

# G-PAK 2023 切削工具新品册

NEW CUTTING TOOLS  
CATALOGUE





# 公司简介

## About GESAC

厦门金鹭特种合金有限公司，成立于1989年，是一家中外合资的国家高新技术企业，隶属于中国六大稀土集团之一的厦门钨业股份有限公司。公司致力于高品质钨粉末材料、硬质合金、精密切削工具等钨系列产品的研发、生产，以及行业专业解决方案的提供，是世界知名的钨粉末、硬质合金及切削工具供应商。

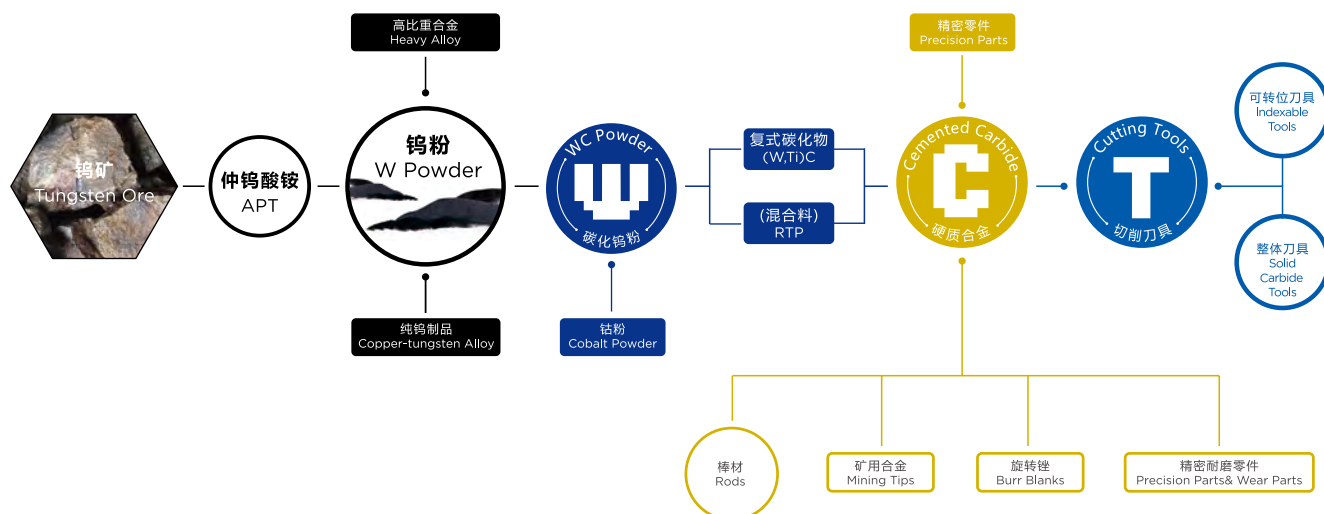
凭借完整钨产业链的产品集成技术研发，以及务实、创新的管理理念，厦门金鹭始终保持着强劲的发展势头，为全球用户提供最高性价比的钨粉末产品和服务，为现代工业领域解决高硬度、耐高温、耐磨损问题，提供了优良的产品和完善的解决方案，客户遍布全球四十多个工业发达国家和地区，享誉海内外。

公司拥有5个生产基地，4个境外销售公司和1个企业技术中心，独立承担并完成多项“国家科技支撑计划项目”，“国家科技重大专项”，“国家火炬计划项目”，“国家重点新产品”开发项目及省市重点研究课题，被评为“战略性新兴产业骨干企业”、“创新型企业”、“先进技术企业”。

Xiamen Golden Egret Cemented Carbides Co.,Ltd., founded in 1989, is a Sino-foreign joint venture with national high-tech, affiliated with XTC, which is one of six major rare earth groups in China. GESAC is committed to research & development, production and professional solutions providing of high-quality tungsten powder materials, cemented carbide, precision cutting tools and other tungsten products. Up to now, GESAC has become world-famous manufacturer and supplier of tungsten powder, cemented carbide and precision cutting tools products.

With the Integrated Product Development of complete tungsten industry chain, as well as a pragmatic and innovative management concept, GESAC has always maintained a strong momentum of development, providing the cost effective tungsten powder products and services for global users, offering the excellent products and perfect solutions for solving high hardness, high temperature resistance and wear resistance topics. Our brand "Golden Egret" has become one of the leading brand in the market, enjoying famous reputation in more than 40 countries and regions.

GESAC owns five production bases, four sales branches and one R&D center. We undertook and completed several development programs independently, including the “National Science and Technology Support Programs”, the “National Torch Program Projects”, and the “National Key Projects” and so on. GESAC was awarded as “Key Enterprise for Strategic Emerging Industry”, “Innovative Enterprise” and “Enterprise with Advanced Technology”.



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PCD Brazed Chip Breaker Inserts Series

CONTENT



A

铣削 Milling



## 可转位铣削产品一览表



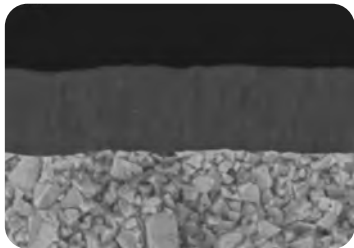
### Indexable Milling Products List

类型 Type	应用 Application	刀片系列 Inserts Series	刀体系列 Cutter Holder Series	图示 Diagram	简介 Product Application
方肩 铣削 Shoulder Milling	 <p>AD10: APMX=9.0mm AD12: APMX=11.0mm AD18: APMX=16.0mm</p>	ADGT  P06	MET190 ( $\phi 16$ - $\phi 160$ )		钛合金等难加工材料的方肩、平面、型腔铣和槽铣等多种加工方式。 Shoulder, face, cavity and slot milling for difficult-to-machine materials, such as Ti alloy.
快进给 铣削 High Feed Milling	 <p>SO09: APMX=1.2mm SO12: APMX=1.4mm</p>	SOE(M)T  P15	MKT113 ( $\phi 25$ - $\phi 125$ )		钛合金等难加工材料的平面和型腔铣削加工。 Face and cavity milling for difficult-to-machine materials, such as Ti alloy.
	 <p>SO09: APMX=1.1mm SO12: APMX=1.8mm</p>	SOMT  P15	MKT213 ( $\phi 25$ - $\phi 125$ )		钛合金等难加工材料的槽铣、坡铣及插补铣削加工。 Slot, slope and Interpolation milling for difficult-to-machine materials, such as Ti alloy.
	 <p>LN09: APMX=1mm LN12: APMX=1.5mm LN15: APMX=2mm</p>	LNMX  P29	MKF115 ( $\phi 16$ - $\phi 200$ )		钢、铸铁、不锈钢、难加工材料的型腔、槽、平面高效铣削加工。 high-efficiency milling of steel, cast iron, stainless steel, and difficult-to-machine material workpieces with complex pocket, slot, and face milling



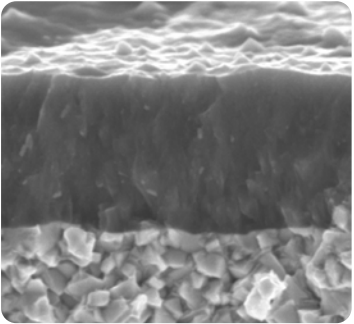
## 铣削用刀片牌号简介

### Milling Inserts Grade

加工S类材料牌号  
Grade for S

被加工材料 Workpiece Material	牌号 Grade	颜色 Color	涂层类型 Coating Type	涂层构成 Coating Structure	特点 Features
	GSM7130 	银白色 Silver	PVD		<ul style="list-style-type: none"> <li>● 新开发具有极高硬度、优异抗粘结磨损性的涂层技术，搭配高钴强韧性基体，保证了加工的高寿命和高可靠性。</li> <li>● 适用于钛合金的中低速加工，加工表面质量高。</li> <li>● Newly-developed PVD coating with high hot hardness and superior resistance to adhesive wear, combined with tough substrate to provide high cutting performance and well stability.</li> <li>● Suitable for medium and low speed machining of titanium alloys with high surface quality.</li> </ul>

加工M类材料牌号  
Grade for M

被加工材料 Workpiece	牌号 Grade	颜色 Color	涂层类型 Coating Type	涂层构成 Coating Structure	特点 Features
	GM4240 	蓝灰色 Blue-Gray	PVD		<ul style="list-style-type: none"> <li>● 全新纳米结构的新一代涂层搭配强韧基体，兼具优异的耐磨与抗崩性能使其具有高的切削寿命与切削稳定性。</li> <li>● 在低到中等切削速度下，适用于的奥氏体不锈钢的半精加工到粗加工及中高硬钢的半精和粗加工。</li> <li>● With a new nanostructured coating integrated with a robust and tough substrate, this cutting-edge technology delivers exceptional wear and fracture resistance, ensuring an extended cutting lifespan and enhanced stability.</li> <li>● Suitable for semi-finishing and roughing of austenitic stainless steel at low to medium cutting speeds, as well as semi-finishing and roughing of medium-high hardness steel.</li> </ul>



## 银雀系列正型两刃方肩铣-ADGT系列 Positive two edges shoulder milling-ADGT series

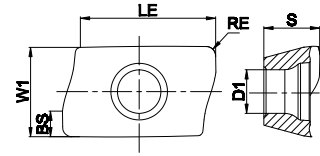
- 空间曲线刃型结构设计，有效降低切削阻力。
  - 变刃宽结构设计，提高刀具寿命。
  - 钛合金材料加工的特殊专用槽型。
  - 主要用于钛合金等难加工材料粗加工至半精加工。
- 
- The edge with spatial curve Cutting Tool design to decrease the cutting resistance .
  - The blade geometry with variable edge width, increased tool life.
  - The special dedicated geometry for machining of Ti alloy.
  - Suitable for semi-finishing and roughing machining of difficult-to-machine materials, such as Ti alloy.



方肩铣削  
Shoulder Milling

# ADGT

正型两刃方肩铣刀片  
Positive two edges square-shoulder milling  
cutter insert



订货号 Ordering Code	尺寸 Dimension(mm)						涂层硬质合金 Coating Grade												硬质合金 Coated	金属陶瓷 Cermet						
	LE	W1	S	BS	D1	RE	GA4225	GA4230	GA4325	GPM7120	GP4225	GP2115	GM4135	GM2140	GM4240	GK4125	GK2115	GS4130	GSM7130	GH4115	GN9125	GP01TM				
ADGT10T302R-SM	9.9	6.9	3.9	1.7	3.0	0.2																				●
ADGT10T304R-SM	9.9	6.9	3.9	1.9	3.0	0.4									○											●
ADGT10T308R-SM	9.9	6.9	3.9	2.0	3.0	0.8									○											●
ADGT10T312R-SM	9.8	6.9	3.9	2.3	3.0	1.2																				●
ADGT10T316R-SM	9.8	6.9	3.9	2.6	3.0	1.6									○											●
ADGT10T320R-SM	9.7	6.9	3.9	2.9	3.0	2.0																				●
ADGT10T330R-SM	9.6	6.9	3.9	3.9	3.0	3.0									○											●
ADGT120402R-SM	12.3	8.2	5.0	1.7	3.95	0.2									○											●
ADGT120404R-SM	12.3	8.2	5.0	1.9	3.95	0.4									○											●
ADGT120408R-SM	12.3	8.2	5.0	2.3	3.95	0.8									○											●
ADGT120412R-SM	12.3	8.2	5.0	2.3	3.95	1.2									○											●
ADGT120416R-SM	12.3	8.2	5.0	2.7	3.95	1.6									○											●
ADGT120420R-SM	12.3	8.2	5.0	2.9	3.95	2.0									○											●
ADGT120430R-SM	12.1	8.2	5.0	3.9	3.95	3.0									○											●
ADGT180602R-SM	17.2	11.2	6.4	1.7	4.97	0.2																				●
ADGT180604R-SM	17.2	11.2	6.4	1.9	4.97	0.4																				●
ADGT180608R-SM	17.2	11.2	6.4	2.3	4.97	0.8									○											●
ADGT180612R-SM	17.2	11.2	6.4	2.7	4.97	1.2																				●
ADGT180616R-SM	17.1	11.2	6.4	3.2	4.97	1.6																				●
ADGT180620R-SM	17.1	11.2	6.4	3.6	4.97	2.0									○											●
ADGT180630R-SM	16.9	11.2	6.4	5.0	4.97	3.0									○											●
ADGT180640R-SM	16.9	11.2	6.4	5.0	4.97	4.0																				●
ADGT180650R-SM	16.8	11.2	6.4	5.7	4.97	5.0									○											●



●标准库存Stock ○需预定Available Upon Order

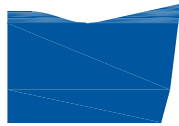
方肩铣削  
Shoulder Milling

ADGT 系列槽型  
ADGT Series Geometry

钛合金等难加工材料工件切削  
Cutting of difficult-to-machine materials such as titanium alloys



SM



低切削阻力切削  
获得更好的加工质量  
Cutting of low cutting force  
Get better processing quality

方肩铣削  
Shoulder Milling

# MET190

心轴式  
Arbor

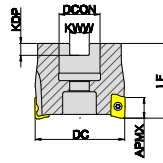
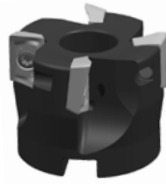


Fig1

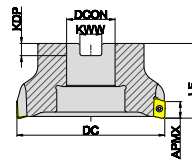


Fig2

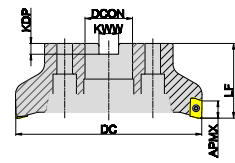


Fig3

订货号 Ordering Code	直径 Dia- meter	刃数 Teeth	尺寸 Dimension(mm)					最大 切深 APMX	匹配刀片 Suitable for	内冷 Coolant	图示 Diagram	库存 Stock
			DC	DCON	LF	KWW	KDP					
MET190050R05A22AD12	50	5	50	22	40	10.4	6.3	11	ADGT1204	✓	Fig1	●
MET190050R07A22AD12	50	7	50	22	40	10.4	6.3	11	ADGT1204	✓	Fig1	●
MET190050R04A22AD18	50	4	50	22	40	10.4	6.3	16	ADGT1806	✓	Fig1	●
MET190050R05A22AD18	50	5	50	22	40	10.4	6.3	16	ADGT1806	✓	Fig1	●
MET190052R04A22AD18	52	4	52	22	40	10.4	6.3	16	ADGT1806	✓	Fig1	●
MET190063R06A22AD12	63	6	63	22	40	10.4	6.3	11	ADGT1204	✓	Fig1	●
MET190063R08A22AD12	63	8	63	22	40	10.4	6.3	11	ADGT1204	✓	Fig1	●
MET190063R05A22AD18	63	5	63	22	40	10.4	6.3	16	ADGT1806	✓	Fig1	●
MET190063R06A22AD18	63	6	63	22	40	10.4	6.3	16	ADGT1806	✓	Fig1	●
MET190066R05A22AD18	66	5	66	22	40	10.4	6.3	16	ADGT1806	✓	Fig1	●
MET190080R07A27AD12	80	7	80	27	50	12.4	7	11	ADGT1204	✓	Fig1	●
MET190080R10A27AD12	80	10	80	27	50	12.4	7	11	ADGT1204	✓	Fig1	●
MET190080R06A27AD18	80	6	80	27	50	12.4	7	16	ADGT1806	✓	Fig1	●
MET190080R08A27AD18	80	8	80	27	50	12.4	7	16	ADGT1806	✓	Fig1	●
MET190100R08B32AD12	100	8	100	32	50	14.4	8	11	ADGT1204	×	Fig2	●
MET190100R12B32AD12	100	12	100	32	50	14.4	8	11	ADGT1204	×	Fig2	●
MET190100R07B32AD18	100	7	100	32	50	14.4	8	16	ADGT1806	×	Fig2	●
MET190100R09B32AD18	100	9	100	32	50	14.4	8	16	ADGT1806	×	Fig2	●
MET190125R08B40AD18	125	8	125	40	63	16.4	9	16	ADGT1806	×	Fig2	●
MET190125R11B40AD18	125	11	125	40	63	16.4	9	16	ADGT1806	×	Fig2	●
MET190160R09C40AD18	160	9	160	40	63	16.4	9	16	ADGT1806	×	Fig3	●
MET190160R12C40AD18	160	12	160	40	63	16.4	9	16	ADGT1806	×	Fig3	●

●标准库存 Stock ○需预定 Available Upon Order

方肩铣削  
Shoulder Milling

# MET190

圆柱直柄式  
Cylindrical Straight Type

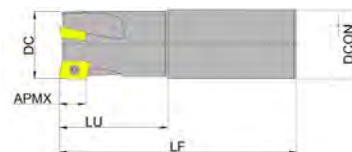


Fig4

订货号 Ordering Code	直径 Dia- meter	刃数 Teeth	尺寸 Dimension(mm)				最大 切深 APMX	匹配刀片 Suitable for	内冷 Coolant	图示 Diagram	库存 Stock
			DC	DCON	LF	LU					
MET190016R02P16AD10	16	2	16	16	100	30	9	ADGT10T3	✓	Fig4	●
MET190016R02P16AD10L	16	2	16	16	170	50	9	ADGT10T3	✓	Fig4	●
MET190016R02P16NAD10	16	2	16	16	100	-	9	ADGT10T3	✓	Fig4	●
MET190018R02P16AD10	18	2	18	16	170	40	9	ADGT10T3	✓	Fig4	●
MET190020R02P20AD10	20	2	20	20	100	30	9	ADGT10T3	✓	Fig4	●
MET190020R02P20AD10L	20	2	20	20	150	40	9	ADGT10T3	✓	Fig4	●
MET190020R03P20AD10	20	3	20	20	150	20	9	ADGT10T3	✓	Fig4	●
MET190020R03P20AD10L	20	3	20	20	200	50	9	ADGT10T3	✓	Fig4	●
MET190020R02P20AD12	20	2	20	20	100	40	11	ADGT1204	✓	Fig4	●
MET190020R02P20AD12L	20	2	20	20	170	60	11	ADGT1204	✓	Fig4	●
MET190025R03P25AD10	25	3	25	25	100	30	9	ADGT10T3	✓	Fig4	●
MET190025R03P25AD10L	25	3	25	25	150	40	9	ADGT10T3	✓	Fig4	●
MET190025R04P25AD10L	25	4	25	25	200	50	9	ADGT10T3	✓	Fig4	●
MET190025R02P25AD12	25	2	25	25	100	40	11	ADGT1204	✓	Fig4	●
MET190025R02P25AD12L	25	2	25	25	200	60	11	ADGT1204	✓	Fig4	●
MET190025R03P25AD12	25	3	25	25	100	40	11	ADGT1204	✓	Fig4	●
MET190025R03P25AD12L	25	3	25	25	200	60	11	ADGT1204	✓	Fig4	●
MET190032R04P32AD10	32	4	32	32	100	30	9	ADGT10T3	✓	Fig4	●
MET190032R04P32AD10L	32	4	32	32	150	40	9	ADGT10T3	✓	Fig4	●
MET190032R05P32AD10L	32	5	32	32	200	50	9	ADGT10T3	✓	Fig4	●
MET190032R03P32AD12	32	3	32	32	110	50	11	ADGT1204	✓	Fig4	●
MET190032R03P32AD12L	32	3	32	32	210	80	11	ADGT1204	✓	Fig4	●
MET190032R04P32AD12	32	4	32	32	110	50	11	ADGT1204	✓	Fig4	●
MET190032R04P32AD12L	32	4	32	32	210	80	11	ADGT1204	✓	Fig4	●
MET190032R02P32AD18	32	2	32	32	110	50	16	ADGT1806	✓	Fig4	●
MET190032R02P32AD18L	32	2	32	32	210	80	16	ADGT1806	✓	Fig4	●
MET190032R03P32AD18	32	3	32	32	110	50	16	ADGT1806	✓	Fig4	●
MET190032R03P32AD18L	32	3	32	32	210	80	16	ADGT1806	✓	Fig4	●
MET190035R03P32AD12	35	3	35	32	160	-	11	ADGT1204	✓	Fig4	●
MET190035R03P32AD12L	35	3	35	32	250	-	11	ADGT1204	✓	Fig4	●
MET190035R04P32AD12	35	4	35	32	160	-	11	ADGT1204	✓	Fig4	●
MET190035R04P32AD12L	35	4	35	32	250	-	11	ADGT1204	✓	Fig4	●
MET190040R03P32AD18	40	3	40	32	160	-	16	ADGT1806	✓	Fig4	●
MET190040R03P32AD18L	40	3	40	32	250	-	16	ADGT1806	✓	Fig4	●
MET190040R04P32AD18	40	4	40	32	160	-	16	ADGT1806	✓	Fig4	●
MET190040R04P32AD18L	40	4	40	32	250	-	16	ADGT1806	✓	Fig4	●

●标准库存 Stock ○需预定 Available Upon Order

方肩铣削  
Shoulder Milling

# MET190

可换式刀头  
Replaceable Tool Head

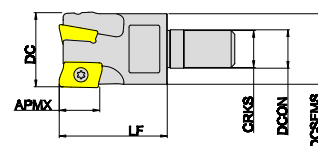



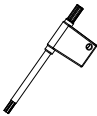
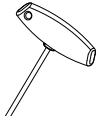
Fig5

订货号 Ordering Code	直径 Dia- meter	刃数 Teeth	尺寸 Dimension(mm)					最大 切深 APMX	匹配刀片 Suitable for	内冷 Coolant	图示 Diagram	库存 Stock
			DC	DCSFMS	DCON	LF	CRKS					
MET190020R02M10AD12	20	2	20	18	10.5	28	M10	11	ADGT1204	✓	Fig5	●
MET190025R03M12AD12	25	3	25	23	12.5	35	M12	11	ADGT1204	✓	Fig5	●
MET190032R03M16AD12	32	3	32	30	17	40	M16	11	ADGT1204	✓	Fig5	●
MET190032R04M16AD12	32	4	32	30	17	40	M16	11	ADGT1204	✓	Fig5	●
MET190032R02M16AD18	32	2	32	30	17	45	M16	16	ADGT1806	✓	Fig5	●
MET190032R03M16AD18	32	3	32	30	17	45	M16	16	ADGT1806	✓	Fig5	●
MET190040R04M16AD12	40	4	40	30	17	40	M16	11	ADGT1204	✓	Fig5	●
MET190040R04M20AD12	40	4	40	37	21	45	M20	11	ADGT1204	✓	Fig5	●
MET190040R05M16AD12	40	5	40	30	17	40	M16	11	ADGT1204	✓	Fig5	●
MET190040R05M20AD12	40	5	40	37	21	45	M20	11	ADGT1204	✓	Fig5	●
MET190040R03M16AD18	40	3	40	30	17	45	M16	16	ADGT1806	✓	Fig5	●
MET190040R03M20AD18	40	3	40	37	21	45	M20	16	ADGT1806	✓	Fig5	●
MET190040R04M16AD18	40	4	40	30	17	45	M16	16	ADGT1806	✓	Fig5	●
MET190040R04M20AD18	40	4	40	37	21	45	M20	16	ADGT1806	✓	Fig5	●

●标准库存 Stock ○需预定 Available Upon Order

## 方肩铣削 Shoulder Milling

### 刀体配件列表 Spare Parts


零件名称 Part Name		刀片螺钉 Insert Screw	刀片螺钉扳手 Insert Screw Wrench		
适用刀片 Inserts	形状 Shape				
	ADGT10T3	订货号 Ordering Code	SI60M025065-03610IS	TI07PB	-
	ADGT1204 (DC20-DC25)	订货号 Ordering Code	SI60M035069-04805IB	TI10PB	-
	ADGT1204 (DC32-DC35)	订货号 Ordering Code	SI60M035080-04805IB	TI10PB	-
	ADGT1204 (DC ≥ 40)	订货号 Ordering Code	SI60M035090-04806IB	TI10PB	TI10TB
	ADGT1806	订货号 Ordering Code	SI60M045100-06212IB	TI20PB	TI20TB

