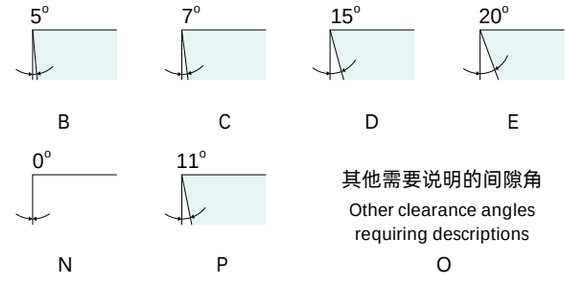
编码系统/Identification System

ISO	C	N	G	A	12	04	08	Z	015	20	
ANSI	C	N	G	A	4	3	2	T	006	20	E1
	1	2	3	4	5	6	7	8	9	10	11

1. 形状 Shape

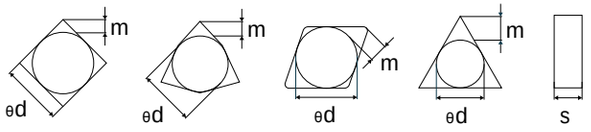


2. 后角 Clearance Angle



其他需要说明的间隙角
Other clearance angles requiring descriptions
O

3. 公差 Tolerance

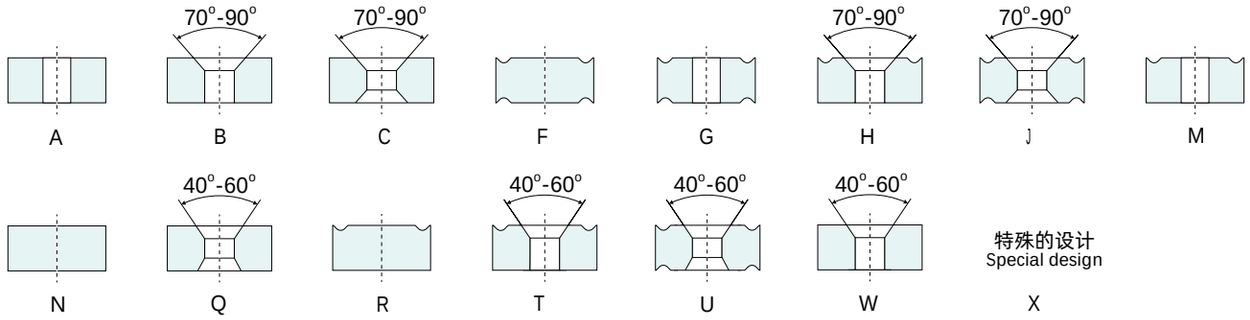


*见下表
* See tables below

代号 Symbol	内切圆直径 d (mm)	刀尖圆弧半径 m (mm)	刀片厚度 s (mm)
A	+0.025	+0.005	+0.025
C	+0.025	+0.013	+0.025
E	+0.025	+0.025	+0.025
F	+0.013	+0.005	+0.025
G	+0.025	+0.025	+0.130
H	+0.013	+0.013	+0.025
J	*	+0.005	+0.025
K	*	+0.013	+0.025
L	*	+0.025	+0.025
M	*	*	+0.127
U	*	*	+0.127
N	*	*	+0.025

Symbol	D		C, E, H, O, S, T, R, W			
	d (mm)	m (mm)	d (mm)		m (mm)	
	M, N	M, N	J, K, L, M, N	U	M, N	U
5.56	±0.05	±0.11	±0.05	±0.08	±0.08	±0.13
6.35	±0.05	±0.11	±0.05	±0.08	±0.08	±0.13
7.94	±0.05	±0.11	±0.05	±0.08	±0.08	±0.13
9.52	±0.05	±0.11	±0.05	±0.08	±0.08	±0.13
12.70	±0.08	±0.15	±0.08	±0.13	±0.13	±0.20
15.87	±0.10	±0.18	±0.10	±0.18	±0.15	±0.27
19.05	±0.10	±0.18	±0.10	±0.18	±0.15	±0.27
25.40	-	-	±0.13	±0.25	±0.18	±0.38

