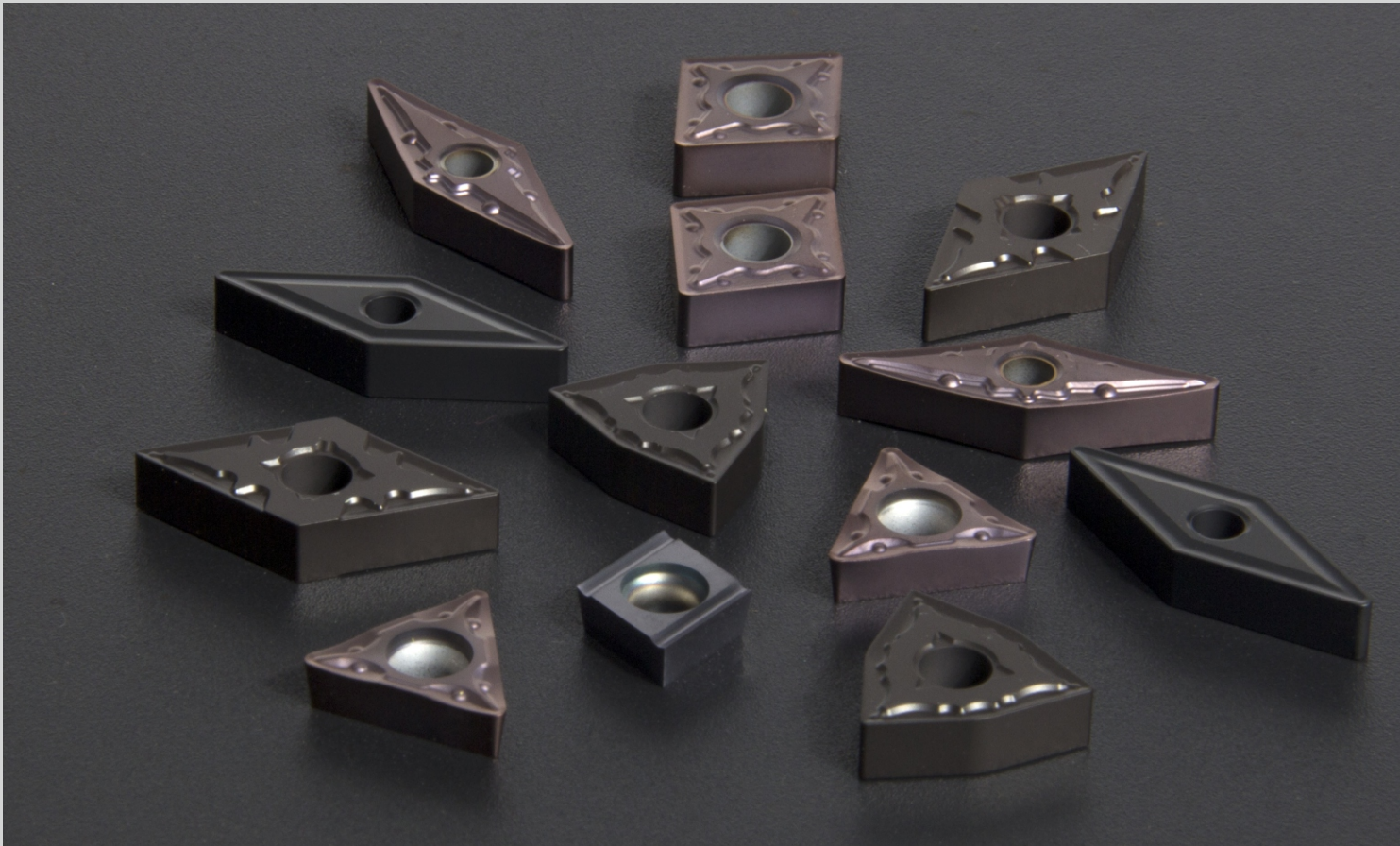


# 硬质合金刀片

*Carbide inserts series*



2026 CARBIDE INSERTS SERIES

**KOVES®**  
科维丝工具

东莞市科维丝精密工具有限公司  
广东省东莞市长安镇乌沙社区蔡屋村振昌路7号  
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车削刀片/铣削刀片/螺纹刀片/  
钻削刀片

TURNING INSERTS/MILLING INSERTS/  
THREADING INSERTS/DRILLING INSERTS

# ABOUT US

## 关于我们

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科维丝公司是一家专注于切削工具生产与销售的企业。  
公司成立于2009年，从成立之初就注重技术服务为基础，公司建有“高性能数控刀具与工具系统技术联合实验室”，同时我们根据客户的产品和工艺需求：制定和优化加工工艺方案；选择合理切削参数；计算加工节拍；选择工具、刀具、刀片及附件；量身定做非标刀具；提供与机械加工相关的全套技术服务。

koves is a global service-oriented enterprise,specialized in developing and selling industrial products. since established in 2009,from tne very beginning,koves pay attention to technical service as basement,we are has" high performance cnc cutting tools and systems technology laboratory" ,also our according to the customer' s product and process requirements formulation and optimization of manufacturing process;reasonable selection of cutting parameters;calculating cycle times;selest tools,cutters,blades and accessories;customized non-standard tool;provide a full range of technical services related to mechanical processing.





刀片材质一览表  
Summary of Insert Grades

普通车削加工  
General Turning

| 材质符号<br>Workpiece<br>Material          | P | 钢<br>Steel |     |     |     |     | M | 不锈钢<br>Stainless steel |     |     |     |     | K      | 铸铁<br>Cast Iron |     |     |     | N | 有色金属<br>Nonferrous |     |     | S | 耐热合金<br>NRSA |        |     |     | H | 高硬材料<br>Hardness |     |     |     |
|----------------------------------------|---|------------|-----|-----|-----|-----|---|------------------------|-----|-----|-----|-----|--------|-----------------|-----|-----|-----|---|--------------------|-----|-----|---|--------------|--------|-----|-----|---|------------------|-----|-----|-----|
|                                        |   | ISO        | P01 | P10 | P20 | P30 |   | P40                    | M01 | M10 | M20 | M30 |        | M40             | K01 | K10 | K20 |   | K30                | N10 | N20 |   | N30          | S01    | S10 | S20 |   | S30              | H01 | H10 | H20 |
| CVD<br>涂层硬质合金<br>CVD Coated<br>Carbide |   | KC1115     |     |     |     |     |   |                        |     |     |     |     | KC3110 |                 |     |     |     |   |                    |     |     |   |              |        |     |     |   |                  |     |     |     |
|                                        |   | KC1125     |     |     |     |     |   |                        |     |     |     |     |        |                 |     |     |     |   |                    |     |     |   |              |        |     |     |   |                  |     |     |     |
| PVD<br>涂层硬质合金<br>PVD Coated<br>Carbide |   | KP2120     |     |     |     |     |   | KP2120                 |     |     |     |     | KP2120 |                 |     |     |     |   |                    |     |     |   |              | KP2130 |     |     |   |                  |     |     |     |
|                                        |   |            |     |     |     |     |   | KP2130                 |     |     |     |     |        |                 |     |     |     |   |                    |     |     |   |              |        |     |     |   |                  |     |     |     |
| 硬质合金<br>Uncoated<br>Carbide            |   |            |     |     |     |     |   |                        |     |     |     |     |        |                 |     |     |     |   | KW20               |     |     |   |              |        |     |     |   |                  |     |     |     |
| 金属陶瓷<br>Cermet                         |   | KT20       |     |     |     |     |   | KT20                   |     |     |     |     | KT20   |                 |     |     |     |   |                    |     |     |   |              |        |     |     |   |                  |     |     |     |

整体合金内孔镗刀  
Solid Carbide Mini Boring Bar

| 材质符号<br>Workpiece<br>Material          | P | 钢<br>Steel |     |     |     |     | M | 不锈钢<br>Stainless steel |     |     |     |     | K | 铸铁<br>Cast Iron |     |     |     | N | 有色金属<br>Nonferrous |     |     | S | 耐热合金<br>NRSA |     |     |     | H | 高硬材料<br>Hardness |     |     |  |  |
|----------------------------------------|---|------------|-----|-----|-----|-----|---|------------------------|-----|-----|-----|-----|---|-----------------|-----|-----|-----|---|--------------------|-----|-----|---|--------------|-----|-----|-----|---|------------------|-----|-----|--|--|
|                                        |   | P01        | P10 | P20 | P30 | P40 |   | M01                    | M10 | M20 | M30 | M40 |   | K01             | K10 | K20 | K30 |   | N10                | N20 | N30 |   | S01          | S10 | S20 | S30 |   | H01              | H10 | H20 |  |  |
| PVD<br>涂层硬质合金<br>PVD Coated<br>Carbide |   | KTX        |     |     |     |     |   |                        |     |     |     |     |   |                 |     |     |     |   |                    |     |     |   |              |     |     |     |   |                  |     |     |  |  |
|                                        |   | KVX        |     |     |     |     |   |                        |     |     |     |     |   |                 |     |     |     |   |                    |     |     |   |              |     |     |     |   |                  |     |     |  |  |
|                                        |   |            |     |     |     |     |   |                        |     |     |     |     |   |                 |     |     |     |   |                    |     |     |   |              |     |     |     |   |                  |     |     |  |  |
| 硬质合金<br>Uncoated<br>Carbide            |   |            |     |     |     |     |   |                        |     |     |     |     |   |                 |     |     |     |   |                    |     |     |   |              |     |     |     |   |                  |     |     |  |  |
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|                                        |   |            |     |     |     |     |   |                        |     |     |     |     |   |                 |     |     |     |   |                    |     |     |   |              |     |     |     |   |                  |     |     |  |  |
|                                        |   |            |     |     |     |     |   |                        |     |     |     |     |   |                 |     |     |     |   |                    |     |     |   |              |     |     |     |   |                  |     |     |  |  |
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|                                        |   |            |     |     |     |     |   |                        |     |     |     |     |   |                 |     |     |     |   |                    |     |     |   |              |     |     |     |   |                  |     |     |  |  |
|                                        |   |            |     |     |     |     |   |                        |     |     |     |     |   |                 |     |     |     |   |                    |     |     |   |              |     |     |     |   |                  |     |     |  |  |
|                                        |   |            |     |     |     |     |   |                        |     |     |     |     |   |                 |     |     |     |   |                    |     |     |   |              |     |     |     |   |                  |     |     |  |  |
|                                        |   |            |     |     |     |     |   |                        |     |     |     |     |   |                 |     |     |     |   |                    |     |     |   |              |     |     |     |   |                  |     |     |  |  |
|                                        |   |            |     |     |     |     |   |                        |     |     |     |     |   |                 |     |     |     |   |                    |     |     |   |              |     |     |     |   |                  |     |     |  |  |
|                                        |   |            |     |     |     |     |   |                        |     |     |     |     |   |                 |     |     |     |   |                    |     |     |   |              |     |     |     |   |                  |     |     |  |  |
|                                        |   |            |     |     |     |     |   |                        |     |     |     |     |   |                 |     |     |     |   |                    |     |     |   |              |     |     |     |   |                  |     |     |  |  |
|                                        |   |            |     |     |     |     |   |                        |     |     |     |     |   |                 |     |     |     |   |                    |     |     |   |              |     |     |     |   |                  |     |     |  |  |
|                                        |   |            |     |     |     |     |   |                        |     |     |     |     |   |                 |     |     |     |   |                    |     |     |   |              |     |     |     |   |                  |     |     |  |  |
|                                        |   |            |     |     |     |     |   |                        |     |     |     |     |   |                 |     |     |     |   |                    |     |     |   |              |     |     |     |   |                  |     |     |  |  |
|                                        |   |            |     |     |     |     |   |                        |     |     |     |     |   |                 |     |     |     |   |                    |     |     |   |              |     |     |     |   |                  |     |     |  |  |
|                                        |   |            |     |     |     |     |   |                        |     |     |     |     |   |                 |     |     |     |   |                    |     |     |   |              |     |     |     |   |                  |     |     |  |  |
|                                        |   |            |     |     |     |     |   |                        |     |     |     |     |   |                 |     |     |     |   |                    |     |     |   |              |     |     |     |   |                  |     |     |  |  |
|                                        |   |            |     |     |     |     |   |                        |     |     |     |     |   |                 |     |     |     |   |                    |     |     |   |              |     |     |     |   |                  |     |     |  |  |
|                                        |   |            |     |     |     |     |   |                        |     |     |     |     |   |                 |     |     |     |   |                    |     |     |   |              |     |     |     |   |                  |     |     |  |  |
|                                        |   |            |     |     |     |     |   |                        |     |     |     |     |   |                 |     |     |     |   |                    |     |     |   |              |     |     |     |   |                  |     |     |  |  |
|                                        |   |            |     |     |     |     |   |                        |     |     |     |     |   |                 |     |     |     |   |                    |     |     |   |              |     |     |     |   |                  |     |     |  |  |
|                                        |   |            |     |     |     |     |   |                        |     |     |     |     |   |                 |     |     |     |   |                    |     |     |   |              |     |     |     |   |                  |     |     |  |  |
|                                        |   |            |     |     |     |     |   |                        |     |     |     |     |   |                 |     |     |     |   |                    |     |     |   |              |     |     |     |   |                  |     |     |  |  |
|                                        |   |            |     |     |     |     |   |                        |     |     |     |     |   |                 |     |     |     |   |                    |     |     |   |              |     |     |     |   |                  |     |     |  |  |
|                                        |   |            |     |     |     |     |   |                        |     |     |     |     |   |                 |     |     |     |   |                    |     |     |   |              |     |     |     |   |                  |     |     |  |  |
|                                        |   |            |     |     |     |     |   |                        |     |     |     |     |   |                 |     |     |     |   |                    |     |     |   |              |     |     |     |   |                  |     |     |  |  |
|                                        |   |            |     |     |     |     |   |                        |     |     |     |     |   |                 |     |     |     |   |                    |     |     |   |              |     |     |     |   |                  |     |     |  |  |
|                                        |   |            |     |     |     |     |   |                        |     |     |     |     |   |                 |     |     |     |   |                    |     |     |   |              |     |     |     |   |                  |     |     |  |  |
|                                        |   |            |     |     |     |     |   |                        |     |     |     |     |   |                 |     |     |     |   |                    |     |     |   |              |     |     |     |   |                  |     |     |  |  |
|                                        |   |            |     |     |     |     |   |                        |     |     |     |     |   |                 |     |     |     |   |                    |     |     |   |              |     |     |     |   |                  |     |     |  |  |
|                                        |   |            |     |     |     |     |   |                        |     |     |     |     |   |                 |     |     |     |   |                    |     |     |   |              |     |     |     |   |                  |     |     |  |  |

小零件加工刀片  
Small Part Cutting Inserts

| 材质符号<br>Workpiece<br>Material          | P | 钢<br>Steel |     |     |     |     | M | 不锈钢<br>Stainless steel |     |     |     |     | K | 铸铁<br>Cast Iron |     |     |     | N | 有色金属<br>Nonferrous |      |     | S | 耐热合金<br>NRSA |     |     |     | H | 高硬材料<br>Hardness |     |     |  |  |
|----------------------------------------|---|------------|-----|-----|-----|-----|---|------------------------|-----|-----|-----|-----|---|-----------------|-----|-----|-----|---|--------------------|------|-----|---|--------------|-----|-----|-----|---|------------------|-----|-----|--|--|
|                                        |   | P01        | P10 | P20 | P30 | P40 |   | M01                    | M10 | M20 | M30 | M40 |   | K01             | K10 | K20 | K30 |   | N10                | N20  | N30 |   | S01          | S10 | S20 | S30 |   | H01              | H10 | H20 |  |  |
| PVD<br>涂层硬质合金<br>PVD Coated<br>Carbide |   | KTX        |     |     |     |     |   |                        |     |     |     |     |   | KVX             |     |     |     |   |                    |      |     |   |              |     |     |     |   |                  |     |     |  |  |
|                                        |   | KVX        |     |     |     |     |   | KVX                    |     |     |     |     |   | KVX             |     |     |     |   |                    |      |     |   |              |     |     |     |   |                  |     |     |  |  |
| 硬质合金<br>Uncoated<br>Carbide            |   |            |     |     |     |     |   |                        |     |     |     |     |   |                 |     |     |     |   |                    | KW20 |     |   |              |     |     |     |   |                  |     |     |  |  |

刀片材质一览表  
Summary of Insert Grades

切断切槽加工  
For Grooving, Parting off

| 材质符号<br>Workpiece<br>Material          | P | 钢<br>Steel |     |     |     |     | M | 不锈钢<br>Stainless steel |     |     |     |     | K   | 铸铁<br>Cast Iron |     |     |     | N | 有色金属<br>Nonferrous |     |     | S | 耐热合金<br>NRSA |     |     |     | H | 高硬材料<br>Hardness |     |     |  |
|----------------------------------------|---|------------|-----|-----|-----|-----|---|------------------------|-----|-----|-----|-----|-----|-----------------|-----|-----|-----|---|--------------------|-----|-----|---|--------------|-----|-----|-----|---|------------------|-----|-----|--|
|                                        |   | P01        | P10 | P20 | P30 | P40 |   | M01                    | M10 | M20 | M30 | M40 |     | K01             | K10 | K20 | K30 |   | N10                | N20 | N30 |   | S01          | S10 | S20 | S30 |   | H01              | H10 | H20 |  |
| PVD<br>涂层硬质合金<br>PVD Coated<br>Carbide |   | KTX        |     |     |     |     |   |                        |     |     |     |     | KTX |                 |     |     |     |   |                    |     |     |   |              |     |     |     |   |                  |     |     |  |
|                                        |   | KVX        |     |     |     |     |   | KVX                    |     |     |     |     |     |                 |     |     |     |   |                    |     |     |   |              |     |     |     |   |                  |     |     |  |
| 硬质合金<br>Uncoated<br>Carbide            |   |            |     |     |     |     |   |                        |     |     |     |     |     |                 |     |     |     |   | KW20               |     |     |   |              |     |     |     |   |                  |     |     |  |

螺纹加工  
Threading Turning

| 材质符号<br>Workpiece<br>Material          | P | 钢<br>Steel |     |     |     |     | M | 不锈钢<br>Stainless steel |     |     |     |     | K | 铸铁<br>Cast Iron |     |     |     | N | 有色金属<br>Nonferrous |     |     | S | 耐热合金<br>NRSA |     |     |     | H | 高硬材料<br>Hardness |     |     |
|----------------------------------------|---|------------|-----|-----|-----|-----|---|------------------------|-----|-----|-----|-----|---|-----------------|-----|-----|-----|---|--------------------|-----|-----|---|--------------|-----|-----|-----|---|------------------|-----|-----|
|                                        |   | ISO        | P01 | P10 | P20 | P30 |   | P40                    | M01 | M10 | M20 | M30 |   | M40             | K01 | K10 | K20 |   | K30                | N10 | N20 |   | N30          | S01 | S10 | S20 |   | S30              | H01 | H10 |
| PVD<br>涂层硬质合金<br>PVD Coated<br>Carbide |   | KTX        |     |     |     |     |   | KKX                    |     |     |     |     |   | KTX             |     |     |     |   |                    |     |     |   |              |     |     |     |   |                  |     |     |
|                                        |   | KVX        |     |     |     |     |   | KVX                    |     |     |     |     |   |                 |     |     |     |   |                    |     |     |   |              |     |     |     |   |                  |     |     |
| 硬质合金<br>Uncoated<br>Carbide            |   |            |     |     |     |     |   |                        |     |     |     |     |   |                 |     |     |     |   | KW20               |     |     |   |              |     |     |     |   |                  |     |     |

钻削加工  
Drilling

| 材质符号<br>Workpiece<br>Material          | P | 钢<br>Steel |     |     |     |     | M      | 不锈钢<br>Stainless steel |     |     |     |        | K | 铸铁<br>Cast Iron |     |     |     | N | 有色金属<br>Nonferrous |     |     | S | 耐热合金<br>NRSA |     |     |     | H | 高硬材料<br>Hardness |     |     |
|----------------------------------------|---|------------|-----|-----|-----|-----|--------|------------------------|-----|-----|-----|--------|---|-----------------|-----|-----|-----|---|--------------------|-----|-----|---|--------------|-----|-----|-----|---|------------------|-----|-----|
|                                        |   | ISO        | P01 | P10 | P20 | P30 |        | P40                    | M01 | M10 | M20 | M30    |   | M40             | K01 | K10 | K20 |   | K30                | N10 | N20 |   | N30          | S01 | S10 | S20 |   | S30              | H01 | H10 |
| PVD<br>涂层硬质合金<br>PVD Coated<br>Carbide |   | KP1320     |     |     |     |     |        |                        |     |     |     | KP1320 |   |                 |     |     |     |   |                    |     |     |   |              |     |     |     |   |                  |     |     |
|                                        |   | KP2330     |     |     |     |     | KP2330 |                        |     |     |     |        |   |                 |     |     |     |   |                    |     |     |   |              |     |     |     |   |                  |     |     |
| 硬质合金<br>Uncoated<br>Carbide            |   |            |     |     |     |     |        |                        |     |     |     |        |   |                 |     |     |     |   | KW20               |     |     |   |              |     |     |     |   |                  |     |     |