### 推荐切削参数 Recommended Cutting Data

被加工材料 Workpiece Material	材料硬度 Hardness	牌号 Grade	规格 Specification	推荐 切深 ap (mm)	切削速度 Cutting Speed Vc(m/min)	进给 / 齿 Feed Per Tooth fz(mm)
<b>S</b> 耐热合金、 钛合金 Heat-resistant Alloy and Titanium Alloy	HRC30-45	GSM7130	ADGT10T3	2	50 (20-80)	0.1 (0.05-0.15)
			ADGT1204	3		
			ADGT1806	4		
<b>M</b> 不锈钢 (铁素 体、马氏体) Stainless (Ferrite、 Martensite)	≤ HB270	GM4240	ADGT10T3	2	180 (140-220)	0.2 (0.15-0.25)
			ADGT1204	3		
			ADGT1806	4		
不锈钢 (奥氏体、双相) Stainless (Austenitic、 Duplex)	≤ HB270	GM4240	ADGT10T3	2	140 (100-180)	0.15 (0.1-0.2)
			ADGT1204	3		
			ADGT1806	4		

# 应用案例 Case


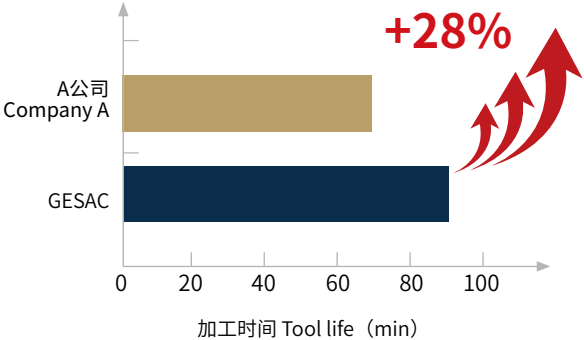
案例1: ADGT+MET190 航空钛合金框件腹板型腔铣加工  
Case1: ADGT+MET190 Milling Machining of Web Cavity of Aerospace Titanium Alloy Frame

刀具规格 Specification	ADGT120430R-SM	 GW-45min	
刀具牌号 Grade	GSM7130		
刀体规格 Size	MET190-032R04P32-AD12		
工件材料 Workpiece Material	TC4	 GESAC-45min	
切削速度 Cutting Speed	40m/min		
进给量 Feed Rate	0.15mm/z	 GESAC-63min	
切削量 Cutting Amount	2.0mm		
切削方式 Cutting Method	型腔铣 Cavity milling		
冷却方式 Cooling Method	水基乳化液, 外冷 Water based emulsion, External cooling		
切削效果 Processing Result	中低速下, 耐磨性高, 较欧美竞品寿命提升40% High wear resistance at medium and low speeds, 40% longer service life than European and American competitors		

## 应用案例

### Case

案例2: ADGT+MET190 航空钛合金结构件槽铣加工  
Case2: ADGT+MET190 Slot milling of aeronautical titanium alloy structure

刀具规格 Specification	ADGT180630R-SM	
刀具牌号 Grade	GSM7130	
刀体规格 Size	MET190-032R03P32-AD18	
工件材料 Workpiece Material	TC18 (HRC40-45)	
切削速度 Cutting Speed	35m/min	
进给量 Feed Rate	0.11mm/z	
切削量 Cutting Amount	1.0mm	
切削方式 Cutting Method	槽铣 Slot milling	
冷却方式 Cooling Method	水基乳化液, 外冷 Water based emulsion, External cooling	
切削效果 Processing Result	中低速下, 高耐磨性, 较欧美竞品寿命提升28% High wear resistance at medium and low speeds, 28% longer service life than European and American competitors	





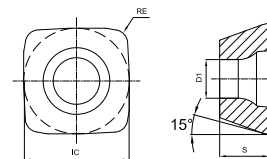
## 银雀系列正型四刃快给进-SOE(M)T系列 Positive four edges high-feed milling——SOE (M)T series



- 正前角加工，切削轻快，加工稳定。
  - 两段式切削刃设计，满足不同加工工况需求。
  - 带修光刃设计，在高进给加工和侧壁加工时，具有良好的加工表面质量。
  - 特殊表面涂层工艺，刃口表面光滑，减少积屑瘤产生。
  - 主要用于钛合金等难加工材料粗加工。
- 
- Positive rake angle processing, cutting light, stable processing.
  - The cutting edge with two-stage design, suitable for different processing conditions.
  - Design with wiper , in high feed processing and side wall processing, has good processing surface quality.
  - Special surface coating technology, make the edge surface smooth, and reduce the formation of debris tumor.
  - Suitable for roughing machining of difficult-to-machine materials, such as Ti alloy.

快进给铣削  
High Feed Milling

# SOE (M)T

正型四刃快进给铣  
Positive four edges high feed milling cutter insert







订货号 Ordering Code	尺寸 (mm) Dimension (mm)				涂层硬质合金 Coating Grade										硬质 合金 coated	金属 陶瓷 cermet								
	IC	S	D1	RE	GA4225	GA4230	GA4325	GPM7120	GP4225	GP2115	GM4135	GM2140	GM4240	GK4125	GK2115	GS4130	GSM7130	GH4115	GN9125	GP01TM				
	SOET09T312-SM	9.525	3.97	4.2	1.2									●							●			
	SOMT09T312-SM	9.525	3.97	4.2	1.2									●								●		
	SOET120420-SM	12.7	4.76	4.4	2.0									●								●		
	SOMT120420-SM	12.7	4.76	4.4	2.0									●								●		
	SOMT090412-ST	9.525	4.76	4.0	1.2																	●		
	SOMT120512-ST	12.7	5.56	4.4	1.2																	●		

●标准库存 Stock ○需预定 Available Upon Order

- SM槽型刀片对应MKT113系列刀体。
- ST槽型刀片对应MKT213系列刀体。
- The inserts of SM geometry correspond to MKT113 cutters.
- The inserts of ST geometry correspond to MKT213 cutters.

## SOE(M)T 系列槽型 SOE(M)T Series Geometry

<p>钛合金等难加工材料工件切削 Cutting of difficult-to-machine materials such as titanium alloys</p>	<p>钛合金等难加工材料工件切削 Cutting of difficult-to-machine materials such as titanium alloys</p>
	
<p>SM</p>	<p>ST</p>
	
<p>正前角，适合中载切削。 Positive rake angle, good for medium cutting.</p>	<p>渐变式前角，适合中载切削。 Gradient rake angle, good for medium cutting.</p>

## 快进给铣削 High Feed Milling

# MKT113

心轴式  
Arbor

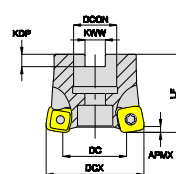


Fig1

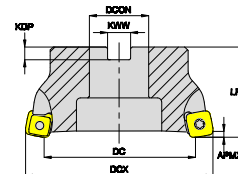


Fig2

订货号 Ordering Code	直径 Dia- meter	刃数 Teeth	尺寸 Dimension(mm)						最大 切深 APMX	匹配刀片 Suitable for	内冷 Coolant	图示 Diagram	库存 Stock
			DC	DCX	DCON	LF	KWW	KDP					
MKT113040R04A16SO09	40	4	26	40	16	40	8.4	5.6	1.2	SOE(M)T09T3	✓	Fig1	●
MKT113040R05A16SO09	40	5	26	40	16	40	8.4	5.6	1.2	SOE(M)T09T3	✓	Fig1	●
MKT113042R04A16SO09	42	4	28	42	16	40	8.4	5.6	1.2	SOE(M)T09T3	✓	Fig1	●
MKT113042R05A16SO09	42	5	28	42	16	40	8.4	5.6	1.2	SOE(M)T09T3	✓	Fig1	●
MKT113050R05A22SO09	50	5	36	50	22	40	10.4	6.3	1.2	SOE(M)T09T3	✓	Fig1	●
MKT113050R06A22SO09	50	6	36	50	22	40	10.4	6.3	1.2	SOE(M)T09T3	✓	Fig1	●
MKT113050R07A22SO09	50	7	36	50	22	40	10.4	6.3	1.2	SOE(M)T09T3	✓	Fig1	●
MKT113050R05A22SO12	50	5	33.3	50	22	40	10.4	6.3	1.4	SOE(M)T1204	✓	Fig1	●
MKT113052R06A22SO09	52	6	38	52	22	40	10.4	6.3	1.2	SOE(M)T09T3	✓	Fig1	●
MKT113052R07A22SO09	52	7	38	52	22	40	10.4	6.3	1.2	SOE(M)T09T3	✓	Fig1	●
MKT113052R05A22SO12	52	5	34.3	52	22	40	10.4	6.3	1.4	SOE(M)T1204	✓	Fig1	●
MKT113063R06A22SO09	63	6	49	63	22	40	10.4	6.3	1.2	SOE(M)T09T3	✓	Fig1	●
MKT113063R08A22SO09	63	8	49	63	22	40	10.4	6.3	1.2	SOE(M)T09T3	✓	Fig1	●
MKT113063R06A27SO09	63	6	49	63	27	50	12.4	7	1.2	SOE(M)T09T3	✓	Fig1	●
MKT113063R08A27SO09	63	8	49	63	27	50	12.4	7	1.2	SOE(M)T09T3	✓	Fig1	●
MKT113063R05A22SO12	63	5	45.3	63	22	40	10.4	6.3	1.4	SOE(M)T1204	✓	Fig1	●
MKT113063R06A22SO12	63	6	45.3	63	22	40	10.4	6.3	1.4	SOE(M)T1204	✓	Fig1	●
MKT113063R05A27SO12	63	5	45.3	63	27	50	12.4	7	1.4	SOE(M)T1204	✓	Fig1	●
MKT113063R06A27SO12	63	6	45.3	63	27	50	12.4	7	1.4	SOE(M)T1204	✓	Fig1	●
MKT113066R05A27SO12	66	5	48.3	66	27	50	12.4	7	1.4	SOE(M)T1204	✓	Fig1	●
MKT113080R06A27SO12	80	6	62.3	80	27	50	12.4	7	1.4	SOE(M)T1204	✓	Fig1	●
MKT113080R08A27SO12	80	8	62.3	80	27	50	12.4	7	1.4	SOE(M)T1204	✓	Fig1	●
MKT113100R07B32SO12	100	7	82.3	100	32	50	14.4	8	1.4	SOE(M)T1204	×	Fig2	●
MKT113125R08B40SO12	125	8	107.3	125	40	63	16.4	9	1.4	SOE(M)T1204	×	Fig2	●

●标准库存 Stock ○需预定 Available Upon Order

快进给铣削  
High Feed Milling

# MKT113

圆柱直柄式  
Cylindrical Straight Type

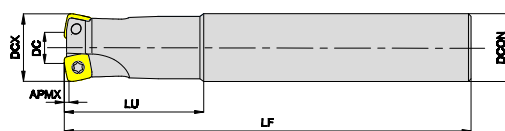


Fig3

订货号 Ordering Code	直径 Dia- meter	刃数 Teeth	尺寸 Dimension(mm)					最大 切深 APMX	匹配刀片 Suitable for	内冷 Coolant	图示 Diagram	库存 Stock
			DC	DCX	DCON	LF	LU					
MKT113025R02P25SO09S	25	2	11	25	25	110	40	1.2	SOE(M)T09T3	✓	Fig3	●
MKT113025R02P25SO09	25	2	11	25	25	150	50	1.2	SOE(M)T09T3	✓	Fig3	●
MKT113025R02P25SO09L	25	2	11	25	25	200	75	1.2	SOE(M)T09T3	✓	Fig3	●
MKT113025R03P25SO09S	25	3	11	25	25	110	40	1.2	SOE(M)T09T3	✓	Fig3	●
MKT113025R03P25SO09	25	3	11	25	25	150	50	1.2	SOE(M)T09T3	✓	Fig3	●
MKT113025R03P25SO09L	25	3	11	25	25	200	75	1.2	SOE(M)T09T3	✓	Fig3	●
MKT113032R03P32SO09S	32	3	18	32	32	120	40	1.2	SOE(M)T09T3	✓	Fig3	●
MKT113032R03P32SO09	32	3	18	32	32	180	60	1.2	SOE(M)T09T3	✓	Fig3	●
MKT113032R03P32SO09L	32	3	18	32	32	250	100	1.2	SOE(M)T09T3	✓	Fig3	●
MKT113032R04P32SO09S	32	4	18	32	32	120	40	1.2	SOE(M)T09T3	✓	Fig3	●
MKT113032R04P32SO09	32	4	18	32	32	180	60	1.2	SOE(M)T09T3	✓	Fig3	●
MKT113032R04P32SO09L	32	4	18	32	32	250	100	1.2	SOE(M)T09T3	✓	Fig3	●
MKT113032R02P32SO12S	32	2	14.3	32	32	120	40	1.4	SOE(M)T1204	✓	Fig3	●
MKT113032R02P32SO12	32	2	14.3	32	32	180	60	1.4	SOE(M)T1204	✓	Fig3	●
MKT113032R02P32SO12L	32	2	14.3	32	32	250	100	1.4	SOE(M)T1204	✓	Fig3	●
MKT113032R03P32SO12S	32	3	14.3	32	32	120	40	1.4	SOE(M)T1204	✓	Fig3	●
MKT113032R03P32SO12	32	3	14.3	32	32	180	60	1.4	SOE(M)T1204	✓	Fig3	●
MKT113032R03P32SO12L	32	3	14.3	32	32	250	100	1.4	SOE(M)T1204	✓	Fig3	●
MKT113035R04P32SO09S	35	4	21	35	32	120	40	1.2	SOE(M)T09T3	✓	Fig3	●
MKT113035R04P32SO09	35	4	21	35	32	180	40	1.2	SOE(M)T09T3	✓	Fig3	●
MKT113035R04P32SO09L	35	4	21	35	32	250	40	1.2	SOE(M)T09T3	✓	Fig3	●
MKT113035R03P32SO12S	35	3	17.3	35	32	120	40	1.4	SOE(M)T1204	✓	Fig3	●
MKT113035R03P32SO12	35	3	17.3	35	32	180	40	1.4	SOE(M)T1204	✓	Fig3	●
MKT113035R03P32SO12L	35	3	17.3	35	32	250	40	1.4	SOE(M)T1204	✓	Fig3	●

●标准库存 Stock ○需预定 Available Upon Order

快进给铣削  
High Feed Milling

# MKT113

可换式刀头  
Replaceable Tool Head

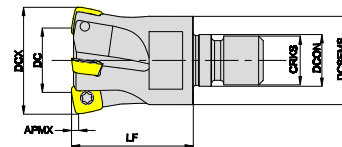


Fig4

订货号 Ordering Code	直径 Dia- meter	刃数 Teeth	尺寸 Dimension(mm)						最大 切深 APMX	匹配刀片 Suitable for	内冷 Coolant	图示 Diagram	库存 Stock
			DC	DCX	DCSFMS	DCON	LF	CRKS					
MKT113025R02M12SO09	25	2	11	25	23	12.5	35	M12	1.2	SOE(M)T09T3	✓	Fig4	●
MKT113025R03M12SO09	25	3	11	25	23	12.5	35	M12	1.2	SOE(M)T09T3	✓	Fig4	●
MKT113032R03M16SO09	32	3	18	32	29	17	40	M16	1.2	SOE(M)T09T3	✓	Fig4	●
MKT113032R04M16SO09	32	4	18	32	29	17	40	M16	1.2	SOE(M)T09T3	✓	Fig4	●
MKT113032R02M16SO12	32	2	14.3	32	29	17	40	M16	1.4	SOE(M)T1204	✓	Fig4	●
MKT113032R03M16SO12	32	3	14.3	32	29	17	40	M16	1.4	SOE(M)T1204	✓	Fig4	●
MKT113035R03M16SO09	35	3	21	35	29	17	40	M16	1.2	SOE(M)T09T3	✓	Fig4	●
MKT113035R04M16SO09	35	4	21	35	29	17	40	M16	1.2	SOE(M)T09T3	✓	Fig4	●
MKT113035R05M16SO09	35	5	21	35	29	17	40	M16	1.2	SOE(M)T09T3	✓	Fig4	●
MKT113035R03M16SO12	35	3	17.3	35	29	17	40	M16	1.4	SOE(M)T1204	✓	Fig4	●
MKT113040R05M16SO09	40	5	26	40	29	17	40	M16	1.2	SOE(M)T09T3	✓	Fig4	●
MKT113042R04M16SO12	42	4	24.3	42	29	17	40	M16	1.4	SOE(M)T1204	✓	Fig4	●

●标准库存 Stock ○需预定 Available Upon Order

快进给铣削  
High Feed Milling

# MKT213

心轴式  
Arbor

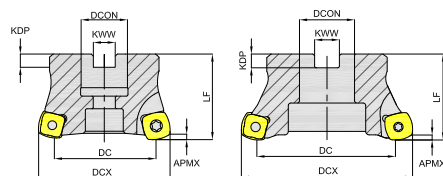


Fig1

Fig2

订货号 Ordering Code	直径 Dia- meter	刃数 Teeth	尺寸 Dimension(mm)						最大 切深 APMX	匹配刀片 Suitable for	内冷 Coolant	图示 Diagram	库存 Stock
			DC	DCX	DCON	LF	KWW	KDP					
MKT213040R04A16SO09	40	4	24.8	40	16	40	8.4	5.6	1.1	SOMT0904	✓	Fig1	○
MKT213040R05A16SO09	40	5	24.8	40	16	40	8.4	5.6	1.1	SOMT0904	✓	Fig1	○
MKT213042R04A16SO09	42	4	26.8	42	16	40	8.4	5.6	1.1	SOMT0904	✓	Fig1	○
MKT213042R05A16SO09	42	5	26.8	42	16	40	8.4	5.6	1.1	SOMT0904	✓	Fig1	○
MKT213050R05A22SO09	50	5	35.3	50	22	40	10.4	6.3	1.1	SOMT0904	✓	Fig1	○
MKT213050R06A22SO09	50	6	35.3	50	22	40	10.4	6.3	1.1	SOMT0904	✓	Fig1	○
MKT213050R07A22SO09	50	7	35.3	50	22	40	10.4	6.3	1.1	SOMT0904	✓	Fig1	○
MKT213050R05A22SO12	50	5	29.5	50	22	40	10.4	6.3	1.8	SOMT1205	✓	Fig1	●
MKT213052R06A22SO09	52	6	36.8	52	22	40	10.4	6.3	1.1	SOMT0904	✓	Fig1	○
MKT213052R07A22SO09	52	7	36.8	52	22	40	10.4	6.3	1.1	SOMT0904	✓	Fig1	○
MKT213052R05A22SO12	52	5	31.5	52	22	40	10.4	6.3	1.8	SOMT1205	✓	Fig1	○
MKT213063R06A22SO09	63	6	47.8	63	22	40	10.4	6.3	1.1	SOMT0904	✓	Fig1	○
MKT213063R08A22SO09	63	8	47.8	63	22	40	10.4	6.3	1.1	SOMT0904	✓	Fig1	○
MKT213063R06A27SO09	63	6	47.8	63	27	50	12.4	7	1.1	SOMT0904	✓	Fig1	○
MKT213063R08A27SO09	63	8	47.8	63	27	50	12.4	7	1.1	SOMT0904	✓	Fig1	○
MKT213063R06A22SO12	63	6	42.4	63	22	40	10.4	6.3	1.8	SOMT1205	✓	Fig1	●
MKT213063R06A27SO12	63	6	42.4	63	27	50	12.4	7	1.8	SOMT1205	✓	Fig1	○
MKT213066R05A27SO12	66	5	45.4	66	27	50	12.4	7	1.8	SOMT1205	✓	Fig1	○
MKT213080R06A27SO12	80	6	59.4	80	27	50	12.4	7	1.8	SOMT1205	✓	Fig1	○
MKT213080R08A27SO12	80	8	59.4	80	27	50	12.4	7	1.8	SOMT1205	✓	Fig1	○
MKT213100R07B32SO12	100	7	79.7	100	32	60	14.4	8	1.8	SOMT1205	×	Fig2	●
MKT213125R08B40SO12	125	8	104.7	125	40	60	16.4	9	1.8	SOMT1205	×	Fig2	○

●标准库存 Stock ○需预定 Available Upon Order

快进给铣削  
High Feed Milling

# MKT213

圆柱直柄式  
Cylindrical Straight Type

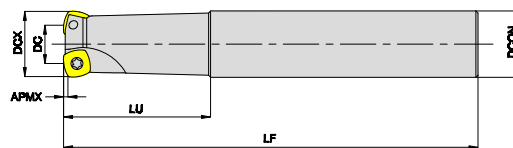


Fig3

订货号 Ordering Code	直径 Dia- meter	刃数 Teeth	尺寸 Dimension(mm)					最大 切深 APMX	匹配刀片 Suitable for	内冷 Coolant	图示 Diagram	库存 Stock
			DC	DCX	DCON	LF	LU					
MKT213025R02P25SO09S	25	2	9.9	25	25	110	40	1.1	SOMT0904	✓	Fig3	○
MKT213025R02P25SO09	25	2	9.9	25	25	150	50	1.1	SOMT0904	✓	Fig3	○
MKT213025R02P25SO09L	25	2	9.9	25	25	200	75	1.1	SOMT0904	✓	Fig3	○
MKT213025R03P25SO09S	25	3	9.9	25	25	110	40	1.1	SOMT0904	✓	Fig3	○
MKT213025R03P25SO09	25	3	9.9	25	25	150	50	1.1	SOMT0904	✓	Fig3	○
MKT213025R03P25SO09L	25	3	9.9	25	25	300	50	1.1	SOMT0904	✓	Fig3	○
MKT213032R03P32SO09S	32	3	16.8	32	32	120	40	1.1	SOMT0904	✓	Fig3	○
MKT213032R03P32SO09	32	3	16.8	32	32	180	60	1.1	SOMT0904	✓	Fig3	○
MKT213032R03P32SO09L	32	3	16.8	32	32	250	100	1.1	SOMT0904	✓	Fig3	○
MKT213032R04P32SO09S	32	4	16.8	32	32	120	40	1.1	SOMT0904	✓	Fig3	○
MKT213032R04P32SO09	32	4	16.8	32	32	180	60	1.1	SOMT0904	✓	Fig3	○
MKT213032R04P32SO09L	32	4	16.8	32	32	250	100	1.1	SOMT0904	✓	Fig3	○
MKT213032R02P32SO12S	32	2	11.5	32	32	120	40	1.8	SOMT1205	✓	Fig3	○
MKT213032R02P32SO12	32	2	11.5	32	32	180	60	1.8	SOMT1205	✓	Fig3	○
MKT213032R02P32SO12L	32	2	11.5	32	32	250	100	1.8	SOMT1205	✓	Fig3	○
MKT213032R03P32SO12S	32	3	11.5	32	32	120	40	1.8	SOMT1205	✓	Fig3	○
MKT213032R03P32SO12	32	3	11.5	32	32	180	60	1.8	SOMT1205	✓	Fig3	○
MKT213032R03P32SO12L	32	3	11.5	32	32	250	100	1.8	SOMT1205	✓	Fig3	○
MKT213035R04P32SO09S	35	4	19.9	35	32	120	40	1.1	SOMT0904	✓	Fig3	○
MKT213035R04P32SO09	35	4	19.9	35	32	180	40	1.1	SOMT0904	✓	Fig3	○
MKT213035R04P32SO09L	35	4	19.9	35	32	250	40	1.1	SOMT0904	✓	Fig3	○
MKT213035R03P32SO12S	35	3	14.4	35	32	120	40	1.8	SOMT1205	✓	Fig3	○
MKT213035R03P32SO12	35	3	14.4	35	32	180	40	1.8	SOMT1205	✓	Fig3	○
MKT213035R03P32SO12L	35	3	14.4	35	32	250	40	1.8	SOMT1205	✓	Fig3	○