4. 型号Type



5. 刀片尺寸和边长 Insert size and edge length

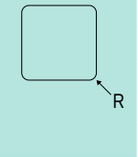
ANSI (in)		ISO					
内切圆 Inscribed circle		C	D	R S	T	V	W
1/4 ”	2	06	07	06	11	11	04
3/8 ”	3	09	11	09	16	16	06
1/2 ”	4	12	15	12	22	22	08
5/8 ”	5	16	19	15	27	27	10
3/4 ”	6	19	23	19	33	33	13
1 ”	8	25	31	25	44	44	17

6. 厚度 Thickness

Tickness (in)	ANSI	ISO
3/32 ”	1.5	02
1/8 ”	2	03
5/32 ”	2.5	T3
3/16 ”	3	04
1/4 ”	4	06
5/16 ”	5	07
3/8 ”	6	09
1/2 ”	8	12

7. 刀尖半径 Nose radius

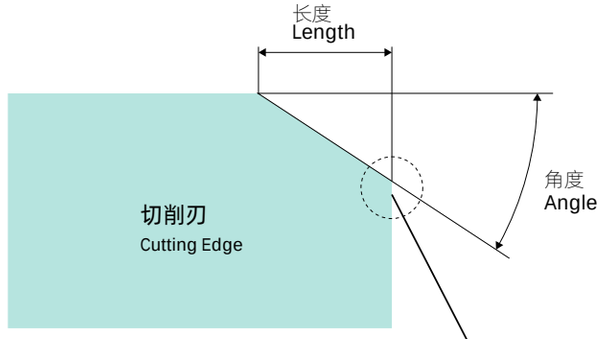
内半径Radius (in)	ANSI	ISO
1/64 ”	1	04
1/32 ”	2	08
3/64 ”	3	12
1/16 ”	4	16
5/64 ”	5	20
3/32 ”	6	24
1/8 ”	8	32



8. 刀尖规格 Edge preperation

刀尖 Edge	ANSI	ISO
倒棱 Honed	E1 E2	E
倒角 Chamfered only	T	T
倒角+倒棱 Chamfered and Honed	T with E1 at end (0.001 ” hone) T with E2 at end (0.002 ” hone)	Z (0.025 mm hone) S (0.050 mm hone)
2段倒角+倒棱 Double Chamfered and Honed	HD	HD

9, 10, 11. 刀尖规格 Edge prep



CNGA 120408 Z 015 20

CNGA 432 T 006 20 E1

9 刀尖处理宽度

10 刀尖处理角度

ANSI Length ISO Length

006 0.006 ” 015 0.15mm

20: 20 degrees

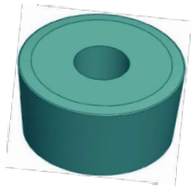
11 倒棱 Hone

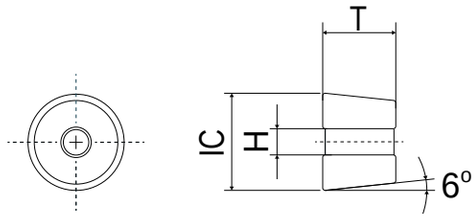
ANSI Length ISO Length

E1 0.001 ” Z 0.025mm

圆形车削刀片/Roll Turning Inserts

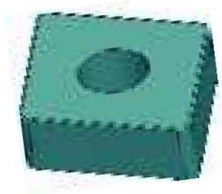
Geometry	IC	T	H
CDH 22	1/2	1/4	0.125
CDH 33	3/4	3/8	0.250
CDH 42	1	1/2	0.266
CDH 515	1 1/4	3/8	0.391
CDH 53	1 1/4	3/4	0.391