刀片材质一览表  
Summary of Insert Grades

铣削加工  
Milling

| 材质符号<br>Workpiece<br>Material          | P   | 钢<br>Steel |        |     |     |     | M   | 不锈钢<br>Stainless steel |     |     |     |     | K      | 铸铁<br>Cast Iron |     |      |     | N   | 有色金属<br>Nonferrous |        |     | S   | 耐热合金<br>NRSA |     |  |        | H | 高硬材料<br>Hardness |  |  |
|----------------------------------------|-----|------------|--------|-----|-----|-----|-----|------------------------|-----|-----|-----|-----|--------|-----------------|-----|------|-----|-----|--------------------|--------|-----|-----|--------------|-----|--|--------|---|------------------|--|--|
| ISO                                    | P01 | P10        | P20    | P30 | P40 | M01 | M10 | M20                    | M30 | M40 | K01 | K10 | K20    | K30             | N10 | N20  | N30 | S01 | S10                | S20    | S30 | H01 | H10          | H20 |  |        |   |                  |  |  |
| PVD<br>涂层硬质合金<br>PVD Coated<br>Carbide |     |            | KP1230 |     |     |     |     | KP1230                 |     |     |     |     | KP1230 |                 |     |      |     |     |                    | KP2220 |     |     |              |     |  | KP1110 |   |                  |  |  |
| 硬质合金<br>Uncoated<br>Carbide            |     |            |        |     |     |     |     |                        |     |     |     |     |        |                 |     | KW20 |     |     |                    |        |     |     |              |     |  |        |   |                  |  |  |
| 金属陶瓷<br>Cermet                         |     |            | KT20   |     |     |     |     | KT20                   |     |     |     |     | KT20   |                 |     |      |     |     |                    |        |     |     |              |     |  |        |   |                  |  |  |

刀片材质说明

Inserts Material Construction

K P 2 1 2 0

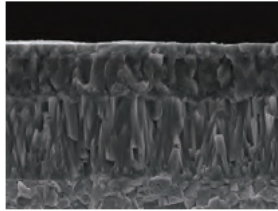
| 注册品牌 (Manufacturer brand)                                                                                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| KOVES®                                                                                                                                                                                                        |
| 刀片材料 (Cutting material)                                                                                                                                                                                       |
| W: 超细颗粒硬质合金 (Carbide uncoated)<br>C: 硬质合金CVD涂层 (Carbide coated CVD)<br>P: 硬质合金PVD涂层 (Carbide coated PVD)<br>T: 金属陶瓷 (Cermet uncoated)<br>E: 金属陶瓷PVD涂层 (Cermet coated PVD)<br>D: 聚晶金刚石 (PCD)<br>B: 立方碳化硼 (CBN) |
| 被加工材料 (Main application material)                                                                                                                                                                             |
| 1: 钢 (Steels)<br>2: 不锈钢 (Stainless steel)<br>3: 铸铁 (Cast iron)<br>4: 有色金属 (Light and non-ferrous metal)<br>5: 铝合金 (Aluminium)<br>6: 钛合金及高温合金 (Hard materials)                                                 |
| 加工方式 (Main application method)                                                                                                                                                                                |
| 1: 车削加工 (Turning)<br>2: 铣削加工 (Milling)<br>3: 钻头 (Drilling)                                                                                                                                                    |
| ISO材质标准 (ISO 513 application range)                                                                                                                                                                           |
| 05:ISO K05/P05      10:ISO K10/P10<br>15:ISO K15/P15      20:ISO K20/P20<br>25:ISO K25/P25      30:ISO K30/P30<br>35:ISO K35/P35      40:ISO K40/P40                                                          |



## 车削刀片材质简介 Turning Insert Grades

CVD涂层硬质合金系列  
CVD coating carbide inserts

**KC1115** 适用类型：精，半精加工  
Cutting Range: Finishing and Semi-finishing



超精细MT-TiCN,Al<sub>2</sub>O<sub>3</sub>和表面光滑的TiN涂层结构与良好耐磨性的硬质合金基体结合，具有良好的抗磨损性能，适合于钢，合金钢的精，半精加工。

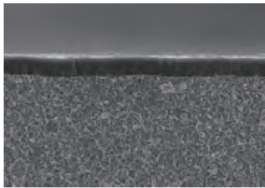
Super fine MT-TiCN,Al<sub>2</sub>O<sub>3</sub> and TiN coating on carbide substrate, smooth surface and superior wear resistance, Application: Suitable for the cutting of steel and alloy steel.



## 车削刀片材质简介 Turning Insert Grades

PVD涂层硬质合金系列  
PVD coating carbide inserts

**KP2120** 适用类型：精，半精加工  
Cutting Range: Finishing and Semi-finishing

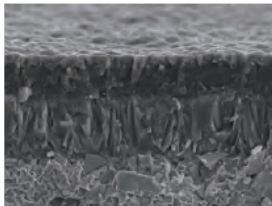


TiAlN涂层与超细颗粒的强韧性基体相结合,具有良好的抗积屑瘤特性,能延长刀具寿命,适合于不锈钢的精加工及半精加工

TiAlN coating on super micro-grain carbide substrate with good toughness, superior adhesion resistance and longer tool life Application: Suitable for stainless steel cutting



**KC1125** 适用类型：半精到轻微粗加工  
Cutting Range: Semi-finishing to Light Roughing

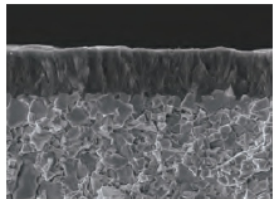


超精细MT-TiCN,Al<sub>2</sub>O<sub>3</sub>和表面光滑的TiN涂层结构与良好韧性的表面硬质合金基体结合，具有良好的抗磨损性能的同时韧性比较好，适合于钢，合金钢的半精到轻微粗加工。

Super fine MT-TiCN,Al<sub>2</sub>O<sub>3</sub> and TiN coating on carbide substrate, smooth surface, superior wear resistance and improved toughness upgraded from KC1125, Application: Suitable for the cutting of steel and alloy steel under interrupted conditions.

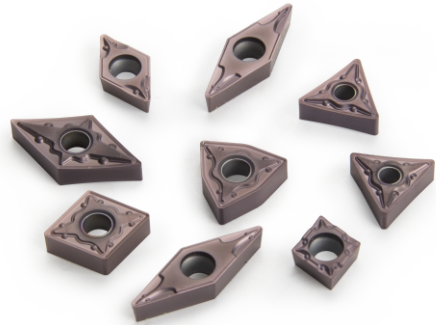


**KP2130** 适用类型：半精到轻微粗加工  
Cutting Range: Semi-finishing to Light Roughing

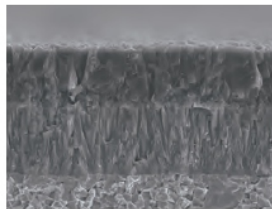


韧性好的基体和TiCN,TiN涂层相结合，具有良好耐热冲击性和耐机械冲击性，适合于不锈钢的半精加工和粗加工，亦可用于断续切削。

TiCN and TiN coating on good toughness carbide substrate, superior resistance to thermal shock and mechanical shock, Application: Suitable for stainless steel cutting and interrupted cutting.



**KC3110** 适用类型：铸铁加工的半精，粗加工  
Cutting Range: For Cast iron Semi-finishing to Roughing



专为铸铁切削加工推出的新牌号。高耐磨性细晶粒基体与厚的Al<sub>2</sub>O<sub>3</sub>涂层完美结合，在具有良好耐磨性的同时，韧性大幅度提高，适用于韧性要求高的恶劣工况。

New grade, special for iron cutting .Al<sub>2</sub>O<sub>3</sub> and coated on thick micro-grain carbide substrate, superior wear resistance and greatly improved toughness Suitable for bad machining conditions which require high toughness.

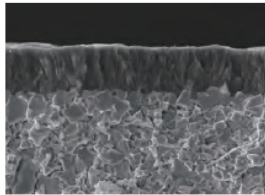


## 车削刀片材质简介 Turning Insert Grades

PVD涂层硬质合金系列  
PVD coating carbide inserts

**KTX**

适用类型：精，半精加工  
Cutting Range: Finishing and Semi-finishing



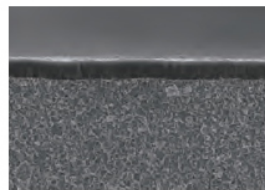
高硬度的硬质合金基体,具有较好的高温红硬性,匹配通用性良好的 TiCN PVD涂层,推荐用于钢件材质的车削

With highly hard substrate, favorable red hardness and .Use TiCN PVD coating with excellent versatility  
Application: Suitable for steel cutting



**KKX**

适用类型：精，半精加工  
Cutting Range: Finishing and Semi-finishing



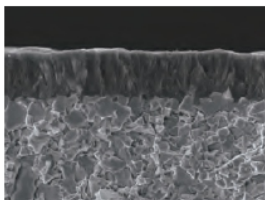
高硬度的硬质合金基体,具有较好的高温红硬性,匹配通用性良好的 TiAlN PVD涂层,推荐用于不锈钢材质的车削

With highly hard substrate, favorable red hardness and .Use TiAlN PVD coating with excellent versatility  
Application: Suitable for stainless steel cutting



**KVX**

适用类型：精，半精加工  
Cutting Range: Finishing and Semi-finishing



高硬度的硬质合金基体,具有较好的高温红硬性,匹配通用性的PVD复合涂层,推荐用于不锈钢和钢件材质的车削

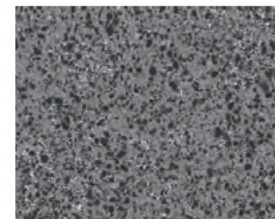
With highly hard substrate, favorable red hardness and excellent versatility  
Application: Suitable for stainless steel and steel cutting



## 车削刀片材质简介 Turning Insert Grades

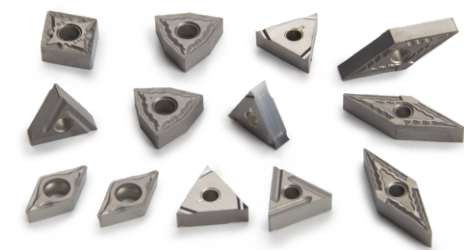
金属陶瓷牌号  
Cermet Grades

**KT20**



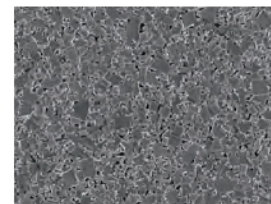
钢,铸铁,不锈钢通用牌号;车,铣削兼用,高耐磨损性及韧性兼备.

For turning and milling of steel, cast iron and stainless, High wear resistance and good toughness



加工 N 类材料牌号  
Grades for N applications

**KW20**



细颗粒硬质合金基体，具有高的硬度和良好的耐磨性，适合于铜，铝合金的加工,表面抛光处理，减少积屑瘤的产生。

Micro-grain carbide substrate with high hardness and superior wear resistance  
Application: copper alloys and aluminum alloys  
Buffed on top face reduced built-up edge



刀片编号说明  
Insert Identification System

|   |   |   |   |    |    |    |    |
|---|---|---|---|----|----|----|----|
| C | N | M | G | 12 | 04 | 04 | PM |
| 1 | 2 | 3 | 4 | 5  | 6  | 7  | 8  |

| 1 刀片形状<br>Insert shape                    |  |
|-------------------------------------------|--|
| A 85°<br>B 82°<br>K 55°                   |  |
| H 120°                                    |  |
| L 90°                                     |  |
| O 135°                                    |  |
| P 108°                                    |  |
| C 80°<br>D 55°<br>E 75°<br>M 86°<br>V 35° |  |
| R -                                       |  |
| S 90°                                     |  |
| T 60°                                     |  |
| W 80°                                     |  |

| 2 刀片后角<br>Insert clearance angle |               |
|----------------------------------|---------------|
|                                  |               |
|                                  | a             |
| A                                | 3°            |
| B                                | 5°            |
| C                                | 7°            |
| D                                | 15°           |
| E                                | 20°           |
| F                                | 25°           |
| G                                | 30°           |
| N                                | 0°            |
| P                                | 11°           |
| O                                | 特殊<br>Special |

| 3 精度代号<br>Tolerance |            |            |            |              |        |              |
|---------------------|------------|------------|------------|--------------|--------|--------------|
|                     | d<br>(±mm) | m<br>(±mm) | s<br>(±mm) | d=6.3/9.5/25 | d=12.7 | d=15.8/19/25 |
| A                   | 0.025      | 0.005      | 0.025      | •            | •      | •            |
| C                   | 0.025      | 0.013      | 0.025      | •            | •      | •            |
| E                   | 0.025      | 0.025      | 0.025      | •            | •      | •            |
| F                   | 0.013      | 0.005      | 0.025      | •            | •      | •            |
| G                   | 0.025      | 0.025      | 0.130      | •            | •      | •            |
| H                   | 0.013      | 0.013      | 0.025      | •            | •      | •            |
| J                   | 0.050      | 0.05       | 0.025      | •            | •      | •            |
| K                   | 0.080      | 0.05       | 0.025      | •            | •      | •            |
| M                   | 0.050      | 0.013      | 0.025      | •            | •      | •            |
| N                   | 0.080      | 0.013      | 0.025      | •            | •      | •            |
| U                   | 0.050      | 0.013      | 0.025      | •            | •      | •            |

| 6 刀片厚度 S(mm)<br>Insert thickness |        |  |
|----------------------------------|--------|--|
|                                  |        |  |
| 01                               | S=1.59 |  |
| T1                               | S=1.98 |  |
| 02                               | S=2.38 |  |
| 03                               | S=3.18 |  |
| T3                               | S=3.97 |  |
| 04                               | S=4.76 |  |
| 05                               | S=5.56 |  |
| 06                               | S=6.35 |  |
| 07                               | S=7.94 |  |
| 09                               | S=9.52 |  |

| 7 刀尖圆角半径 R<br>Corner radius |           |  |
|-----------------------------|-----------|--|
|                             |           |  |
|                             | R<br>(mm) |  |
| 02                          | 0.2       |  |
| 04                          | 0.4       |  |
| 05                          | 0.5       |  |
| 08                          | 0.8       |  |
| 12                          | 1.2       |  |
| 16                          | 1.6       |  |
| 20                          | 2.0       |  |
| 24                          | 2.4       |  |
| 32                          | 3.2       |  |

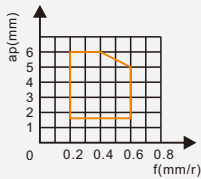
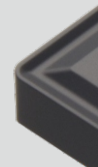
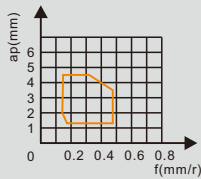
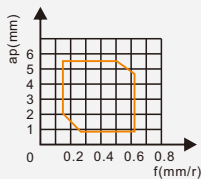
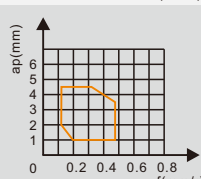
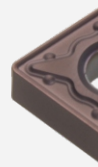
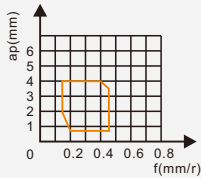
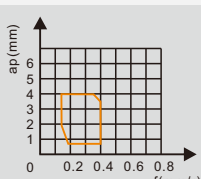
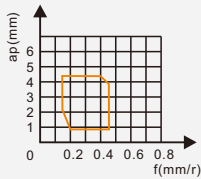
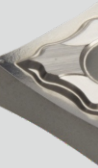
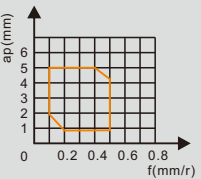
| 4 切削槽及夹固形式<br>Chip-breaker and clamp type                     |                                                               |
|---------------------------------------------------------------|---------------------------------------------------------------|
| R<br>无中心孔 Without hole                                        | Q<br>圆柱孔 + 双面倒角 40°60°<br>Cylindrical hole+double countersink |
| F<br>无中心孔 Without hole                                        | C<br>圆柱孔 + 双面倒角 70°90°<br>Cylindrical hole+double countersink |
| N<br>无中心孔 Without hole                                        | G<br>圆柱孔 Cylindrical hole                                     |
| A<br>圆柱孔 Cylindrical hole                                     | T<br>圆柱孔 + 单面倒角 40°60°<br>Cylindrical hole+countersink        |
| M<br>圆柱孔 Cylindrical hole                                     | H<br>圆柱孔 + 单面倒角 70°90°<br>Cylindrical hole+countersink        |
| U<br>圆柱孔 + 双面倒角 40°60°<br>Cylindrical hole+double countersink | W<br>圆柱孔 + 单面倒角 40°60°<br>Cylindrical hole+countersink        |
| J<br>圆柱孔 + 双面倒角 70°90°<br>Cylindrical hole+double countersink | B<br>圆柱孔 + 单面倒角 70°90°<br>Cylindrical hole+countersink        |
| X 特殊设计 Special                                                |                                                               |

| 5 切削刃长度<br>Insert size |    |    |    |    |    |    |    |
|------------------------|----|----|----|----|----|----|----|
| d<br>mm                | C  | D  | R  | S  | T  | V  | W  |
| 5.56                   | 05 | -  | -  | 05 | 09 | -  | 03 |
| 6.0                    | -  | -  | 06 | -  | -  | -  | -  |
| 6.35                   | 06 | 07 | -  | 06 | 11 | 11 | 04 |
| 6.65                   | -  | -  | -  | -  | -  | -  | -  |
| 7.94                   | 07 | -  | 08 | 07 | -  | -  | -  |
| 8.0                    | -  | -  | -  | -  | -  | -  | -  |
| 9.525                  | 09 | 11 | -  | 09 | 16 | 16 | 06 |
| 10.0                   | -  | -  | 10 | -  | -  | -  | -  |
| 12.0                   | -  | -  | 12 | -  | -  | -  | -  |
| 12.7                   | 12 | 15 | -  | 12 | 22 | 22 | 08 |
| 15.875                 | 16 | 19 | -  | 15 | 27 | -  | 10 |
| 16.0                   | -  | -  | 16 | -  | -  | -  | -  |
| 16.74                  | -  | -  | -  | 16 | -  | -  | -  |
| 19.05                  | 19 | -  | -  | 19 | 33 | -  | 13 |
| 20.0                   | -  | -  | 20 | -  | -  | -  | -  |
| 25.4                   | 25 | -  | 25 | 25 | -  | -  | -  |

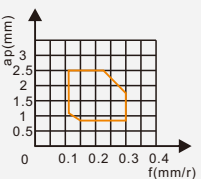
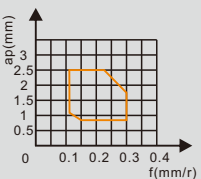
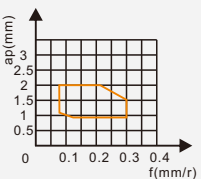
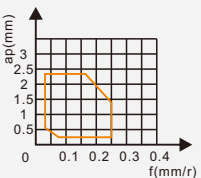
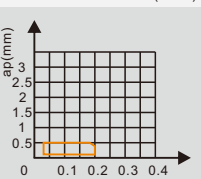
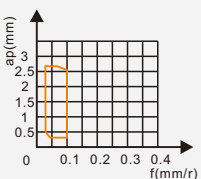
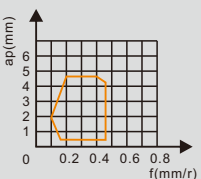
| 8 断屑槽型<br>Chip breaker |  |
|------------------------|--|
| KM                     |  |
| PM                     |  |
| MM                     |  |
| APK                    |  |



车削刀片一览表  
Features of Turning Insert  
车削刀片(负型)  
Turning Inserts (Negative)

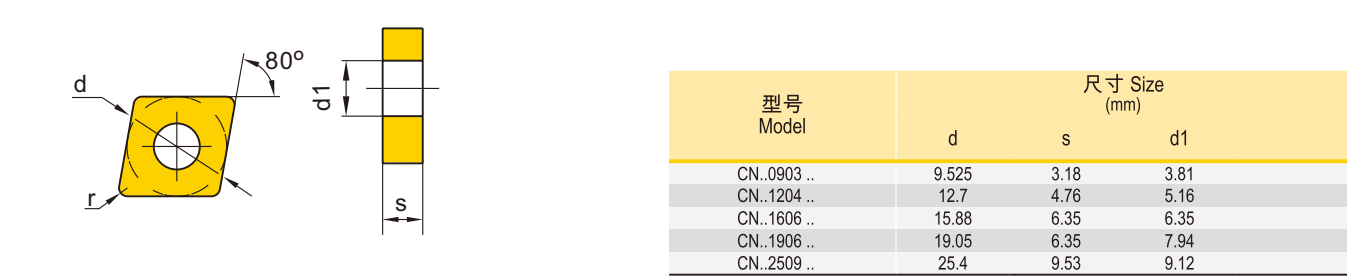
| 槽型<br>Chipbreaker | 刀片外形<br>Shape                                                                       | 断屑范围<br>Applicable<br>Chipbreaker Range                                             | 特点<br>Features                                                                                                                                                                                                                                                                                   |
|-------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 无<br>None         |    |    | 无断屑槽, 平板刀片<br>刀尖强度高, 刀片落位稳定, 最适于断续切削等不稳定切削<br><br>Without chip breaker, Flat-top. Stable placement<br>Strong edge design for intermittent cutting coinditions .                                                                                                                                  |
| KM                |    |    | 双面断屑槽<br>切削刃口强度高, 中等切削条件下加工表现优越<br><br>Double-sided chipbreaker<br>Strong cutting edge and wide land for improved performance                                                                                                                                                                    |
| KR                |    |    | 碳钢, 铸钢及合金钢粗加工用<br>变前角和变刃宽相结合满足不同切深的切削刃锋利性和强度要求<br><br>For rough machining of carbon steel, cast steel and alloy steel<br>The combination of variable rake angle and variable edge width<br>can meet the requirements of sharpness and strength of cutting<br>edges with different cutting depths |
| PM                |   |   | 普通钢, 合金钢半精加工用<br>双面断屑槽<br>扁平棱边刃形, 切削强度高<br><br>For semi-finishing of general steel and alloy steel<br>Double-sided chip breaker<br>Strong flat cutting edge                                                                                                                                      |
| MM                |  |  | 不锈钢, 软钢中切削用<br>双面断屑槽<br>尖锐切削刃, 切削锋利度高<br><br>For medium cutting of stainless steel and mild steel<br>Double-sided chip breaker<br>Sharp cutting edge                                                                                                                                             |
| MH                |  |  | 钢件和不锈钢的半精加工。<br>双前角设计, 切削轻快, 加强型刀尖。<br>开放型断屑槽, 断屑和排屑效果理想, 断屑范围广<br><br>Semi finishing of steel parts and stainless steel.<br>Double rake angle design, light cutting, reinforced tool tip<br>Open chip breaking groove, ideal chip breaking and chip removal effect,<br>wide chip breaking range |
| SM                |  |  | 用于高温合金和钛合金的半精加工,<br>具有高强度的刃口和正前角, 切削轻快!<br><br>For semi finishing of superalloys and titanium alloys,<br>With high strength cutting edge and positive rake angle,<br>cutting is light and fast!                                                                                                  |
| AH                |  |  | 双面断屑槽<br>刀尖锋利和切削刃强劲<br><br>Double-sided chip breaker<br>Sharp tool nose and strong cutting edge                                                                                                                                                                                                  |