●标准库存 Stock ○需预定 Available Upon Order



快进给铣削  
High Feed Milling

# MKT213

可换式刀头  
Replaceable Tool Head

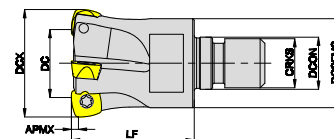


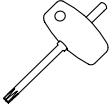
Fig4

订货号 Ordering Code	直径 Dia- meter	刃数 Teeth	尺寸 Dimension(mm)						最大 切深 APMX	匹配刀片 Suitable for	内冷 Coolant	图示 Diagram	库存 Stock
			DC	DCX	DCSFMS	DCON	LF	CRKS					
MKT213025R02M12SO09	25	2	9.9	25	23	12.5	35	M12	1.1	SOMT0904	✓	Fig4	●
MKT213025R03M12SO09	25	3	9.9	25	23	12.5	35	M12	1.1	SOMT0904	✓	Fig4	○
MKT213032R03M16SO09	32	3	16.8	32	29	17	40	M16	1.1	SOMT0904	✓	Fig4	○
MKT213032R04M16SO09	32	4	16.8	32	29	17	40	M16	1.1	SOMT0904	✓	Fig4	●
MKT213032R02M16SO12	32	2	11.5	32	29	17	40	M16	1.8	SOMT1205	✓	Fig4	○
MKT213032R03M16SO12	32	3	11.5	32	29	17	40	M16	1.8	SOMT1205	✓	Fig4	○
MKT213035R04M16SO09	35	4	19.9	35	29	17	40	M16	1.1	SOMT0904	✓	Fig4	○
MKT213035R03M16SO12	35	3	14.4	35	29	17	40	M16	1.8	SOMT1205	✓	Fig4	○
MKT213040R05M16SO09	40	5	24.8	40	29	17	40	M16	1.1	SOMT0904	✓	Fig4	○
MKT213042R04M16SO12	42	4	21.4	42	29	17	40	M16	1.8	SOMT1205	✓	Fig4	○

●标准库存 Stock ○需预定 Available Upon Order

## 快进给铣削 High Feed Milling

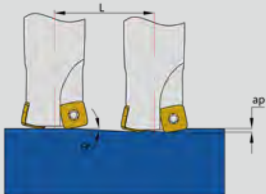
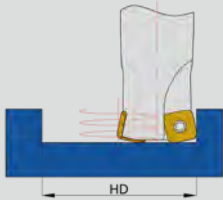
### 刀体配件列表 Spare Parts

零件名称 Part Name		刀片螺钉 Insert Screw	刀片螺钉扳手 Insert Screw Wrench	
适用刀片 Inserts				
SOE(M)T09T312-SM	订货号 Ordering Code	SI60M035076-04808IB	TI10KB	-
SOE(M)T120420-SM	订货号 Ordering Code	SI60M040100-05510IS	TI15KB	TI15TB
SOMT090412-ST	订货号 Ordering Code	SI60M035076-04808IB	TI10KB	-
SOMT120512-ST	订货号 Ordering Code	SI60M040100-05510IS	TI15KB	TI15TB

### 刀尖半径参数 Parameters for Cutting Edge Radius

刀片规格 Specification	编程圆角 R Approximate Corner Radius R(mm)	残留量 K Remains K(mm)	示意图 Diagram
SOET09T312-SM	2.34	0.9	
SOMT09T312-SM	2.34	0.9	
SOET120420-SM	3.29	1.0	
SOMT120420-SM	3.29	1.0	
SOMT090412-ST	2.20	0.7	
SOMT120512-ST	2.79	1.0	

## 斜坡铣及螺旋铣参数 Parameters for Slope Milling and Helical Milling

刀片规格 Specification	刀盘直径 Tool holder D(mm)	 斜坡铣 Slope Milling			 螺旋插补铣 Helical Interpolation Milling	
		最大斜坡角度 Max slope angle $\theta$	最大切深 Max cutting depth $a_p$ (mm)	加工至最大切深最小走刀长度 Min length when cutting to max $a_p$ L (mm)	最小直径 HD min (mm)	最大直径 HD max (mm)
MKT113 SO*T09-SM	25	3	1.2	22.9	33	48
	32	2.5	1.2	27.5	47	62
	35	2	1.2	34.4	53	68
	40	1.8	1.2	38.2	63	78
	42	1.8	1.2	38.2	67	82
	50	1.5	1.2	45.8	83	98
	52	1.2	1.2	57.3	87	102
	63	1	1.2	68.7	109	124
MKT113 SO*T12-SM	32	2.5	1.4	32.1	41	62
	35	2	1.4	40.1	47	68
	42	1.8	1.4	44.5	61	82
	50	1.5	1.4	53.5	77	98
	52	1	1.4	80.2	81	102
	63	0.8	1.4	100.3	103	124
	66	0.8	1.4	100.3	109	130
	80	0.6	1.4	133.7	137	158
	100	0.5	1.4	160.4	177	198
125	0.4	1.4	200.5	227	248	
MKT213 SOMT09-ST	25	3	1.1	21.0	33	48
	32	2.5	1.1	25.2	47	62
	35	2	1.1	31.5	53	68
	40	1.5	1.1	42.0	63	78
	42	1.5	1.1	42.0	67	82
	50	1.2	1.1	52.5	83	98
	52	1	1.1	63.0	87	102
	63	0.6	1.1	105.0	109	124
MKT213 SOMT12-ST	32	2.5	1.8	41.2	42	62
	35	2.5	1.8	41.2	48	68
	42	2	1.8	51.5	62	82
	50	1.5	1.8	68.7	78	98
	52	1.5	1.8	68.7	82	102
	63	1	1.8	103.1	104	124
	66	0.8	1.8	128.9	110	130
	80	0.5	1.8	206.3	138	158
	100	0.3	1.8	343.8	178	198
125	0.2	1.8	515.7	228	248	


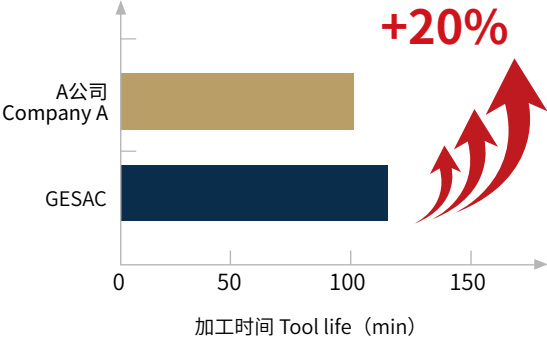
## 推荐切削参数 Recommended Cutting Data

被加工材料 Workpiece Material	材料硬度 Hardness	牌号 Grade	规格 Specification	推荐 切深 ap(mm)	切削速度 Cutting Speed Vc(m/min)	进给 / 齿 Feed Per Tooth fz(mm)	
						中切削 (M) Medium Machining(M)	重切削 (H) Heavy Machining(H)
<b>S</b> 钛合金 Titanium Alloy	HRC30-45	GSM7130	SOE(M)T09T3	1.2	40 (30-60)	0.5 (0.3-0.8)	0.7 (0.4-1.1)
			SOE(M)T1204	1.4			
			SOMT0904	1.1			
			SOMT1205	1.8			
<b>M</b>	≤ HB270	GM4240	SOE(M)T09T3	1.2	120 (80-160)	1.0 (0.6-1.4)	1.2 (0.8-1.5)
			SOE(M)T1204	1.4			
			SOMT0904	1.1			
			SOMT1205	1.8			
	≤ HB270	GM4240	SOE(M)T09T3	1.2	100 (60-140)	0.6 (0.6-1.0)	1.0 (0.8-1.2)
			SOE(M)T1204	1.4			
			SOMT0904	1.1			
			SOMT1205	1.8			

## 应用案例 Case

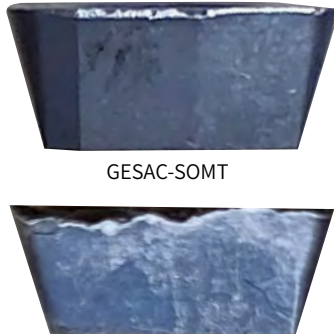
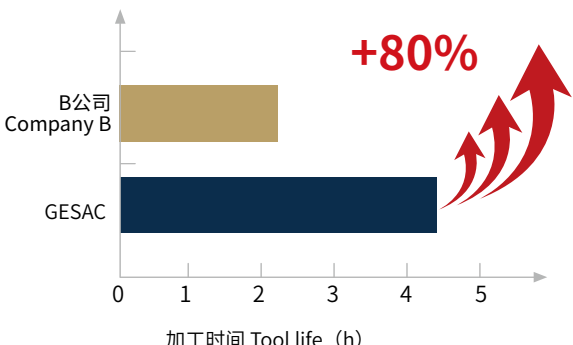
案例1: SOE(M)T+MKT113&213 钛合金吊挂后梁加工

Case1: SOE(M)T+MKT113&213 Titanium alloy hanging rear beam processing

刀具规格 Specification	SOET09T312-SM	
刀具牌号 Grade	GSM7130	
刀体规格 Size	MKT113-050R06A22-SO09	
工件材料 Workpiece Material	TC4	
切削速度 Cutting Speed	47 m/min	
进给量 Feed Rate	0.6 mm/z	
切削量 Cutting Amount	$ap=0.6$ mm, $ae=40$ mm	
切削方式 Cutting Method	型腔铣 Pocket milling	
冷却方式 Cooling Method	水基乳化液, 外冷 Water based emulsion, External cooling	
切削效果 Processing Result	同样工况, 刀片寿命较竞品提升20% Under the same working condition, the service life of the blade is 80% longer than that of the competitors	

## 应用案例 Case

案例2: SOE(M)T+MKT113&213 外副作动器粗加工  
Case2: SOE(M)T+MKT113&213 Rough machining of external auxiliary actuator

刀具规格 Specification	SOMT09T312-SM	
刀具牌号 Grade	GSM7130	
刀体规格 Size	MKT113-025R02P25-SO09	
工件材料 Workpiece Material	TC18(HRC40-45)	
切削速度 Cutting Speed	35 m/min	
进给量 Feed Rate	0.11 mm/z	
切削量 Cutting Amount	ap=0.5 mm, ae=10-35 mm	
切削方式 Cutting Method	型腔铣 Pocket milling	
冷却方式 Cooling Method	水基乳化液, 外冷 Water based emulsion, External cooling	
切削效果 Processing Result	同样工况, 刀片寿命较竞品提升80% Under the same working condition, the service life of the blade is 80% longer than that of the competitors	



## 通用负型四刃快进给-LNMX系列 Universal Negative Four Edges High Feed - LNMX Series

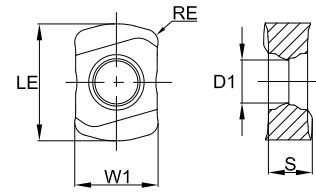
- 适用于模具、航空等行业的型腔、侧壁快进给加工。
- 加强刀尖圆弧，适合型腔、侧壁加工。
- 负型4刃刀片设计，实现更密齿数，具有高效率、高经济性。
- 丰富的槽型和牌号搭配，适合各类材料粗至半精加工。




- Suitable for high feed machining of pockets and sidewalls in industries like molds and aviation.
- Reinforced with rounded cutting edge, ideal for pocket and sidewall machining.
- Negative 4-edges insert design for higher tooth density, ensuring efficiency and cost-effectiveness.
- Available in various chip breaker types and grades, suitable for rough to semi-finish machining of different materials.

快进给铣削  
High Feed Milling

# LNMX

负型四刃快进给铣刀片  
Negative Four Edges High Feed Milling Insert









订货号 Ordering Code	尺寸 Dimension(mm)					涂层硬质合金 Coating Grade										硬质合金 coated	金属陶瓷 cermet					
	LE	W1	S	D1	RE	GA4225	GA4230	GA4325	GPM7120	GP4225	GP2115	GM4135	GM2140	GM4240	GK4125			GK2115	GS4130	GSM7130	GH4115	GN9125
	LNMX090603-GL	9	6.3	3.4	3.3	1				●	●	●	●	●		○	○	●				
	LNMX120705-GL	11.9	9.1	4.2	4	1.5				●	○	○	●			○	○	●				
	LNMX090603-GM	9	6.3	3.4	3.3	1				●	●	●	●	●	●	●	●	●				
	LNMX120705-GM	11.9	9.1	4.2	4	1.5				●	●	●	●		●	●	●	●				
	LNMX151106-GM	14.5	11.1	5.7	5.9	1.5				●	●	○	●		●	●	○					
	LNMX090603-GH	9	6.3	3.4	3.3	1				●					●	●						
	LNMX120705-GH	11.9	9.1	4.2	4	1.5				●					●	●						
	LNMX151106-GH	14.5	11.1	5.7	5.9	1.5				●					●	●						

●标准库存Stock ○需预定Available Upon Order



快进给铣削  
High Feed Milling

LNMX 系列槽型  
LNMX Series Geometry

通用材料轻载 Light Cutting for General Material	通用材料中载 Medium Cutting for General Material	通用材料重载 Heavy Cutting for General Material
		
GL	GM	GH
		
<p>低切削力，适合不锈钢、钛合金及轻载加工。 Low cutting force, suitable for stainless steel, Titanium alloy and light duty machining.</p>	<p>一般工况下，实现高稳定性加工。 High stability processing under normal working conditions.</p>	<p>刀刃强度更好，适合粗加工。 Better edge strength for rough machining.</p>

## 快进给铣削 High Feed Milling

# MKF115

心轴式  
Arbor

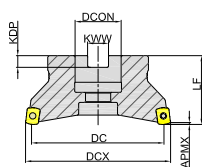


Fig1

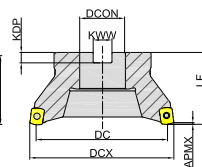


Fig2

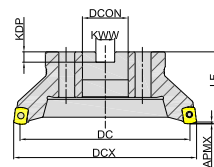


Fig3

订货号 Ordering Code	直径 Dia- meter	刃数 Teeth	尺寸 Dimension(mm)						最大 切深 APMX	匹配刀片 Suitable for	内冷 Coolant	图示 Diagram	库存 Stock
			DC	DCX	DCON	LF	KWW	KDP					
MKF115040R04A16LN12	40	4	30	40	16	40	8.4	5.6	1.5	LNMX12	✓	Fig1	●
MKF115040R05A16LN09	40	5	32	40	16	40	8.4	5.6	1	LNMX09	✓	Fig1	●
MKF115040R05A16LN12	40	5	30	40	16	40	8.4	5.6	1.5	LNMX12	✓	Fig1	●
MKF115040R06A16LN09	40	6	32	40	16	40	8.4	5.6	1	LNMX09	✓	Fig1	●
MKF115050R04A22LN15	50	4	36	50	22	40	10.4	6.3	2	LNMX15	✓	Fig1	●
MKF115050R06A22LN09	50	6	42	50	22	40	10.4	6.3	1	LNMX09	✓	Fig1	●
MKF115050R06A22LN12	50	6	40	50	22	40	10.4	6.3	1.5	LNMX12	✓	Fig1	●
MKF115050R07A22LN12	50	7	40	50	22	40	10.4	6.3	1.5	LNMX12	✓	Fig1	●
MKF115050R08A22LN09	50	8	42	50	22	40	10.4	6.3	1	LNMX09	✓	Fig1	●
MKF115052R06A22LN12	52	6	42	52	22	40	10.4	6.3	1.5	LNMX12	✓	Fig1	●
MKF115052R07A22LN09	52	7	44	52	22	40	10.4	6.3	1	LNMX09	✓	Fig1	●
MKF115052R07A22LN12	52	7	42	52	22	40	10.4	6.3	1.5	LNMX12	✓	Fig1	●
MKF115052R08A22LN09	52	8	44	52	22	40	10.4	6.3	1	LNMX09	✓	Fig1	●
MKF115063R05A22LN15	63	5	49	63	22	40	10.4	6.3	2	LNMX15	✓	Fig1	●
MKF115063R06A22LN12	63	6	53	63	22	40	10.4	6.3	1.5	LNMX12	✓	Fig1	●
MKF115063R06A22LN15	63	6	49	63	22	40	10.4	6.3	2	LNMX15	✓	Fig1	●
MKF115063R07A22LN09	63	7	55	63	22	40	10.4	6.3	1	LNMX09	✓	Fig1	●
MKF115063R08A22LN12	63	8	53	63	22	40	10.4	6.3	1.5	LNMX12	✓	Fig1	●
MKF115063R09A22LN09	63	9	55	63	22	40	10.4	6.3	1	LNMX09	✓	Fig1	●
MKF115080R06A27LN15	80	6	66	80	27	50	12.4	7	2	LNMX15	✓	Fig1	●
MKF115080R07A27LN15	80	7	66	80	27	50	12.4	7	2	LNMX15	✓	Fig1	●
MKF115080R08A27LN12	80	8	70	80	27	50	12.4	7	1.5	LNMX12	✓	Fig1	○
MKF115080R10A27LN12	80	10	70	80	27	50	12.4	7	1.5	LNMX12	✓	Fig1	●
MKF115100R06A32LN15	100	6	86	100	32	50	14.4	8	2	LNMX15	✓	Fig1	●
MKF115100R07A32LN15	100	7	86	100	32	50	14.4	8	2	LNMX15	✓	Fig1	●
MKF115100R09A32LN12	100	9	90	100	32	50	14.4	8	1.5	LNMX12	✓	Fig1	●
MKF115100R11A32LN12	100	11	90	100	32	50	14.4	8	1.5	LNMX12	✓	Fig1	●
MKF115125R10B40LN15	125	10	111	125	40	63	16.4	9	2	LNMX15	×	Fig2	●
MKF115125R11B40LN12	125	11	115	125	40	63	16.4	9	1.5	LNMX12	×	Fig2	●
MKF115125R12B40LN12	125	12	115	125	40	63	16.4	9	1.5	LNMX12	×	Fig2	●
MKF115125R14B40LN12	125	14	115	125	40	63	16.4	9	1.5	LNMX12	×	Fig2	●
MKF115160R10C40LN15	160	10	146	160	40	63	16.4	9	2	LNMX15	×	Fig3	●
MKF115200R12C60LN15	200	12	186	200	60	63	25.7	14	2	LNMX15	×	Fig3	●

●标准库存 Stock ○需预定 Available Upon Order

快进给铣削  
High Feed Milling

# MKF115

圆柱直柄式  
Cylinder Straight Shank

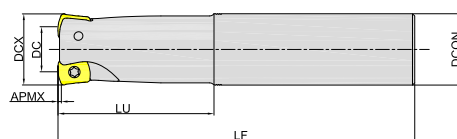


Fig4

订货号 Ordering Code	直径 Dia- meter	刃数 Teeth	尺寸 Dimension(mm)					最大 切深 APMX	匹配刀片 Suitable for	内冷 Coolant	图示 Diagram	库存 Stock
			DC	DCX	DCON	LF	LU					
MKF115016R02P15LN09	16	2	8	16	15	150	40	1	LNMX09	✓	Fig4	●
MKF115016R02P16LN09	16	2	8	16	16	150	40	1	LNMX09	✓	Fig4	●
MKF115016R02P16LN09S	16	2	8	16	16	100	30	1	LNMX09	✓	Fig4	●
MKF115017R02P16LN09	17	2	9	17	16	150	40	1	LNMX09	✓	Fig4	●
MKF115018R02P16LN09	18	2	10	18	16	150	40	1	LNMX09	✓	Fig4	●
MKF115020R02P20LN09L	20	2	12	20	20	200	70	1	LNMX09	✓	Fig4	●
MKF115020R03P20LN09	20	3	12	20	20	160	60	1	LNMX09	✓	Fig4	●
MKF115020R03P20LN09S	20	3	12	20	20	130	50	1	LNMX09	✓	Fig4	●
MKF115020R04P20LN09	20	4	12	20	20	160	60	1	LNMX09	✓	Fig4	●
MKF115021R03P20LN09	21	3	13	21	20	160	60	1	LNMX09	✓	Fig4	●
MKF115025R02P25LN12	25	2	15	25	25	150	70	1.5	LNMX12	✓	Fig4	●
MKF115025R03P25LN09L	25	3	17	25	25	220	80	1	LNMX09	✓	Fig4	●
MKF115025R03P25LN12	25	3	15	25	25	150	70	1.5	LNMX12	✓	Fig4	●
MKF115025R03P25LN12L	25	3	15	25	25	200	80	1.5	LNMX12	✓	Fig4	●
MKF115025R04P24LN09	25	4	17	25	24	180	60	1	LNMX09	✓	Fig4	●
MKF115025R04P25LN09	25	4	17	25	25	180	60	1	LNMX09	✓	Fig4	●
MKF115025R04P25LN09S	25	4	17	25	25	140	50	1	LNMX09	✓	Fig4	●
MKF115025R05P25LN09	25	5	17	25	25	180	60	1	LNMX09	✓	Fig4	●
MKF115026R03P25LN12L	26	3	16	26	25	220	90	1.5	LNMX12	✓	Fig4	●
MKF115032R02P32LN15	32	2	18	32	32	160	70	2	LNMX15	✓	Fig4	●
MKF115032R03P32LN12	32	3	22	32	32	160	70	1.5	LNMX12	✓	Fig4	●
MKF115032R03P32LN12L	32	3	22	32	32	220	90	1.5	LNMX12	✓	Fig4	●
MKF115032R03P32LN15L	32	3	18	32	32	200	80	2	LNMX15	✓	Fig4	●
MKF115032R04P32LN09S	32	4	24	32	32	150	60	1	LNMX09	✓	Fig4	●
MKF115032R04P32LN12	32	4	22	32	32	160	70	1.5	LNMX12	✓	Fig4	●

●标准库存 Stock ○需预定 Available Upon Order

快进给铣削  
High Feed Milling

# MKF115

圆柱直柄式  
Cylinder Straight Shank

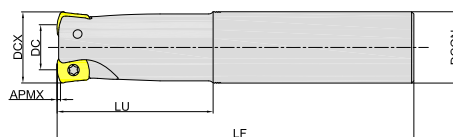


Fig4

订货号 Ordering Code	直径 Dia- meter	刃数 Teeth	尺寸 Dimension(mm)					最大 切深 APMX	匹配刀片 Suitable for	内冷 Coolant	图示 Diagram	库存 Stock
			DC	DCX	DCON	LF	LU					
MKF115032R04P32LN12L	32	4	22	32	32	220	90	1.5	LNMX12	✓	Fig4	●
MKF115032R05P32LN09	32	5	24	32	32	200	70	1	LNMX09	✓	Fig4	●
MKF115032R05P32LN09S	32	5	24	32	32	150	60	1	LNMX09	✓	Fig4	●
MKF115035R04P32LN09	35	4	27	35	32	200	50	1	LNMX09	✓	Fig4	●
MKF115035R04P32LN12	35	4	25	35	32	160	50	1.5	LNMX12	✓	Fig4	●
MKF115035R05P32LN09	35	5	27	35	32	200	50	1	LNMX09	✓	Fig4	●
MKF115040R03P32LN15	40	3	26	40	32	180	50	2	LNMX15	✓	Fig4	●
MKF115040R04P32LN12	40	4	30	40	32	180	50	1.5	LNMX12	✓	Fig4	●
MKF115040R04P32LN12L	40	4	30	40	32	250	50	1.5	LNMX12	✓	Fig4	●
MKF115040R05P32LN12	40	5	30	40	32	180	50	1.5	LNMX12	✓	Fig4	●
MKF115040R05P32LN12L	40	5	30	40	32	250	50	1.5	LNMX12	✓	Fig4	●
MKF115040R06P32LN09L	40	6	32	40	32	220	50	1	LNMX09	✓	Fig4	●
MKF115040R06P32LN09S	40	6	32	40	32	150	50	1	LNMX09	✓	Fig4	●

●标准库存 Stock ○需预定 Available Upon Order

快进给铣削  
High Feed Milling

# MKF115

可换式刀头  
Replaceable Tool Head

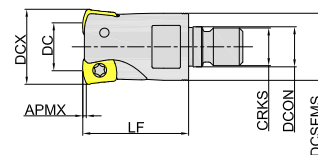




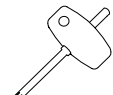
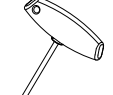
Fig5