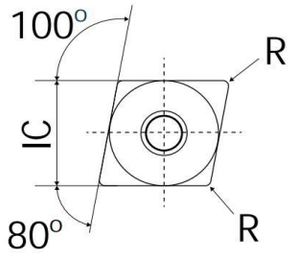




菱形80°负角带孔
Diamond Inserts, 80°, Negative, with hole

Geometry	IC	T	R
CNGA 432	1/2	3/16	0.031
CNGA 433	1/2	3/16	0.047
CNGA 434	1/2	3/16	0.063
CNGA 543	5/8	1/4	0.047
CNGA 544	5/8	1/4	0.063
CNGA 643	3/4	1/4	0.047

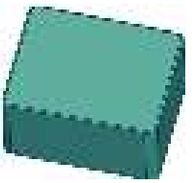


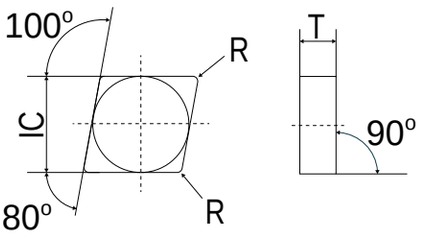


轧钢行业晶须陶瓷用切削刀具
Cutting tools for whisker ceramics in the steel rolling industry

菱形80°负角/Diamond Inserts, 80°, Negative

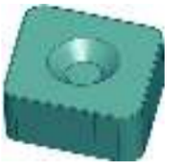
Geometry	IC	T	R
CNGN 432	1/2	3/16	0.031
CNGN 433	1/2	3/16	0.047
CNGN 434	1/2	3/16	0.063
CNGN 452	1/2	5/16	0.031
CNGN 453	1/2	5/16	0.047
CNGN 454	1/2	5/16	0.063

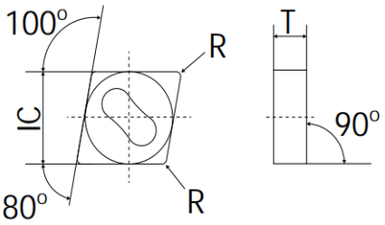




菱形80°负角凹窝形
Diamond Inserts, 80°, Negative, with dimple

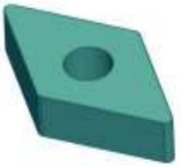
Geometry	IC	T	R
CNGX 432	1/2	3/16	0.031
CNGX 433	1/2	3/16	0.047
CNGX434	1/2	3/16	0.063
CNGX 452	1/2	5/16	0.031
CNGX 453	1/2	5/16	0.047
CNGX 454	1/2	5/16	0.063

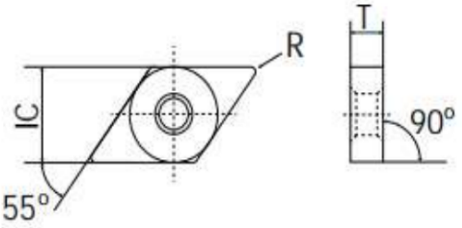




菱形55°负角带孔
Diamond Inserts, 55°, Negative, with hole

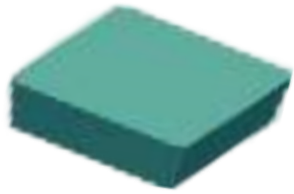
Geometry	IC	T	R
DNGA 432	1/2	3/16	0.031
DNGA 433	1/2	3/16	0.047
DNGA 434	1/2	3/16	0.063

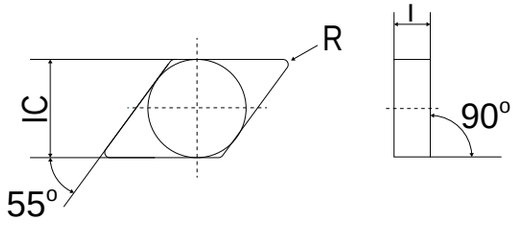




菱形55°负角/Diamond Inserts, 55°, Negative

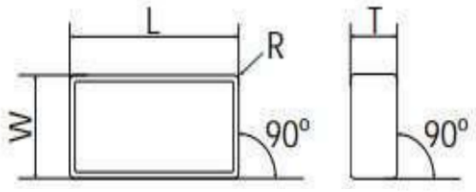
Geometry	IC	T	R
DNGN 432	1/2	3/16	0.031
DNGN 433	1/2	3/16	0.047
DNGN 434	1/2	3/16	0.063