车削刀片一览表  
Features of Turning Insert  
车削刀片(正型)  
Turning Inserts (Positive)

| 槽型<br>Chipbreaker | 刀片外形<br>Shape                                                                         | 断屑范围<br>Applicable<br>Chipbreaker Range                                               | 特点<br>Features                                                                                                                                                                                                                                                                                    |
|-------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| GPK               |    |    | 扁平棱边与双角组合,<br>同时确保刀尖强度与切削锋利度<br>Strong tool nose due to flat cutting edge and sharp cutting<br>edge due to double rake angle.                                                                                                                                                                     |
| TMP               |    |    | 独特的槽型设计在保证刃口锋利的基础上, 增加了刀片的抗冲击力<br>能够有效避免刀片切削堆积, 适用于钢件, 不锈钢的半精加工<br><br>Special chip breaker design to keep both sharp cutting edge<br>and good impact resistance which can efficiently avoid accum-<br>ulated and suited for semi-finishing steel and stainless steel.                            |
| 无<br>None         |    |    | 钢件和不锈钢内孔的精加工到半精加工, 简洁的断屑槽设计,<br>通用性强, 应用范围广<br>Finishing to semi finishing of steel parts and stainless steel<br>inner holes, simple chip breaking groove design,<br>Strong universality and wide application range                                                                               |
| SM                |   |   | 高温合金和钛合金的半精加工到中加工, 刃倾角设计保证低切削力,<br>良好的断屑控制源于专业的断屑槽设计<br>Semi finish machining to medium machining of super alloys and<br>titanium alloys, and the blade inclination design ensures low cutting<br>force, Good chip breaking control comes from professional chip<br>breaking groove design        |
| SA                |  |  | 用于不锈钢和高温合金的超精加工到精加工,<br>在低进给和小切深时具备优越的断屑效果,<br>在加工时能得到良好的表面光洁度和更长的刀具寿命<br>For superfinishing to finishing of stainless steel and superalloys,<br>Excellent chip breaking effect at low feed and small cutting depth,<br>Good surface finish and longer tool life can be obtained during machining |
| R/L-F             |  |  | 精加工<br>控制切屑流向, 切削阻力小<br><br>Finishing control cutting flow direction<br>which can reduce the cutting resistance                                                                                                                                                                                   |
| R/L-U             |  |  | 适用于精加工和半精加工<br>低进给条件下, 即使切深变化也能控制切屑,<br><br>Suitable for finishing and semi-finishing,<br>it can control the chip even under low feed conditions.                                                                                                                                                 |
| APK               |  |  | 铝合金切削用<br>大前角, 刀尖锋利度高<br><br>For aluminum alloy cutting<br>Sharp tool nose due to large rake angle                                                                                                                                                                                                |

车削刀片(负型)  
Turning Inserts (Negative)

CN..

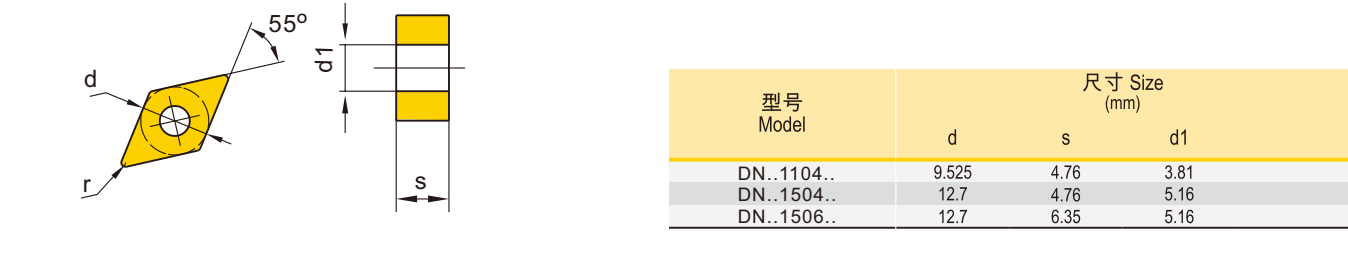


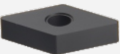
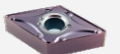
| 刀片外形<br>Insert shape                   |                                                                                     | 型号<br>Model  | 刀片材质及适用加工材料 Insert grades and application      |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |   |
|----------------------------------------|-------------------------------------------------------------------------------------|--------------|------------------------------------------------|----------------|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|-------|---|
|                                        |                                                                                     |              | r                                              | 进给fn<br>mm/rev | 切深ap<br>mm | KC3110 | KC3125 | KC1115 | KC1125 | KC1135 | KP1110 | KP2120 | KP2130 | KP6105 | KP6110 | KT20 | KCT20 | KW20 | KCW20 |   |
| 粗加工<br>Roughing                        |    | CNMA120404   | 0.4                                            | 0.25-0.70      | 3.0-7.0    | ●      |        |        |        |        |        |        |        |        |        |      |       |      |       |   |
|                                        |                                                                                     | CNMA120408   | 0.8                                            | 0.25-0.70      | 3.0-7.0    | ●      |        |        |        |        |        |        |        |        |        |      |       |      |       |   |
|                                        |                                                                                     | CNMA120412   | 1.2                                            | 0.25-0.70      | 3.0-7.0    | ●      |        |        |        |        |        |        |        |        |        |      |       |      |       |   |
| 半精加工<br>Semi-Finishing                 |    | CNMG120404KM | 0.4                                            | 0.17-0.55      | 1.2-5.0    | ●      |        |        |        |        |        |        |        |        |        |      |       |      |       |   |
|                                        |                                                                                     | CNMG120408KM | 0.8                                            | 0.17-0.55      | 1.2-5.0    | ●      |        |        |        |        |        |        |        |        |        |      |       |      |       |   |
|                                        |                                                                                     | CNMG120412KM | 1.2                                            | 0.20-0.55      | 1.5-5.0    | ●      |        |        |        |        |        |        |        |        |        |      |       |      |       |   |
| 粗加工<br>Roughing                        |   | CNMG120408KR | 0.8                                            | 0.20-0.60      | 1.20-6.4   |        | ●      |        |        | ●      |        |        |        |        |        |      |       |      |       |   |
|                                        |                                                                                     | CNMG120412KR | 1.2                                            | 0.30-0.90      | 1.80-6.4   |        | ●      |        |        | ●      |        |        |        |        |        |      |       |      |       |   |
|                                        |                                                                                     | CNMG160608KR | 0.8                                            | 0.20-0.60      | 1.20-8.1   |        | ●      |        |        | ●      |        |        |        |        |        |      |       |      |       |   |
|                                        |                                                                                     | CNMG160612KR | 1.2                                            | 0.30-0.90      | 1.80-8.1   |        | ●      |        |        | ●      |        |        |        |        |        |      |       |      |       |   |
| 半精加工<br>Semi-Finishing                 |  | CNMG120404PM | 0.4                                            | 0.12-0.52      | 0.7-4.8    |        |        | ●      | ●      |        |        |        |        |        |        |      |       |      |       |   |
|                                        |                                                                                     | CNMG120408PM | 0.8                                            | 0.12-0.52      | 0.7-4.8    |        |        | ●      | ●      |        |        |        |        |        |        |      |       |      |       |   |
|                                        |                                                                                     | CNMG120412PM | 1.2                                            | 0.12-0.52      | 0.7-4.8    |        |        | ●      | ●      |        |        |        |        |        |        |      |       |      |       |   |
| 半精加工<br>Semi-Finishing                 |  | CNMG120404MM | 0.4                                            | 0.10-0.50      | 0.5-5.0    |        |        |        |        |        | ●      | ●      |        |        |        |      |       |      |       |   |
|                                        |                                                                                     | CNMG120408MM | 0.8                                            | 0.12-0.50      | 0.5-5.0    |        |        |        |        |        | ●      | ●      |        |        |        |      |       |      |       |   |
| 半精加工<br>Semi-Finishing                 |  | CNMG120404MH | 0.4                                            | 0.07-0.20      | 0.34-3.9   |        |        |        |        |        | ●      | ●      |        |        |        |      |       |      |       |   |
|                                        |                                                                                     | CNMG120408MH | 0.8                                            | 0.14-0.40      | 0.68-3.9   |        |        |        |        |        | ●      | ●      |        |        |        |      |       |      |       |   |
|                                        |                                                                                     | CNMG120412MH | 1.2                                            | 0.20-0.60      | 1.02-3.9   |        |        |        |        |        | ●      | ●      |        |        |        |      |       |      |       |   |
| 半精加工<br>Semi-Finishing                 |  | CNMG120404SM | 0.4                                            | 0.08-0.22      | 0.40-4.3   |        |        |        |        |        |        |        | ●      | ●      |        |      |       |      |       |   |
|                                        |                                                                                     | CNMG120408SM | 0.8                                            | 0.15-0.44      | 0.80-4.3   |        |        |        |        |        |        |        | ●      | ●      |        |      |       |      |       |   |
| 半精加工<br>Semi-Finishing                 |  | CNMG120404MT | 0.4                                            | 0.15-0.40      | 1.0-5.0    |        |        |        |        |        |        |        |        |        |        | ●    | ●     |      |       |   |
|                                        |                                                                                     | CNMG120408MT | 0.8                                            | 0.17-0.55      | 1.2-5.0    |        |        |        |        |        |        |        |        |        |        | ●    | ●     |      |       |   |
| 半精加工 / 精加工<br>Semi-finishing/Finishing |  | CNMG120402AH | 0.2                                            | 0.05-0.20      | 0.8-3.5    |        |        |        |        |        |        |        |        |        |        |      |       | ●    | ●     |   |
|                                        |                                                                                     | CNMG120404AH | 0.4                                            | 0.10-0.40      | 0.8-3.5    |        |        |        |        |        |        |        |        |        |        |      |       |      | ●     | ● |
|                                        |                                                                                     | CNMG120408AH | 0.8                                            | 0.13-0.55      | 0.8-3.5    |        |        |        |        |        |        |        |        |        |        |      |       |      | ●     | ● |
| 钢 Steel                                |                                                                                     |              |                                                |                |            |        |        | ★      | ★      | ★      | ☆      | ☆      | ☆      |        | ★      | ★    |       |      |       |   |
| 不锈钢 Stainless Steel                    |                                                                                     |              |                                                |                |            |        |        |        |        |        | ★      | ★      | ☆      | ★      |        |      |       |      |       |   |
| 铸铁 Cast Iron                           |                                                                                     |              |                                                |                |            | ★      | ★      |        |        |        |        |        |        |        |        |      |       |      |       |   |
| 有色金属 Nonferrous Metal                  |                                                                                     |              |                                                |                |            |        |        |        |        |        |        |        |        |        |        |      |       | ★    | ★     |   |
| 耐热合金 Heat Resistant Alloy              |                                                                                     |              |                                                |                |            |        |        |        |        |        | ☆      | ☆      | ★      | ★      |        |      |       |      |       |   |
| 淬硬钢 Hardened Steel                     |                                                                                     |              |                                                |                |            |        |        |        |        |        |        | ★      |        |        |        |      |       |      |       |   |
| ★ 首选Preferred    ☆ 可选optional          |                                                                                     |              | ● 标准库存standard stock    ○ 订单生产order production |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |   |

★ 首选Preferred ☆ 可选optional ● 标准库存standard stock ○ 订单生产order production

车削刀片(负型)  
Turning Inserts (Negative)

DN..

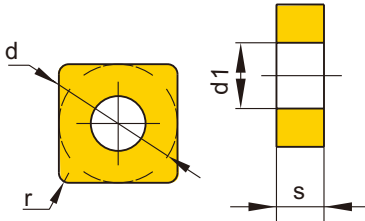


| 刀片外形<br>Insert shape      |                                                                                       | 型号<br>Model    | 刀片材质及适用加工材料 Insert grades and application |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
|---------------------------|---------------------------------------------------------------------------------------|----------------|-------------------------------------------|----------------|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|-------|
|                           |                                                                                       |                | r                                         | 进给fn<br>mm/rev | 切深ap<br>mm | KC3110 | KC3125 | KC1115 | KC1125 | KC1135 | KP1110 | KP2120 | KP2130 | KP6105 | KP6110 | KT20 | KCT20 | KW20 | KCW20 |
| 粗加工<br>Roughing           |    | DNMA150408     | 0.8                                       | 0.25-0.70      | 3.0-7.0    | ●      |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                           |                                                                                       | DNMA150412     | 1.2                                       | 0.25-0.70      | 3.0-7.0    | ●      |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                           |                                                                                       | DNMA150608     | 0.8                                       | 0.15-0.65      | 0.8-4.0    | ●      |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                           |                                                                                       | DNMA150612     | 1.2                                       | 0.15-0.65      | 1.2-4.0    | ●      |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 半精加工<br>Semi-Finishing    |    | DNMG150408KM   | 0.8                                       | 0.17-0.50      | 1.0-4.0    | ●      |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                           |                                                                                       | DNMG150412KM   | 1.2                                       | 0.20-0.50      | 1.3-4.0    | ●      |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                           |                                                                                       | DNMG150608KM   | 0.8                                       | 0.17-0.47      | 1.0-4.0    | ●      |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                           |                                                                                       | DNMG150612KM   | 1.2                                       | 0.23-0.63      | 1.3-4.0    | ●      |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 粗加工<br>Roughing           |   | DNMG150408KR   | 0.8                                       | 0.20-0.60      | 1.20-5.4   |        | ●      |        |        | ●      |        |        |        |        |        |      |       |      |       |
|                           |                                                                                       | DNMG150412KR   | 1.2                                       | 0.30-0.90      | 1.80-5.4   |        | ●      |        |        | ●      |        |        |        |        |        |      |       |      |       |
|                           |                                                                                       | DNMG150608KR   | 0.8                                       | 0.20-0.60      | 1.20-5.1   |        | ●      |        |        | ●      |        |        |        |        |        |      |       |      |       |
|                           |                                                                                       | DNMG150612KR   | 1.2                                       | 0.30-0.90      | 1.80-5.4   |        | ●      |        |        | ●      |        |        |        |        |        |      |       |      |       |
| 半精加工<br>Semi-Finishing    |  | DNMG150404PM   | 0.4                                       | 0.12-0.52      | 0.7-4.8    |        |        | ●      | ●      |        |        |        |        |        |        |      |       |      |       |
|                           |                                                                                       | DNMG150408PM   | 0.8                                       | 0.12-0.52      | 0.7-4.8    |        |        | ●      | ●      |        |        |        |        |        |        |      |       |      |       |
|                           |                                                                                       | DNMG150604PM   | 0.4                                       | 0.12-0.52      | 0.7-4.8    |        |        | ●      | ●      |        |        |        |        |        |        |      |       |      |       |
|                           |                                                                                       | DNMG150608PM   | 0.8                                       | 0.12-0.52      | 0.7-4.8    |        |        | ●      | ●      |        |        |        |        |        |        |      |       |      |       |
| 半精加工<br>Semi-Finishing    |  | DNMG150612PM   | 1.2                                       | 0.12-0.52      | 0.7-4.8    |        |        | ●      | ●      |        |        |        |        |        |        |      |       |      |       |
|                           |                                                                                       | DNMG150404MH   | 0.4                                       | 0.07-0.20      | 0.34-3.5   |        |        |        |        |        | ●      | ●      |        |        |        |      |       |      |       |
| 半精加工<br>Semi-Finishing    |  | DNMG150408MH   | 0.8                                       | 0.14-0.40      | 0.68-3.5   |        |        |        |        |        | ●      | ●      |        |        |        |      |       |      |       |
|                           |                                                                                       |                |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 半精加工<br>Semi-Finishing    |  | DNMG150404SM   | 0.4                                       | 0.08-0.22      | 0.40-3.9   |        |        |        |        |        |        |        |        | ●      | ●      |      |       |      |       |
|                           |                                                                                       | DNMG150408SM   | 0.8                                       | 0.15-0.44      | 0.80-3.9   |        |        |        |        |        |        |        |        | ●      | ●      |      |       |      |       |
| 半精加工<br>Semi-Finishing    |  | DNMG150404MM   | 0.4                                       | 0.10-0.50      | 0.5-5.0    |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                           |                                                                                       | DNMG150408MM   | 0.8                                       | 0.12-0.50      | 0.5-5.0    |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 半精加工<br>Semi-Finishing    |  | DNMG150404R-VF | 0.4                                       | 0.15-0.40      | 0.8-4.0    |        |        |        |        |        |        |        |        |        |        |      |       | ●    |       |
|                           |                                                                                       | DNMG150408R-VF | 0.8                                       | 0.17-0.50      | 1.0-4.0    |        |        |        |        |        |        |        |        |        |        |      |       | ●    |       |
| 半精加工<br>Semi-Finishing    |  | DNMG150404-TM  | 0.4                                       | 0.15-0.40      | 0.8-4.0    |        |        |        |        |        |        |        |        |        |        |      |       | ●    |       |
|                           |                                                                                       | DNMG150604-TM  | 0.4                                       | 0.15-0.40      | 0.8-4.0    |        |        |        |        |        |        |        |        |        |        |      |       | ●    |       |
|                           |                                                                                       |                |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 钢 Steel                   |                                                                                       |                |                                           |                |            |        |        | ★      | ★      | ★      | ☆      | ☆      | ☆      |        |        | ★    |       |      |       |
| 不锈钢 Stainless Steel       |                                                                                       |                |                                           |                |            |        |        |        |        |        |        | ★      | ★      | ★      | ★      |      |       |      |       |
| 铸铁 Cast Iron              |                                                                                       |                |                                           |                |            | ★      | ★      |        |        |        |        |        |        |        |        |      |       |      |       |
| 有色金属 Nonferrous Metal     |                                                                                       |                |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 耐热合金 Heat Resistant Alloy |                                                                                       |                |                                           |                |            |        |        |        |        |        |        |        |        | ★      | ★      |      |       |      |       |
| 淬硬钢 Hardened Steel        |                                                                                       |                |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |

★ 首选Preferred ☆ 可选optional ● 标准库存standard stock ○ 订单生产order production

车削刀片(负型)  
Turning Inserts (Negative)

SN..