订货号 Ordering Code	直径 Dia- meter	刃数 Teeth	尺寸 Dimension(mm)						最大 切深 APMX	匹配刀片 Suitable for	内冷 Coolant	图示 Diagram	库存 Stock
			DC	DCX	DCSFMS	DCON	LF	CRKS					
MKF115016R02M08LN09	16	2	8	16	14.5	8.5	25.5	M08	1	LNMX09	✓	Fig5	●
MKF115017R02M08LN09	16	2	8	16	14.5	8.5	25.5	M08	1	LNMX09	✓	Fig5	●
MKF115020R03M10LN09	20	3	12	20	18	10.5	31	M10	1	LNMX09	✓	Fig5	●
MKF115021R03M10LN09	21	3	13	21	18	10.5	31	M10	1	LNMX09	✓	Fig5	●
MKF115025R02M12LN12	25	2	15	25	23	12.5	35	M12	1.5	LNMX12	✓	Fig5	●
MKF115025R03M12LN09	25	3	17	25	21	12.5	35	M12	1	LNMX09	✓	Fig5	●
MKF115025R03M12LN12	25	3	15	25	23	12.5	35	M12	1.5	LNMX12	✓	Fig5	●
MKF115025R04M12LN09	25	4	17	25	21	12.5	35	M12	1	LNMX09	✓	Fig5	●
MKF115026R03M12LN12	26	3	15	25	23	12.5	35	M12	1.5	LNMX12	✓	Fig5	●
MKF115026R04M12LN09	26	4	18	26	21	12.5	35	M12	1	LNMX09	✓	Fig5	●
MKF115030R03M16LN12	30	3	20	30	28.5	17	45	M16	1.5	LNMX12	✓	Fig5	●
MKF115032R02M16LN15	32	2	18	32	28.5	17	45	M16	2	LNMX15	✓	Fig5	●
MKF115032R03M16LN12	32	3	22	32	28.5	17	45	M16	1.5	LNMX12	✓	Fig5	●
MKF115032R03M16LN15	32	3	18	32	28.5	17	45	M16	2	LNMX15	✓	Fig5	●
MKF115032R04M16LN09	32	4	24	32	28.5	17	42	M16	1	LNMX09	✓	Fig5	●
MKF115032R04M16LN12	32	4	22	32	28.5	17	45	M16	1.5	LNMX12	✓	Fig5	●
MKF115032R05M16LN09	32	5	24	32	28.5	17	42	M16	1	LNMX09	✓	Fig5	●
MKF115035R03M16LN12	35	3	25	35	28.5	17	45	M16	1.5	LNMX12	✓	Fig5	●
MKF115035R03M16LN15	35	3	21	35	28.5	17	45	M16	2	LNMX15	✓	Fig5	●
MKF115035R04M16LN12	35	4	25	35	28.5	17	45	M16	1.5	LNMX12	✓	Fig5	●
MKF115035R05M16LN09	35	5	27	35	28.5	17	45	M16	1	LNMX09	✓	Fig5	●
MKF115040R03M16LN15	40	3	26	40	28.5	17	45	M16	2	LNMX15	✓	Fig5	●
MKF115040R04M16LN12	40	4	30	40	28.5	17	45	M16	1.5	LNMX12	✓	Fig5	●
MKF115040R05M16LN12	40	5	30	40	28.5	17	45	M16	1.5	LNMX12	✓	Fig5	●
MKF115040R06M16LN09	40	6	32	40	28.5	17	45	M16	1	LNMX09	✓	Fig5	●
MKF115042R05M16LN12	42	5	32	42	28.5	17	45	M16	1.5	LNMX12	✓	Fig5	●

●标准库存 Stock ○需预定 Available Upon Order

## 快进给铣削 High Feed Milling

### 刀体配件列表 Spare Parts

零件名称 Part Name		刀片螺钉 Insert Screw	推荐扭矩 Recommended Torque	刀片螺钉扳手 Insert Screw Wrench	
形状 Shape					
适用刀片 Inserts					
LNMX09	订货号 Ordering Code	SI60M030065-03906IB	1.2	TI08KB	-
LNMX12	订货号 Ordering Code	SI60M035080-04805IB	2	TI10KB	TI10TB
LNMX15	订货号 Ordering Code	SI60M050143-07215IB	4.5	TI20KB	TI20TB

### 刀尖半径参数 Parameters for Cutting Edge Radius

刀片规格 Specification	编程圆角 R Approximate Corner radius R(mm)	残留量 K Remains K(mm)	切入量 Overcut (mm)	图示 Diagram
LNMX09	R1.6	0.56	0	<p>切入量 Overcut</p> <p>编程圆角 R Approximate Corner radius R</p> <p>残留量 K Remains K</p>
	R1.9 (推荐 Recommend)	0.47	0	
	R2.2	0.37	0.05	
	R2.5	0.28	0.14	
LNMX12	R2.4	0.65	0	
	R2.7 (推荐 Recommend)	0.54	0	
	R3.0	0.43	0.04	
	R3.3	0.32	0.12	
LNMX15	R2.5	0.87	0	
	R2.8 (推荐 Recommend)	0.79	0	
	R3.1	0.7	0.05	
	R3.4	0.62	0.11	

## 斜坡铣及螺旋铣参数 Parameters for Slope Milling and Helical Milling

刀片规格 Specification	刀盘直径 Tool holder D(mm)	斜坡铣 Slope Milling			螺旋插补铣 Helical Interpolation Milling	
		最大斜坡角度 Max slope angle $\theta$	最大切深 Max cutting depth $ap$ (mm)	加工至最大切深最小 走刀长度 Min length when cutting to max $ap$ L (mm)	最小直径 HD min (mm)	最大直径 HD max(mm)
LNMx09	16	2	1	29	23	30
	17	1.8	1	32	25	32
	18	1.7	1	34	27	34
	20	1.5	1	38	31	38
	21	1.4	1	41	33	40
	25	1.1	1	52	41	48
	26	1.1	1	52	43	50
	32	0.8	1	72	55	62
	35	0.8	1	72	61	68
	40	0.7	1	82	71	78
	50	0.5	1	115	91	98
	52	0.5	1	115	95	102
	63	0.4	1	143	117	124
LNMx12	25	1.3	1.5	66	35	48
	26	1.3	1.5	66	37	50
	32	1.2	1.5	72	49	62
	35	1.1	1.5	78	55	68
	40	1.1	1.5	78	65	78
	50	0.9	1.5	95	85	98
	52	0.9	1.5	95	89	102
	63	0.75	1.5	115	111	124
	80	0.55	1.5	156	145	158
	100	0.45	1.5	191	185	198
LNMx15	32	1.1	2	104	45	62
	40	0.8	2	143	61	78
	50	0.6	2	191	81	98
	63	0.45	2	255	107	124
	80	0.35	2	327	141	158
	100	0.25	2	458	181	198
	125	0.2	2	573	231	248
	160	0.15	2	764	301	318
	200	0.1	2	1146	381	398

## 推荐切削参数 Recommended Cutting Data

	被加工材料 Workpiece Material	材料硬度 Hardness	牌号 Grade	规格 Specification	推荐 切深 ap(mm)	切削速度 Cutting Speed Vc(m/min)	进给 / 刃 fz Feed/Edge fz(mm)	
							中切削 (M) Medium Machining(M)	重切削 (H) Heavy Machining(H)
<b>P</b>	软钢 Soft Steel	≤ HB180	GPM7120 GP2115	LNMX09	1	180 (140-220)	0.8 (0.6-1.2)	1 (0.8-1.2)
				LNMX12	1.5			
				LNMX15	2			
	碳钢、合金钢 Carbon Steel, Alloy Steel	HB180-350	GPM7120 GP2115	LNMX09	1	150 (110-190)	0.6 (0.4-0.8)	0.8 (0.6-1.0)
				LNMX12	1.5			
				LNMX15	2			
	预硬钢 Pre-hardened Steel	HRC35-45	GPM7120	LNMX09	1	120 (80-160)	0.6 (0.4-0.8)	0.8 (0.6-1.0)
				LNMX12	1.5			
				LNMX15	2			
<b>M</b>	不锈钢 (铁素体、马氏体) Stainless (Ferrite, Martensite)	≤ HB270	GM2140 GM4135 GM4240	LNMX09	1	120 (80-160)	0.8 (0.6-1.2)	1 (0.8-1.2)
				LNMX12	1.5			
				LNMX15	2			
	不锈钢 (奥氏体、双相) Stainless (Austenitic, Duplex)	≤ HB270	GM2140 GM4135 GM4240	LNMX09	1	100 (60-140)	0.6 (0.4-0.8)	0.8 (0.6-1.0)
				LNMX12	1.5			
				LNMX15	2			
<b>K</b>	灰铸铁 Gray Cast Iron	≤ HB280	GK2115 GK4125	LNMX09	1	180 (140-220)	0.8 (0.6-1.2)	1 (0.8-1.2)
				LNMX12	1.5			
				LNMX15	2			
	球墨铸铁、 蠕墨铸铁 Ductile Iron, Vermicular Graphite Iron	≤ HB350	GK4125 GK2115	LNMX09	1	120 (80-160)	0.8 (0.6-1.2)	1 (0.8-1.2)
				LNMX12	1.5			
				LNMX15	2			
<b>S</b>	耐热合金、钛合金 Super Alloy、 Titanium Alloy	HRC30-45	GSM7130 GS4130	LNMX09	1	50 (30-70)	0.4 (0.2-0.6)	0.5 (0.3-0.7)
				LNMX12	1.5			
				LNMX15	2			



## 应用案例 Case

### 案例1: 活塞扩孔加工 Case 1: Piston Reaming

刀具规格 Specification	LNMX090603-GM	
刀具牌号 Grade	GPM7120	
刀具规格 Size	MKF115-025R04P25-LN09S	
工件材料 Workpiece Material	40CrMo	
切削速度 Cutting Speed	196m/min	
进给量 Feed Rate	0.25mm/z	
切削量 Cutting Amount	ap=0.5mm, ae=0.5mm	
切削方式 Cutting Method	扩孔 Ring Rolling	
冷却方式 Cooling Method	水基乳化液, 外冷 Water based emulsion, External cooling	
切削效果 Processing Result	同样工况, 刀片寿命较竞品提升10% Under the same working condition, the service life of the blade is 10% longer than that of the competitors	

## 应用案例 Case

### 案例2：深型腔测试 Case 2: Deep Cavity Milling

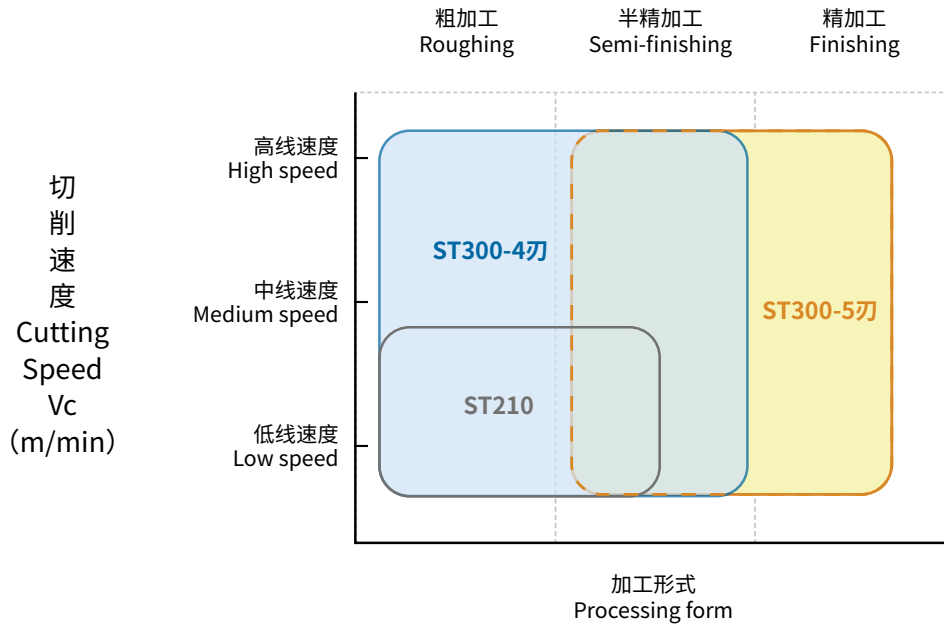
刀具规格 Specification	LNMX090603-GL	
刀具牌号 Grade	GSM7130	
刀体规格 Size	MKF115-016R02P16-LN09	
工件材料 Workpiece Material	TC18	
切削速度 Cutting Speed	35m/min	
进给量 Feed Rate	0.5mm/z	
切削量 Cutting Amount	ap=0.5mm,ae=9.6mm	
切削方式 Cutting Method	深型腔铣 Deep Cavity Milling	
冷却方式 Cooling Method	水基乳化液, 外冷 Water based emulsion, External cooling	
切削效果 Processing Result	同样工况, 刀片寿命较竞品提升50% Under the same working condition, the service life of the blade is 50% longer than that of the competitors	





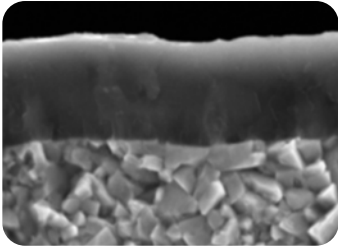
## 银雀系列ST300钛合金高性能加工立铣刀 ST300 Endmills for High Performance Machining of Titanium Alloys

- 适用于航空航天行业中钛合金结构件、医疗行业钛合金零件等钛合金材料的高性能加工。
  - 采用全新钛合金铣削牌号，在耐磨和抗粘结方面有显著提升。
  - 特殊圆角处理，提高切削刃强度及锋利性，有效减少因圆角产生的振动。
  - 采用增强型大螺旋角设计和不等齿距，降低切削产生的谐波，消除不良振颤，可通过增加进给量和切削深度进一步提高材料去除率。
  - 新增了专业的5刃设计，旨在实现超越4刃立铣刀的生产率。
- 
- Suitable for high performance processing of titanium alloys such as titanium alloy structural parts in aerospace industry and titanium alloy parts in medical industry.
  - The new titanium alloy milling grade is adopted, which has significant improvement in wear resistance and bond resistance.
  - Special corner radius treatment, improve the cutting edge strength and sharpness, effectively reduce the vibration caused by corner radius.
  - The use of enhanced large helix angle design and unequal tooth pitch can reduce the harmonics produced by cutting, eliminate bad chatter, and further improve the material removal rate by increasing the feed rate and cutting depth.
  - A professional 5-edge design has been added, designed to exceed the productivity of 4-edge endmills.

## 应用介绍 Application Introduction

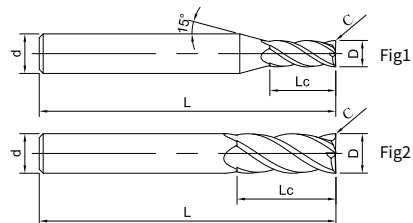


## 全新钛合金铣削PVD牌号应用一览表 New Titanium Alloy Milling PVD Grade Application List

被加工材料 Workpiece Material	牌号 Grade	颜色 Color	涂层类型 Coating Type	涂层构成 Coating Structure	特点 Features
	GSR7115 	银白色 Silver	PVD		<ul style="list-style-type: none"> <li>采用革新PVD技术制备，高光滑表面与自润滑涂层成分特性有效控制钛合金加工过程粘结磨损，提升刀具加工寿命。 Manufactured using innovative PVD technology, this coating exhibits a high-smooth surface and self-lubricating properties that effectively control bonding and wear during titanium alloy processing, thus significantly improving the tool's service life.</li> <li>采用全新等离子体调控技术，实现原子级别有序排布，有效提升膜基结合力，降低涂层内应力，提升涂层韧性，加之涂层本身高硬度特性，实现涂层耐磨性能大幅提升。 Utilizing advanced plasma control technology, the coating achieves atomic-level ordered arrangement, resulting in enhanced adhesion between the film and substrate. This technology also reduces internal stresses within the coating, improves its toughness, and, combined with the inherent high hardness characteristics, greatly enhances the coating's wear resistance performance.</li> </ul>

# ST300-S4

4 刃平头  
4 Flutes, Square



订货号 Ordering Code	D	C	Lc	L	d	图号 Figure No.	库存 Stock
ST300-S4-02006	2	0.02	6	50	4	1	●
ST300-S4-02506	2.5	0.02	6	50	4	1	●
ST300-S4-03009	3	0.03	9	50	4	1	●
ST300-S4-03510	3.5	0.03	10	50	4	1	○
ST300-S4-04011	4	0.04	11	50	4	2	●
ST300-S4-04511	4.5	0.04	11	50	6	1	○
ST300-S4-05013	5	0.05	13	50	6	1	●
ST300-S4-06016	6	0.06	16	50	6	2	●
ST300-S4-08020	8	0.08	20	60	8	2	●
ST300-S4-10025	10	0.10	25	75	10	2	●
ST300-S4-12030	12	0.10	30	75	12	2	●
ST300-S4-14032	14	0.10	32	80	14	2	○
ST300-S4-16036	16	0.10	36	100	16	2	●
ST300-S4-20045	20	0.10	45	100	20	2	●

●标准库存 Stock ○需预定 Available upon Order

D	公差Tol
D<6	0 -0.02
6≤D≤12	0 -0.03
D>12	0 -0.04

单位Unit(mm)

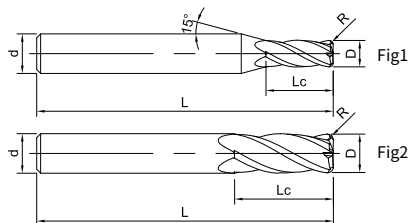
工件材料 Workpiece Material					
P		M	K	S	
1234	5	123	123	123	4
碳钢、合金钢 Carbon steels、Alloy steels<35HRC	合金钢 Alloy steels <48HRC	不锈钢 Stainless steel	铸铁 Cast Iron	高温合金 Super Alloys	钛合金 Titanium Alloys
○	○	○	○	○	◎

◎最适合Most Suitable ○适合Suitable

推荐切削参数 ※P64  
Recommended Cutting Data ※P64

# ST300-R4

4刃圆角头  
4 Flutes, Corner Radius



订货号 Ordering Code	D	R	Lc	L	d	图号 Figure No.	库存 Stock
ST300-R4-02002	2	0.2	6	50	4	1	●
ST300-R4-03003	3	0.3	9	50	4	1	●
ST300-R4-03005	3	0.5	9	50	4	1	●
ST300-R4-04003	4	0.3	11	50	4	2	●
ST300-R4-04005	4	0.5	11	50	4	2	●
ST300-R4-04010	4	1	11	50	4	2	●
ST300-R4-05005	5	0.5	13	50	6	1	●
ST300-R4-06005	6	0.5	16	50	6	2	●
ST300-R4-06010	6	1	16	50	6	2	●
ST300-R4-08002	8	0.2	20	60	8	2	●
ST300-R4-08005	8	0.5	20	60	8	2	●
ST300-R4-08010	8	1	20	60	8	2	●
ST300-R4-10002	10	0.2	25	75	10	2	○
ST300-R4-10005	10	0.5	25	75	10	2	●
ST300-R4-10010	10	1	25	75	10	2	●
ST300-R4-10020	10	2	25	75	10	2	●
ST300-R4-10030	10	3	25	75	10	2	●
ST300-R4-12002	12	0.2	30	75	12	2	○

●标准库存 Stock ○需预定 Available upon Order

D	公差Tol
D < 6	0 -0.02
6 ≤ D ≤ 12	0 -0.03
D > 12	0 -0.04

单位Unit(mm)

## 工件材料 Workpiece Material

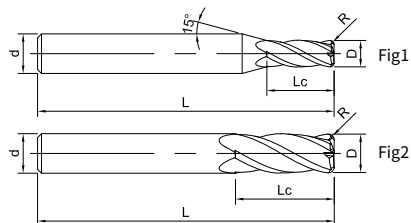
P		M	K	S	
1234	5	123	123	123	4
碳钢、合金钢 Carbon steels, Alloy steels < 35HRC	合金钢 Alloy steels < 48HRC	不锈钢 Stainless steel	铸铁 Cast Iron	高温合金 Super Alloys	钛合金 Titanium Alloys
○	○	○	○	○	◎

◎ 最适合 Most Suitable ○ 适合 Suitable

推荐切削参数 ※P64  
Recommended Cutting Data ※P64

# ST300-R4

4刃圆角头  
4 Flutes, Corner Radius



订货号 Ordering Code	D	R	Lc	L	d	图号 Figure No.	库存 Stock
ST300-R4-12005	12	0.5	30	75	12	2	●
ST300-R4-12010	12	1	30	75	12	2	●
ST300-R4-12020	12	2	30	75	12	2	●
ST300-R4-12030	12	3	30	75	12	2	●
ST300-R4-16002	16	0.2	36	100	16	2	○
ST300-R4-16005	16	0.5	36	100	16	2	●
ST300-R4-16010	16	1	36	100	16	2	●
ST300-R4-16020	16	2	36	100	16	2	●
ST300-R4-16030	16	3	36	100	16	2	●
ST300-R4-16040	16	4	36	100	16	2	●
ST300-R4-16050	16	5	36	100	16	2	●
ST300-R4-20002	20	0.2	45	100	20	2	○
ST300-R4-20005	20	0.5	45	100	20	2	●
ST300-R4-20010	20	1	45	100	20	2	●
ST300-R4-20020	20	2	45	100	20	2	●
ST300-R4-20030	20	3	45	100	20	2	●
ST300-R4-20040	20	4	45	100	20	2	○
ST300-R4-20050	20	5	45	100	20	2	○

●标准库存 Stock ○需预定 Available upon Order

D	公差Tol
D < 6	0 -0.02
6 ≤ D ≤ 12	0 -0.03
D > 12	0 -0.04

单位Unit(mm)

工件材料 Workpiece Material					
P		M	K	S	
1234	5	123	123	123	4
碳钢、合金钢 Carbon steels、Alloy steels < 35HRC	合金钢 Alloy steels < 48HRC	不锈钢 Stainless steel	铸铁 Cast Iron	高温合金 Super Alloys	钛合金 Titanium Alloys
○	○	○	○	○	◎

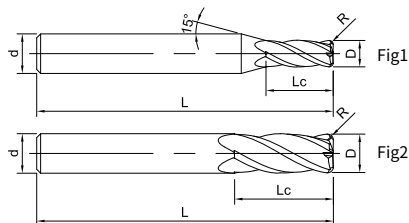
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推荐切削参数 ※P64  
Recommended Cutting Data ※P64

# ST300-RH4

4刃长柄圆角头

4 Flutes, Corner Radius, with Long Shank Length



订货号 Ordering Code	D	R	Lc	L	d	图号 Figure No.	库存 Stock
ST300-RH4-06005	6	0.5	16	75	6	2	●
ST300-RH4-06010	6	1	16	75	6	2	●
ST300-RH4-08002	8	0.2	20	75	8	2	●
ST300-RH4-08005	8	0.5	20	75	8	2	●
ST300-RH4-08010	8	1	20	75	8	2	●
ST300-RH4-10002	10	0.2	30	100	10	2	○
ST300-RH4-10005	10	0.5	30	100	10	2	●
ST300-RH4-10010	10	1	30	100	10	2	●
ST300-RH4-10020	10	2	30	100	10	2	●
ST300-RH4-10030	10	3	30	100	10	2	●
ST300-RH4-12002A	12	0.2	30	100	12	2	○
ST300-RH4-12002B	12	0.2	30	120	12	2	○
ST300-RH4-12005A	12	0.5	30	100	12	2	○
ST300-RH4-12005B	12	0.5	30	120	12	2	●
ST300-RH4-12010A	12	1	30	100	12	2	○
ST300-RH4-12010B	12	1	30	120	12	2	●

●标准库存 Stock ○需预定 Available upon Order

D	公差Tol
D < 6	0 -0.02
6 ≤ D ≤ 12	0 -0.03
D > 12	0 -0.04

单位Unit(mm)