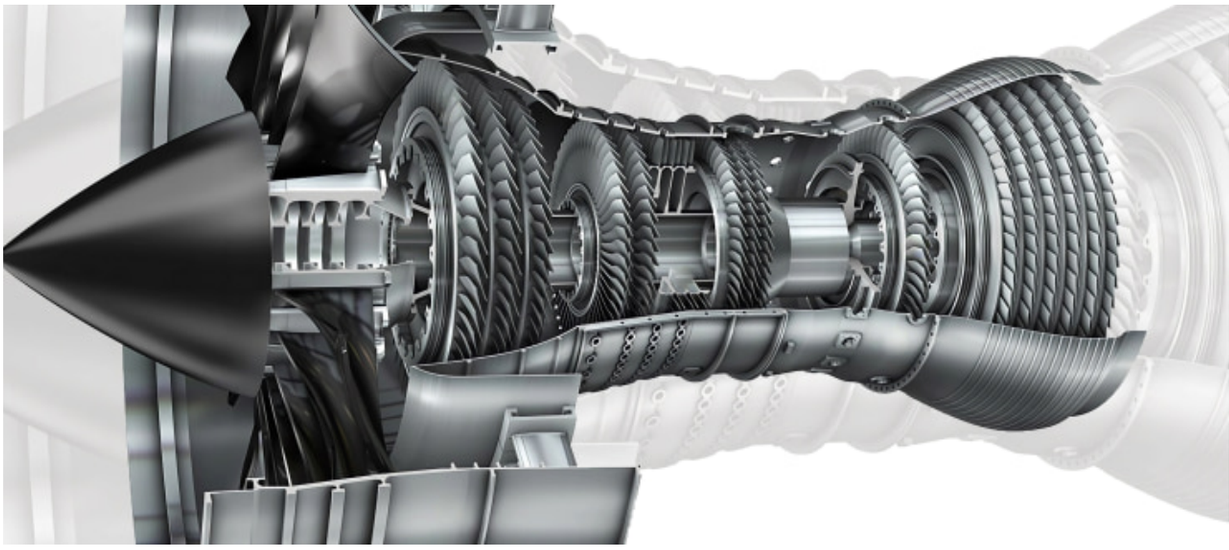


矩形/Rectangular Inserts

Geometry	W	L	T
LNJ 6688	3/4	1 ½	1/2

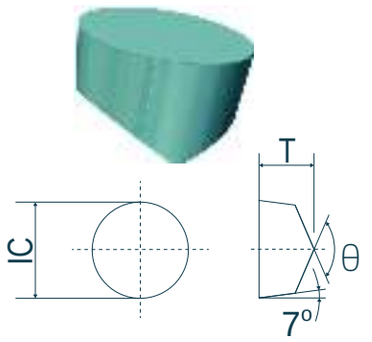


航空航天用晶须陶瓷切削刀具
Whisker ceramic cutting tools for aerospace applications



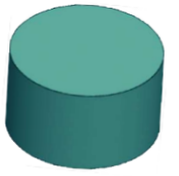
圆形7°V形底/Round Inserts, 7°, V-Bottom

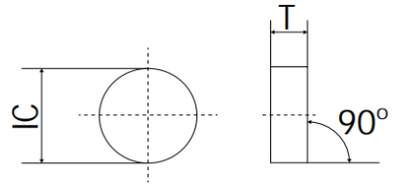
Geometry	IC	T	θ
RCGX 23	1/4	3/16	120°
RCGX 24	1/4	1/4	120°
RCGX 25	1/4	5/16	120°
RCGX 35	3/8	5/16	120°
RCGX 45	1/2	5/16	120°
RCGX 102	1/4	0.309	120°
RCGX 103	3/8	0.309	120°
RCGX 104	1/2	0.312	120°
RCGX 105	5/8	0.388	120°
RCGX 106	3/4	0.388	120°
RCGX 108	1	0.461	140°