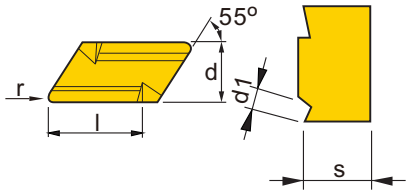
| 型号<br>Model | 尺寸 Size<br>(mm) |      |      |
|-------------|-----------------|------|------|
|             | d               | s    | d1   |
| SN..1204 .. | 12.7            | 4.76 | 5.16 |
| SN..1506 .. | 15.88           | 6.35 | 6.35 |
| SN..1906 .. | 19.05           | 6.35 | 7.94 |
| SN..2509 .. | 25.4            | 9.53 | 9.12 |

| 刀片外形<br>Insert shape      |                                                                                     | 型号<br>Model   | 刀片材质及适用加工材料 Insert grades and application |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
|---------------------------|-------------------------------------------------------------------------------------|---------------|-------------------------------------------|----------------|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|-------|
|                           |                                                                                     |               | r                                         | 进给fn<br>mm/rev | 切深ap<br>mm | KC3110 | KC3125 | KC1115 | KC1125 | KC1135 | KP1110 | KP2120 | KP2130 | KP6105 | KP6110 | KT20 | KCT20 | KW20 | KCW20 |
| 粗加工<br>Roughing           |    | SNMA120404    | 0.4                                       | 0.15-0.70      | 1.0-6.0    | ●      |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                           |                                                                                     | SNMA120408    | 0.8                                       | 0.15-0.70      | 1.0-6.0    | ●      |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                           |                                                                                     | SNMA120412    | 1.2                                       | 0.20-0.80      | 1.5-6.0    | ●      |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 半精加工<br>Semi-Finishing    |    | SNMG120404KM  | 0.4                                       | 0.17-0.55      | 1.2-5.0    | ●      |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                           |                                                                                     | SNMG120408KM  | 0.8                                       | 0.20-0.55      | 1.5-5.0    | ●      |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                           |                                                                                     | SNMG120412KM  | 1.2                                       | 0.25-0.60      | 2.0-5.0    | ●      |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 粗加工<br>Roughing           |  | SNMG120408KR  | 0.8                                       | 0.20-0.60      | 0.80-5.2   |        | ●      |        |        | ●      |        |        |        |        |        |      |       |      |       |
|                           |                                                                                     | SNMG120412KR  | 1.2                                       | 0.30-0.90      | 1.20-5.2   |        | ●      |        |        | ●      |        |        |        |        |        |      |       |      |       |
|                           |                                                                                     | SNMG120416KR  | 1.6                                       | 0.40-1.20      | 1.60-5.2   |        | ●      |        |        | ●      |        |        |        |        |        |      |       |      |       |
|                           |                                                                                     | SNMG150608KR  | 0.8                                       | 0.20-0.60      | 1.20-7.9   |        | ●      |        |        | ●      |        |        |        |        |        |      |       |      |       |
|                           |                                                                                     | SNMG150612KR  | 1.2                                       | 0.30-0.90      | 1.80-7.9   |        | ●      |        |        | ●      |        |        |        |        |        |      |       |      |       |
|                           |                                                                                     | SNMG150616KR  | 1.6                                       | 0.40-1.20      | 2.40-7.9   |        | ●      |        |        | ●      |        |        |        |        |        |      |       |      |       |
|                           |                                                                                     | SNMG190612KR  | 1.2                                       | 0.30-0.90      | 1.80-9.5   |        | ●      |        |        | ●      |        |        |        |        |        |      |       |      |       |
|                           |                                                                                     | SNMG190616KR  | 1.6                                       | 0.10-1.20      | 2.40-9.5   |        | ●      |        |        | ●      |        |        |        |        |        |      |       |      |       |
| 半精加工<br>Semi-Finishing    |  | SNMG120404-TM | 0.4                                       | 0.12-0.40      | 1.0-5.0    |        |        |        |        |        |        |        |        |        |        | ●    |       |      |       |
|                           |                                                                                     | SNMG120408-TM | 0.8                                       | 0.17-0.55      | 1.2-5.0    |        |        |        |        |        |        |        |        |        |        | ●    |       |      |       |
| 半精加工<br>Semi-Finishing    |  | SNMG120404PM  | 0.4                                       | 0.15-0.50      | 1.2-5.0    |        |        |        |        | ●      | ●      |        |        |        |        |      |       |      |       |
|                           |                                                                                     | SNMG120408PM  | 0.8                                       | 0.15-0.50      | 1.2-5.0    |        |        |        |        | ●      | ●      |        |        |        |        |      |       |      |       |
| 半精加工<br>Semi-Finishing    |  | SNMG120404MM  | 0.4                                       | 0.10-0.50      | 0.5-5.0    |        |        |        |        |        |        | ●      | ●      |        |        |      |       |      |       |
|                           |                                                                                     | SNMG120408MM  | 0.8                                       | 0.12-0.50      | 0.5-5.0    |        |        |        |        |        |        | ●      | ●      |        |        |      |       |      |       |
| 半精加工<br>Semi-Finishing    |  | SNMG120404MH  | 0.4                                       | 0.07-0.20      | 0.34-3.8   |        |        |        |        |        |        | ●      | ●      |        |        |      |       |      |       |
|                           |                                                                                     | SNMG120408MH  | 0.8                                       | 0.14-0.40      | 0.68-3.8   |        |        |        |        |        |        | ●      | ●      |        |        |      |       |      |       |
| 半精加工<br>Semi-Finishing    |  | SNGG120404R-C | 0.4                                       | 0.15-0.30      | 1.0-4.0    |        |        |        |        |        |        |        |        |        |        |      | ●     |      |       |
|                           |                                                                                     | SNGG120404L-C | 0.4                                       | 0.15-0.35      | 1.0-4.0    |        |        |        |        |        |        |        |        |        |        |      | ●     |      |       |
|                           |                                                                                     | SNGG120408R-C | 0.8                                       | 0.15-0.35      | 1.0-4.0    |        |        |        |        |        |        |        |        |        |        |      | ●     |      |       |
|                           |                                                                                     | SNGG120408L-C | 0.8                                       | 0.15-0.35      | 1.0-4.0    |        |        |        |        |        |        |        |        |        |        |      | ●     |      |       |
| 钢 Steel                   |                                                                                     |               |                                           |                |            |        |        | ★      | ★      | ★      | ☆      | ☆      | ☆      |        | ★      |      |       |      |       |
| 不锈钢 Stainless Steel       |                                                                                     |               |                                           |                |            |        |        |        |        |        |        | ★      | ★      |        |        |      |       |      |       |
| 铸铁 Cast Iron              |                                                                                     |               |                                           |                |            |        | ★      | ★      |        |        |        |        |        |        |        |      |       |      |       |
| 有色金属 Nonferrous Metal     |                                                                                     |               |                                           |                |            |        |        |        |        |        |        |        |        |        |        | ★    |       |      |       |
| 耐热合金 Heat Resistant Alloy |                                                                                     |               |                                           |                |            |        |        |        |        |        |        |        | ☆      | ☆      |        |      |       |      |       |
| 淬硬钢 Hardened Steel        |                                                                                     |               |                                           |                |            |        |        |        |        |        |        |        |        | ★      |        |      |       |      |       |

★ 首选Preferred ☆ 可选optional ● 标准库存standard stock ○ 订单生产order production

车削刀片(负型)  
Turning Inserts (Negative)

KN..



| 型号<br>Model  | 尺寸 Size<br>(mm) |       |      |     |     |
|--------------|-----------------|-------|------|-----|-----|
|              | l               | d     | s    | d1  | r   |
| KN..160405.. | 19.2            | 9.525 | 4.76 | 2.2 | 0.5 |

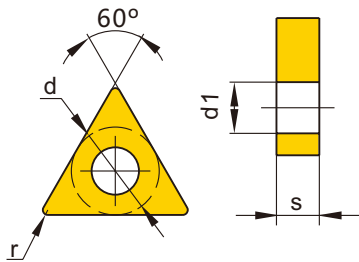
| 刀片外形<br>Insert shape                                                                                                   | 型号<br>Model    | 刀片材质及适用加工材料 Insert grades and application |                 |             |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
|------------------------------------------------------------------------------------------------------------------------|----------------|-------------------------------------------|-----------------|-------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|-------|
|                                                                                                                        |                | r                                         | 进给 fn<br>mm/rev | 切深 ap<br>mm | KC3110 | KC3125 | KC1115 | KC1125 | KC1135 | KP1110 | KP2120 | KP2130 | KP6105 | KP6110 | KT20 | KCT20 | KW20 | KCW20 |
| <div>半精加工<br/>Semi-Finishing</div>  | KNUX160405R-11 | 0.5                                       | 0.20-0.35       | 1.0-6.0     |        |        |        | ●      |        | ●      |        |        |        |        |      |       |      |       |
|                                                                                                                        | KNUX160405L-11 | 0.5                                       | 0.20-0.35       | 1.0-6.0     |        |        |        | ●      |        | ●      |        |        |        |        |      |       |      |       |
|                                                                                                                        |                |                                           |                 |             |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                                                                                                                        |                |                                           |                 |             |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                                                                                                                        |                |                                           |                 |             |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 钢 Steel                                                                                                                |                |                                           |                 |             |        |        |        | ★      |        | ★      |        |        |        |        |      |       |      |       |
| 不锈钢 Stainless Steel                                                                                                    |                |                                           |                 |             |        |        |        | ★      |        | ★      |        |        |        |        |      |       |      |       |
| 铸铁 Cast Iron                                                                                                           |                |                                           |                 |             |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 有色金属 Nonferrous Metal                                                                                                  |                |                                           |                 |             |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 耐热合金 Heat Resistant Alloy                                                                                              |                |                                           |                 |             |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 淬硬钢 Hardened Steel                                                                                                     |                |                                           |                 |             |        |        |        |        |        |        |        |        |        |        |      |       |      |       |

★ 首选Preferred ☆ 可选optional ● 标准库存standard stock ○ 订单生产order production



车削刀片(负型)  
Turning Inserts (Negative)

TN..



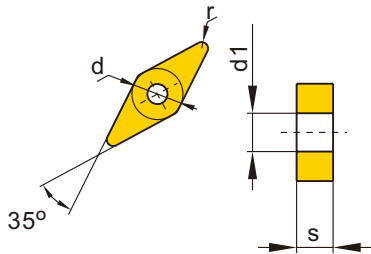
| 型号<br>Model | 尺寸 Size<br>(mm) |      |      |
|-------------|-----------------|------|------|
|             | d               | s    | d1   |
| TN..1604..  | 9.525           | 4.76 | 3.81 |
| TN..2204..  | 12.7            | 4.76 | 5.16 |

| 刀片外形<br>Insert shape                   |                                                                                                |               | 型号<br>Model |           | 刀片材质及适用加工材料 Insert grades and application |                |            |        |        |        |        |        |        |        |        |        |        |      |       |
|----------------------------------------|------------------------------------------------------------------------------------------------|---------------|-------------|-----------|-------------------------------------------|----------------|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|
|                                        |                                                                                                |               |             |           | r                                         | 进给fn<br>mm/rev | 切深ap<br>mm | KC3110 | KC3125 | KC1115 | KC1125 | KC1135 | KP1110 | KP2120 | KP2130 | KP6105 | KP6110 | KT20 | KCT20 |
| 粗加工<br>Roughing                        |               | TNMA160404    | 0.4         | 0.25-0.70 | 3.0-7.0                                   | ●              |            |        |        |        |        |        |        |        |        |        |        |      |       |
|                                        |                                                                                                | TNMA160408    | 0.8         | 0.25-0.70 | 3.0-7.0                                   | ●              |            |        |        |        |        |        |        |        |        |        |        |      |       |
|                                        |                                                                                                | TNMA160412    | 1.2         | 0.25-0.70 | 3.0-7.0                                   | ●              |            |        |        |        |        |        |        |        |        |        |        |      |       |
| 半精加工<br>Semi-Finishing                 |               | TNMG160404KM  | 0.4         | 0.17-0.50 | 1.2-3.5                                   | ●              |            |        |        |        |        |        |        |        |        |        |        |      |       |
|                                        |                                                                                                | TNMG160408KM  | 0.8         | 0.20-0.50 | 1.5-3.5                                   | ●              |            |        |        |        |        |        |        |        |        |        |        |      |       |
|                                        |                                                                                                | TNMG160412KM  | 1.2         | 0.20-0.50 | 1.5-3.5                                   | ●              |            |        |        |        |        |        |        |        |        |        |        |      |       |
| 粗加工<br>Roughing                        |              | TNMG160404KR  | 0.4         | 0.17-0.50 | 1.2-3.5                                   |                | ●          |        |        | ●      |        |        |        |        |        |        |        |      |       |
|                                        |                                                                                                | TNMG160408KR  | 0.8         | 0.20-0.50 | 1.5-3.5                                   |                | ●          |        |        | ●      |        |        |        |        |        |        |        |      |       |
|                                        |                                                                                                | TNMG160412KR  | 1.2         | 0.20-0.50 | 1.5-3.5                                   |                | ●          |        |        |        |        |        |        |        |        |        |        |      |       |
| 半精加工<br>Semi-Finishing                 |             | TNMG160404PM  | 0.4         | 0.05-0.30 | 0.5-2.0                                   |                |            |        |        | ●      |        |        |        |        |        |        |        |      |       |
|                                        |                                                                                                | TNMG160408PM  | 0.8         | 0.07-0.30 | 0.5-2.0                                   |                |            |        |        | ●      |        |        |        |        |        |        |        |      |       |
| 半精加工<br>Semi-Finishing                 |             | TNMG160404MM  | 0.4         | 0.05-0.30 | 0.8-5.0                                   |                |            |        |        |        |        | ●      | ●      |        |        |        |        |      |       |
|                                        |                                                                                                | TNMG160408MM  | 0.8         | 0.10-0.50 | 1.0-5.0                                   |                |            |        |        |        |        | ●      | ●      |        |        |        |        |      |       |
| 半精加工<br>Semi-Finishing                 |             | TNMG160404MH  | 0.4         | 0.07-0.20 | 0.34-3.7                                  |                |            |        |        |        |        | ●      | ●      |        |        |        |        |      |       |
|                                        |                                                                                                | TNMG160408MH  | 0.8         | 0.14-0.40 | 0.68-3.7                                  |                |            |        |        |        |        | ●      | ●      |        |        |        |        |      |       |
| 半精加工 / 精加工<br>Semi-finishing/Finishing |             | TNGG160401SA  | 0.1         | 0.05-0.15 | 0.40-4.1                                  |                |            |        |        |        |        |        |        |        |        |        |        |      |       |
|                                        |                                                                                                | TNGG160402SA  | 0.2         | 0.15-0.44 | 0.80-4.1                                  |                |            |        |        |        |        |        |        |        |        |        |        |      |       |
| 半精加工<br>Semi-Finishing                 |             | TNMG160404SM  | 0.4         | 0.05-0.15 | 0.40-4.1                                  |                |            |        |        |        |        |        | ●      | ●      |        |        |        |      |       |
|                                        |                                                                                                | TNMG160408SM  | 0.8         | 0.15-0.44 | 0.80-4.1                                  |                |            |        |        |        |        |        | ●      | ●      |        |        |        |      |       |
| 半精加工<br>Semi-Finishing                 |             | TNMG160404MT  | 0.4         | 0.10-0.50 | 0.5-5.0                                   |                |            |        |        |        |        |        |        |        |        |        | ●      |      |       |
|                                        |                                                                                                | TNMG160408MT  | 0.8         | 0.12-0.50 | 0.5-5.0                                   |                |            |        |        |        |        |        |        |        |        |        | ●      |      |       |
| 半精加工 / 精加工<br>Semi-finishing/Finishing |             | TNMG160402AH  | 0.2         | 0.04-0.28 | 0.5-3.0                                   |                |            |        |        |        |        |        |        |        |        |        |        |      | ●     |
|                                        |                                                                                                | TNMG160404AH  | 0.4         | 0.05-0.30 | 0.8-3.5                                   |                |            |        |        |        |        |        |        |        |        |        |        |      | ●     |
|                                        |                                                                                                | TNMG160408AH  | 0.8         | 0.10-0.40 | 0.8-3.5                                   |                |            |        |        |        |        |        |        |        |        |        |        |      | ●     |
| 半精加工<br>Semi-Finishing                 |             | TNMG160404R-C | 0.4         | 0.12-0.30 | 1.0-3.5                                   |                |            |        |        |        |        | ●      |        |        |        |        | ●      |      |       |
|                                        |                                                                                                | TNMG160404L-C | 0.4         | 0.12-0.30 | 1.0-3.5                                   |                |            |        |        |        |        | ●      |        |        |        |        | ●      |      |       |
|                                        |                                                                                                | TNMG160408R-C | 0.8         | 0.15-0.35 | 1.3-3.5                                   |                |            |        |        |        |        | ●      |        |        |        |        | ●      |      |       |
|                                        |                                                                                                | TNMG160408L-C | 0.8         | 0.15-0.35 | 1.3-3.5                                   |                |            |        |        |        |        | ●      |        |        |        |        | ●      |      |       |
| 精加工<br>Finishing                       | <br>(有标准库存) | TNGG160402R-F | 0.2         | 0.03-0.20 | 0.1-1.5                                   |                |            |        |        |        |        | ●      |        |        |        |        | ●      |      |       |
|                                        |                                                                                                | TNGG160402L-F | 0.2         | 0.03-0.20 | 0.1-1.5                                   |                |            |        |        |        |        | ●      |        |        |        |        | ●      |      |       |
|                                        |                                                                                                | TNGG160404R-F | 0.4         | 0.05-0.25 | 0.3-2.0                                   |                |            |        |        |        |        | ●      |        |        |        |        | ●      |      |       |
|                                        |                                                                                                | TNGG160404L-F | 0.4         | 0.05-0.25 | 0.3-2.0                                   |                |            |        |        |        |        | ●      |        |        |        |        | ●      |      |       |
| 钢 Steel                                |                                                                                                |               |             |           |                                           |                | ★          |        | ★      | ★      | ☆      | ☆      | ☆      |        |        | ★      |        |      |       |
| 不锈钢 Stainless Steel                    |                                                                                                |               |             |           |                                           |                |            |        |        |        |        | ★      | ★      | ★      | ★      |        |        |      |       |
| 铸铁 Cast Iron                           |                                                                                                |               |             |           |                                           |                | ★          | ★      |        |        |        |        |        |        |        |        |        |      |       |
| 有色金属 Nonferrous Metal                  |                                                                                                |               |             |           |                                           |                |            |        |        |        |        |        |        |        |        | ★      |        | ★    |       |
| 耐热合金 Heat Resistant Alloy              |                                                                                                |               |             |           |                                           |                |            |        |        |        |        | ☆      | ☆      | ★      | ★      |        |        |      |       |
| 淬硬钢 Hardened Steel                     |                                                                                                |               |             |           |                                           |                |            |        |        |        |        | ★      |        |        |        |        |        |      |       |

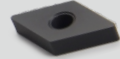
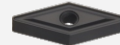
★ 首选Preferred ☆ 可选optional ● 标准库存standard stock ○ 订单生产order production

车削刀片(负型)  
Turning Inserts (Negative)

VN..



| 型号<br>Model | 尺寸 Size<br>(mm) |      |      |
|-------------|-----------------|------|------|
|             | d               | s    | d1   |
| VN..1604..  | 9.525           | 4.76 | 3.81 |

| 刀片外形<br>Insert shape      |                                                                                       | 型号<br>Model  | 刀片材质及适用加工材料 Insert grades and application |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
|---------------------------|---------------------------------------------------------------------------------------|--------------|-------------------------------------------|----------------|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|-------|
|                           |                                                                                       |              | r                                         | 进给fn<br>mm/rev | 切深ap<br>mm | KC3110 | KC3125 | KC1115 | KC1125 | KC1135 | KP1110 | KP2120 | KP2130 | KP6105 | KP6110 | KT20 | KCT20 | KW20 | KCW20 |
| 粗加工<br>Roughing           |    | VNGA160404   | 0.4                                       | 0.05-0.10      | 0.5-1.0    | ●      |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                           |                                                                                       | VNGA160408   | 0.8                                       | 0.05-0.10      | 0.5-1.0    | ●      |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                           |                                                                                       |              |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 半精加工<br>Semi-Finishing    |    | VNMG160404KM | 0.4                                       | 0.15-0.36      | 0.8-3.0    | ●      |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                           |                                                                                       | VNMG160408KM | 0.8                                       | 0.17-0.36      | 1.0-2.5    | ●      |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                           |                                                                                       |              |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 半精加工<br>Semi-Finishing    |  | VNMG160404PM | 0.4                                       | 0.15-0.50      | 1.2-5.0    |        |        | ●      | ●      |        |        |        |        |        |        |      |       |      |       |
|                           |                                                                                       | VNMG160408PM | 0.8                                       | 0.15-0.50      | 1.2-5.0    |        |        | ●      | ●      |        |        |        |        |        |        |      |       |      |       |
|                           |                                                                                       |              |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 半精加工<br>Semi-Finishing    |  | VNMG160404MM | 0.4                                       | 0.05-0.30      | 0.5-2.0    |        |        |        |        |        | ●      | ●      |        |        |        |      |       |      |       |
|                           |                                                                                       | VNMG160408MM | 0.8                                       | 0.07-0.30      | 0.5-2.0    |        |        |        |        |        | ●      | ●      |        |        |        |      |       |      |       |
|                           |                                                                                       |              |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 半精加工<br>Semi-Finishing    |  | VNMG160404MH | 0.4                                       | 0.07-0.20      | 0.34-3.3   |        |        |        |        |        | ●      | ●      |        |        |        |      |       |      |       |
|                           |                                                                                       | VNMG160408MH | 0.8                                       | 0.14-0.40      | 0.68-3.3   |        |        |        |        |        | ●      | ●      |        |        |        |      |       |      |       |
|                           |                                                                                       |              |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 半精加工<br>Semi-Finishing    |  | VNMG160404SM | 0.4                                       | 0.08-0.22      | 0.40-3.3   |        |        |        |        |        |        |        | ●      | ●      |        |      |       |      |       |
|                           |                                                                                       | VNMG160408SM | 0.8                                       | 0.15-0.44      | 0.80-3.3   |        |        |        |        |        |        |        | ●      | ●      |        |      |       |      |       |
|                           |                                                                                       |              |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 半精加工<br>Semi-Finishing    |  | VNMG160404MT | 0.4                                       | 0.15-0.36      | 0.8-3.0    |        |        |        |        |        |        |        |        |        | ●      |      |       |      |       |
|                           |                                                                                       | VNMG160408MT | 0.8                                       | 0.17-0.36      | 1.0-2.5    |        |        |        |        |        |        |        |        |        | ●      |      |       |      |       |
|                           |                                                                                       |              |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 钢 Steel                   |                                                                                       |              |                                           |                |            |        |        | ★      | ★      |        | ☆      | ☆      | ☆      |        | ★      |      |       |      |       |
| 不锈钢 Stainless Steel       |                                                                                       |              |                                           |                |            |        |        |        |        |        |        | ★      | ★      | ★      | ★      |      |       |      |       |
| 铸铁 Cast Iron              |                                                                                       |              |                                           |                |            |        | ★      |        |        |        |        |        |        |        |        |      |       |      |       |
| 有色金属 Nonferrous Metal     |                                                                                       |              |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 耐热合金 Heat Resistant Alloy |                                                                                       |              |                                           |                |            |        |        |        |        |        |        |        |        | ★      | ★      |      |       |      |       |
| 淬硬钢 Hardened Steel        |                                                                                       |              |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |

★ 首选Preferred ☆ 可选optional ● 标准库存standard stock ○ 订单生产order production

车削刀片(负型)  
Turning Inserts (Negative)

WN..