## 工件材料 Workpiece Material

P		M	K	S	
1234	5	123	123	123	4
碳钢、合金钢 Carbon steels、Alloy steels < 35HRC	合金钢 Alloy steels < 48HRC	不锈钢 Stainless steel	铸铁 Cast Iron	高温合金 Super Alloys	钛合金 Titanium Alloys
○	○	○	○	○	◎

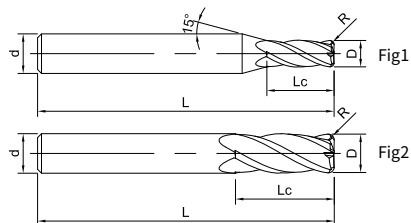
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推荐切削参数 ※P64  
Recommended Cutting Data ※P64



# ST300-RH4

4刃长柄圆角头  
4 Flutes, Corner Radius, with Long Shank Length



订货号 Ordering Code	D	R	Lc	L	d	图号 Figure No.	库存 Stock
ST300-RH4-12020A	12	2	30	100	12	2	○
ST300-RH4-12020B	12	2	30	120	12	2	●
ST300-RH4-12030A	12	3	30	100	12	2	○
ST300-RH4-12030B	12	3	30	120	12	2	●
ST300-RH4-16002A	16	0.2	40	150	16	2	○
ST300-RH4-16002B	16	0.2	50	200	16	2	○
ST300-RH4-16005A	16	0.5	40	150	16	2	●
ST300-RH4-16005B	16	0.5	50	200	16	2	○
ST300-RH4-16010A	16	1	40	150	16	2	●
ST300-RH4-16010B	16	1	50	200	16	2	○
ST300-RH4-16020A	16	2	40	150	16	2	●
ST300-RH4-16020B	16	2	50	200	16	2	○
ST300-RH4-16030A	16	3	40	150	16	2	●
ST300-RH4-16030B	16	3	50	200	16	2	○
ST300-RH4-16040A	16	4	40	150	16	2	○
ST300-RH4-16040B	16	4	50	200	16	2	○

●标准库存 Stock ○需预定 Available upon Order

D	公差Tol
D < 6	0 -0.02
6 ≤ D ≤ 12	0 -0.03
D > 12	0 -0.04

单位Unit(mm)

工件材料 Workpiece Material					
P		M	K	S	
1234	5	123	123	123	4
碳钢、合金钢 Carbon steels, Alloy steels < 35HRC	合金钢 Alloy steels < 48HRC	不锈钢 Stainless steel	铸铁 Cast Iron	高温合金 Super Alloys	钛合金 Titanium Alloys
○	○	○	○	○	◎

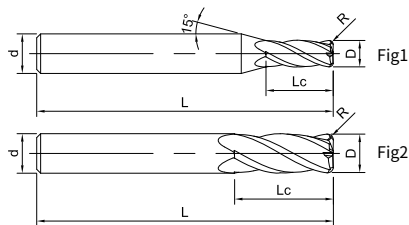
◎ 最适合 Most Suitable ○ 适合 Suitable

推荐切削参数 ※P64  
Recommended Cutting Data ※P64

# ST300-RH4

4刃长柄圆角头

4 Flutes, Corner Radius, with Long Shank Length



订货号 Ordering Code	D	R	Lc	L	d	图号 Figure No.	库存 Stock
ST300-RH4-16050A	16	5	40	150	16	2	○
ST300-RH4-16050B	16	5	50	200	16	2	○
ST300-RH4-20002A	20	0.2	50	150	20	2	○
ST300-RH4-20002B	20	0.2	50	200	20	2	○
ST300-RH4-20005A	20	0.5	50	150	20	2	●
ST300-RH4-20005B	20	0.5	50	200	20	2	○
ST300-RH4-20010A	20	1	50	150	20	2	●
ST300-RH4-20010B	20	1	50	200	20	2	○
ST300-RH4-20020A	20	2	50	150	20	2	●
ST300-RH4-20020B	20	2	50	200	20	2	○
ST300-RH4-20030A	20	3	50	150	20	2	●
ST300-RH4-20030B	20	3	50	200	20	2	○
ST300-RH4-20040A	20	4	50	150	20	2	○
ST300-RH4-20040B	20	4	50	200	20	2	○
ST300-RH4-20050A	20	5	50	150	20	2	○
ST300-RH4-20050B	20	5	50	200	20	2	○

●标准库存 Stock ○需预定 Available upon Order

D	公差Tol
D < 6	0 -0.02
6 ≤ D ≤ 12	0 -0.03
D > 12	0 -0.04

单位Unit(mm)

## 工件材料 Workpiece Material

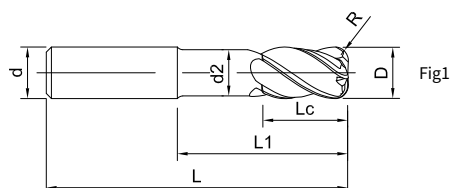
P		M	K	S	
1234	5	123	123	123	4
碳钢、合金钢 Carbon steels, Alloy steels < 35HRC	合金钢 Alloy steels < 48HRC	不锈钢 Stainless steel	铸铁 Cast Iron	高温合金 Super Alloys	钛合金 Titanium Alloys
○	○	○	○	○	◎

◎ 最适合 Most Suitable ○ 适合 Suitable

推荐切削参数 ※P64  
Recommended Cutting Data ※P64

# ST300-RN4

4刃长颈圆角头  
4 Flutes, Corner Radius, with Long Neck



订货号 Ordering Code	D	R	Lc	L1	d2	L	d	图号 Figure No.	库存 Stock
ST300-RN4-06005	6	0.5	12	18	5.4	60	6	1	○
ST300-RN4-06010	6	1	12	18	5.4	60	6	1	○
ST300-RN4-08005	8	0.5	16	25	7.4	75	8	1	●
ST300-RN4-08010	8	1	16	25	7.4	75	8	1	●
ST300-RN4-10005A	10	0.5	20	30	9.4	75	10	1	○
ST300-RN4-10005B	10	0.5	30	50	9.4	90	10	1	○
ST300-RN4-10010A	10	1	20	30	9.4	75	10	1	○
ST300-RN4-10010B	10	1	30	50	9.4	90	10	1	○
ST300-RN4-10020A	10	2	20	30	9.4	75	10	1	○
ST300-RN4-10020B	10	2	30	50	9.4	90	10	1	○
ST300-RN4-10030A	10	3	20	30	9.4	75	10	1	●
ST300-RN4-10030B	10	3	30	40	9.4	90	10	1	●
ST300-RN4-10030C	10	3	30	50	9.4	90	10	1	●
ST300-RN4-10030D	10	3	30	60	9.4	100	10	1	●
ST300-RN4-12005A	12	0.5	24	40	11.4	90	12	1	○
ST300-RN4-12005B	12	0.5	24	50	11.4	100	12	1	○
ST300-RN4-12010A	12	1	24	40	11.4	90	12	1	○
ST300-RN4-12010B	12	1	24	50	11.4	100	12	1	○
ST300-RN4-12020A	12	2	24	40	11.4	90	12	1	○
ST300-RN4-12020B	12	2	24	50	11.4	100	12	1	○

●标准库存 Stock ○需预定 Available upon Order

D	公差Tol
D<6	0 -0.02
6≤D≤12	0 -0.03
D>12	0 -0.04

单位Unit(mm)

工件材料 Workpiece Material					
P		M	K	S	
1234	5	123	123	123	4
碳钢、合金钢 Carbon steels、Alloy steels<35HRC	合金钢 Alloy steels <48HRC	不锈钢 Stainless steel	铸铁 Cast Iron	高温合金 Super Alloys	钛合金 Titanium Alloys
○	○	○	○	○	◎

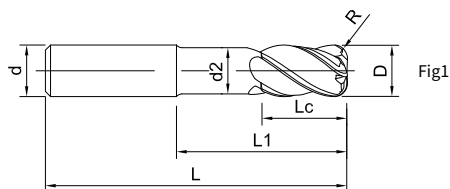
◎最适合Most Suitable ○适合Suitable

推荐切削参数 ※P64  
Recommended Cutting Data ※P64

# ST300-RN4

4刃长颈圆角头

4 Flutes, Corner Radius, with Long Neck



订货号 Ordering Code	D	R	Lc	L1	d2	L	d	图号 Figure No.	库存 Stock
ST300-RN4-12030A	12	3	24	40	11.4	90	12	1	●
ST300-RN4-12030B	12	3	36	50	11.4	100	12	1	●
ST300-RN4-12030C	12	3	36	60	11.4	110	12	1	●
ST300-RN4-16005A	16	0.5	32	50	15.4	100	16	1	○
ST300-RN4-16005B	16	0.5	32	60	15.4	110	16	1	○
ST300-RN4-16005C	16	0.5	32	70	15.4	120	16	1	○
ST300-RN4-16005D	16	0.5	32	80	15.4	130	16	1	○
ST300-RN4-16010A	16	1	32	50	15.4	100	16	1	○
ST300-RN4-16010B	16	1	32	60	15.4	110	16	1	○
ST300-RN4-16010C	16	1	32	70	15.4	120	16	1	○
ST300-RN4-16010D	16	1	32	80	15.4	130	16	1	○
ST300-RN4-16020A	16	2	32	50	15.4	100	16	1	○
ST300-RN4-16020B	16	2	32	60	15.4	110	16	1	○
ST300-RN4-16030A	16	3	32	50	15.4	100	16	1	●
ST300-RN4-16030B	16	3	32	60	15.4	110	16	1	●
ST300-RN4-16030C	16	3	32	70	15.4	120	16	1	●
ST300-RN4-16030D	16	3	32	80	15.4	130	16	1	●
ST300-RN4-16040A	16	4	32	50	15.4	100	16	1	○
ST300-RN4-16040B	16	4	32	60	15.4	110	16	1	○
ST300-RN4-16040C	16	4	32	70	15.4	120	16	1	○

●标准库存 Stock ○需预定 Available upon Order

D	公差Tol
D < 6	0 -0.02
6 ≤ D ≤ 12	0 -0.03
D > 12	0 -0.04

单位Unit(mm)

## 工件材料 Workpiece Material

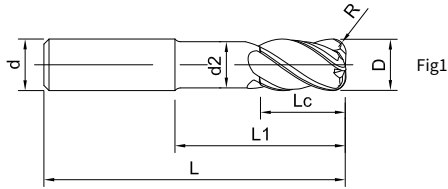
P		M	K	S	
1234	5	123	123	123	4
碳钢、合金钢 Carbon steels、Alloy steels < 35HRC	合金钢 Alloy steels < 48HRC	不锈钢 Stainless steel	铸铁 Cast Iron	高温合金 Super Alloys	钛合金 Titanium Alloys
○	○	○	○	○	◎

◎最适合 Most Suitable ○适合 Suitable

推荐切削参数 ※P64  
Recommended Cutting Data ※P64

# ST300-RN4

4刃长颈圆角头  
4 Flutes, Corner Radius, with Long Neck



订货号 Ordering Code	D	R	Lc	L1	d2	L	d	图号 Figure No.	库存 Stock
ST300-RN4-16040D	16	4	32	80	15.4	130	16	1	○
ST300-RN4-16050A	16	5	32	50	15.4	100	16	1	○
ST300-RN4-16050B	16	5	32	60	15.4	110	16	1	○
ST300-RN4-16050C	16	5	32	70	15.4	120	16	1	○
ST300-RN4-16050D	16	5	32	80	15.4	130	16	1	○
ST300-RN4-20005A	20	0.5	40	60	19.4	110	20	1	○
ST300-RN4-20005B	20	0.5	40	70	19.4	120	20	1	○
ST300-RN4-20005C	20	0.5	40	80	19.4	130	20	1	○
ST300-RN4-20005D	20	0.5	40	100	19.4	150	20	1	○
ST300-RN4-20010A	20	1	40	60	19.4	110	20	1	○
ST300-RN4-20010B	20	1	40	70	19.4	120	20	1	○
ST300-RN4-20010C	20	1	40	80	19.4	130	20	1	○
ST300-RN4-20010D	20	1	40	100	19.4	150	20	1	○
ST300-RN4-20020A	20	2	40	60	19.4	110	20	1	○
ST300-RN4-20020B	20	2	40	80	19.4	130	20	1	○
ST300-RN4-20030A	20	3	40	60	19.4	110	20	1	●
ST300-RN4-20030B	20	3	40	70	19.4	120	20	1	●
ST300-RN4-20030C	20	3	40	80	19.4	130	20	1	●
ST300-RN4-20030D	20	3	40	100	19.4	150	20	1	●
ST300-RN4-20040A	20	4	40	60	19.4	110	20	1	○

●标准库存 Stock ○需预定 Available upon Order

D	公差Tol
D<6	0 -0.02
6≤D≤12	0 -0.03
D>12	0 -0.04

单位Unit(mm)

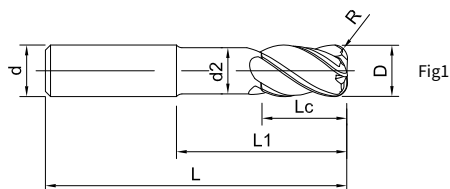
工件材料 Workpiece Material					
P		M	K	S	
1234	5	123	123	123	4
碳钢、合金钢 Carbon steels, Alloy steels<35HRC	合金钢 Alloy steels <48HRC	不锈钢 Stainless steel	铸铁 Cast Iron	高温合金 Super Alloys	钛合金 Titanium Alloys
○	○	○	○	○	◎

◎最适合 Most Suitable ○适合 Suitable

推荐切削参数 ※P64  
Recommended Cutting Data ※P64

# ST300-RN4

4刃长颈圆角头  
4 Flutes, Corner Radius, with Long Neck



订货号 Ordering Code	D	R	Lc	L1	d2	L	d	图号 Figure No.	库存 Stock
ST300-RN4-20040B	20	4	40	70	19.4	120	20	1	○
ST300-RN4-20040C	20	4	40	80	19.4	130	20	1	○
ST300-RN4-20040D	20	4	40	100	19.4	150	20	1	○
ST300-RN4-20050A	20	5	40	60	19.4	110	20	1	○
ST300-RN4-20050B	20	5	40	70	19.4	120	20	1	○
ST300-RN4-20050C	20	5	40	80	19.4	130	20	1	○
ST300-RN4-20050D	20	5	40	100	19.4	150	20	1	○
ST300-RN4-25005	25	0.5	50	80	24.4	140	25	1	○
ST300-RN4-25010A	25	1	50	80	24.4	140	25	1	○
ST300-RN4-25010B	25	1	50	100	24.4	160	25	1	○
ST300-RN4-25020	25	2	50	80	24.4	140	25	1	○
ST300-RN4-25030A	25	3	50	80	24.4	140	25	1	○
ST300-RN4-25030B	25	3	50	100	24.4	160	25	1	○
ST300-RN4-25030C	25	3	50	120	24.4	180	25	1	○
ST300-RN4-25040	25	4	50	80	24.4	140	25	1	○
ST300-RN4-25050A	25	5	50	80	24.4	140	25	1	○
ST300-RN4-25050B	25	5	50	100	24.4	160	25	1	○

●标准库存 Stock ○需预定 Available upon Order

D	公差Tol
D < 6	0 -0.02
6 ≤ D ≤ 12	0 -0.03
D > 12	0 -0.04

单位Unit(mm)

## 工件材料 Workpiece Material

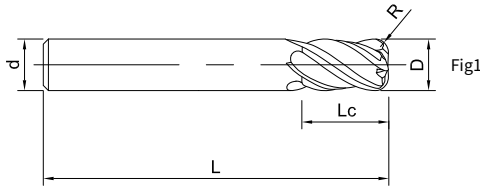
P		M	K	S	
1234	5	123	123	123	4
碳钢、合金钢 Carbon steels, Alloy steels < 35HRC	合金钢 Alloy steels < 48HRC	不锈钢 Stainless steel	铸铁 Cast Iron	高温合金 Super Alloys	钛合金 Titanium Alloys
○	○	○	○	○	◎

◎ 最适合 Most Suitable ○ 适合 Suitable

推荐切削参数 ※P64  
Recommended Cutting Data ※P64

# ST300-R5

5刃圆角头  
5 Flutes, Corner Radius



订货号 Ordering Code	D	C	Lc	L	d	图号 Figure No.	库存 Stock
ST300-R5-06002	6	0.2	16	50	6	1	●
ST300-R5-06005	6	0.5	16	50	6	1	●
ST300-R5-06010	6	1	16	50	6	1	●
ST300-R5-08002	8	0.2	20	60	8	1	●
ST300-R5-08005	8	0.5	20	60	8	1	●
ST300-R5-08010	8	1	20	60	8	1	●
ST300-R5-10002	10	0.2	25	75	10	1	○
ST300-R5-10005	10	0.5	25	75	10	1	●
ST300-R5-10010	10	1	25	75	10	1	●
ST300-R5-10020	10	2	25	75	10	1	●
ST300-R5-10030	10	3	25	75	10	1	●
ST300-R5-12002	12	0.2	30	75	12	1	○
ST300-R5-12005	12	0.5	30	75	12	1	●
ST300-R5-12010	12	1	30	75	12	1	●
ST300-R5-12020	12	2	30	75	12	1	●

●标准库存 Stock ○需预定 Available upon Order

D	公差Tol
D < 6	0 -0.02
6 ≤ D ≤ 12	0 -0.03
D > 12	0 -0.04

单位Unit(mm)

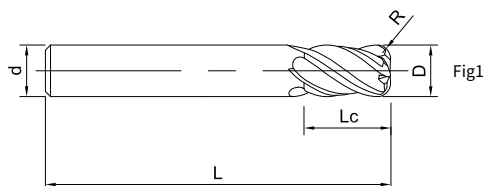
工件材料 Workpiece Material					
P		M	K	S	
1234	5	123	123	123	4
碳钢、合金钢 Carbon steels、Alloy steels < 35HRC	合金钢 Alloy steels < 48HRC	不锈钢 Stainless steel	铸铁 Cast Iron	高温合金 Super Alloys	钛合金 Titanium Alloys
○	○	○	○	○	◎

◎ 最适合 Most Suitable ○ 适合 Suitable

推荐切削参数 ※P64  
Recommended Cutting Data ※P64

# ST300-R5

5刃圆角头  
5 Flutes, Corner Radius



订货号 Ordering Code	D	C	Lc	L	d	图号 Figure No.	库存 Stock
ST300-R5-12030	12	3	30	75	12	1	●
ST300-R5-16002	16	0.2	36	100	16	1	○
ST300-R5-16005	16	0.5	36	100	16	1	●
ST300-R5-16010	16	1	36	100	16	1	●
ST300-R5-16020	16	2	36	100	16	1	●
ST300-R5-16030	16	3	36	100	16	1	●
ST300-R5-16040	16	4	36	100	16	1	○
ST300-R5-16050	16	5	36	100	16	1	○
ST300-R5-20002	20	0.2	45	100	20	1	○
ST300-R5-20005	20	0.5	45	100	20	1	●
ST300-R5-20010	20	1	45	100	20	1	●
ST300-R5-20020	20	2	45	100	20	1	●
ST300-R5-20030	20	3	45	100	20	1	●
ST300-R5-20040	20	4	45	100	20	1	○
ST300-R5-20050	20	5	45	100	20	1	○

●标准库存 Stock ○需预定 Available upon Order

D	公差Tol
D < 6	0 -0.02
6 ≤ D ≤ 12	0 -0.03
D > 12	0 -0.04

单位Unit(mm)

## 工件材料 Workpiece Material

P		M	K	S	
1234	5	123	123	123	4
碳钢、合金钢 Carbon steels、Alloy steels < 35HRC	合金钢 Alloy steels < 48HRC	不锈钢 Stainless steel	铸铁 Cast Iron	高温合金 Super Alloys	钛合金 Titanium Alloys
○	○	○	○	○	◎

◎ 最适合 Most Suitable ○ 适合 Suitable

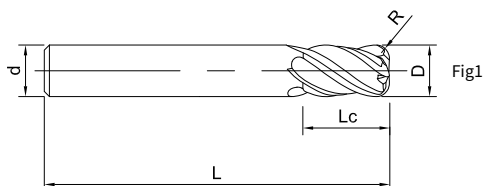
推荐切削参数 ※P64  
Recommended Cutting Data ※P64



# ST300-RH5

5刃长柄圆角头

5 Flutes, Corner Radius, with Long Shank Length



订货号 Ordering Code	D	C	Lc	L	d	图号 Figure No.	库存 Stock
ST300-RH5-06002	6	0.2	16	75	6	1	●
ST300-RH5-06005	6	0.5	16	75	6	1	●
ST300-RH5-06010	6	1	16	75	6	1	●
ST300-RH5-08002	8	0.2	20	75	8	1	●
ST300-RH5-08005	8	0.5	20	75	8	1	●
ST300-RH5-08010	8	1	20	75	8	1	●
ST300-RH5-10002	10	0.2	30	100	10	1	○
ST300-RH5-10005	10	0.5	30	100	10	1	●
ST300-RH5-10010	10	1	30	100	10	1	●
ST300-RH5-10020	10	2	30	100	10	1	●
ST300-RH5-10030	10	3	30	100	10	1	●
ST300-RH5-12002A	12	0.2	30	100	12	1	○
ST300-RH5-12002B	12	0.2	30	120	12	1	○
ST300-RH5-12005A	12	0.5	30	100	12	1	○
ST300-RH5-12005B	12	0.5	30	120	12	1	●
ST300-RH5-12010A	12	1	30	100	12	1	○

●标准库存 Stock ○需预定 Available upon Order

D	公差Tol
D < 6	0 -0.02
6 ≤ D ≤ 12	0 -0.03
D > 12	0 -0.04

单位Unit(mm)

## 工件材料 Workpiece Material

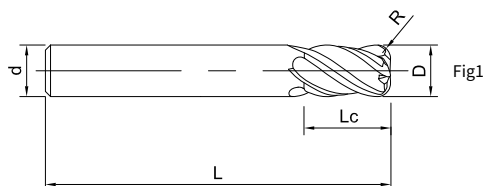
P		M	K	S	
1234	5	123	123	123	4
碳钢、合金钢 Carbon steels、Alloy steels < 35HRC	合金钢 Alloy steels < 48HRC	不锈钢 Stainless steel	铸铁 Cast Iron	高温合金 Super Alloys	钛合金 Titanium Alloys
○	○	○	○	○	◎

◎ 最适合 Most Suitable ○ 适合 Suitable

推荐切削参数 ※P64  
Recommended Cutting Data ※P64

# ST300-RH5

5刃长柄圆角头  
5 Flutes, Corner Radius, with Long Shank Length



订货号 Ordering Code	D	C	Lc	L	d	图号 Figure No.	库存 Stock
ST300-RH5-12010B	12	1	30	120	12	1	●
ST300-RH5-12020A	12	2	30	100	12	1	○
ST300-RH5-12020B	12	2	30	120	12	1	●
ST300-RH5-12030A	12	3	30	100	12	1	○
ST300-RH5-12030B	12	3	30	120	12	1	●
ST300-RH5-16002A	16	0.2	40	150	16	1	○
ST300-RH5-16002B	16	0.2	50	200	16	1	○
ST300-RH5-16005A	16	0.5	40	150	16	1	●
ST300-RH5-16005B	16	0.5	50	200	16	1	○
ST300-RH5-16010A	16	1	40	150	16	1	●
ST300-RH5-16010B	16	1	50	200	16	1	○
ST300-RH5-16020A	16	2	40	150	16	1	●
ST300-RH5-16020B	16	2	50	200	16	1	○
ST300-RH5-16030A	16	3	40	150	16	1	●
ST300-RH5-16030B	16	3	50	200	16	1	○

●标准库存 Stock ○需预定 Available upon Order

D	公差Tol
D < 6	0 -0.02
6 ≤ D ≤ 12	0 -0.03
D > 12	0 -0.04

单位Unit(mm)

## 工件材料 Workpiece Material

P		M	K	S	
1234	5	123	123	123	4
碳钢、合金钢 Carbon steels, Alloy steels < 35HRC	合金钢 Alloy steels < 48HRC	不锈钢 Stainless steel	铸铁 Cast Iron	高温合金 Super Alloys	钛合金 Titanium Alloys
○	○	○	○	○	◎