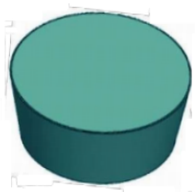
圆形90°负角/Round Inserts, Negative

Geometry	IC	T
RNGN 32	3/8	1/8
RNGN 33	3/8	3/16
RNGN 43	1/2	3/16
RNGN 45	1/2	5/16
RNGN 55	5/8	5/16
RNGN 64	3/4	1/4
RNGN 65	3/4	5/16
RNGN 85	1	5/16
RNGN 86	1	3/8
RNGN 106	1 ¼	3/8

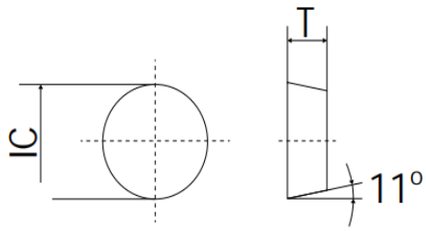




圆形11°正角/Round Inserts, Positive

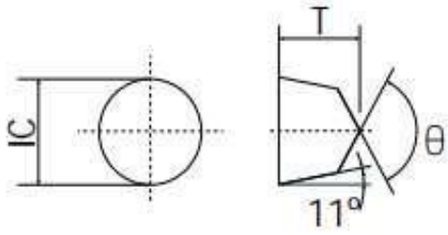


Geometry	IC	T
RPGN 215	1/4	3/32
RPGN 32	3/8	1/8
RPGN 43	1/2	3/16



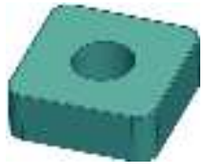
圆形11°V形底/Round Inserts, 11°, V-Bottom

Geometry	IC	T	θ
RPGX 23	1/4	3/16	120°
RPGX 35	3/8	5/16	120°
RPGX 45	1/2	5/16	120°

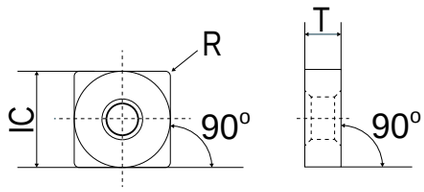


正方形90°负角带孔

Square Inserts, 90º, Negative, with hole



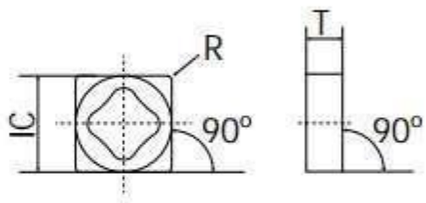
Geometry	IC	T	R
SNGA 432	1/2	3/16	0.031
SNGA 433	1/2	3/16	0.047
SNGA 434	1/2	3/16	0.063
SNGA 434	1/2	3/16	0.063
SNGA 543	5/8	1/4	0.047
SNGA 544	5/8	1/4	0.063
SNGA 644	3/4	1/4	0.064



正方形90°负角凹窝形

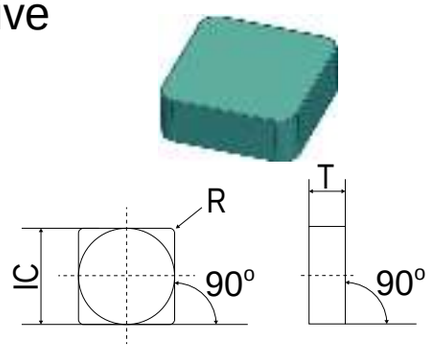
Square Inserts, 90º, Negative, with dimple

Geometry	IC	T	R
SNGX 432	1/2	3/16	0.031
SNGX 433	1/2	3/16	0.047
SNGX 434	1/2	3/16	0.063
SNGX 452	1/2	5/16	0.031
SNGX 453	1/2	5/16	0.047
SNGX 454	1/2	5/16	0.063