| 型号<br>Model | 尺寸 Size<br>(mm) |      |      |
|-------------|-----------------|------|------|
|             | d               | s    | d1   |
| WN..0604 .. | 9.525           | 4.76 | 3.81 |
| WN..0804 .. | 12.7            | 4.76 | 5.16 |

| 刀片外形<br>Insert shape                                                                                                          | 型号<br>Model    | r   | 进给fn<br>mm/rev | 切深ap<br>mm | 刀片材质及适用加工材料 Insert grades and application |        |        |        |        |        |        |        |        |        |      |       |      |       |
|-------------------------------------------------------------------------------------------------------------------------------|----------------|-----|----------------|------------|-------------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|-------|
|                                                                                                                               |                |     |                |            | KC3110                                    | KC3125 | KC1115 | KC1125 | KC1135 | KP1110 | KP2120 | KP2130 | KP6105 | KP6110 | KT20 | KCT20 | KW20 | KCW20 |
| <br>粗加工<br>Roughing                          | WNMA080404     | 0.4 | 0.25-0.55      | 1.5-4.0    | ●                                         |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                                                                                                                               | WNMA080408     | 0.8 | 0.25-0.70      | 3.0-7.0    | ●                                         |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                                                                                                                               | WNMA080412     | 1.2 | 0.25-0.70      | 3.0-7.0    | ●                                         |        |        |        |        |        |        |        |        |        |      |       |      |       |
| <br>半精加工<br>Semi-Finishing                   | WNMG080404KM   | 0.4 | 0.12-0.52      | 0.7-4.8    | ●                                         |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                                                                                                                               | WNMG080408KM   | 0.8 | 0.17-0.55      | 1.2-4.0    | ●                                         |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                                                                                                                               | WMMG080412KM   | 1.2 | 0.25-0.55      | 1.5-4.0    | ●                                         |        |        |        |        |        |        |        |        |        |      |       |      |       |
| <br>粗加工<br>Roughing                         | WNMG080404KR   | 0.4 | 0.12-0.52      | 0.7-4.8    |                                           | ●      |        |        |        | ●      |        |        |        |        |      |       |      |       |
|                                                                                                                               | WNMG080408KR   | 0.8 | 0.20-0.60      | 1.20-5.8   |                                           | ●      |        |        |        | ●      |        |        |        |        |      |       |      |       |
|                                                                                                                               | WMMG080412KR   | 1.2 | 0.30-0.90      | 1.20-5.8   |                                           | ●      |        |        |        |        |        |        |        |        |      |       |      |       |
| <br>半精加工<br>Semi-Finishing                 | WNMG080404PM   | 0.4 | 0.12-0.52      | 0.7-4.8    |                                           |        | ●      | ●      |        |        |        |        |        |        |      |       |      |       |
|                                                                                                                               | WNMG080408PM   | 0.8 | 0.12-0.52      | 0.7-4.8    |                                           |        | ●      | ●      |        |        |        |        |        |        |      |       |      |       |
| <br>WNMG080404MM                           | WNMG080404MM   | 0.4 | 0.10-0.50      | 0.5-5.0    |                                           |        |        |        |        |        |        | ●      | ●      |        |      |       |      |       |
|                                                                                                                               | WNMG080408MM   | 0.8 | 0.12-0.50      | 0.5-5.0    |                                           |        |        |        |        |        |        | ●      | ●      |        |      |       |      |       |
| <br>半精加工<br>Semi-Finishing                 | WNMG080404MH   | 0.4 | 0.07-0.20      | 0.34-2.6   |                                           |        |        |        |        |        | ●      | ●      |        |        |      |       |      |       |
|                                                                                                                               | WNMG080408MH   | 0.8 | 0.14-0.40      | 0.68-2.6   |                                           |        |        |        |        |        | ●      | ●      |        |        |      |       |      |       |
| <br>半精加工<br>Semi-Finishing                 | WNMG080404SM   | 0.4 | 0.08-0.22      | 0.40-2.9   |                                           |        |        |        |        |        |        |        | ●      | ●      |      |       |      |       |
|                                                                                                                               | WNMG080408SM   | 0.8 | 0.15-0.44      | 0.80-2.9   |                                           |        |        |        |        |        |        |        | ●      | ●      |      |       |      |       |
| <br>半精加工<br>Semi-Finishing                 | WNMG080404MT   | 0.4 | 0.12-0.40      | 1.0-4.0    |                                           |        |        |        |        |        |        |        |        |        | ●    |       |      |       |
|                                                                                                                               | WNMG080408MT   | 0.8 | 0.17-0.55      | 1.2-4.0    |                                           |        |        |        |        |        |        |        |        |        | ●    |       |      |       |
| <br>半精加工 / 精加工<br>Semi-finishing/Finishing | WNMG080402AH   | 0.2 | 0.04-0.28      | 0.5-3.0    |                                           |        |        |        |        |        |        |        |        |        |      |       |      | ●     |
|                                                                                                                               | WNMG080404AH   | 0.4 | 0.05-0.30      | 0.8-3.5    |                                           |        |        |        |        |        |        |        |        |        |      |       |      | ●     |
|                                                                                                                               | WNMG080408AH   | 0.8 | 0.10-0.40      | 0.8-3.5    |                                           |        |        |        |        |        |        |        |        |        |      |       |      | ●     |
| <br>半精加工 / 精加工<br>Semi-finishing/Finishing | WNMG080404R-VF | 0.4 | 0.05-0.30      | 0.8-3.5    |                                           |        |        |        |        |        |        |        |        |        | ●    |       |      |       |
|                                                                                                                               | WNMG080404L-VF | 0.4 | 0.05-0.30      | 0.8-3.5    |                                           |        |        |        |        |        |        |        |        |        | ●    |       |      |       |
| 钢 Steel                                                                                                                       |                |     |                |            |                                           |        | ★      | ★      | ★      | ☆      | ☆      | ☆      |        | ★      |      |       |      |       |
| 不锈钢 Stainless Steel                                                                                                           |                |     |                |            |                                           |        |        |        |        |        | ★      | ★      | ★      |        |      |       |      |       |
| 铸铁 Cast Iron                                                                                                                  |                |     |                |            | ★                                         | ★      |        |        |        |        |        |        |        |        |      |       |      |       |
| 有色金属 Nonferrous Metal                                                                                                         |                |     |                |            |                                           |        |        |        |        |        |        |        |        |        |      |       | ★    |       |
| 耐热合金 Heat Resistant Alloy                                                                                                     |                |     |                |            |                                           |        |        |        |        |        |        |        | ★      | ★      |      |       |      |       |
| 淬硬钢 Hardened Steel                                                                                                            |                |     |                |            |                                           |        |        |        |        |        |        |        |        |        |      |       |      | ★     |

★ 首选Preferred ☆ 可选optional ● 标准库存standard stock ○ 订单生产order production

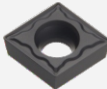
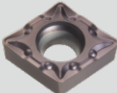
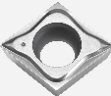
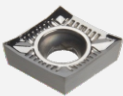
★ 首选Preferred ☆ 可选optional

● 标准库存standard stock ○ 订单生产order production

车削刀片(正型)  
Turning Inserts (Positive)

CC..

| 型号<br>Model | 尺寸 Size<br>(mm) |      |     |
|-------------|-----------------|------|-----|
|             | d               | s    | d1  |
| CC..0602..  | 6.35            | 2.38 | 2.8 |
| CC..09T3..  | 9.525           | 3.97 | 4.4 |
| CC..1204..  | 12.7            | 4.76 | 5.5 |

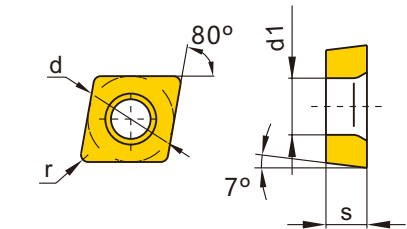
| 刀片外形<br>Insert shape                                                                                                            | 型号<br>Model   | r   | 进给fn<br>mm/rev | 切深ap<br>mm | 刀片材质及适用加工材料 Insert grades and application |        |        |        |        |        |        |        |        |        |      |       |      |       |
|---------------------------------------------------------------------------------------------------------------------------------|---------------|-----|----------------|------------|-------------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|-------|
|                                                                                                                                 |               |     |                |            | KC3110                                    | KC3125 | KC1115 | KC1125 | KC1135 | KP1110 | KP2120 | KP2130 | KP6105 | KP6110 | KT20 | KCT20 | KW20 | KCW20 |
| <br>半精加工<br>Semi-Finishing                   | CCMT060204GPK | 0.4 | 0.06-0.15      | 0.3-2.0    | ●                                         |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                                                                                                                                 | CCMT060208GPK | 0.8 | 0.08-0.21      | 0.5-2.0    | ●                                         |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                                                                                                                                 | CCMT09T304GPK | 0.4 | 0.08-0.21      | 0.3-2.5    | ●                                         |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                                                                                                                                 | CCMT09T308GPK | 0.8 | 0.10-0.30      | 0.6-3.0    | ●                                         |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                                                                                                                                 | CCMT120404GPK | 0.4 | 0.09-0.27      | 0.3-3.5    | ●                                         |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                                                                                                                                 | CCMT120408GPK | 0.8 | 0.12-0.35      | 0.6-3.5    | ●                                         |        |        |        |        |        |        |        |        |        |      |       |      |       |
| <br>半精加工<br>Semi-Finishing                   | CCMT060202TMP | 0.2 | 0.02-0.07      | 0.15-1.6   |                                           |        | ●      | ●      |        |        | ●      | ●      |        |        |      |       |      |       |
|                                                                                                                                 | CCMT060204TMP | 0.4 | 0.06-0.17      | 0.2-2.4    |                                           |        | ●      | ●      |        |        | ●      | ●      |        |        |      |       |      |       |
|                                                                                                                                 | CCMT060208TMP | 0.8 | 0.07-0.22      | 0.1-2.0    |                                           |        | ●      | ●      |        |        | ●      | ●      |        |        |      |       |      |       |
|                                                                                                                                 | CCMT09T302TMP | 0.2 | 0.08-0.23      | 0.3-3.0    |                                           |        | ●      | ●      |        |        | ●      | ●      |        |        |      |       |      |       |
|                                                                                                                                 | CCMT09T304TMP | 0.4 | 0.10-0.30      | 0.5-3.0    |                                           |        | ●      | ●      |        |        | ●      | ●      |        |        |      |       |      |       |
|                                                                                                                                 | CCMT09T308TMP | 0.8 | 0.09-0.27      | 0.3-3.6    |                                           |        | ●      | ●      |        |        | ●      | ●      |        |        |      |       |      |       |
| <br>半精加工<br>Semi-Finishing                 | CCMT120404TMP | 0.4 | 0.24-0.36      | 1.0-3.6    |                                           |        | ●      | ●      |        |        |        |        |        |        |      |       |      |       |
|                                                                                                                                 | CCMT120408TMP | 0.8 | 0.24-0.36      | 1.0-3.6    |                                           |        | ●      | ●      |        |        |        |        |        |        |      |       |      |       |
|                                                                                                                                 | CCMT060202    | 0.2 | 0.02-0.07      | 0.15-1.6   |                                           |        |        |        |        | ●      | ●      |        |        |        |      |       |      |       |
|                                                                                                                                 | CCMT060204    | 0.4 | 0.05-0.16      | 0.35-1.9   |                                           |        |        |        |        | ●      | ●      |        |        |        |      |       |      |       |
|                                                                                                                                 | CCMT09T302    | 0.8 | 0.02-0.07      | 0.15-2.4   |                                           |        |        |        |        | ●      | ●      |        |        |        |      |       |      |       |
|                                                                                                                                 | CCMT09T304    | 0.4 | 0.05-0.16      | 0.35-2.9   |                                           |        |        |        |        | ●      | ●      |        |        |        |      |       |      |       |
| <br>半精加工<br>Semi-Finishing                 | CCMT09T308    | 0.8 | 0.10-0.32      | 0.70-2.9   |                                           |        |        |        |        | ●      | ●      |        |        |        |      |       |      |       |
|                                                                                                                                 | CCMT120404    | 0.4 | 0.10-0.32      | 0.35-3.9   |                                           |        |        |        |        | ●      | ●      |        |        |        |      |       |      |       |
|                                                                                                                                 | CCMT120408    | 0.8 | 0.16-0.48      | 0.70-3.9   |                                           |        |        |        |        | ●      | ●      |        |        |        |      |       |      |       |
|                                                                                                                                 | CCMT060204SM  | 0.4 | 0.05-0.16      | 0.35-1.9   |                                           |        |        |        |        |        |        | ●      | ●      |        |      |       |      |       |
|                                                                                                                                 | CCMT060208SM  | 0.8 | 0.10-0.32      | 0.70-1.9   |                                           |        |        |        |        |        |        | ●      | ●      |        |      |       |      |       |
|                                                                                                                                 | CCMT09T304SM  | 0.4 | 0.05-0.16      | 0.35-2.9   |                                           |        |        |        |        |        |        | ●      | ●      |        |      |       |      |       |
| <br>半精加工<br>Semi-Finishing                 | CCMT09T308SM  | 0.8 | 0.10-0.32      | 0.70-2.9   |                                           |        |        |        |        |        | ●      | ●      |        |        |      |       |      |       |
|                                                                                                                                 | CCMT120404SM  | 0.4 | 0.05-0.16      | 0.35-3.9   |                                           |        |        |        |        |        | ●      | ●      |        |        |      |       |      |       |
|                                                                                                                                 | CCMT120408SM  | 0.8 | 0.10-0.32      | 0.70-3.9   |                                           |        |        |        |        |        | ●      | ●      |        |        |      |       |      |       |
|                                                                                                                                 | CCMT060202-FA | 0.2 | 0.03-0.15      | 0.1-1.5    |                                           |        |        |        |        |        |        |        |        |        |      |       | ●    |       |
|                                                                                                                                 | CCMT09T302-FA | 0.2 | 0.03-0.15      | 0.1-2.0    |                                           |        |        |        |        |        |        |        |        |        |      |       | ●    |       |
|                                                                                                                                 |               |     |                |            |                                           |        |        |        |        |        |        |        |        |        |      |       |      |       |
| <br>半精加工 / 精加工<br>Semi-finishing/Finishing | CCMT060204FG  | 0.4 | 0.07-0.15      | 0.4-2.0    |                                           |        |        |        |        |        |        |        |        |        |      |       | ●    |       |
|                                                                                                                                 | CCMT060208FG  | 0.8 | 0.08-0.18      | 0.4-2.0    |                                           |        |        |        |        |        |        |        |        |        |      |       | ●    |       |
|                                                                                                                                 | CCMT09T304FG  | 0.4 | 0.07-0.20      | 0.4-2.0    |                                           |        |        |        |        |        |        |        |        |        |      |       | ●    |       |
|                                                                                                                                 | CCMT09T308FG  | 0.8 | 0.10-0.25      | 0.6-2.0    |                                           |        |        |        |        |        |        |        |        |        |      |       | ●    |       |
|                                                                                                                                 | CCGT060202APK | 0.2 | 0.01-0.12      | 0.05-3.0   |                                           |        |        |        |        |        |        |        |        |        |      |       |      | ●     |
|                                                                                                                                 | CCGT060204APK | 0.4 | 0.02-0.15      | 0.1-3.0    |                                           |        |        |        |        |        |        |        |        |        |      |       |      | ●     |
| <br>半精加工 / 精加工<br>Semi-finishing/Finishing | CCGT060208APK | 0.8 | 0.02-0.20      | 0.1-4.0    |                                           |        |        |        |        |        |        |        |        |        |      |       | ●    |       |
|                                                                                                                                 | CCGT09T302APK | 0.2 | 0.02-0.20      | 0.05-3.0   |                                           |        |        |        |        |        |        |        |        |        |      |       |      | ●     |
|                                                                                                                                 | CCGT09T304APK | 0.4 | 0.02-0.30      | 0.1-5.0    |                                           |        |        |        |        |        |        |        |        |        |      |       |      | ●     |
|                                                                                                                                 | CCGT09T308APK | 0.8 | 0.03-0.50      | 0.1-5.0    |                                           |        |        |        |        |        |        |        |        |        |      |       |      | ●     |
|                                                                                                                                 | CCGT120402APK | 0.2 | 0.02-0.30      | 0.05-4.0   |                                           |        |        |        |        |        |        |        |        |        |      |       |      | ●     |
|                                                                                                                                 | CCGT120404APK | 0.4 | 0.03-0.50      | 0.1-5.0    |                                           |        |        |        |        |        |        |        |        |        |      |       |      | ●     |
|                                                                                                                                 | CCGT120408APK | 0.8 | 0.04-0.80      | 0.1-5.0    |                                           |        |        |        |        |        |        |        |        |        |      |       |      | ●     |
|                                                                                                                                 |               |     |                |            |                                           |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 钢 Steel                                                                                                                         |               |     |                |            |                                           |        | ★      | ★      | ☆      | ☆      | ☆      |        | ★      |        |      |       |      |       |
| 不锈钢 Stainless Steel                                                                                                             |               |     |                |            |                                           |        |        |        |        |        | ★      | ★      |        |        |      |       |      |       |
| 铸铁 Cast Iron                                                                                                                    |               |     |                |            | ★                                         |        |        |        |        |        |        |        | ★      | ★      |      |       |      |       |
| 有色金属 Nonferrous Metal                                                                                                           |               |     |                |            |                                           |        |        |        |        |        |        |        |        |        |      |       | ★    |       |
| 耐热合金 Heat Resistant Alloy                                                                                                       |               |     |                |            |                                           |        |        |        |        |        |        |        | ★      | ★      |      |       |      |       |
| 淬硬钢 Hardened Steel                                                                                                              |               |     |                |            |                                           |        |        |        |        |        |        |        |        |        |      |       |      | ★     |

★ 首选Preferred ☆ 可选optional

● 标准库存standard stock ○ 订单生产order production

车削刀片(正型)  
Turning Inserts (Positive)

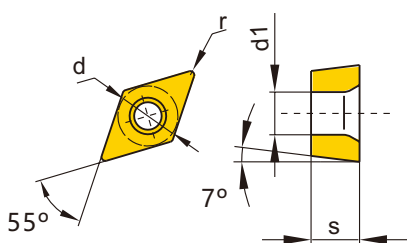
CC..



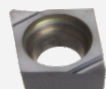
| 型号<br>Model | 尺寸 Size<br>(mm) |      |     |
|-------------|-----------------|------|-----|
|             | d               | s    | d1  |
| CC..0301..  | 3.5             | 1.4  | 1.9 |
| CC..0401..  | 4.3             | 1.8  | 2.3 |
| CC..0602..  | 6.35            | 2.38 | 2.8 |
| CC..09T3..  | 9.525           | 3.97 | 4.4 |

车削刀片(正型)  
Turning Inserts (Positive)

DC..



| 型号<br>Model | 尺寸 Size<br>(mm) |      |     |
|-------------|-----------------|------|-----|
|             | d               | s    | d1  |
| DC..0702 .. | 6.35            | 2.38 | 2.8 |
| DC..11T3 .. | 9.525           | 3.97 | 4.4 |