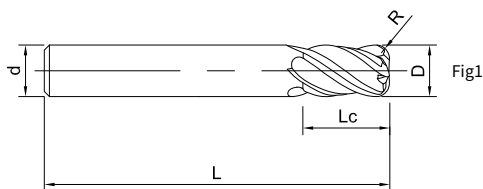
◎ 最适合 Most Suitable ○ 适合 Suitable

推荐切削参数 ※P64  
Recommended Cutting Data ※P64

# ST300-RH5

5刃长柄圆角头

5 Flutes, Corner Radius, with Long Shank Length



订货号 Ordering Code	D	C	Lc	L	d	图号 Figure No.	库存 Stock
ST300-RH5-16040A	16	4	40	150	16	1	○
ST300-RH5-16040B	16	4	50	200	16	1	○
ST300-RH5-16050A	16	5	40	150	16	1	○
ST300-RH5-16050B	16	5	50	200	16	1	○
ST300-RH5-20002A	20	0.2	50	150	20	1	○
ST300-RH5-20002B	20	0.2	50	200	20	1	○
ST300-RH5-20005A	20	0.5	50	150	20	1	●
ST300-RH5-20005B	20	0.5	50	200	20	1	○
ST300-RH5-20010A	20	1	50	150	20	1	●
ST300-RH5-20010B	20	1	50	200	20	1	○
ST300-RH5-20020A	20	2	50	150	20	1	●
ST300-RH5-20020B	20	2	50	200	20	1	○
ST300-RH5-20030A	20	3	50	150	20	1	●
ST300-RH5-20030B	20	3	50	200	20	1	○
ST300-RH5-20040A	20	4	50	150	20	1	○

●标准库存 Stock ○需预定 Available upon Order

D	公差Tol
D < 6	0 -0.02
6 ≤ D ≤ 12	0 -0.03
D > 12	0 -0.04

单位Unit(mm)

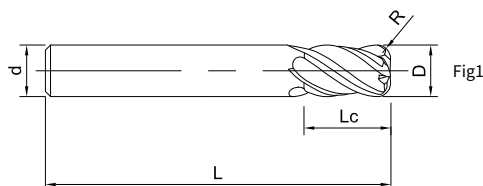
工件材料 Workpiece Material					
P		M	K	S	
1234	5	123	123	123	4
碳钢、合金钢 Carbon steels, Alloy steels < 35HRC	合金钢 Alloy steels < 48HRC	不锈钢 Stainless steel	铸铁 Cast Iron	高温合金 Super Alloys	钛合金 Titanium Alloys
○	○	○	○	○	◎

◎最适合 Most Suitable ○适合 Suitable

推荐切削参数 ※P64  
Recommended Cutting Data ※P64

# ST300-RH5

5刃长柄圆角头  
5 Flutes, Corner Radius, with Long Shank Length



订货号 Ordering Code	D	C	Lc	L	d	图号 Figure No.	库存 Stock
ST300-RH5-20040B	20	4	50	200	20	1	○
ST300-RH5-20050A	20	5	50	150	20	1	○
ST300-RH5-20050B	20	5	50	200	20	1	○
ST300-RH5-25005A	25	0.5	50	150	25	1	○
ST300-RH5-25005B	25	0.5	50	200	25	1	○
ST300-RH5-25010A	25	1	50	150	25	1	○
ST300-RH5-25010B	25	1	50	200	25	1	○
ST300-RH5-25020A	25	2	50	150	25	1	○
ST300-RH5-25020B	25	2	50	200	25	1	○
ST300-RH5-25030A	25	3	50	150	25	1	○
ST300-RH5-25030B	25	3	50	200	25	1	○
ST300-RH5-25040A	25	4	50	150	25	1	○
ST300-RH5-25040B	25	4	50	200	25	1	○
ST300-RH5-25050A	25	5	50	150	25	1	○
ST300-RH5-25050B	25	5	50	200	25	1	○

●标准库存 Stock ○需预定 Available upon Order

D	公差Tol
D < 6	0 -0.02
6 ≤ D ≤ 12	0 -0.03
D > 12	0 -0.04

单位Unit(mm)

## 工件材料 Workpiece Material

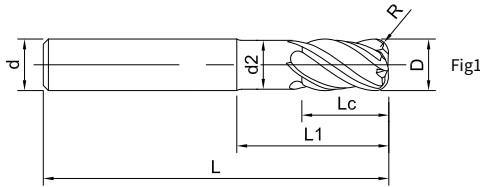
P		M	K	S	
1234	5	123	123	123	4
碳钢、合金钢 Carbon steels, Alloy steels < 35HRC	合金钢 Alloy steels < 48HRC	不锈钢 Stainless steel	铸铁 Cast Iron	高温合金 Super Alloys	钛合金 Titanium Alloys
○	○	○	○	○	◎

◎ 最适合 Most Suitable ○ 适合 Suitable

推荐切削参数 ※P64  
Recommended Cutting Data ※P64

# ST300-RN5

5刃长颈圆角头  
5 Flutes, Corner Radius, with Long Neck



订货号 Ordering Code	D	R	Lc	L1	d2	L	d	图号 Figure No.	库存 Stock
ST300-RN5-12005A	12	0.5	24	40	11.4	90	12	1	○
ST300-RN5-12005B	12	0.5	24	50	11.4	100	12	1	○
ST300-RN5-12010A	12	1	24	40	11.4	90	12	1	○
ST300-RN5-12010B	12	1	24	50	11.4	100	12	1	○
ST300-RN5-12020A	12	2	24	40	11.4	90	12	1	○
ST300-RN5-12020B	12	2	24	50	11.4	100	12	1	○
ST300-RN5-12030A	12	3	24	40	11.4	90	12	1	●
ST300-RN5-12030B	12	3	36	50	11.4	100	12	1	●
ST300-RN5-12030C	12	3	36	60	11.4	110	12	1	●
ST300-RN5-16005A	16	0.5	32	50	15.4	100	16	1	○
ST300-RN5-16005B	16	0.5	32	60	15.4	110	16	1	○
ST300-RN5-16005C	16	0.5	32	70	15.4	120	16	1	○
ST300-RN5-16005D	16	0.5	32	80	15.4	130	16	1	○
ST300-RN5-16010A	16	1	32	50	15.4	100	16	1	○
ST300-RN5-16010B	16	1	32	60	15.4	110	16	1	○
ST300-RN5-16010C	16	1	32	70	15.4	120	16	1	○
ST300-RN5-16010D	16	1	32	80	15.4	130	16	1	○
ST300-RN5-16020A	16	2	32	50	15.4	100	16	1	○
ST300-RN5-16020B	16	2	32	60	15.4	110	16	1	○
ST300-RN5-16030A	16	3	32	50	15.4	100	16	1	●

●标准库存 Stock ○需预定 Available upon Order

D	公差Tol
D < 6	0 -0.02
6 ≤ D ≤ 12	0 -0.03
D > 12	0 -0.04

单位Unit(mm)

工件材料 Workpiece Material					
P		M	K	S	
1234	5	123	123	123	4
碳钢、合金钢 Carbon steels, Alloy steels < 35HRC	合金钢 Alloy steels < 48HRC	不锈钢 Stainless steel	铸铁 Cast Iron	高温合金 Super Alloys	钛合金 Titanium Alloys
○	○	○	○	○	◎

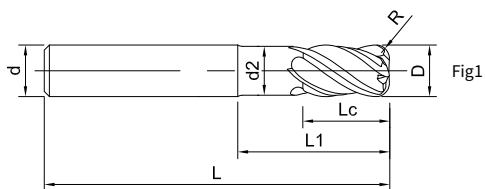
◎最适合 Most Suitable ○适合 Suitable

推荐切削参数 ※P64  
Recommended Cutting Data ※P64

# ST300-RN5

5刃长颈圆角头

5 Flutes, Corner Radius, with Long Neck



订货号 Ordering Code	D	R	Lc	L1	d2	L	d	图号 Figure No.	库存 Stock
ST300-RN5-16030B	16	3	32	60	15.4	110	16	1	●
ST300-RN5-16030C	16	3	32	70	15.4	120	16	1	●
ST300-RN5-16030D	16	3	32	80	15.4	130	16	1	●
ST300-RN5-16040A	16	4	32	50	15.4	100	16	1	○
ST300-RN5-16040B	16	4	32	60	15.4	110	16	1	○
ST300-RN5-16050A	16	5	32	50	15.4	100	16	1	○
ST300-RN5-16050B	16	5	32	60	15.4	110	16	1	○
ST300-RN5-16050C	16	5	32	70	15.4	120	16	1	○
ST300-RN5-16050D	16	5	32	80	15.4	130	16	1	○
ST300-RN5-20005A	20	0.5	40	60	19.4	110	20	1	○
ST300-RN5-20005B	20	0.5	40	70	19.4	120	20	1	○
ST300-RN5-20005C	20	0.5	40	80	19.4	130	20	1	○
ST300-RN5-20005D	20	0.5	40	100	19.4	150	20	1	○
ST300-RN5-20010A	20	1	40	60	19.4	110	20	1	○
ST300-RN5-20010B	20	1	40	70	19.4	120	20	1	○
ST300-RN5-20010C	20	1	40	80	19.4	130	20	1	○
ST300-RN5-20010D	20	1	40	100	19.4	150	20	1	○
ST300-RN5-20020A	20	2	40	60	19.4	110	20	1	○
ST300-RN5-20020B	20	2	40	80	19.4	130	20	1	○
ST300-RN5-20030A	20	3	40	60	19.4	110	20	1	●

●标准库存 Stock ○需预定 Available upon Order

D	公差Tol
D < 6	0 -0.02
6 ≤ D ≤ 12	0 -0.03
D > 12	0 -0.04

单位Unit(mm)

## 工件材料 Workpiece Material

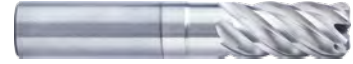
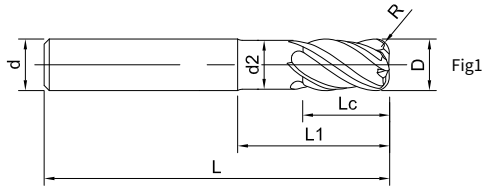
P		M	K	S	
1234	5	123	123	123	4
碳钢、合金钢 Carbon steels、Alloy steels < 35HRC	合金钢 Alloy steels < 48HRC	不锈钢 Stainless steel	铸铁 Cast Iron	高温合金 Super Alloys	钛合金 Titanium Alloys
○	○	○	○	○	◎

◎最适合 Most Suitable ○适合 Suitable

推荐切削参数 ※P64  
Recommended Cutting Data ※P64

# ST300-RN5

5刃长颈圆角头  
5 Flutes, Corner Radius, with Long Neck



订货号 Ordering Code	D	R	Lc	L1	d2	L	d	图号 Figure No.	库存 Stock
ST300-RN5-20030B	20	3	40	70	19.4	120	20	1	●
ST300-RN5-20030C	20	3	40	80	19.4	130	20	1	●
ST300-RN5-20030D	20	3	40	100	19.4	150	20	1	●
ST300-RN5-20040A	20	4	40	60	19.4	110	20	1	○
ST300-RN5-20040B	20	4	40	80	19.4	130	20	1	○
ST300-RN5-20050A	20	5	40	60	19.4	110	20	1	○
ST300-RN5-20050B	20	5	40	70	19.4	120	20	1	○
ST300-RN5-20050C	20	5	40	80	19.4	130	20	1	○
ST300-RN5-20050D	20	5	40	100	19.4	150	20	1	○
ST300-RN5-25005	25	0.5	50	80	24.4	140	25	1	○
ST300-RN5-25010A	25	1	50	80	24.4	140	25	1	○
ST300-RN5-25010B	25	1	50	100	24.4	160	25	1	○
ST300-RN5-25020	25	2	50	80	24.4	140	25	1	○
ST300-RN5-25030A	25	3	50	80	24.4	140	25	1	○
ST300-RN5-25030B	25	3	50	100	24.4	160	25	1	○
ST300-RN5-25030C	25	3	50	120	24.4	180	25	1	○
ST300-RN5-25040	25	4	50	80	24.4	140	25	1	○
ST300-RN5-25050A	25	5	50	80	24.4	140	25	1	○
ST300-RN5-25050B	25	5	50	100	24.4	160	25	1	○

●标准库存 Stock ○需预定 Available upon Order

D	公差Tol
D < 6	0 -0.02
6 ≤ D ≤ 12	0 -0.03
D > 12	0 -0.04

单位Unit(mm)

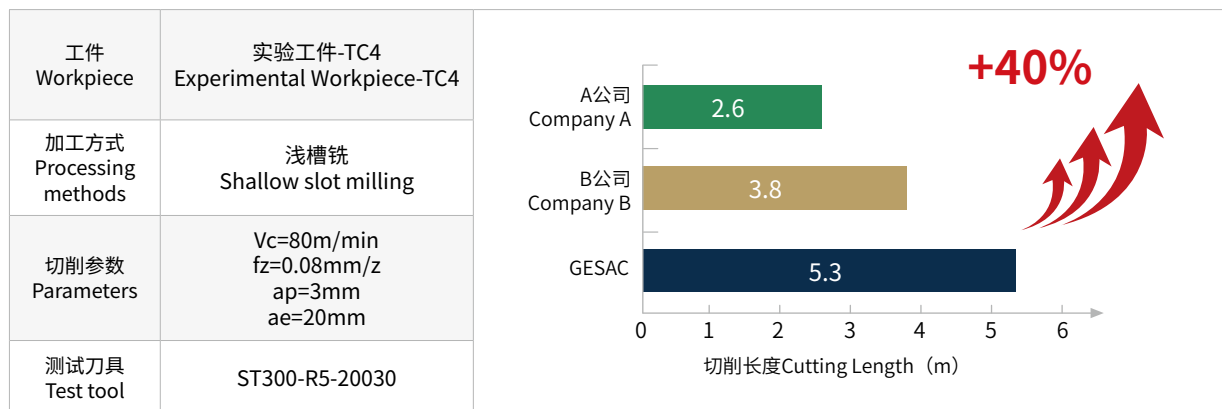
工件材料 Workpiece Material					
P		M	K	S	
1234	5	123	123	123	4
碳钢、合金钢 Carbon steels, Alloy steels < 35HRC	合金钢 Alloy steels < 48HRC	不锈钢 Stainless steel	铸铁 Cast Iron	高温合金 Super Alloys	钛合金 Titanium Alloys
○	○	○	○	○	◎

◎ 最适合 Most Suitable ○ 适合 Suitable

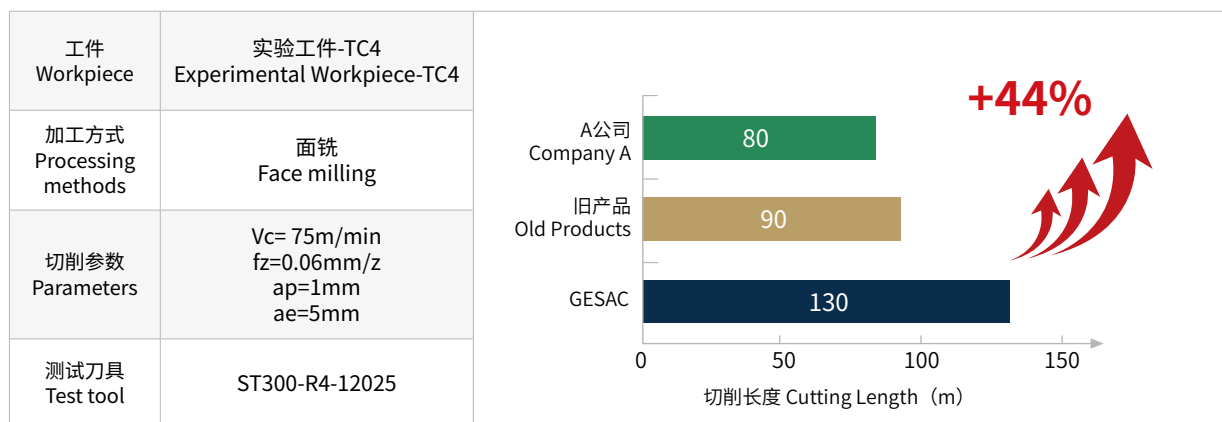
推荐切削参数 ※P64  
Recommended Cutting Data ※P64

## 应用案例 Applications

### 案例1：槽铣性能测试 Case 1: Performance Testing for Slot Milling



### 案例2：面铣性能测试 Case 2: Performance Testing for Face Milling

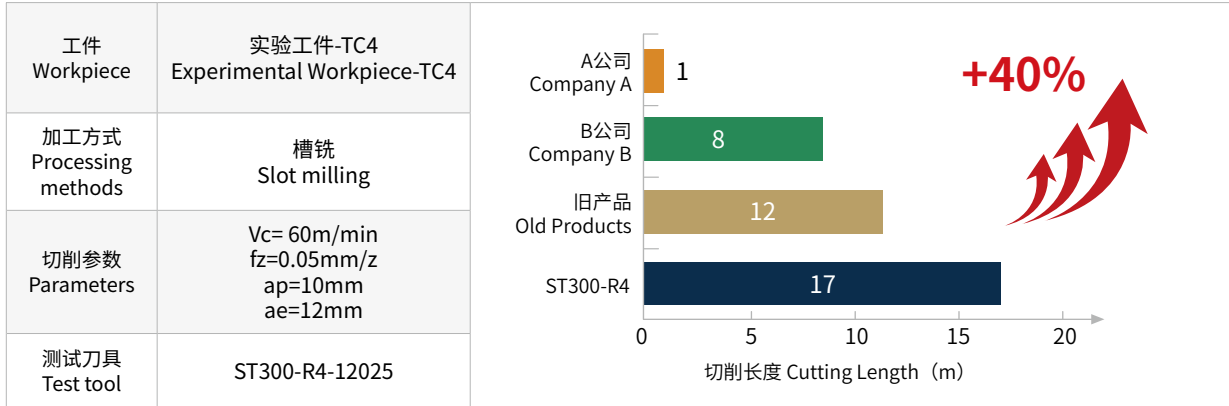




## 应用案例 Applications

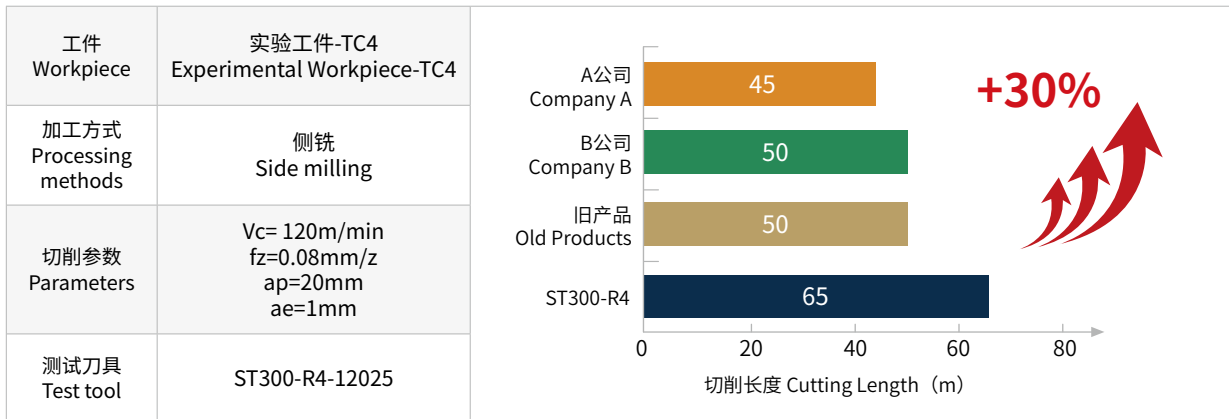
### 案例3：槽铣性能测试

#### Case 3: Performance Testing for Slot Milling



### 案例4：侧铣性能测试

#### Case 4: Performance Testing for Side Milling



## 推荐切削参数 Recommended Cutting Data

### ST300-S4/R4/RH4/RN4 钛合金Titanium Alloys——侧铣Side Milling



工件材料 Workpiece Material		切削量 Cutting Depth (mm)	切削速度 Vc (m/min)	刃径 Tool Diameter (mm)	2	3	4	5	6	8	10	12	16	20	25
<b>S</b>	钛合金 Titanium Alloys	ap≤1.5D	70 (60~80)	转速 n (min <sup>-1</sup> )	11140	7430	5570	4460	3720	2790	2230	1860	1400	1120	895
		ae≤0.3D		进给速度 Vf (mm/min)	670	600	560	540	630	620	630	640	620	540	430

### ST300-S4/R4/RH4/RN4 钛合金Titanium Alloys——槽铣Slotting



工件材料 Workpiece Material		切削量 Cutting Depth (mm)	切削速度 Vc (m/min)	刃径 Tool Diameter (mm)	2	3	4	5	6	8	10	12	16	20	25
<b>S</b>	钛合金 Titanium Alloys	ap≤1D	60 (50~70)	转速 n (min <sup>-1</sup> )	9550	6370	4780	3820	3200	2390	1910	1600	1200	960	770
		ae≤1D		进给速度 Vf (mm/min)	390	300	285	255	255	285	300	315	285	285	245

### ST300-R5/RH5/RN5 钛合金Titanium Alloys——侧铣Side Milling



工件材料 Workpiece Material		切削量 Cutting Depth (mm)	切削速度 Vc (m/min)	刃径 Tool Diameter (mm)	6	8	10	12	16	20	25
<b>S</b>	钛合金 Titanium Alloys	ap≤1.5D	70 (60~80)	转速 n (min <sup>-1</sup> )	3720	2790	2230	1860	1400	1120	895
		ae≤0.3D		进给速度 Vf (mm/min)	780	765	780	790	765	670	535

### ST300-S4/R4/RH4/RN4 钛合金Titanium Alloys——槽铣Slotting

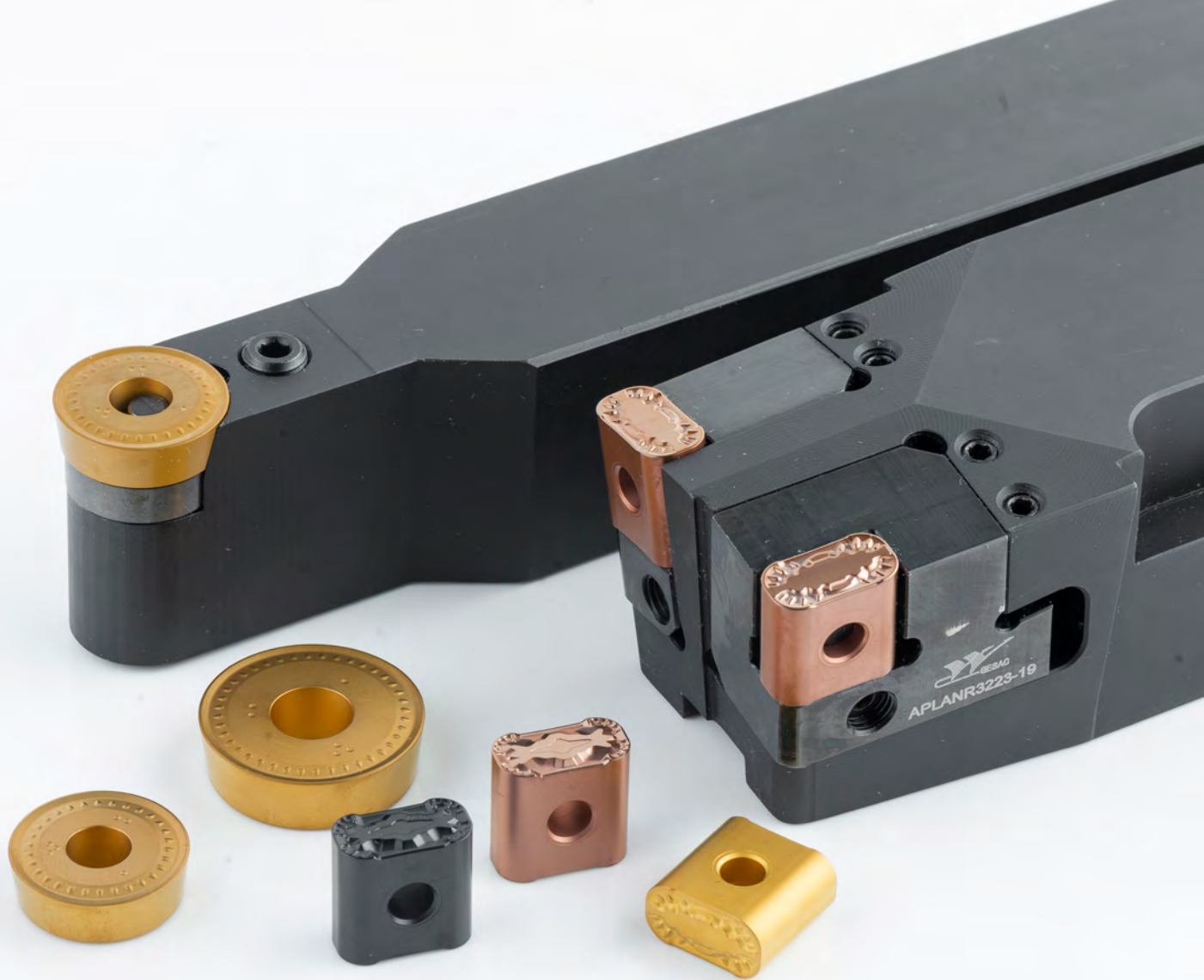


工件材料 Workpiece Material		切削量 Cutting Depth (mm)	切削速度 Vc (m/min)	刃径 Tool Diameter (mm)	6	8	10	12	16	20	25
<b>S</b>	钛合金 Titanium Alloys	ap≤1D	60 (50~70)	转速 n (min <sup>-1</sup> )	3200	2390	1910	1600	1200	960	770
		ae≤1D		进给速度 Vf (mm/min)	320	360	375	400	360	360	305