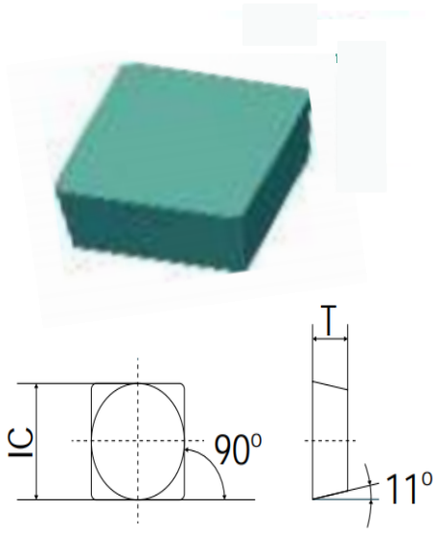
正方形90°负角/Square Inserts, 90°, Negative

Geometry	IC	T	R
SNGN 432	1/2	3/16	0.031
SNGN 433	1/2	3/16	0.047
SNGN 434	1/2	3/16	0.063
SNGN 434	1/2	3/16	0.063
SNGN 437	1/2	3/16	0.109
SNGN 452	1/2	5/16	0.031
SNGN 453	1/2	5/16	0.047
SNGN 454	1/2	5/16	0.063
SNGN 543	5/8	1/4	0.047
SNGN 544	5/8	1/4	0.063
SNGN 644	3/4	1/4	0.063
SNGN 654	3/4	5/16	0.063



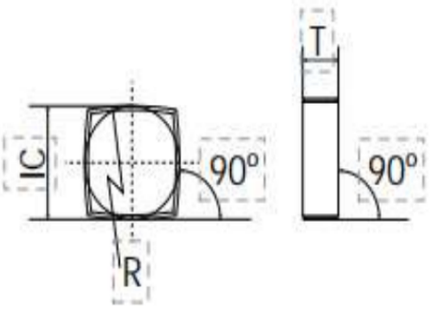
正方形11°正角/Square Inserts, Positive

Geometry	IC	T	R
SPGN 322	3/8	1/8	0.031
SPGN 422	1/2	1/8	0.031
SPGN 432	1/2	3/16	0.031
SPGN 433	1/2	3/16	0.047
SPGN 434	1/2	3/16	0.063
SPGN 633	3/4	3/16	0.047
SPGN 634	3/4	3/16	0.063



正方形90°/Square Inserts

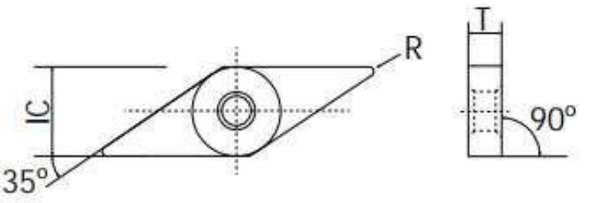
Geometry	IC	T	R
ZT-1130	1 ½	1/2	4 ½



菱形35°负角带孔

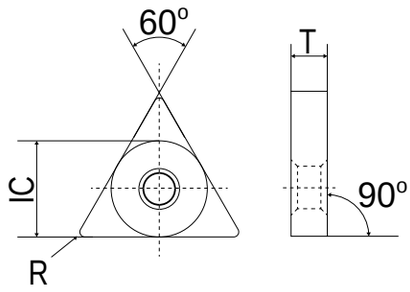
Diamond Inserts, 35°, Negative, with hole

Geometry	IC	T	R
VNGA 332	3/8	3/16	0.031
VNGA 333	3/8	3/16	0.047
VNGA 432	1/2	3/16	0.031
VNGA 433	1/2	3/16	0.047

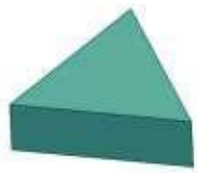


三角形60°负角带孔
Triangle Inserts, 60°, Negative, with hole

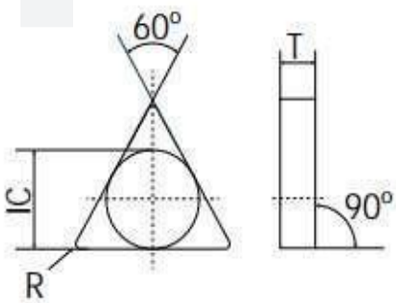
Geometry	IC	T	R
TNGA 332	3/8	3/16	0.031
TNGA 432	1/2	3/16	0.031