| 刀片外形<br>Insert shape                   |                                                                                               | 型号<br>Model     | 刀片材质及适用加工材料 Insert grades and application |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
|----------------------------------------|-----------------------------------------------------------------------------------------------|-----------------|-------------------------------------------|----------------|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|-------|
|                                        |                                                                                               |                 | r                                         | 进给fn<br>mm/rev | 切深ap<br>mm | KC3110 | KC3125 | KC1115 | KC1125 | KC1135 | KP1110 | KP2120 | KP2130 | KP6105 | KP6110 | KT20 | KCT20 | KW20 | KCW20 |
| 精加工<br>Finishing                       | <br>(有标准库存) | CCGT0301005L-F  | 0.05                                      | 0.01-0.05      | 0.1-0.3    |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                                        |                                                                                               | CCGT030101L-F   | 0.1                                       | 0.01-0.05      | 0.1-0.3    |        |        |        |        |        | ●      |        |        |        | ●      |      | ●     |      |       |
|                                        |                                                                                               | CCGT030102L-F   | 0.2                                       | 0.01-0.05      | 0.1-0.3    |        |        |        |        |        | ●      |        |        |        | ●      |      | ●     |      |       |
|                                        |                                                                                               | CCGT0401005L-F  | 0.05                                      | 0.01-0.10      | 0.1-0.5    |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                                        |                                                                                               | CCGT040101L-F   | 0.1                                       | 0.01-0.10      | 0.1-0.5    |        |        |        |        |        | ●      |        |        |        | ●      |      | ●     |      |       |
|                                        |                                                                                               | CCGT040102L-F   | 0.2                                       | 0.01-0.10      | 0.1-0.5    |        |        |        |        |        | ●      |        |        |        | ●      |      | ●     |      |       |
|                                        |                                                                                               | CCGT0602005R-F  | 0.05                                      | 0.01-0.06      | 0.04-1.3   |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                                        |                                                                                               | CCGT0602005L-F  | 0.05                                      | 0.01-0.06      | 0.04-1.3   |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                                        |                                                                                               | CCGT060201R-F   | 0.1                                       | 0.02-0.08      | 0.05-1.5   |        |        |        |        |        | ●      |        |        |        | ●      |      | ●     |      |       |
|                                        |                                                                                               | CCGT060201L-F   | 0.1                                       | 0.02-0.08      | 0.05-1.5   |        |        |        |        |        | ●      |        |        |        | ●      |      | ●     |      |       |
|                                        |                                                                                               | CCGT060202R-F   | 0.2                                       | 0.03-0.11      | 0.06-1.7   |        |        |        |        |        | ●      |        |        |        | ●      |      | ●     |      |       |
|                                        |                                                                                               | CCGT060202L-F   | 0.2                                       | 0.03-0.11      | 0.06-1.7   |        |        |        |        |        | ●      |        |        |        | ●      |      | ●     |      |       |
|                                        |                                                                                               | CCGT09T3005R-F  | 0.05                                      | 0.02-0.08      | 0.05-1.5   |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                                        |                                                                                               | CCGT09T3005L-F  | 0.05                                      | 0.02-0.08      | 0.05-1.5   |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                                        |                                                                                               | CCGT09T301R-F   | 0.1                                       | 0.03-0.11      | 0.06-1.7   |        |        |        |        |        | ●      |        |        |        | ●      |      | ●     |      |       |
|                                        |                                                                                               | CCGT09T301L-F   | 0.1                                       | 0.03-0.11      | 0.06-1.7   |        |        |        |        |        | ●      |        |        |        | ●      |      | ●     |      |       |
|                                        |                                                                                               | CCGT09T302R-F   | 0.2                                       | 0.04-0.15      | 0.08-2.0   |        |        |        |        |        | ●      |        |        |        | ●      |      | ●     |      |       |
|                                        |                                                                                               | CCGT09T302L-F   | 0.2                                       | 0.04-0.15      | 0.08-2.0   |        |        |        |        |        | ●      |        |        |        | ●      |      | ●     |      |       |
| 半精加工 / 精加工<br>Semi-finishing/Finishing |            | CCGT060201R-U   | 0.1                                       | 0.02-0.08      | 0.05-1.5   |        |        |        |        | ●      |        |        |        | ●      |        |      | ●     |      |       |
|                                        |                                                                                               | CCGT060201L-U   | 0.1                                       | 0.02-0.08      | 0.05-1.5   |        |        |        |        | ●      |        |        |        | ●      |        | ●    |       |      |       |
|                                        |                                                                                               | CCGT060202R-U   | 0.2                                       | 0.03-0.11      | 0.06-1.7   |        |        |        |        | ●      |        |        |        | ●      |        | ●    |       |      |       |
|                                        |                                                                                               | CCGT060202L-U   | 0.2                                       | 0.03-0.11      | 0.06-1.7   |        |        |        |        | ●      |        |        |        | ●      |        | ●    |       |      |       |
|                                        |                                                                                               | CCGT060204R-U   | 0.4                                       | 0.05-0.15      | 0.08-2.0   |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                                        |                                                                                               | CCGT060204L-U   | 0.4                                       | 0.05-0.15      | 0.08-2.0   |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                                        |                                                                                               | CCGT09T301R-U   | 0.1                                       | 0.03-0.11      | 0.06-1.7   |        |        |        |        |        | ●      |        |        |        | ●      |      | ●     |      |       |
|                                        |                                                                                               | CCGT09T301L-U   | 0.1                                       | 0.03-0.11      | 0.06-1.7   |        |        |        |        |        | ●      |        |        |        | ●      |      | ●     |      |       |
|                                        |                                                                                               | CCGT09T302R-U   | 0.2                                       | 0.04-0.15      | 0.08-2.0   |        |        |        |        |        | ●      |        |        |        | ●      |      | ●     |      |       |
|                                        |                                                                                               | CCGT09T302L-U   | 0.2                                       | 0.04-0.15      | 0.08-2.0   |        |        |        |        |        | ●      |        |        |        | ●      |      | ●     |      |       |
|                                        |                                                                                               | CCGT09T304R-U   | 0.4                                       | 0.05-0.20      | 1.0-2.5    |        |        |        |        |        | ●      |        |        |        | ●      |      | ●     |      |       |
|                                        |                                                                                               | CCGT09T304L-U   | 0.4                                       | 0.05-0.20      | 1.0-2.5    |        |        |        |        |        | ●      |        |        |        | ●      |      | ●     |      |       |
| 半精加工 / 精加工<br>Semi-finishing/Finishing |            | CCGT060201SA/AM | 0.1                                       | 0.02-0.15      | 0.10-1.4   |        |        |        |        |        |        |        |        | ●      |        |      |       |      |       |
|                                        |                                                                                               | CCGT060202SA/AM | 0.2                                       | 0.02-0.15      | 0.10-1.4   |        |        |        |        |        |        |        |        | ●      |        |      |       |      |       |
|                                        |                                                                                               | CCGT060204SA    | 0.4                                       | 0.03-0.20      | 0.10-1.4   |        |        |        |        |        |        |        |        | ●      |        |      |       |      |       |
|                                        |                                                                                               | CCGT09T301SA/AM | 0.1                                       | 0.02-0.15      | 0.10-2.4   |        |        |        |        |        |        |        |        | ●      |        |      |       |      |       |
|                                        |                                                                                               | CCGT09T302SA/AM | 0.2                                       | 0.02-0.15      | 0.10-2.4   |        |        |        |        |        |        |        |        | ●      |        |      |       |      |       |
|                                        |                                                                                               | CCGT09T304SA    | 0.1                                       | 0.03-0.20      | 0.10-2.4   |        |        |        |        |        |        |        |        | ●      |        |      |       |      |       |
|                                        |                                                                                               | CCGT09T308SA    | 0.8                                       | 0.03-0.25      | 0.10-2.4   |        |        |        |        |        |        |        |        | ●      |        |      |       |      |       |
| 钢 Steel                                |                                                                                               |                 |                                           |                |            |        |        |        |        | ☆      |        |        |        | ★      | ★      |      |       |      |       |
| 不锈钢 Stainless Steel                    |                                                                                               |                 |                                           |                |            |        |        |        |        | ★      |        |        |        | ★      |        |      |       |      |       |
| 铸铁 Cast Iron                           |                                                                                               |                 |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 有色金属 Nonferrous Metal                  |                                                                                               |                 |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 耐热合金 Heat Resistant Alloy              |                                                                                               |                 |                                           |                |            |        |        |        |        |        |        |        |        |        |        | ★    | ★     |      |       |
| 淬硬钢 Hardened Steel                     |                                                                                               |                 |                                           |                |            |        |        |        |        | ☆      |        |        |        | ★      |        |      |       |      |       |

★ 首选 Preferred ☆ 可选 optional ● 标准库存 standard stock ○ 订单生产 order production

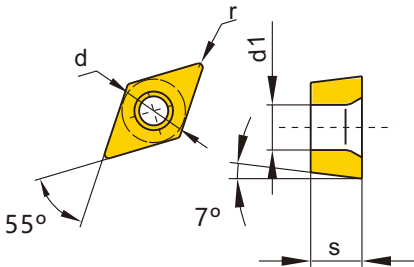
| 刀片外形<br>Insert shape                   |                                                                                       | 型号<br>Model   | r   | 进给fn<br>mm/rev | 切深ap<br>mm | 刀片材质及适用加工材料 Insert grades and application |        |        |        |        |        |        |        |        |        |      |       |      |       |
|----------------------------------------|---------------------------------------------------------------------------------------|---------------|-----|----------------|------------|-------------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|-------|
|                                        |                                                                                       |               |     |                |            | KC3110                                    | KC3125 | KC1115 | KC1125 | KC1135 | KP1110 | KP2120 | KP2130 | KP6105 | KP6110 | KT20 | KCT20 | KW20 | KCW20 |
| 半精加工<br>Semi-Finishing                 |    | DCMT070204GPK | 0.4 | 0.06-0.15      | 0.3-2.0    | ●                                         |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                                        |                                                                                       | DCMT070208GPK | 0.8 | 0.08-0.21      | 0.3-2.5    | ●                                         |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                                        |                                                                                       | DCMT11T304GPK | 0.4 | 0.08-0.21      | 0.3-2.5    | ●                                         |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                                        |                                                                                       | DCMT11T308GPK | 0.8 | 0.10-0.26      | 0.5-3.0    | ●                                         |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 半精加工<br>Semi-Finishing                 |    | DCMT070202TMP | 0.2 | 0.03-0.12      | 0.1-1.5    |                                           |        | ●      | ●      |        |        | ●      | ●      |        |        |      |       |      |       |
|                                        |                                                                                       | DCMT070204TMP | 0.4 | 0.06-0.17      | 0.2-2.3    |                                           |        | ●      | ●      |        |        | ●      | ●      |        |        |      |       |      |       |
|                                        |                                                                                       | DCMT11T302TMP | 0.2 | 0.04-0.22      | 0.1-2.0    |                                           |        | ●      | ●      |        |        | ●      | ●      |        |        |      |       |      |       |
|                                        |                                                                                       | DCMT11T304TMP | 0.4 | 0.08-0.23      | 0.3-3.0    |                                           |        | ●      | ●      |        |        | ●      | ●      |        |        |      |       |      |       |
| 半精加工<br>Semi-Finishing                 |  | DCMT11T308TMP | 0.8 | 0.10-0.30      | 0.5-3.0    |                                           |        | ●      | ●      |        |        | ●      | ●      |        |        |      |       |      |       |
|                                        |                                                                                       | DCMT070202    | 0.2 | 0.02-0.07      | 0.15-1.5   |                                           |        |        |        |        | ●      | ●      |        |        |        |      |       |      |       |
|                                        |                                                                                       | DCMT070204    | 0.4 | 0.05-0.16      | 0.35-2.1   |                                           |        |        |        |        | ●      | ●      |        |        |        |      |       |      |       |
|                                        |                                                                                       | DCMT11T302    | 0.2 | 0.02-0.07      | 0.15-2.3   |                                           |        |        |        |        | ●      | ●      |        |        |        |      |       |      |       |
| 半精加工<br>Semi-Finishing                 |  | DCMT11T304    | 0.4 | 0.05-0.16      | 0.35-3.1   |                                           |        |        |        |        | ●      | ●      |        |        |        |      |       |      |       |
|                                        |                                                                                       | DCMT11T308    | 0.8 | 0.10-0.32      | 0.70-3.1   |                                           |        |        |        |        | ●      | ●      |        |        |        |      |       |      |       |
|                                        |                                                                                       | DCMT070202-FA | 0.2 | 0.05-0.16      | 0.35-2.1   |                                           |        |        |        |        |        |        |        |        |        | ●    |       |      |       |
|                                        |                                                                                       | DCMT11T302-FA | 0.4 | 0.10-0.32      | 0.70-2.1   |                                           |        |        |        |        |        |        |        |        |        | ●    |       |      |       |
| 半精加工<br>Semi-Finishing                 |  | DCMT070202SM  | 0.2 | 0.05-0.16      | 0.35-1.5   |                                           |        |        |        |        |        |        |        |        | ●      | ●    |       |      |       |
|                                        |                                                                                       | DCMT070204SM  | 0.4 | 0.07-0.20      | 0.4-1.5    |                                           |        |        |        |        |        |        |        |        | ●      | ●    |       |      |       |
|                                        |                                                                                       | DCMT11T304SM  | 0.4 | 0.08-0.25      | 0.5-2.5    |                                           |        |        |        |        |        |        |        |        | ●      | ●    |       |      |       |
|                                        |                                                                                       | DCMT11T308SM  | 0.8 | 0.07-0.20      | 0.4-2.0    |                                           |        |        |        |        |        |        |        |        | ●      | ●    |       |      |       |
| 半精加工 / 精加工<br>Semi-finishing/Finishing |  | DCMT11T312SM  | 1.2 | 0.10-0.25      | 0.6-2.0    |                                           |        |        |        |        |        |        |        | ●      | ●      |      |       |      |       |
|                                        |                                                                                       | DCMT070204FG  | 0.4 | 0.07-0.20      | 0.4-1.5    |                                           |        |        |        |        |        |        |        |        |        |      | ●     |      |       |
|                                        |                                                                                       | DCMT070208FG  | 0.8 | 0.07-0.20      | 0.4-1.5    |                                           |        |        |        |        |        |        |        |        |        |      | ●     |      |       |
|                                        |                                                                                       | DCMT11T304FG  | 0.4 | 0.10-0.25      | 0.6-1.5    |                                           |        |        |        |        |        |        |        |        |        |      | ●     |      |       |
| 半精加工 / 精加工<br>Semi-finishing/Finishing |  | DCMT11T308FG  | 0.8 | 0.10-0.25      | 0.6-2.0    |                                           |        |        |        |        |        |        |        |        |        | ●    |       |      |       |
|                                        |                                                                                       | DCGT070202APK | 0.2 | 0.01-0.20      | 0.05-3.0   |                                           |        |        |        |        |        |        |        |        |        |      |       |      | ●     |
|                                        |                                                                                       | DCGT070204APK | 0.4 | 0.02-0.30      | 0.1-4.0    |                                           |        |        |        |        |        |        |        |        |        |      |       |      | ●     |
|                                        |                                                                                       | DCGT070208APK | 0.8 | 0.03-0.40      | 0.1-4.0    |                                           |        |        |        |        |        |        |        |        |        |      |       |      | ●     |
| 半精加工 / 精加工<br>Semi-finishing/Finishing |  | DCGT11T302APK | 0.2 | 0.02-0.30      | 0.05-4.0   |                                           |        |        |        |        |        |        |        |        |        |      |       |      | ●     |
|                                        |                                                                                       | DCGT11T304APK | 0.4 | 0.03-0.50      | 0.1-5.0    |                                           |        |        |        |        |        |        |        |        |        |      |       |      | ●     |
|                                        |                                                                                       | DCGT11T308APK | 0.8 | 0.03-0.50      | 0.1-5.0    |                                           |        |        |        |        |        |        |        |        |        |      |       |      | ●     |
|                                        |                                                                                       | DCGT11T312APK | 1.2 | 0.04-0.60      | 0.15-5.0   |                                           |        |        |        |        |        |        |        |        |        |      |       |      | ●     |
| 钢 Steel                                |                                                                                       |               |     |                |            |                                           |        | ★      | ★      |        | ☆      | ☆      | ☆      |        |        | ★    |       |      |       |
| 不锈钢 Stainless Steel                    |                                                                                       |               |     |                |            |                                           |        |        |        |        |        | ★      | ★      | ★      | ★      |      |       |      |       |
| 铸铁 Cast Iron                           |                                                                                       |               |     |                |            | ★                                         |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 有色金属 Nonferrous Metal                  |                                                                                       |               |     |                |            |                                           |        |        |        |        |        |        |        |        |        |      |       |      | ★     |
| 耐热合金 Heat Resistant Alloy              |                                                                                       |               |     |                |            |                                           |        |        |        |        |        |        |        | ★      | ★      |      |       |      |       |
| 淬硬钢 Hardened Steel                     |                                                                                       |               |     |                |            |                                           |        |        |        |        | ★      |        |        |        |        |      |       |      |       |

★ 首选 Preferred ☆ 可选 optional ● 标准库存 standard stock ○ 订单生产 order production



车削刀片(正型)  
Turning Inserts (Positive)

DC..



| 型号<br>Model | 尺寸 Size<br>(mm) |      |     |
|-------------|-----------------|------|-----|
|             | d               | s    | d1  |
| DC..0702 .. | 6.35            | 2.38 | 2.8 |
| DC..11T3 .. | 9.525           | 3.97 | 4.4 |

| 刀片外形<br>Insert shape                                                                          | 型号<br>Model     | 刀片材质及适用加工材料 Insert grades and application |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
|-----------------------------------------------------------------------------------------------|-----------------|-------------------------------------------|----------------|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|-------|
|                                                                                               |                 | r                                         | 进给fn<br>mm/rev | 切深ap<br>mm | KC3110 | KC3125 | KC1115 | KC1125 | KC1135 | KP1110 | KP2120 | KP2130 | KP6105 | KP6110 | KT20 | KCT20 | KW20 | KCW20 |
| <br>(L有标准库存) | DCGT0702005R-F  | 0.05                                      | 0.01-0.06      | 0.04-1.3   |        |        |        |        |        |        |        | ●      |        | ●      |      |       |      |       |
|                                                                                               | DCGT0702005L-F  | 0.05                                      | 0.01-0.06      | 0.04-1.3   |        |        |        |        |        |        |        | ●      |        | ●      |      |       |      |       |
|                                                                                               | DCGT070201R-F   | 0.1                                       | 0.02-0.08      | 0.05-1.5   |        |        |        |        |        |        |        | ●      |        | ●      |      |       |      |       |
|                                                                                               | DCGT070201L-F   | 0.1                                       | 0.02-0.08      | 0.05-1.5   |        |        |        |        |        |        |        | ●      |        | ●      |      |       |      |       |
|                                                                                               | DCGT070202R-F   | 0.2                                       | 0.03-0.11      | 0.06-1.5   |        |        |        |        |        |        |        | ●      |        | ●      |      |       |      |       |
|                                                                                               | DCGT070202L-F   | 0.2                                       | 0.03-0.11      | 0.06-1.5   |        |        |        |        |        |        |        | ●      |        | ●      |      |       |      |       |
|                                                                                               | DCGT11T3005R-F  | 0.05                                      | 0.02-0.08      | 0.05-1.5   |        |        |        |        |        |        |        | ●      |        | ●      |      |       |      |       |
|                                                                                               | DCGT11T3005L-F  | 0.05                                      | 0.02-0.08      | 0.05-1.5   |        |        |        |        |        |        |        | ●      |        | ●      |      |       |      |       |
|                                                                                               | DCGT11T301R-F   | 0.1                                       | 0.03-0.11      | 0.06-1.7   |        |        |        |        |        |        |        | ●      |        | ●      |      |       |      |       |
|                                                                                               | DCGT11T301L-F   | 0.1                                       | 0.03-0.11      | 0.06-1.7   |        |        |        |        |        |        |        | ●      |        | ●      |      |       |      |       |
|            | DCGT11T302R-F   | 0.2                                       | 0.04-0.15      | 0.08-2.0   |        |        |        |        |        |        | ●      |        | ●      |        |      |       |      |       |
|                                                                                               | DCGT11T302L-F   | 0.2                                       | 0.04-0.15      | 0.08-2.0   |        |        |        |        |        |        | ●      |        | ●      |        |      |       |      |       |
|                                                                                               | DCGT070201R-U   | 0.1                                       | 0.02-0.08      | 0.05-1.5   |        |        |        |        |        |        |        | ●      |        | ●      |      |       | ●    |       |
|                                                                                               | DCGT070201L-U   | 0.1                                       | 0.02-0.08      | 0.05-1.5   |        |        |        |        |        |        |        | ●      |        | ●      |      |       | ●    |       |
|                                                                                               | DCGT070202R-U   | 0.2                                       | 0.03-0.11      | 0.06-1.5   |        |        |        |        |        |        |        | ●      |        | ●      |      |       | ●    |       |
|                                                                                               | DCGT070202L-U   | 0.2                                       | 0.03-0.11      | 0.06-1.5   |        |        |        |        |        |        |        | ●      |        | ●      |      |       | ●    |       |
|                                                                                               | DCGT070204R-U   | 0.4                                       | 0.04-0.15      | 0.08-1.5   |        |        |        |        |        |        |        | ●      |        | ●      |      |       | ●    |       |
|                                                                                               | DCGT070204L-U   | 0.4                                       | 0.04-0.15      | 0.08-1.5   |        |        |        |        |        |        |        | ●      |        | ●      |      |       | ●    |       |
|                                                                                               | DCGT11T301R-U   | 0.1                                       | 0.03-0.11      | 0.06-1.7   |        |        |        |        |        |        |        | ●      |        | ●      |      |       | ●    |       |
|                                                                                               | DCGT11T301L-U   | 0.1                                       | 0.03-0.11      | 0.06-1.7   |        |        |        |        |        |        |        | ●      |        | ●      |      |       | ●    |       |
|            | DCGT11T302R-U   | 0.2                                       | 0.04-0.15      | 0.08-2.0   |        |        |        |        |        |        | ●      |        | ●      |        |      |       | ●    |       |
|                                                                                               | DCGT11T302L-U   | 0.2                                       | 0.04-0.15      | 0.08-2.0   |        |        |        |        |        |        | ●      |        | ●      |        |      |       | ●    |       |
|                                                                                               | DCGT11T304R-U   | 0.4                                       | 0.05-0.2       | 1.0-2.5    |        |        |        |        |        |        |        | ●      |        | ●      |      |       | ●    |       |
|                                                                                               | DCGT11T304L-U   | 0.4                                       | 0.05-0.2       | 1.0-2.5    |        |        |        |        |        |        |        | ●      |        | ●      |      |       | ●    |       |
|                                                                                               | DCGT070201SA/AM | 0.1                                       | 0.02-0.15      | 0.10-1.4   |        |        |        |        |        |        |        |        | ●      |        | ●    |       |      |       |
|                                                                                               | DCGT070202SA/AM | 0.2                                       | 0.02-0.15      | 0.10-1.4   |        |        |        |        |        |        |        |        | ●      |        | ●    |       |      |       |
|                                                                                               | DCGT070204SA/AM | 0.4                                       | 0.03-0.20      | 0.10-1.4   |        |        |        |        |        |        |        |        | ●      |        | ●    |       |      |       |
|                                                                                               | DCGT11T301SA/AM | 0.1                                       | 0.02-0.15      | 0.10-2.4   |        |        |        |        |        |        |        |        | ●      |        | ●    |       |      |       |
|                                                                                               | DCGT11T302SA/AM | 0.2                                       | 0.02-0.15      | 0.10-2.4   |        |        |        |        |        |        |        |        | ●      |        | ●    |       |      |       |
|                                                                                               | DCGT11T304SA/AM | 0.4                                       | 0.03-0.20      | 0.10-2.4   |        |        |        |        |        |        |        |        | ●      |        | ●    |       |      |       |
| 钢 Steel                                                                                       |                 |                                           |                |            |        |        |        |        |        |        | ☆      |        |        | ★      |      |       |      |       |
| 不锈钢 Stainless Steel                                                                           |                 |                                           |                |            |        |        |        |        |        |        | ★      |        | ★      |        |      |       |      |       |
| 铸铁 Cast Iron                                                                                  |                 |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 有色金属 Nonferrous Metal                                                                         |                 |                                           |                |            |        |        |        |        |        |        |        |        |        | ★      |      | ★     |      |       |
| 耐热合金 Heat Resistant Alloy                                                                     |                 |                                           |                |            |        |        |        |        |        |        |        |        | ★      |        |      |       |      |       |
| 淬硬钢 Hardened Steel                                                                            |                 |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |

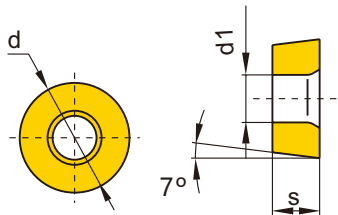
★ 首选Preferred ☆ 可选optional

● 标准库存standard stock

○ 订单生产order production

车削刀片(正型)  
Turning Inserts (Positive)

RC..