B

车削 Turning



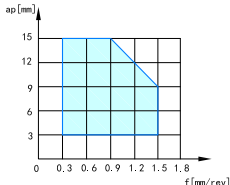
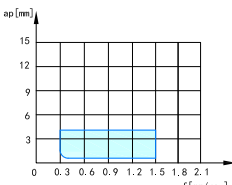
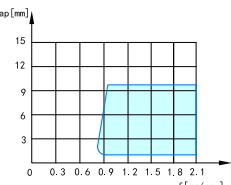
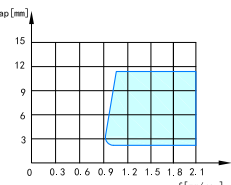
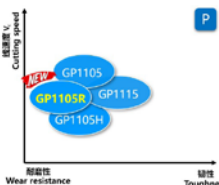


## 轨道交通行业车削刀具 Cutting Tools for the Rail Transportation Industry

- 适用于轨道交通行业各类新火车轮车削加工及火车轮修复车削加工；
- 全新推出火车轮新制刀片RCMX和火车轮修复刀片LNMX，搭配新开发的专用牌号，通过合理的槽型与牌号搭配，完美解决火车轮加工各种恶劣工况的问题；
- 高抗热塑性变形基体搭配中等厚度的强韧CVD涂层，可应用于高金属去除率的重载切削工况；同时，采取特定的后处理工艺实现更可靠和更稳定的刀具寿命。


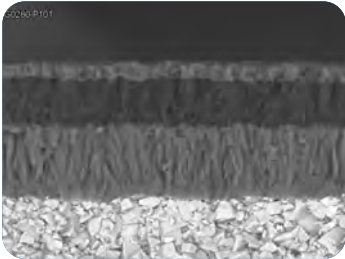
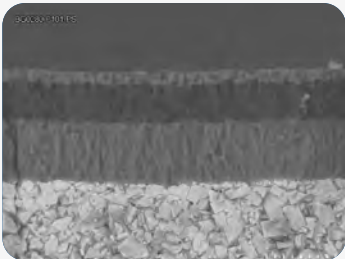
- Applicable for the machining and repairing of train wheels in the rail transportation industry.
- Introducing our latest offerings, the RCMX train wheel cutting inserts and LNMX train wheel repair inserts, perfectly complemented by the new grade. This well-designed combination effectively resolves challenges encountered during the machining of train wheels under adverse conditions.
- Boasting a high-temperature thermoplastic deformation-resistant substrate, paired with a medium-thickness, robust CVD coating, these cutting tools are ideal for heavy-duty cutting applications with superior metal removal rates. Furthermore, specific post-treatment techniques have been employed to ensure enhanced reliability and stability in tool longevity.

# 应用介绍 Application Introduction

火车轮新制刀片 RCMX 系列 RCMX-Cutting Inserts for Train Wheel Machining	火车轮修复刀片 LNMX 系列 LNMX-Cutting Inserts for Train Wheel Repair			火车轮加工牌号 Grade for Train Wheel Machining
通用 General	精加工 Finishing	半精加工 Semi-finishing	粗加工 Roughing	通用 General
RR	HF	HM	HR	GP1105R
				

## 轨道交通行业车削刀具牌号应用一览表

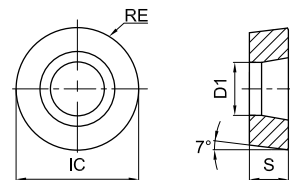
Overview of Cutting Tools Grade Applications in the Rail Transportation Industry



牌号 Grade	颜色 Colour	材质结构 Grade Microstructure	特点 Grade Feature
GP1105R 	黄色 Yellow		<ul style="list-style-type: none"> <li>• 高抗热塑性变形基体搭配中等厚度的强韧CVD涂层，具有极高的红硬性，同时采用特定的工艺对刃口进行均匀细致的后处理，保证产品的稳定加工。Heat-resistant thermoplastic deformation substrate combined with a medium-thickness tough CVD coating. It adopts excellent red hardness and undergoes a specific post-processing treatment to ensure uniform and precise cutting edges, guaranteeing stable machining.</li> <li>• 适用于大金属去除率的重载工况，尤其在干式切削和高硬度钢的应用方面表现较佳。Suitable for heavy-duty applications with high metal removal rates, especially in dry machining and cutting high-hardness steels.</li> </ul>
GP1105H	黄色 Yellow		<ul style="list-style-type: none"> <li>• 特殊的韧性基体设计，结合新型重载加工用隔热涂层，能有效抵抗湿切工况下刃口的热裂纹扩展，保证切削过程的稳定性。Special tough substrate combined with a new anti-thermal coating for heavy-duty machining effectively resists the thermal crack propagation of cutting edges under wet cutting conditions, ensuring stable cutting processes.</li> <li>• 适用于大金属去除率的重载工况，尤其适用于中低硬度钢的湿切工况。Suitable for heavy-duty applications with high metal removal rates, especially ideal for wet cutting conditions of medium-low hardness steels</li> </ul>

车削刀片 (正型)  
Turning Insect (Positive)

# RCMX

圆形有孔  
Circle with hole



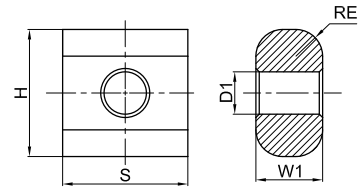
订货号 Ordering Code	尺寸 Dimension(mm)				涂层硬质合金 Coating Grade			
	IC	S	D1	RE	GP1105R	GP1105H	GP1105	GP1115
 RCMX160600-RR	16	6.35	5.5	8		○		
RCMX200600-RR	20	6.35	6.5	10		○		
RCMX250700-RR	25	7.94	7.2	12.5		●		
RCMX320900-RR	32	9.52	9.5	16		○		
 RCMX250700-RR1	25	7.94	7.2	12.5	●			





●标准库存 Stock ○需预定 Available Upon Order

车削刀片 (负型)  
Turning Insect (Negative)

# LNMX

立装刀片  
Vertical Insert



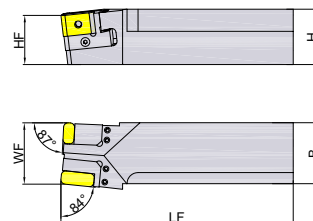
订货号 Ordering Code	尺寸 Dimension(mm)					涂层硬质合金 Coating Grade			
	H	W1	S	D1	RE	GP1105R	GP1105H	GP1105	GP1115
 LNMX191940-HF	19.05	10	19.05	6.35	4			○	○
 LNMX191940-HM	19.05	10	19.05	6.35	4			○	○
 LNMX301940-HM	30	12	19.05	6.35	4	○		○	○
 LNMX301940-HR	30	12	19.05	6.35	4	○		○	○

●标准库存 Stock ○需预定 Available Upon Order



火车轮修复刀杆  
Turning Toolholder for Train wheel repairing

# TXZNR



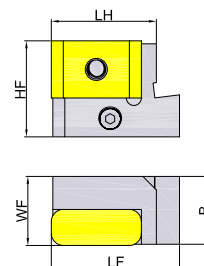
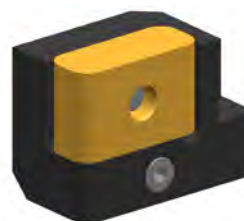
订货号 Ordering Code	尺寸 Dimension (mm)					匹配刀夹 Insert	紧定螺钉 Screw	扳手 Wrench	重量 Weight (KG)	库存 Stock	
	H	B	LF	HF	WF					R	L
TXZNR/L5055X-A	50	55	210	44	55	APLNR/L3223-19 APLNR/L3223-30 APLFNR/L3219-19	STCM060180Y	TH30LH	3.8	○	○

备注：刀杆不包含刀夹，刀夹需单独购买。  
Notice: Clamp need to place an separate order.

●标准库存 Stock ○需预定 Available upon Order

火车轮修复刀杆配套刀夹  
Clamp for Train wheel repairing

# APLANR

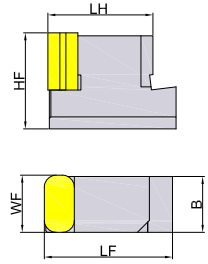


订货号 Ordering Code	尺寸 Dimension (mm)					匹配刀夹 Insert	杠杆 Lever	杠杆螺钉 Screw	扳手 Wrench	重量 Weight (KG)	库存 Stock	
	B	LH	LF	HF	WF						R	L
APLANR/L3223-19	22.6	35	42.7	32	TH30LH	LNMX19**	LA5Y	SLM08025OFY	TH30LH	0.17	○	○
APLANR/L3223-30	22.6	35	42.7	32	TH30LH	LNMX30**	LA5Y	SLM08025OFY	TH30LH	0.15	○	○

●标准库存 Stock ○需预定 Available upon Order

火车轮修复刀杆配套刀夹  
Clamp for Train wheel repairing

# APLFNR

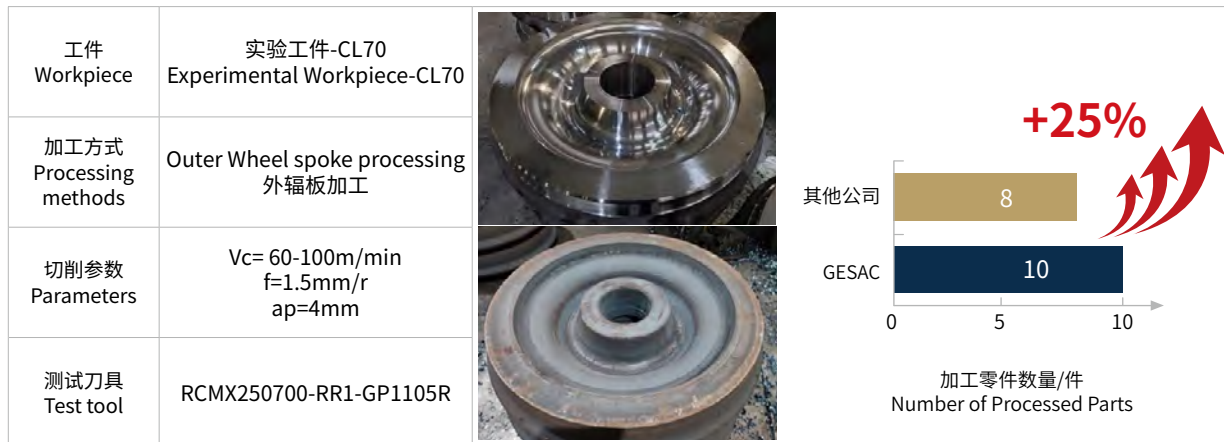


订货号 Ordering Code	尺寸 Dimension (mm)					匹配刀片 Insert	杠杆 Lever	杠杆螺钉 Screw	扳手 Wrench	重量 Weight (KG)	库存 Stock	
	B	LH	LF	HF	WF						R	L
APLFNR/L3219-19	18.6	35	42.7	32	19.05	LNMX19**	LA5Y	SLM08025OFY	TH30LH	0.13	<input type="radio"/>	<input type="radio"/>

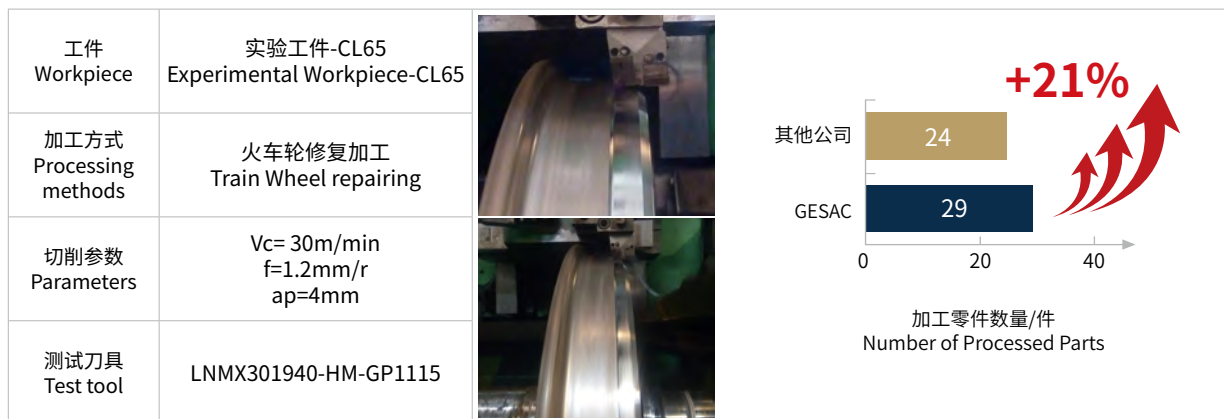
●标准库存 Stock ○需预定 Available upon Order

## 应用案例 Case

案例1: 火车轮外辐板加工  
Case 1: Railway Outer Wheel spoke processing



案例2: 火车轮修复加工  
Case2: Train wheel repairing



## 推荐切削参数 (正型) Recommended Cutting Data

被加工材料 Workpiece Material	材料硬度 Hardness	切削范围 Application Range	工况 Working Condition	断屑槽 Chip Breaker	牌号 Grade	下限 - 推荐 - 上限 Min-Optimum-Max			
						切削速度 Cutting Speed Vc(m/min)	切深 Cutting Depth ap(mm)	进给量 Feed Rate f(mm/rev)	
<b>P</b>	钢 Steel	≥ HB240	精 - 粗加工 Finishing-Roughing	通用 General	RR	GP1105H	50-100-150	2.00-7.50-15.0	0.30-1.00-1.80
			精 - 粗加工 Finishing-Roughing	通用 General	RR1	GP1105R	50-100-150	2.00-7.50-15.0	0.30-1.00-1.80

## 推荐切削参数 (负型) Recommended Cutting Data

被加工材料 Workpiece Material	材料硬度 Hardness	切削范围 Application Range	工况 Working Condition	断屑槽 Chip Breaker	牌号 Grade	下限 - 推荐 - 上限 Min-Optimum-Max			
						切削速度 Cutting Speed Vc(m/min)	切深 Cutting Depth ap(mm)	进给量 Feed Rate f(mm/rev)	
<b>P</b>	钢 Steel	≥ HB240	精加工	通用 General	HF	GP1105R	40-70-100	0.50-2.00-4.00	0.30-0.8-1.50
						GP1105	40-70-100	0.50-2.00-4.00	0.30-0.8-1.50
						GP1115	40-70-100	0.50-2.00-4.00	0.30-0.8-1.50
			半精加工	通用 General	HM	GP1105R	40-70-100	0.80-5.00-10.0	0.5-1.00-2.00
						GP1105	40-70-100	0.80-5.00-10.0	0.5-1.00-2.00
						GP1115	40-70-100	0.80-5.00-10.0	0.5-1.00-2.00
			粗加工	通用 General	HR	GP1105R	40-70-100	2.00-7.50-12.0	0.80-1.30-2.1
						GP1105	40-70-100	2.00-7.50-12.0	0.80-1.30-2.1
						GP1115	40-70-100	2.00-7.50-12.0	0.80-1.30-2.1



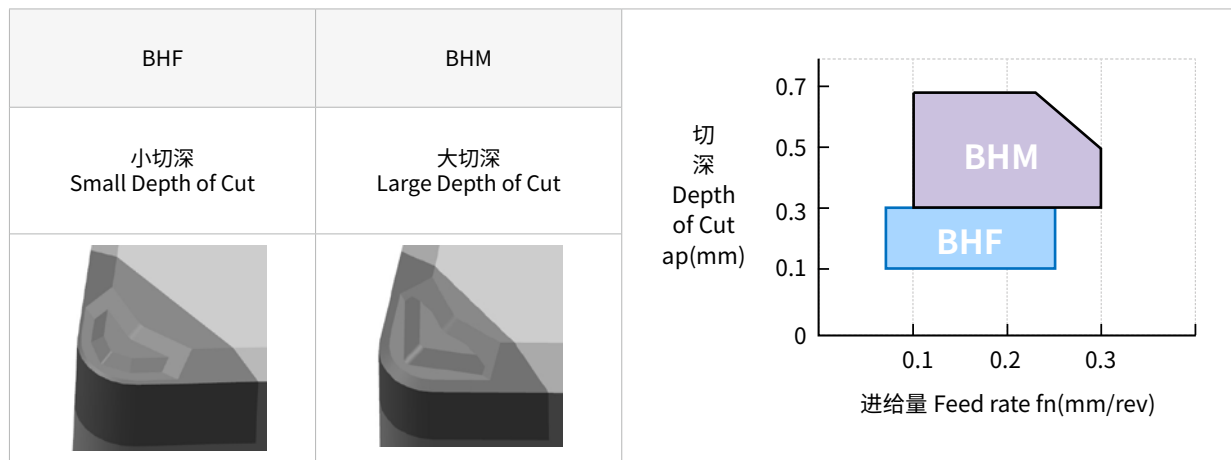
## PCBN焊片式断屑槽刀片系列 PCBN Brazed Chip Breaker Inserts Series

- 适用于淬火钢材料半精加工、精加工，主要应用于汽车行业的齿轮，轴类以及轮毂单元等零件加工。
- 含Si双层纳米涂层，耐化学和氧化能力提升，采用高纯度粘结相的细晶PCBN材料，具有良好的抗冲击和耐磨性。
- 搭配BHF、BHM专用槽型，不同切深下仍实现稳定断屑。

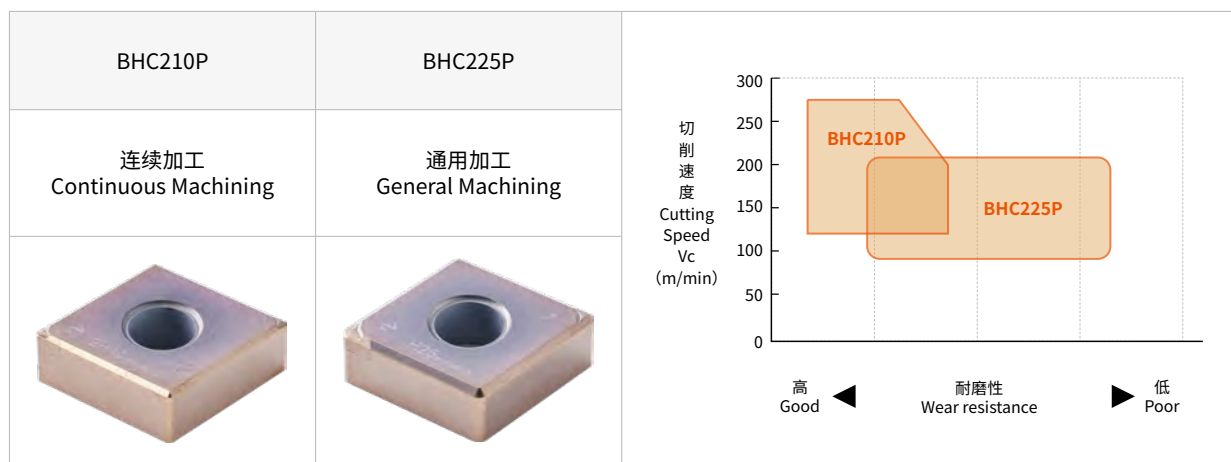
- Suitable for semi-finishing and finishing of quenched steel, mainly used in the machining of gears, shafts and wheel hub parts in the automotive industry.
- Double-layer nano coating containing Si, improved chemical and oxidation resistance, fine-grained PCBN material with high-purity and bonding phase, with good impact resistance and wear resistance.
- With BHF and BHM special chip breaker, achieve the stable chip breaking under different cutting depths.