三角形60°负角/Triangle Inserts, 60°, Negative

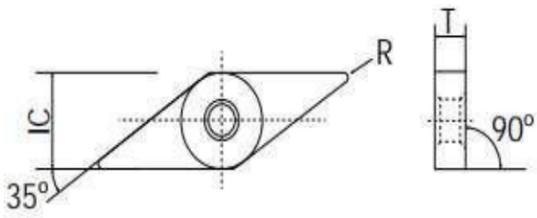


TNGN 332	3/8	3/16	
TNGN 433	1/2	3/16	0.047
TNGN 434	1/2	3/16	0.063
TNGN 453	1/2	5/16	0.047
TNGN 454	1/2	5/16	0.063



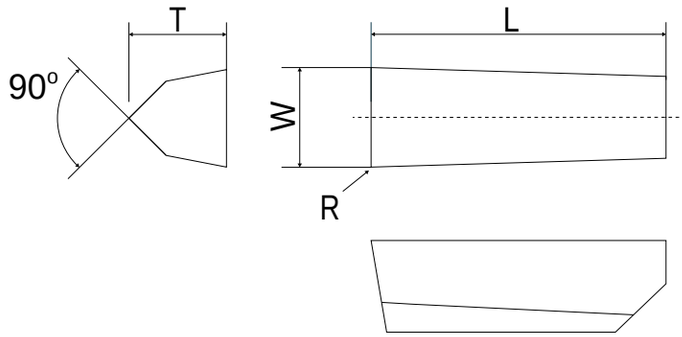
菱形35°负角带孔
Diamond Inserts, 35°, Negative, with hole

Geometry	IC	T	R
VNGA 332	3/8	3/16	0.031
VNGA 333	3/8	3/16	0.047
VNGA 432	1/2	3/16	0.031
VNGA 433	1/2	3/16	0.047



VGW型/Grooving and Side Turning Inserts

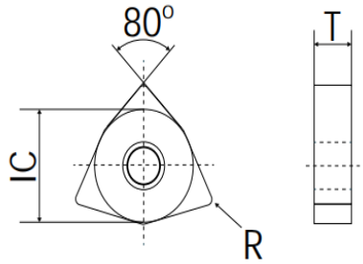
Geometry	W	L	T	R
VGW 4125-R	0.125	0.500	0.187	0.063
VGW 4125-1	0.125	0.500	0.187	0.016
VGW 4125-2	0.125	0.500	0.187	0.031
VGW 4156-R	0.156	0.500	0.187	0.078
VGW 4156-1	0.156	0.500	0.187	0.016
VGW 4156-2	0.156	0.500	0.187	0.031
VGW 4187-R	0.187	0.500	0.187	0.094
VGW 4187-1	0.187	0.500	0.187	0.016
VGW 4187-2	0.187	0.500	0.187	0.031
VGW 6218-R	0.218	0.750	0.250	0.109
VGW 6218-1	0.218	0.750	0.250	0.016
VGW 6218-2	0.218	0.750	0.250	0.031
VGW 6250-R	0.250	0.750	0.250	0.125
VGW 6250-1	0.250	0.750	0.250	0.016
VGW 6250-2	0.250	0.750	0.250	0.031
VGW 6250-3	0.250	0.750	0.250	0.047