| 型号<br>Model | 尺寸 Size<br>(mm) |      |     |
|-------------|-----------------|------|-----|
|             | d               | s    | d1  |
| RC..0602MO  | 6               | 2.38 | 2.8 |
| RC..0803MO  | 8               | 3.18 | 3.4 |
| RC..1003MO  | 10              | 3.18 | 3.6 |
| RC..1204MO  | 12              | 4.76 | 4.2 |

| 刀片外形<br>Insert shape      |                                                                                       | 型号<br>Model    | 刀片材质及适用加工材料 Insert grades and application |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
|---------------------------|---------------------------------------------------------------------------------------|----------------|-------------------------------------------|----------------|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|-------|
|                           |                                                                                       |                | r                                         | 进给fn<br>mm/rev | 切深ap<br>mm | KC3110 | KC3125 | KC1115 | KC1125 | KC1135 | KP1110 | KP2120 | KP2130 | KP6105 | KP6110 | KT20 | KCT20 | KW20 | KCW20 |
| 精加工<br>Finishing          |    | RCMT0602MO     | 6.0                                       | 0.06-0.15      | 0.2-2.0    |        |        | ●      |        |        |        |        |        |        |        |      |       |      |       |
|                           |                                                                                       | RCMT0803MO     | 8.0                                       | 0.08-0.21      | 0.3-2.5    |        |        | ●      |        |        |        |        |        |        |        |      |       |      |       |
|                           |                                                                                       | RCMT10T3MO     | 10.0                                      | 0.25-0.50      | 1.5-4.0    |        |        | ●      |        |        |        |        |        |        |        |      |       |      |       |
|                           |                                                                                       | RCMT1204MO     | 12.0                                      | 0.30-0.60      | 2.5-5.0    |        |        | ●      |        |        |        |        |        |        |        |      |       |      |       |
|                           |                                                                                       |                |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 精加工<br>Finishing          |   | RCMT0602M0-61  | 6.0                                       | 0.07-0.35      | 0.6-2.4    |        |        |        |        |        |        |        |        |        |        | ●    |       |      |       |
|                           |                                                                                       | RCMT0803M0-61  | 8.0                                       | 0.08-0.56      | 0.8-2.4    |        |        |        |        |        |        |        |        |        |        | ●    |       |      |       |
|                           |                                                                                       | RCMM1003M0-61  | 10.0                                      | 0.12-0.56      | 0.4-2.5    |        |        |        |        |        |        |        |        |        |        | ●    |       |      |       |
|                           |                                                                                       | RCMM1204M0-61  | 12.0                                      | 0.13-0.57      | 0.3-2.5    |        |        |        |        |        |        |        |        |        |        | ●    |       |      |       |
| 精加工<br>Finishing          |  | RCKT10T3MO-WM  | 10.0                                      | 0.10-0.30      |            |        |        |        |        |        |        |        |        |        |        | ●    |       |      |       |
|                           |                                                                                       | RCKT1204MO-WM  | 12.0                                      | 0.10-0.42      |            |        |        |        |        |        |        |        |        |        |        | ●    |       |      |       |
|                           |                                                                                       |                |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 精加工<br>Finishing          |  | RCGT0602MO-APK | 6.0                                       | 0.05-0.20      | 0.5-2.0    |        |        |        |        |        |        |        |        |        |        |      |       | ●    |       |
|                           |                                                                                       | RCGT0803MO-APK | 8.0                                       | 0.05-0.25      | 0.5-2.5    |        |        |        |        |        |        |        |        |        |        |      |       | ●    |       |
|                           |                                                                                       | RCGT1003MO-APK | 10.0                                      | 0.10-0.30      | 1.0-3.0    |        |        |        |        |        |        |        |        |        |        |      |       | ●    |       |
|                           |                                                                                       | RCGT10T3MO-APK | 10.0                                      | 0.10-0.30      | 1.0-3.0    |        |        |        |        |        |        |        |        |        |        |      |       | ●    |       |
|                           |                                                                                       | RCGT1204MO-APK | 12.0                                      | 0.10-0.35      | 1.0-3.5    |        |        |        |        |        |        |        |        |        |        |      |       | ●    |       |
| 钢 Steel                   |                                                                                       |                |                                           |                |            |        | ★      |        |        |        |        |        |        |        | ★      |      |       |      |       |
| 不锈钢 Stainless Steel       |                                                                                       |                |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 铸铁 Cast Iron              |                                                                                       |                |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 有色金属 Nonferrous Metal     |                                                                                       |                |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      |       | ★    |       |
| 耐热合金 Heat Resistant Alloy |                                                                                       |                |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |

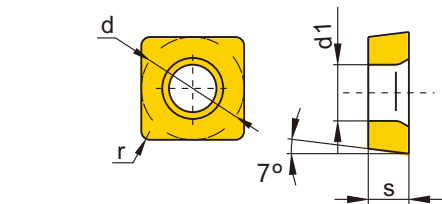
★ 首选Preferred ☆ 可选optional

● 标准库存standard stock

○ 订单生产order production

车削刀片(正型)  
Turning Inserts (Positive)

SC..



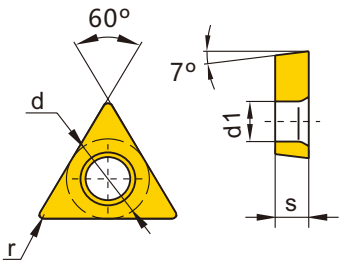
| 型号<br>Model  | 尺寸 Size<br>(mm) |      |     |
|--------------|-----------------|------|-----|
|              | d               | s    | d1  |
| SC..09T304.. | 9.525           | 3.97 | 4.4 |
| SC..120404.. | 12.7            | 4.76 | 5.5 |

| 刀片外形<br>Insert shape      |                                                                                     | 型号<br>Model   | 刀片材质及适用加工材料 Insert grades and application |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
|---------------------------|-------------------------------------------------------------------------------------|---------------|-------------------------------------------|----------------|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|-------|
|                           |                                                                                     |               | r                                         | 进给fn<br>mm/rev | 切深ap<br>mm | KC3110 | KC3125 | KC1115 | KC1125 | KC1135 | KP1110 | KP2120 | KP2130 | KP6105 | KP6110 | KT20 | KCT20 | KW20 | KCW20 |
| 半精加工<br>Semi-Finishing    |    | SCMT09T304GPK | 0.4                                       | 0.08-0.25      | 0.3-3.0    | ●      |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                           |                                                                                     | SCMT09T308GPK | 0.8                                       | 0.10-0.30      | 0.5-3.0    | ●      |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                           |                                                                                     | SCMT120408GPK | 0.8                                       | 0.12-0.35      | 0.6-4.0    | ●      |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                           |                                                                                     | SCMT120412GPK | 1.2                                       | 0.15-0.40      | 0.9-4.0    | ●      |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 半精加工<br>Semi-Finishing    |    | SCMT09T304TMP | 0.4                                       | 0.08-0.23      | 0.3-3.0    |        |        | ●      |        |        | ●      |        |        |        |        |      |       |      |       |
|                           |                                                                                     | SCMT09T308TMP | 0.8                                       | 0.10-0.30      | 0.5-3.0    |        |        | ●      |        |        | ●      |        |        |        |        |      |       |      |       |
|                           |                                                                                     | SCMT120408TMP | 0.8                                       | 0.09-0.27      | 0.3-3.6    |        |        | ●      |        |        | ●      |        |        |        |        |      |       |      |       |
|                           |                                                                                     | SCMT120412TMP | 1.2                                       | 0.12-0.36      | 0.6-3.6    |        |        | ●      |        |        | ●      |        |        |        |        |      |       |      |       |
| 半精加工<br>Semi-Finishing    |  | SCGT09T302APK | 0.2                                       | 0.02-0.30      | 0.1-4.0    |        |        |        |        |        |        |        |        |        |        |      |       | ●    |       |
|                           |                                                                                     | SCGT09T304APK | 0.4                                       | 0.04-0.40      | 0.1-5.0    |        |        |        |        |        |        |        |        |        |        |      |       | ●    |       |
|                           |                                                                                     | SCGT09T308APK | 0.8                                       | 0.03-0.40      | 0.1-5.0    |        |        |        |        |        |        |        |        |        |        |      |       | ●    |       |
|                           |                                                                                     | SCGT120404APK | 0.4                                       | 0.03-0.50      | 0.1-5.0    |        |        |        |        |        |        |        |        |        |        |      |       | ●    |       |
|                           |                                                                                     | SCGT120408APK | 0.8                                       | 0.04-0.60      | 0.15-5.5   |        |        |        |        |        |        |        |        |        |        |      |       | ●    |       |
| 钢 Steel                   |                                                                                     |               |                                           |                |            |        | ★      |        |        | ☆      |        |        |        |        |        |      |       |      |       |
| 不锈钢 Stainless Steel       |                                                                                     |               |                                           |                |            |        |        |        |        | ★      |        |        |        |        |        |      |       |      |       |
| 铸铁 Cast Iron              |                                                                                     |               |                                           |                | ★          |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 有色金属 Nonferrous Metal     |                                                                                     |               |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      | ★     |      |       |
| 耐热合金 Heat Resistant Alloy |                                                                                     |               |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 淬硬钢 Hardened Steel        |                                                                                     |               |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |

★ 首选 Preferred    ☆ 可选 optional    ● 标准库存 standard stock    ○ 订单生产 order production

车削刀片(正型)  
Turning Inserts (Positive)

TC..



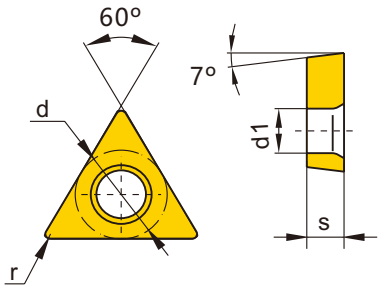
| 型号<br>Model | 尺寸 Size<br>(mm) |      |     |
|-------------|-----------------|------|-----|
|             | d               | s    | d1  |
| TC..0902..  | 5.56            | 2.38 | 2.5 |
| TC..1102..  | 6.35            | 2.38 | 2.8 |
| TC..16T3..  | 9.525           | 3.97 | 4.4 |

| 刀片外形<br>Insert shape                  |                                                                                       | 型号<br>Model   | 刀片材质及适用加工材料 Insert grades and application |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
|---------------------------------------|---------------------------------------------------------------------------------------|---------------|-------------------------------------------|----------------|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|-------|
|                                       |                                                                                       |               | r                                         | 进给fn<br>mm/rev | 切深ap<br>mm | KC3110 | KC3125 | KC1115 | KC1125 | KC1135 | KP1110 | KP2120 | KP2130 | KP6105 | KP6110 | KT20 | KCT20 | KW20 | KCW20 |
| 半精加工<br>Semi-Finishing                |    | TCMT090204GPK | 0.4                                       | 0.06-0.18      | 0.3-1.5    | ●      |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                                       |                                                                                       | TCMT090208GPK | 0.8                                       | 0.08-0.22      | 0.5-1.8    | ●      |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                                       |                                                                                       | TCMT110204GPK | 0.4                                       | 0.06-0.20      | 0.3-2.0    | ●      |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                                       |                                                                                       | TCMT110208GPK | 0.8                                       | 0.08-0.25      | 0.6-2.0    | ●      |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                                       |                                                                                       | TCMT16T304GPK | 0.4                                       | 0.08-0.30      | 0.3-3.0    | ●      |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                                       |                                                                                       | TCMT16T308GPK | 0.8                                       | 0.10-0.35      | 0.6-3.0    | ●      |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                                       |                                                                                       | TCMT16T312GPK | 1.2                                       | 0.12-0.40      | 0.9-3.5    | ●      |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 半精加工<br>Semi-Finishing                |    | TCMT090204TMP | 0.4                                       | 0.06-0.17      | 0.2-2.3    |        |        |        | ●      | ●      |        |        | ●      | ●      |        |      |       |      |       |
|                                       |                                                                                       | TCMT110204TMP | 0.4                                       | 0.06-0.19      | 0.2-2.5    |        |        |        | ●      | ●      |        |        | ●      | ●      |        |      |       |      |       |
|                                       |                                                                                       | TCMT110208TMP | 0.8                                       | 0.09-0.26      | 0.4-2.5    |        |        |        | ●      | ●      |        |        | ●      | ●      |        |      |       |      |       |
|                                       |                                                                                       | TCMT16T304TMP | 0.4                                       | 0.08-0.23      | 0.3-3.0    |        |        |        | ●      | ●      |        |        | ●      | ●      |        |      |       |      |       |
|                                       |                                                                                       | TCMT16T308TMP | 0.8                                       | 0.10-0.30      | 0.5-3.0    |        |        |        | ●      | ●      |        |        | ●      | ●      |        |      |       |      |       |
| 半精加工<br>Semi-Finishing                |  | TCMT090202    | 0.4                                       | 0.04-0.14      | 0.30-1.9   |        |        |        |        |        |        | ●      | ●      |        |        |      |       |      |       |
|                                       |                                                                                       | TCMT090204    | 0.8                                       | 0.05-0.16      | 0.35-2.6   |        |        |        |        |        |        | ●      | ●      |        |        |      |       |      |       |
|                                       |                                                                                       | TCMT110202    | 0.2                                       | 0.02-0.07      | 0.15-2.2   |        |        |        |        |        |        | ●      | ●      |        |        |      |       |      |       |
|                                       |                                                                                       | TCMT110204    | 0.4                                       | 0.05-0.16      | 0.35-3.0   |        |        |        |        |        |        | ●      | ●      |        |        |      |       |      |       |
|                                       |                                                                                       | TCMT110208    | 0.8                                       | 0.10-0.32      | 0.70-3.0   |        |        |        |        |        |        | ●      | ●      |        |        |      |       |      |       |
|                                       |                                                                                       | TCMT16T304    | 0.4                                       | 0.05-0.16      | 0.70-4.5   |        |        |        |        |        |        | ●      | ●      |        |        |      |       |      |       |
|                                       |                                                                                       | TCMT16T308    | 0.8                                       | 0.10-0.32      | 1.05-4.5   |        |        |        |        |        |        | ●      | ●      |        |        |      |       |      |       |
| 半精加工<br>Semi-Finishing                |  | TCMT090204-TM | 0.4                                       | 0.10-0.25      | 0.6-2.0    |        |        |        |        |        |        |        |        |        |        | ●    |       |      |       |
|                                       |                                                                                       |               |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                                       |                                                                                       |               |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 半精加工<br>Semi-Finishing                |  | TCMT110202-FA | 0.2                                       | 0.03-0.15      | 0.1-1.5    |        |        |        |        |        |        |        |        |        |        | ●    |       |      |       |
|                                       |                                                                                       |               |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                                       |                                                                                       |               |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 半精加工 / 精加工<br>Semi-fnishing/Finishing |  | TCMT110204FG  | 0.4                                       | 0.10-0.25      | 0.7-3.5    |        |        |        |        |        |        |        |        |        |        |      | ●     |      |       |
|                                       |                                                                                       | TCMT110208FG  | 0.8                                       | 0.13-0.30      | 1.0-3.5    |        |        |        |        |        |        |        |        |        |        |      | ●     |      |       |
|                                       |                                                                                       |               |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 半精加工 / 精加工<br>Semi-fnishing/Finishing |  | TCMT110304-FG | 0.4                                       | 0.07-0.20      | 0.4-1.5    |        |        |        |        |        |        |        |        |        |        |      | ●     |      |       |
|                                       |                                                                                       |               |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
|                                       |                                                                                       |               |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 半精加工 / 精加工<br>Semi-fnishing/Finishing |  | TCGT090202APK | 0.2                                       | 0.01-0.12      | 0.05-3.0   |        |        |        |        |        |        |        |        |        |        |      |       | ●    |       |
|                                       |                                                                                       | TCGT090204APK | 0.4                                       | 0.02-0.15      | 0.1-4.0    |        |        |        |        |        |        |        |        |        |        |      |       | ●    |       |
|                                       |                                                                                       | TCGT110202APK | 0.2                                       | 0.02-0.20      | 0.05-4.0   |        |        |        |        |        |        |        |        |        |        |      |       | ●    |       |
|                                       |                                                                                       | TCGT110204APK | 0.4                                       | 0.03-0.30      | 0.1-4.0    |        |        |        |        |        |        |        |        |        |        |      |       | ●    |       |
|                                       |                                                                                       | TCGT110208APK | 0.8                                       | 0.03-0.40      | 0.1-5.0    |        |        |        |        |        |        |        |        |        |        |      |       | ●    |       |
|                                       |                                                                                       | TCGT16T302APK | 0.2                                       | 0.02-0.30      | 0.05-5.0   |        |        |        |        |        |        |        |        |        |        |      |       | ●    |       |
|                                       |                                                                                       | TCGT16T304APK | 0.4                                       | 0.03-0.40      | 0.1-5.5    |        |        |        |        |        |        |        |        |        |        |      |       | ●    |       |
|                                       |                                                                                       | TCGT16T308APK | 0.8                                       | 0.03-0.50      | 0.1-5.5    |        |        |        |        |        |        |        |        |        |        |      |       | ●    |       |
|                                       |                                                                                       | TCGT16T312APK | 1.2                                       | 0.04-0.60      | 0.15-5.5   |        |        |        |        |        |        |        |        |        |        |      |       | ●    |       |
| 钢 Steel                               |                                                                                       |               |                                           |                |            |        | ★      | ★      |        | ☆      | ☆      | ☆      |        | ★      |        |      |       |      |       |
| 不锈钢 Stainless Steel                   |                                                                                       |               |                                           |                |            |        |        |        |        |        | ★      | ★      |        |        |        |      |       |      |       |
| 铸铁 Cast Iron                          |                                                                                       |               |                                           |                | ★          |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 有色金属 Nonferrous Metal                 |                                                                                       |               |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      | ★     |      |       |
| 耐热合金 Heat Resistant Alloy             |                                                                                       |               |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 淬硬钢 Hardened Steel                    |                                                                                       |               |                                           |                |            |        |        |        |        |        |        |        | ★      |        |        |      |       |      |       |

★ 首选 Preferred    ☆ 可选 optional    ● 标准库存 standard stock    ○ 订单生产 order production

车削刀片(正型)  
Turning Inserts (Positive)

TC..



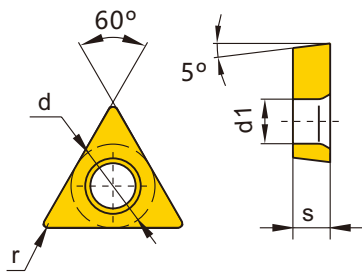
| 型号<br>Model | 尺寸 Size<br>(mm) |      |     |
|-------------|-----------------|------|-----|
|             | d               | s    | d1  |
| TC..0902..  | 5.56            | 2.38 | 2.5 |
| TC..1102..  | 6.35            | 2.38 | 2.5 |
| TC..1103..  | 6.35            | 2.38 | 2.8 |
| TC..16T3..  | 9.525           | 3.97 | 4.4 |

| 刀片外形<br>Insert shape                                                                                                                         | 型号<br>Model   | 刀片材质及适用加工材料 Insert grades and application |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
|----------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------------------------------|----------------|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|-------|
|                                                                                                                                              |               | r                                         | 进给fn<br>mm/rev | 切深ap<br>mm | KC3110 | KC3125 | KC1115 | KC1125 | KC1135 | KP1110 | KP2120 | KP2130 | KP6105 | KP6110 | KT20 | KCT20 | KW20 | KCW20 |
| <div>精加工<br/>Finishing</div> <div></div> <div>(有标准库存)</div> | TCGT090201R-F | 0.1                                       | 0.02-0.08      | 0.05-1.5   |        |        |        |        |        |        |        | ●      |        | ●      |      |       |      |       |
|                                                                                                                                              | TCGT090201L-F | 0.1                                       | 0.02-0.08      | 0.05-1.5   |        |        |        |        |        |        |        | ●      |        | ●      |      |       |      |       |
|                                                                                                                                              | TCGT090202R-F | 0.2                                       | 0.03-0.11      | 0.06-1.7   |        |        |        |        |        |        |        | ●      |        |        | ●    |       |      |       |
|                                                                                                                                              | TCGT090202L-F | 0.2                                       | 0.03-0.11      | 0.06-1.7   |        |        |        |        |        |        |        | ●      |        |        | ●    |       |      |       |
|                                                                                                                                              | TCGT110201R-F | 0.1                                       | 0.02-0.10      | 0.05-1.5   |        |        |        |        |        |        |        | ●      |        |        | ●    |       |      |       |
|                                                                                                                                              | TCGT110201L-F | 0.1                                       | 0.02-0.10      | 0.05-1.5   |        |        |        |        |        |        |        | ●      |        |        | ●    |       |      |       |
|                                                                                                                                              | TCGT110202R-F | 0.2                                       | 0.03-0.13      | 0.06-1.7   |        |        |        |        |        |        |        | ●      |        |        | ●    |       |      |       |
|                                                                                                                                              | TCGT110202L-F | 0.2                                       | 0.03-0.13      | 0.06-1.7   |        |        |        |        |        |        |        | ●      |        |        | ●    |       |      |       |
|                                                                                                                                              | TCGT110301R-F | 0.1                                       | 0.02-0.10      | 0.05-1.5   |        |        |        |        |        |        |        | ●      |        |        |      |       |      |       |
|                                                                                                                                              | TCGT110301L-F | 0.1                                       | 0.02-0.10      | 0.05-1.5   |        |        |        |        |        |        |        | ●      |        |        |      |       |      |       |
|                                                                                                                                              | TCGT110302R-F | 0.2                                       | 0.03-0.13      | 0.06-1.7   |        |        |        |        |        |        |        | ●      |        |        |      |       |      |       |
|                                                                                                                                              | TCGT110302L-F | 0.2                                       | 0.03-0.13      | 0.06-1.7   |        |        |        |        |        |        |        | ●      |        |        |      |       |      |       |
| <div>精加工<br/>Finishing</div> <div></div>                  | TCMT090204SM  | 0.4                                       | 0.05-0.16      | 0.35-2.6   |        |        |        |        |        |        |        | ●      |        | ●      |      |       |      |       |
|                                                                                                                                              | TCMT090208SM  | 0.8                                       | 0.10-0.32      | 0.70-2.6   |        |        |        |        |        |        |        | ●      |        | ●      |      |       |      |       |
|                                                                                                                                              | TCMT110204SM  | 0.1                                       | 0.05-0.16      | 0.35-3.0   |        |        |        |        |        |        |        | ●      |        | ●      |      |       |      |       |
|                                                                                                                                              | TCMT110208SM  | 0.8                                       | 0.10-0.32      | 0.70-3.0   |        |        |        |        |        |        |        | ●      |        | ●      |      |       |      |       |
|                                                                                                                                              | TCMT16T304SM  | 0.4                                       | 0.05-0.16      | 0.35-4.5   |        |        |        |        |        |        |        | ●      |        | ●      |      |       |      |       |
|                                                                                                                                              | TCMT16T308SM  | 0.8                                       | 0.10-0.32      | 0.70-4.5   |        |        |        |        |        |        |        | ●      |        | ●      |      |       |      |       |
| <div>精加工<br/>Finishing</div> <div></div>                  | TCMT16T312SM  | 1.2                                       | 0.16-0.48      | 1.05-4.5   |        |        |        |        |        |        |        | ●      |        | ●      |      |       |      |       |
|                                                                                                                                              | TCGT110201SA  | 0.1                                       | 0.02-0.15      | 0.10-2.4   |        |        |        |        |        |        |        |        |        | ●      |      |       |      |       |
|                                                                                                                                              | TCGT110202SA  | 0.2                                       | 0.02-0.15      | 0.20-2.4   |        |        |        |        |        |        |        |        |        | ●      |      |       |      |       |
|                                                                                                                                              | TCGT110204SA  | 0.4                                       | 0.03-0.20      | 0.20-2.4   |        |        |        |        |        |        |        |        |        | ●      |      |       |      |       |
|                                                                                                                                              | TCGT16T304SA  | 0.4                                       | 0.03-0.20      | 0.20-2.4   |        |        |        |        |        |        |        |        |        | ●      |      |       |      |       |
|                                                                                                                                              |               |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 钢 Steel                                                                                                                                      |               |                                           |                |            |        |        |        |        |        |        |        | ☆      |        | ★      |      |       |      |       |
| 不锈钢 Stainless Steel                                                                                                                          |               |                                           |                |            |        |        |        |        |        |        |        | ★      | ★      | ★      |      |       |      |       |
| 铸铁 Cast Iron                                                                                                                                 |               |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 有色金属 Nonferrous Metal                                                                                                                        |               |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 耐热合金 Heat Resistant Alloy                                                                                                                    |               |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      |       | ★    |       |
| 淬硬钢 Hardened Steel                                                                                                                           |               |                                           |                |            |        |        |        |        |        |        |        |        | ★      | ★      |      |       |      |       |

★ 首选Preferred ☆ 可选optional ● 标准库存standard stock ○ 订单生产order production

车削刀片(正型)  
Turning Inserts (Positive)

TB..