## 应用介绍 Application Introduction

### PCBN断屑槽专用槽型 Dedicated Groove of PCBN Chip breaker Inserts


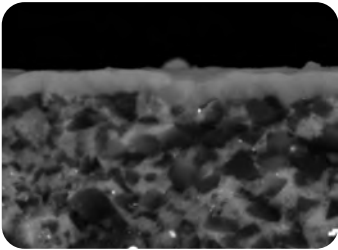

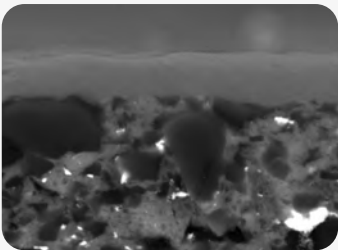


### PCBN断屑槽专用牌号 Dedicated Grade of PCBN Chip breaker Inserts



## PCBN焊片式断屑槽刀片牌号应用一览表

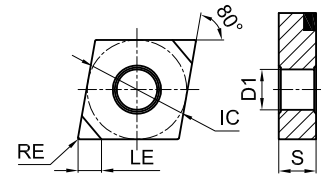
Application Summary of Grades For PCBN Brazed Chip Breaker Inserts

牌号 Grade	应用 Application	材质结构 Grade Microstructure	特点 Grade Feature
BHC210P 	淬火钢精加工 PVD Coated Grade for Finishing for Quenched Steel		<ul style="list-style-type: none"> <li>全新双层纳米结构的<math>\text{AlTiSiN}</math> 涂层，优异的耐热性和耐磨性，稳定实现优良的表面粗糙度。</li> <li>The new double-layer nanostructured coating, <math>\text{AlTiSiN}</math>, provides excellent heat and wear resistance and stable surface roughness.</li> <li>适用于淬火钢表面粗糙度和尺寸精度要求高的精加工工况。</li> <li>Suitable for finishing condition of high requirement surface.</li> </ul>
BHC225P 	淬火钢半精加工 PVD Coated Grade for Semi- Finishing for Quenched Steel		<ul style="list-style-type: none"> <li>全新双层纳米结构的<math>\text{AlTiSiN}</math> 涂层，涂覆在特色设计的CBN基体上，具备强韧性的同时，进一步提高耐磨性，可实现更稳定的加工和长寿命。</li> <li>The new double-layer nanostructured coating, <math>\text{AlTiSiN}</math>, is coated on a specially designed CBN matrix, providing strength and toughness while further improving wear resistance for more stable cutting and long tool life.</li> </ul>

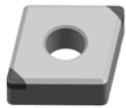
PCBN 断屑槽车削刀片 (负型)  
PCBN Turning Inserts with Chip Breaker (Negative)

**CN** □ □

菱形80° 有孔  
Rhombic 80°,with Hole



订货号 Ordering Code	刃数 Edge	尺寸 Dimension(mm)					涂层 PCBN 牌号 Coated PCBN	
		LE	IC	S	D1	RE	BHC210P	BHC225P
CNGG120404L-2BHF	2	2.5	12.7	4.76	5.16	0.4	●	●
CNGG120408L-2BHF	2	2.5	12.7	4.76	5.16	0.8	●	●
CNGG120412L-2BHF	2	2.5	12.7	4.76	5.16	1.2	○	○
CNGG120404L-4BHF	4	2.5	12.7	4.76	5.16	0.4	○	○
CNGG120408L-4BHF	4	2.5	12.7	4.76	5.16	0.8	○	○
CNGG120412L-4BHF	4	2.5	12.7	4.76	5.16	1.2	○	○
CNGG120404M-2BHM	2	2.5	12.7	4.76	5.16	0.4	●	●
CNGG120408M-2BHM	2	2.5	12.7	4.76	5.16	0.8	●	●
CNGG120412M-2BHM	2	2.5	12.7	4.76	5.16	1.2	○	○
CNGG120404M-4BHM	4	2.5	12.7	4.76	5.16	0.4	○	○
CNGG120408M-4BHM	4	2.5	12.7	4.76	5.16	0.8	○	○
CNGG120412M-4BHM	4	2.5	12.7	4.76	5.16	1.2	○	○



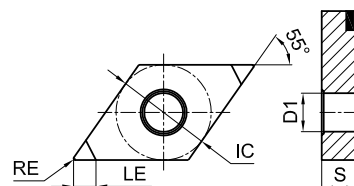
●标准库存Stock ○需预定Available Upon Order



PCBN 断屑槽车削刀片 (负型)  
PCBN Turning Inserts with Chip Breaker (Negative)

**DN** □ □

菱形55° 有孔  
Rhombic 55°,with Hole



订货号 Ordering Code	刃数 Edge	尺寸 Dimension(mm)					涂层 PCBN 牌号 Coated PCBN	
		LE	IC	S	D1	RE	BHC210P	BHC225P
DNGG150404L-2BHF	2	2.5	12.7	4.76	5.16	0.4	●	●
DNGG150408L-2BHF	2	2.5	12.7	4.76	5.16	0.8	●	●
DNGG150412L-2BHF	2	2.5	12.7	4.76	5.16	1.2	○	○
DNGG150404L-4BHF	4	2.5	12.7	4.76	5.16	0.4	○	○
DNGG150408L-4BHF	4	2.5	12.7	4.76	5.16	0.8	○	○
DNGG150412L-4BHF	4	2.5	12.7	4.76	5.16	1.2	○	○
DNGG150404M-2BHM	2	2.5	12.7	4.76	5.16	0.4	●	●
DNGG150408M-2BHM	2	2.5	12.7	4.76	5.16	0.8	●	●
DNGG150412M-2BHM	2	2.5	12.7	4.76	5.16	1.2	○	○
DNGG150404M-4BHM	4	2.5	12.7	4.76	5.16	0.4	○	○
DNGG150408M-4BHM	4	2.5	12.7	4.76	5.16	0.8	○	○
DNGG150412M-4BHM	4	2.5	12.7	4.76	5.16	1.2	○	○

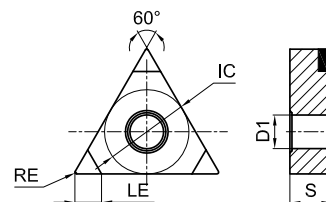


●标准库存Stock ○需预定Available Upon Order

PCBN 断屑槽车削刀片 (负型)  
PCBN Turning Inserts with Chip Breaker (Negative)

**TN** □ □

三角形60° 有孔  
Triangle 60°,with Hole



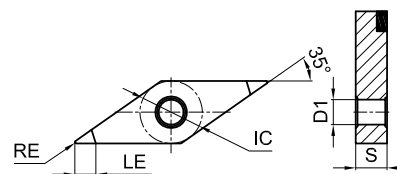
订货号 Ordering Code	刃数 Edge	尺寸 Dimension(mm)					涂层 PCBN 牌号 Coated PCBN	
		LE	IC	S	D1	RE	BHC210P	BHC225P
TNGG160404L-3BHF	3	2.5	9.525	4.76	3.81	0.4	●	●
TNGG160408L-3BHF	3	2.5	9.525	4.76	3.81	0.8	●	●
TNGG160412L-3BHF	3	2.5	9.525	4.76	3.81	1.2	○	○
TNGG160404L-6BHF	6	2.5	9.525	4.76	3.81	0.4	○	○
TNGG160408L-6BHF	6	2.5	9.525	4.76	3.81	0.8	○	○
TNGG160412L-6BHF	6	2.5	9.525	4.76	3.81	1.2	○	○
TNGG160404M-3BHM	3	2.5	9.525	4.76	3.81	0.4	●	●
TNGG160408M-3BHM	3	2.5	9.525	4.76	3.81	0.8	●	●
TNGG160412M-3BHM	3	2.5	9.525	4.76	3.81	1.2	○	○
TNGG160404M-6BHM	6	2.5	9.525	4.76	3.81	0.4	○	○
TNGG160408M-6BHM	6	2.5	9.525	4.76	3.81	0.8	○	○
TNGG160412M-6BHM	6	2.5	9.525	4.76	3.81	1.2	○	○



●标准库存Stock ○需预定Available Upon Order

**VN** □ □

菱形35° 有孔  
Rhombic 35°,with Hole



订货号 Ordering Code	刃数 Edge	尺寸 Dimension(mm)					涂层 PCBN 牌号 Coated PCBN	
		LE	IC	S	D1	RE	BHC210P	BHC225P
VNGG160404L-2BHF	2	2.5	9.525	4.76	3.81	0.4	●	●
VNGG160408L-2BHF	2	2.5	9.525	4.76	3.81	0.8	●	●

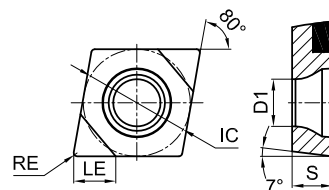


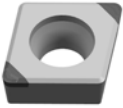
●标准库存Stock ○需预定Available Upon Order

PCBN 断屑槽车削刀片 (正型)  
PCBN Turning Inserts with Chip Breaker (Positive)

**CC** □ □

菱形80°有孔  
Rhombic 80°,with Hole

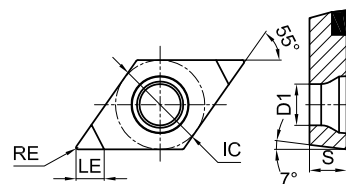


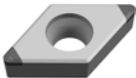
订货号 Ordering Code	刃数 Edge	尺寸 Dimension(mm)					涂层 PCBN 牌号 Coated PCBN	
		LE	IC	S	D1	RE	BHC210P	BHC225P
 CCGT060204L-2BHF	2	2.5	6.35	2.38	2.8	0.4	○	○
CCGT09T304L-2BHF	2	2.5	9.525	3.97	4.4	0.4	●	●
CCGT09T308L-2BHF	2	2.5	9.525	3.97	4.4	0.8	●	●

●标准库存Stock ○需预定Available Upon Order

**DC** □ □

菱形55°有孔  
Rhombic 55°,with Hole



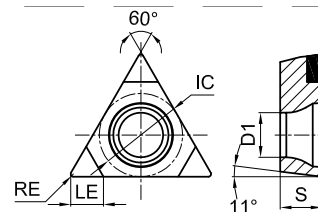
订货号 Ordering Code	刃数 Edge	尺寸 Dimension(mm)					涂层 PCBN 牌号 Coated PCBN	
		LE	IC	S	D1	RE	BHC210P	BHC225P
 DCGT070204L-2BHF	2	2.5	6.35	2.38	2.8	0.4	○	○
DCGT11T304L-2BHF	2	2.5	9.525	3.97	4.4	0.4	●	●
DCGT11T308L-2BHF	2	2.5	9.525	3.97	4.4	0.8	●	●


●标准库存Stock ○需预定Available Upon Order

PCBN 断屑槽车削刀片 (正型)  
PCBN Turning Inserts with Chip Breaker (Positive)

**TP**□□

三角形60°有孔  
Triangle 60°,with Hole

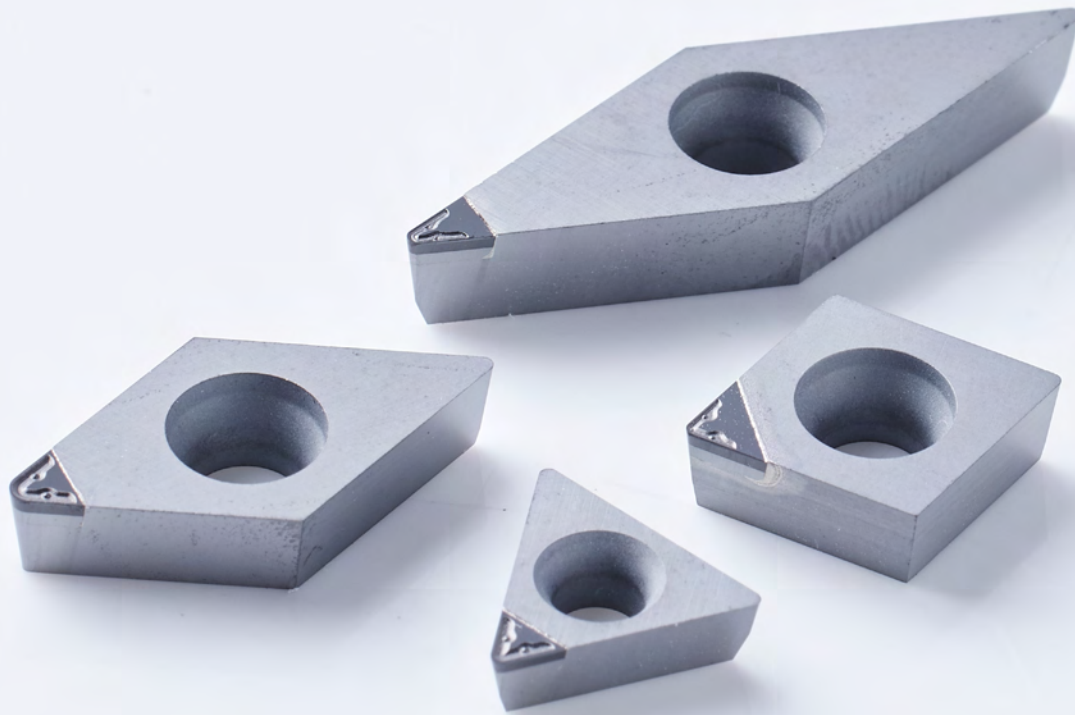


订货号 Ordering Code	刃数 Edge	尺寸 Dimension(mm)					涂层 PCBN 牌号 Coated PCBN	
		LE	IC	S	D1	RE	BHC210P	BHC225P
 TPGT110304L-3BHF TPGT110308L-3BHF	3	2.5	6.35	3.18	2.8	0.4	●	●
	3	2.5	6.35	3.18	2.8	0.8	●	●

●标准库存Stock ○需预定Available Upon Order

推荐切削参数 -PCBN 断屑槽  
Recommended Cutting Data

ISO	被加工材料 Workpiece Material	材料硬度 Hardness	切削范围 Application Range	用途 Usage	槽型 Chip Breaker	牌号 Grade	下限 - 推荐 - 上限 Min-Optimum-Max		
							切削速度 Cutting Speed Vc(m/min)	切深 Cutting Depth ap(mm)	进给量 Feed Rate f(mm/rev)
<b>H</b>	高硬度材料 High hardness	≥ HRC50	精加工 Finishing	连续 Continuous	BHF	BHC210P	120-160-260	0.10-0.20-0.30	0.05-0.10-0.25
	高硬度材料 High hardness	≥ HRC50	半精加工 Semi- finishing	通用 General	BHF	BHC225P	100-150-200	0.10-0.20-0.30	0.05-0.10-0.25
	高硬度材料 High hardness	≥ HRC50	精加工 Finishing	连续 Continuous	BHM	BHC210P	110-140-220	0.30-0.50-0.70	0.10-0.20-0.30
	高硬度材料 High hardness	≥ HRC50	半精加工 Semi- finishing	通用 General	BHM	BHC225P	100-120-180	0.30-0.50-0.70	0.10-0.20-0.30



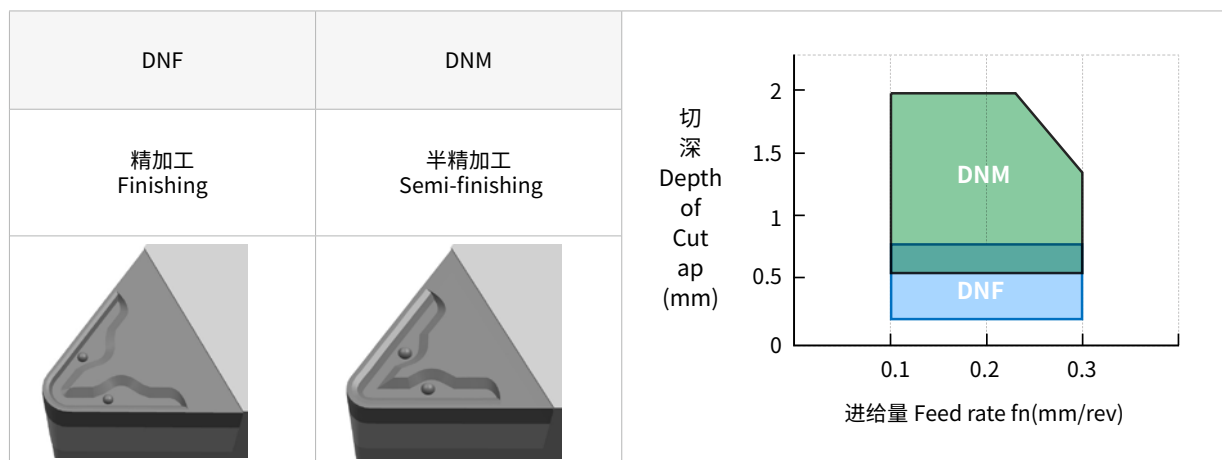
## PCD焊片式断屑槽刀片系列 PCD Brazed Chip Breaker Inserts Series

- 适用于有色金属材料半精加工、精加工，主要应用于汽车行业的变速箱箱体、气缸体等零件加工。
- 中等粒度金刚石颗粒，具有优异的耐磨性和抗崩性。
- 双前角设计，搭配DNF、DNM专用槽型，满足铝合金高光、高效率加工，保证在不稳定工况在仍实现稳定断屑和稳定寿命。

- Suitable for semi-finishing and finishing of non-ferrous metal, mainly used in the processing of gearbox box, cylinder block and other parts in the automotive industry.
- The medium-grit diamond particles, with excellent wear resistance and impact resistance.
- With double rake angle design, special chip breaker of DNF, DNM, can meet the requirements for high-gloss, high-efficiency machining for aluminum alloys, ensuring stable chip breaking and stable lifetime even in unstable conditions.

## 应用介绍 Application Introduction

### PCD断屑槽专用槽型 Dedicated Geometry of PCD Chip Breaker Inserts

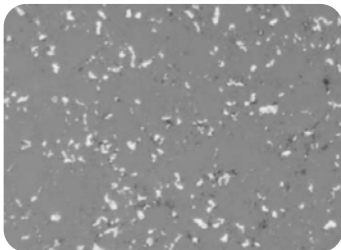


### PCD断屑槽专用牌号 Dedicated Grade of PCD Chip Breaker Inserts

DNN125P	被切削性 Machinability	被切削材质 Materials for machining	粗加工 Roughing	精加工 Finishing	适用领域 Application Field
通用加工 General Machining  	易 Easy ▲	烧结铝 Sintered aluminum	DNN125P		活塞衬垫 Piston liners
		铸铝 Cast aluminum			变速箱箱体、缸体、油盘、轮毂、 Gearbox housings Engine cylinders Oil pans Wheel shells
	▼ 难 Difficult	低硅铝 Low-silicon aluminum			缸盖 Cylinder heads
		高硅铝 High-silicon aluminum			缸体 Engine blocks

## PCD焊片式断屑槽刀片牌号应用一览表

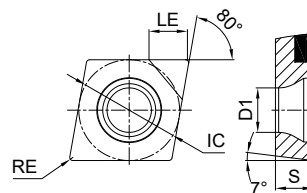
Application Summary of Grades For PCD Brazed Chip Breaker Inserts

牌号 Grade	应用 Application	材质结构 Grade Microstructure	特点 Grade Feature
DNN125P	铝合金精-半精加工 Grade for Semi-Finishing for Aluminum Alloy		<ul style="list-style-type: none"> <li>• 中等金刚石粒度，具有优异的耐磨性及抗崩性。 The medium-grit diamond particles exhibit excellent wear resistance and impact resistance.</li> <li>• 适用于铝合金、铜合金、塑料、石墨等材料的高效精加工。 Suitable for high-efficiency finishing of aluminum alloy, copper alloy, plastic, graphite and other materials.</li> </ul>

PCD 断屑槽车削刀片 (正型)  
PCD Turning Inserts with Chip Breaker (Positive)

CC□□

菱形80°有孔  
Rhombic 80°,with Hole



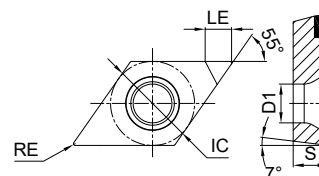
订货号 Ordering Code	刃数 Edge	尺寸 Dimension(mm)					PCD 牌号 PCD Grade
		LE	IC	S	D1	RE	DNN125P
CCGT060202K-1DNF	1	3	6.35	2.38	2.8	0.2	○
CCGT060204K-1DNF	1	3	6.35	2.38	2.8	0.4	○
CCGT09T302K-1DNF	1	3.5	9.525	3.97	4.4	0.2	●
CCGT09T304K-1DNF	1	3.5	9.525	3.97	4.4	0.4	●
CCGT09T308K-1DNF	1	3.5	9.525	3.97	4.4	0.8	●
CCGT060204K-1DNM	1	3	6.35	2.38	2.8	0.4	○
CCGT09T304K-1DNM	1	3.5	9.525	3.97	4.4	0.4	●
CCGT09T308K-1DNM	1	3.5	9.525	3.97	4.4	0.8	●



●标准库存Stock ○需预定Available Upon Order

DC□□

菱形55°有孔  
Rhombic 55°,with Hole



订货号 Ordering Code	刃数 Edge	尺寸 Dimension(mm)					PCD 牌号 PCD Grade
		LE	IC	S	D1	RE	DNN125P
DCGT070202K-1DNF	1	3	6.35	2.38	2.8	0.2	○
DCGT070204K-1DNF	1	3	6.35	2.38	2.8	0.4	○
DCGT11T302K-1DNF	1	3.5	9.525	3.97	4.4	0.2	●
DCGT11T304K-1DNF	1	3.5	9.525	3.97	4.4	0.4	●
DCGT11T308K-1DNF	1	3.5	9.525	3.97	4.4	0.8	●
DCGT070204K-1DNM	1	3	6.35	2.38	2.8	0.4	○
DCGT11T304K-1DNM	1	3.5	9.525	3.97	4.4	0.4	●
DCGT11T308K-1DNM	1	3.5	9.525	3.97	4.4	0.8	●



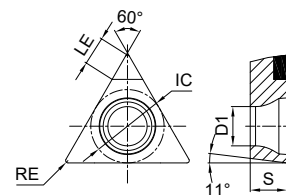
●标准库存Stock ○需预定Available Upon Order



PCD 断屑槽车削刀片 (正型)  
PCD Turning Inserts with Chip Breaker (Positive)

TP□□

三角形60°有孔  
Triangle 60°,with Hole



订货号 Ordering Code	刃数 Edge	尺寸 Dimension(mm)					PCD 牌号 PCD Grade
		LE	IC	S	D1	RE	DNN125P
TPGT080202K-1DNF	1	2.5	4.76	2.38	2.34	0.2	○
TPGT080204K-1DNF	1	2.5	4.76	2.38	2.34	0.4	○
TPGT090202K-1DNF	1	3	5.56	2.38	2.8	0.2	●
TPGT090204K-1DNF	1	3	5.56	2.38	2.8	0.4	●
TPGT110202K-1DNF	1	3	6.35	2.38	2.8	0.2	○
TPGT110204K-1DNF	1	3	6.35	2.38	2.8	0.4	○
TPGT110302K-1DNF	1	3	6.35	3.18	3.4	0.2	●
TPGT110304K-1DNF	1	3	6.35	3.18	3.4	0.4	●
TPGT110308K-1DNF	1	3	6.35	3.18	3.4	0.8	○
TPGT160402K-1DNF	1	3.5	9.525	4.76	4.4	0.2	●
TPGT160404K-1DNF	1	3.5	9.525	4.76	4.4	0.4	●
TPGT160408K-1DNF	1	3.5	9.525	4.76	4.4	0.8	●
TPGT080204K-1DNM	1	2.5	4.76	2.38	2.34	0.4	○
TPGT090204K-1DNM	1	3	5.56	2.38	2.8	0.4	●
TPGT110204K-1DNM	1	3	6.35	2.38	2.8	0.4	○
TPGT110304K-1DNM	1	3	6.35	3.18	3.4	0.4	●
TPGT110308K-1DNM	1	3	6.35	3.18	3.4	0.8	●
TPGT160404K-1DNM	1	3.5	9.525	4.76	4.4	0.4	●
TPGT160408K-1DNM	1	3.5	9.525	4.76	4.4	0.8	●

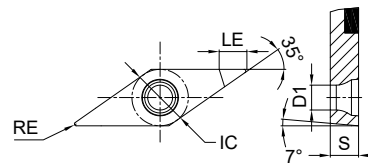


●标准库存Stock ○需预定Available Upon Order

PCD 断屑槽车削刀片 (正型)  
PCD Turning Inserts with Chip Breaker (Positive)

VC□□

菱形35°有孔  
Rhombic 35°,with Hole



订货号 Ordering Code	刃数 Edge	尺寸 Dimension(mm)					PCD 牌号 PCD Grade
		LE	IC	S	D1	RE	DNN125P
VCGT110302K-1DNF	1	3.5	6.35	3.18	2.8	0.2	○
VCGT110304K-1DNF	1	3.5	6.35	3.18	2.8	0.4	○
VCGT160404K-1DNF	1	3.5	9.525	4.76	4.4	0.4	●
VCGT160408K-1DNF	1	3.5	9.525	4.76	4.4	0.8	●
VCGT160412K-1DNF	1	3.5	9.525	4.76	4.4	1.2	○
VCGT110304K-1DNM	1	3.5	6.35	3.18	2.8	0.4	○
VCGT160404K-1DNM	1	3.5	9.525	4.76	4.4	0.4	●
VCGT160408K-1DNM	1	3.5	9.525	4.76	4.4	0.8	●
VCGT160412K-1DNM	1	3.5	9.525	4.76	4.4	1.2	○



●标准库存Stock ○需预定Available Upon Order

## 推荐切削参数 -PCD 断屑槽

### Recommended Cutting Data

ISO	被加工材料 Workpiece Material	切削范围 Application Range	用途 Usage	槽型 Chip Breaker	牌号 Grade	下限 - 推荐 - 上限 Min-Optimum-Max		
						切削速度 Cutting Speed Vc(m/min)	切深 Cutting Depth ap(mm)	进给量 Feed Rate f(mm/rev)
N	铝合金 Aluminium Alloys	精加工 Finishing	通用 General	DNF	DNN125P	300-1200-3000	0.10-0.40-0.70	0.10-0.20-0.30
	铝合金 Aluminium Alloys	半精加工 Semi-finishing	通用 General	DNM	DNN125P	300-1000-2400	0.50-1.00-2.00	0.10-0.20-0.30



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