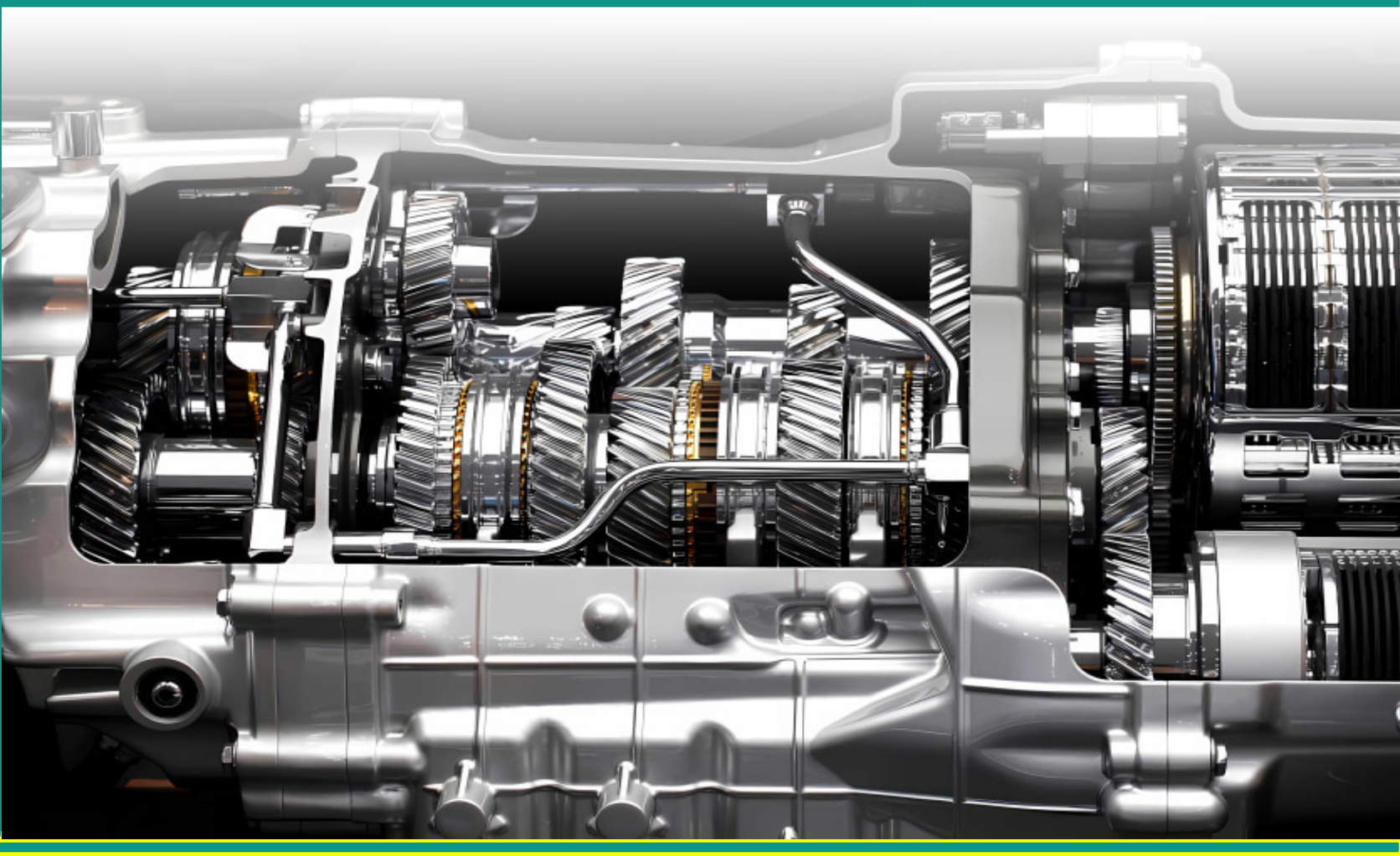
六边形80°负角带孔

Trigon Inserts, 80°, Negative, with hole

Geometry	IC	T	R
WNGA 332	3/8	3/16	0.031
WNGA 333	3/8	3/16	0.047
WNGA 431	1/2	3/16	0.016
WNGA 432	1/2	3/16	0.031
WNGA 433	1/2	3/16	0.047
WNGA 434	1/2	3/16	0.063



汽车工业用晶须陶瓷切削刀具
Whisker ceramic cutting tools for automotive industry



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