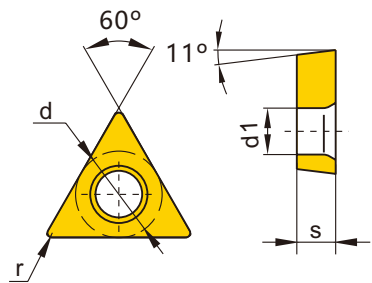
| 型号<br>Model | 尺寸 Size<br>(mm) |      |     |
|-------------|-----------------|------|-----|
|             | d               | s    | d1  |
| TB..0601..  | 3.97            | 1.59 | 2.3 |

| 刀片外形<br>Insert shape                                                                                                                           |               | 型号<br>Model | 刀片材质及适用加工材料 Insert grades and application |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |
|------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------|-------------------------------------------|----------------|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|
|                                                                                                                                                |               |             | r                                         | 进给fn<br>mm/rev | 切深ap<br>mm | KC3110 | KC3125 | KC1115 | KC1125 | KC1135 | KP1110 | KP2120 | KP2130 | KP6105 | KP6110 | KT20 | KCT20 | KW20 |
| <div>精加工<br/>Finishing</div> <div></div> <div>(有标准库存)</div> | TBGT060101R-F | 0.1         | 0.03-0.15                                 | 0.06-1.0       |            |        |        |        |        |        |        | ●      |        |        |        |      |       |      |
|                                                                                                                                                | TBGT060101L-F | 0.1         | 0.03-0.15                                 | 0.06-1.0       |            |        |        |        |        |        |        | ●      |        |        |        |      |       |      |
|                                                                                                                                                | TBGT060102R-F | 0.2         | 0.05-0.20                                 | 0.1-1.3        |            |        |        |        |        |        |        | ●      |        |        |        |      |       |      |
|                                                                                                                                                | TBGT060102L-F | 0.2         | 0.05-0.20                                 | 0.1-1.3        |            |        |        |        |        |        |        | ●      |        |        | ●      |      | ●     |      |
|                                                                                                                                                | TBGT060104R-F | 0.4         | 0.08-0.20                                 | 0.1-1.3        |            |        |        |        |        |        |        | ●      |        |        |        |      |       |      |
|                                                                                                                                                | TBGT060104L-F | 0.4         | 0.05-0.20                                 | 0.1-1.3        |            |        |        |        |        |        |        | ●      |        |        | ●      |      | ●     |      |
|                                                                                                                                                |               |             |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |
| 钢 Steel                                                                                                                                        |               |             |                                           |                |            |        |        |        |        |        |        | ☆      |        | ★      |        |      |       |      |
| 不锈钢 Stainless Steel                                                                                                                            |               |             |                                           |                |            |        |        |        |        |        |        | ★      |        |        |        |      |       |      |
| 铸铁 Cast Iron                                                                                                                                   |               |             |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |
| 有色金属 Nonferrous Metal                                                                                                                          |               |             |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |
| 耐热合金 Heat Resistant Alloy                                                                                                                      |               |             |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      | ★     |      |
| 淬硬钢 Hardened Steel                                                                                                                             |               |             |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |

★ 首选Preferred ☆ 可选optional ● 标准库存standard stock ○ 订单生产order production

车削刀片(正型)  
Turning Inserts (Positive)

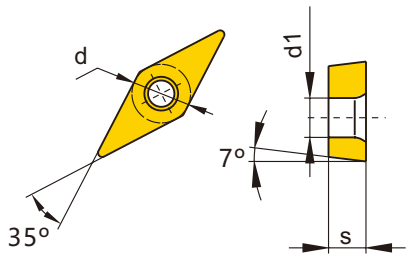
TP..



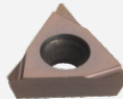
| 型号<br>Model | 尺寸 Size<br>(mm) |      |     |
|-------------|-----------------|------|-----|
|             | d               | s    | d1  |
| TP..0802..  | 4.76            | 2.38 | 2.3 |
| TP..0902..  | 5.56            | 2.38 | 3.0 |
| TP..1102..  | 6.35            | 2.38 | 3.5 |
| TP..1103..  | 6.35            | 3.18 | 3.3 |
| TP..16T3..  | 9.525           | 3.18 | 4.5 |

车削刀片(正型)  
Turning Inserts (Positive)

VC..



| 型号<br>Model | 尺寸 Size<br>(mm) |      |     |
|-------------|-----------------|------|-----|
|             | d               | s    | d1  |
| VC..1103..  | 6.35            | 3.18 | 2.8 |
| VC..1604..  | 9.525           | 4.76 | 4.4 |

| 刀片外形<br>Insert shape      |                                                                                                | 型号<br>Model   | 刀片材质及适用加工材料 Insert grades and application |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
|---------------------------|------------------------------------------------------------------------------------------------|---------------|-------------------------------------------|----------------|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|-------|
|                           |                                                                                                |               | r                                         | 进给fn<br>mm/rev | 切深ap<br>mm | KC3110 | KC3125 | KC1115 | KC1125 | KC1135 | KP1110 | KP2120 | KP2130 | KP6105 | KP6110 | KT20 | KCT20 | KW20 | KCW20 |
| 精加工<br>Finishing          | <br>(有标准库存) | TPGH080201R-F | 0.1                                       | 0.02-0.08      | 0.05-1.0   |        |        |        |        |        |        |        | ●      |        |        | ●    |       |      |       |
|                           |                                                                                                | TPGH080201L-F | 0.1                                       | 0.02-0.08      | 0.05-1.0   |        |        |        |        |        |        |        | ●      |        |        | ●    |       |      |       |
|                           |                                                                                                | TPGH080202R-F | 0.2                                       | 0.03-0.10      | 0.06-1.2   |        |        |        |        |        |        |        | ●      |        |        | ●    |       |      |       |
|                           |                                                                                                | TPGH080202L-F | 0.2                                       | 0.03-0.10      | 0.06-1.2   |        |        |        |        |        |        |        | ●      |        |        | ●    |       | ●    |       |
|                           |                                                                                                | TPGH080204R-F | 0.4                                       | 0.04-0.12      | 0.08-1.5   |        |        |        |        |        |        |        | ●      |        |        | ●    |       |      |       |
|                           |                                                                                                | TPGH080204L-F | 0.4                                       | 0.04-0.12      | 0.08-1.5   |        |        |        |        |        |        |        | ●      |        |        | ●    |       | ●    |       |
|                           |                                                                                                | TPGH090201R-F | 0.1                                       | 0.02-0.08      | 0.05-1.0   |        |        |        |        |        |        |        | ●      |        |        | ●    |       |      |       |
|                           |                                                                                                | TPGH090201L-F | 0.1                                       | 0.02-0.08      | 0.05-1.0   |        |        |        |        |        |        |        | ●      |        |        | ●    |       |      |       |
|                           |                                                                                                | TPGH090202R-F | 0.2                                       | 0.03-0.10      | 0.06-1.2   |        |        |        |        |        |        |        | ●      |        |        | ●    |       |      |       |
|                           |                                                                                                | TPGH090202L-F | 0.2                                       | 0.03-0.10      | 0.06-1.2   |        |        |        |        |        |        |        | ●      |        |        | ●    |       | ●    |       |
|                           |                                                                                                | TPGH090204R-F | 0.4                                       | 0.04-0.12      | 0.08-1.5   |        |        |        |        |        |        |        | ●      |        |        | ●    |       |      |       |
|                           |                                                                                                | TPGH090204L-F | 0.4                                       | 0.04-0.12      | 0.08-1.5   |        |        |        |        |        |        |        | ●      |        |        | ●    |       | ●    |       |
|                           |                                                                                                | TPGH110202R-F | 0.2                                       | 0.03-0.10      | 0.06-1.2   |        |        |        |        |        |        |        | ●      |        |        | ●    |       |      |       |
|                           |                                                                                                | TPGH110202L-F | 0.2                                       | 0.03-0.10      | 0.06-1.2   |        |        |        |        |        |        |        | ●      |        |        | ●    |       |      |       |
|                           |                                                                                                | TPGH110204R-F | 0.4                                       | 0.04-0.12      | 0.08-1.5   |        |        |        |        |        |        |        | ●      |        |        | ●    |       |      |       |
|                           |                                                                                                | TPGH110204L-F | 0.4                                       | 0.04-0.12      | 0.08-1.5   |        |        |        |        |        |        |        | ●      |        |        | ●    |       | ●    |       |
|                           |                                                                                                | TPGH110302R-F | 0.2                                       | 0.03-0.10      | 0.06-1.2   |        |        |        |        |        |        |        | ●      |        |        | ●    |       |      |       |
|                           |                                                                                                | TPGH110302L-F | 0.2                                       | 0.03-0.10      | 0.06-1.2   |        |        |        |        |        |        |        | ●      |        |        | ●    |       | ●    |       |
|                           |                                                                                                | TPGH110304R-F | 0.4                                       | 0.04-0.12      | 0.08-1.5   |        |        |        |        |        |        |        | ●      |        |        | ●    |       |      |       |
|                           |                                                                                                | TPGH110304L-F | 0.4                                       | 0.04-0.12      | 0.08-1.5   |        |        |        |        |        |        |        | ●      |        |        | ●    |       | ●    |       |
|                           |                                                                                                | TPGH110308R-F | 0.8                                       | 0.05-0.15      | 1.0-1.7    |        |        |        |        |        |        |        | ●      |        |        | ●    |       |      |       |
|                           |                                                                                                | TPGH110308L-F | 0.8                                       | 0.05-0.15      | 1.0-1.7    |        |        |        |        |        |        |        | ●      |        |        | ●    |       |      |       |
|                           |                                                                                                | TPGH16T302R-F | 0.2                                       | 0.03-0.10      | 0.06-1.2   |        |        |        |        |        |        |        | ●      |        |        | ●    |       |      |       |
|                           |                                                                                                | TPGH16T302L-F | 0.2                                       | 0.03-0.10      | 0.06-1.2   |        |        |        |        |        |        |        | ●      |        |        | ●    |       |      |       |
|                           |                                                                                                | TPGH16T304R-F | 0.4                                       | 0.04-0.12      | 0.08-1.7   |        |        |        |        |        |        |        | ●      |        |        | ●    |       |      |       |
|                           |                                                                                                | TPGH16T304L-F | 0.4                                       | 0.04-0.12      | 0.08-1.7   |        |        |        |        |        |        |        | ●      |        |        | ●    |       |      |       |
|                           |                                                                                                | TPGH16T308R-F | 0.8                                       | 0.05-0.20      | 1.0-2.0    |        |        |        |        |        |        |        | ●      |        |        | ●    |       |      |       |
|                           |                                                                                                | TPGH16T308L-F | 0.8                                       | 0.05-0.20      | 1.0-2.0    |        |        |        |        |        |        |        | ●      |        |        | ●    |       |      |       |
| 精加工<br>Finishing          | <br>(有标准库存) | TPGT080202L-W | 0.2                                       | 0.03-0.15      | 0.1-0.4    |        |        |        |        |        |        | ●      |        |        | ●      |      |       |      |       |
|                           |                                                                                                | TPGT090202L-W | 0.2                                       | 0.03-0.20      | 0.1-0.4    |        |        |        |        |        |        | ●      |        |        | ●      |      |       |      |       |
|                           |                                                                                                | TPGT110202L-W | 0.2                                       | 0.03-0.20      | 0.1-0.5    |        |        |        |        |        |        | ●      |        |        | ●      |      |       |      |       |
|                           |                                                                                                |               |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 钢 Steel                   |                                                                                                |               |                                           |                |            |        |        |        |        |        |        | ☆      |        |        | ★      |      |       |      |       |
| 不锈钢 Stainless Steel       |                                                                                                |               |                                           |                |            |        |        |        |        |        |        | ★      |        |        |        |      |       |      |       |
| 铸铁 Cast Iron              |                                                                                                |               |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 有色金属 Nonferrous Metal     |                                                                                                |               |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      | ★     |      |       |
| 耐热合金 Heat Resistant Alloy |                                                                                                |               |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 淬硬钢 Hardened Steel        |                                                                                                |               |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |

★ 首选 Preferred ☆ 可选 optional ● 标准库存 standard stock ○ 订单生产 order production

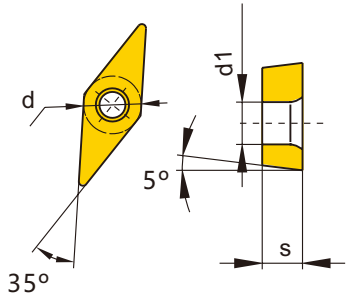
| 刀片外形<br>Insert shape      |                                                                                                  | 型号<br>Model     | 刀片材质及适用加工材料 Insert grades and application |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
|---------------------------|--------------------------------------------------------------------------------------------------|-----------------|-------------------------------------------|----------------|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|-------|------|-------|
|                           |                                                                                                  |                 | r                                         | 进给fn<br>mm/rev | 切深ap<br>mm | KC3110 | KC3125 | KC1115 | KC1125 | KC1135 | KP1110 | KP2120 | KP2130 | KP6105 | KP6110 | KT20 | KCT20 | KW20 | KCW20 |
| 半精加工<br>Semi-Finishing    |               | VCMT110304TMP   | 0.4                                       | 0.03-0.20      | 0.15-2.7   |        |        | ●      | ●      |        | ●      | ●      |        |        |        |      |       |      |       |
|                           |                                                                                                  | VCMT160404TMP   | 0.4                                       | 0.07-0.20      | 0.2-2.7    |        |        | ●      | ●      |        | ●      | ●      |        |        |        |      |       |      |       |
|                           |                                                                                                  | VCMT160408TMP   | 0.8                                       | 0.09-0.27      | 0.5-2.7    |        |        | ●      | ●      |        | ●      | ●      |        |        |        |      |       |      |       |
|                           |                                                                                                  |                 |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 半精加工<br>Semi-Finishing    |               | VCMT110304      | 0.4                                       | 0.05-0.16      | 0.35-2.1   |        |        |        |        |        | ●      | ●      |        |        |        |      |       |      |       |
|                           |                                                                                                  | VCMT110308      | 0.8                                       | 0.10-0.32      | 0.70-2.1   |        |        |        |        |        | ●      | ●      |        |        |        |      |       |      |       |
|                           |                                                                                                  | VCMT160404      | 0.4                                       | 0.05-0.16      | 0.35-3.1   |        |        |        |        |        | ●      | ●      |        |        |        |      |       |      |       |
|                           |                                                                                                  | VCMT160408      | 0.8                                       | 0.10-0.32      | 0.70-3.1   |        |        |        |        |        | ●      | ●      |        |        |        |      |       |      |       |
| 半精加工<br>Semi-Finishing    | <br>(有标准库存) | VCGT110301R-F   | 0.1                                       | 0.02-0.08      | 0.05-1.5   |        |        |        |        |        |        | ●      |        |        |        |      |       |      |       |
|                           |                                                                                                  | VCGT110301L-F   | 0.1                                       | 0.02-0.08      | 0.05-1.5   |        |        |        |        |        |        | ●      |        |        |        |      |       |      |       |
|                           |                                                                                                  | VCGT110302R-F   | 0.2                                       | 0.03-0.13      | 0.06-1.7   |        |        |        |        |        |        | ●      |        |        |        |      |       |      |       |
|                           |                                                                                                  | VCGT110302L-F   | 0.2                                       | 0.03-0.13      | 0.06-1.7   |        |        |        |        |        |        | ●      |        |        |        |      |       |      |       |
|                           |                                                                                                  | VCGT110304R-F   | 0.4                                       | 0.05-0.20      | 0.08-2.0   |        |        |        |        |        |        | ●      |        |        |        |      |       |      |       |
|                           |                                                                                                  | VCGT110304L-F   | 0.4                                       | 0.05-0.20      | 0.08-2.0   |        |        |        |        |        |        | ●      |        |        |        |      |       |      |       |
| 半精加工<br>Semi-Finishing    |             | VCGT110302R-U   | 0.2                                       | 0.03-0.13      | 0.06-1.7   |        |        |        |        |        |        |        |        |        | ●      |      |       |      |       |
|                           |                                                                                                  | VCGT110302L-U   | 0.2                                       | 0.03-0.13      | 0.06-1.7   |        |        |        |        |        |        | ●      |        |        |        | ●    |       |      |       |
|                           |                                                                                                  | VCGT110304R-U   | 0.4                                       | 0.05-0.15      | 0.08-2.0   |        |        |        |        |        |        | ●      |        |        |        | ●    |       |      |       |
|                           |                                                                                                  | VCGT110304L-U   | 0.4                                       | 0.05-0.15      | 0.08-2.0   |        |        |        |        |        |        | ●      |        |        |        | ●    |       |      |       |
|                           |                                                                                                  | VCGT160404R-U   | 0.4                                       | 0.05-0.17      | 0.08-2.0   |        |        |        |        |        |        | ●      |        |        |        |      |       |      |       |
|                           |                                                                                                  | VCGT160404L-U   | 0.4                                       | 0.05-0.17      | 0.08-2.0   |        |        |        |        |        |        | ●      |        |        |        |      |       |      |       |
| 半精加工<br>Semi-Finishing    |             | VCGT110302APK   | 0.2                                       | 0.02-0.20      | 0.05-3.0   |        |        |        |        |        |        |        |        |        |        |      |       | ●    |       |
|                           |                                                                                                  | VCGT110304APK   | 0.4                                       | 0.02-0.20      | 0.1-4.0    |        |        |        |        |        |        |        |        |        |        |      |       | ●    |       |
|                           |                                                                                                  | VCGT110308APK   | 0.8                                       | 0.03-0.30      | 0.1-5.0    |        |        |        |        |        |        |        |        |        |        |      |       | ●    |       |
|                           |                                                                                                  | VCGT160402APK   | 0.2                                       | 0.02-0.30      | 0.05-5.0   |        |        |        |        |        |        |        |        |        |        |      |       | ●    |       |
|                           |                                                                                                  | VCGT160404APK   | 0.4                                       | 0.03-0.40      | 0.1-5.0    |        |        |        |        |        |        |        |        |        |        |      |       | ●    |       |
|                           |                                                                                                  | VCGT160408APK   | 0.8                                       | 0.03-0.50      | 0.1-5.0    |        |        |        |        |        |        |        |        |        |        |      |       | ●    |       |
| 半精加工<br>Semi-Finishing    |             | VCGT160412APK   | 1.2                                       | 0.05-0.60      | 0.1-5.0    |        |        |        |        |        |        |        |        |        |        |      |       | ●    |       |
|                           |                                                                                                  | VCGT110301SA/AM | 0.1                                       | 0.02-0.15      | 0.10-1.4   |        |        |        |        |        |        |        |        |        | ●      |      |       |      |       |
|                           |                                                                                                  | VCGT110302SA/AM | 0.2                                       | 0.02-0.15      | 0.20-1.4   |        |        |        |        |        |        |        |        |        | ●      |      |       |      |       |
|                           |                                                                                                  | VCGT110304SA/AM | 0.4                                       | 0.03-0.20      | 0.20-1.4   |        |        |        |        |        |        |        |        |        | ●      |      |       |      |       |
|                           |                                                                                                  |                 |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 钢 Steel                   |                                                                                                  |                 |                                           |                |            |        |        | ★      | ★      |        | ☆      | ☆      | ☆      |        | ★      |      |       |      |       |
| 不锈钢 Stainless Steel       |                                                                                                  |                 |                                           |                |            |        |        |        |        |        |        | ★      | ★      |        | ★      |      |       |      |       |
| 铸铁 Cast Iron              |                                                                                                  |                 |                                           |                |            |        |        |        |        |        |        |        |        |        |        |      |       |      |       |
| 有色金属 Nonferrous Metal     |                                                                                                  |                 |                                           |                |            |        |        |        |        |        |        |        |        |        |        | ★    |       | ★    |       |
| 耐热合金 Heat Resistant Alloy |                                                                                                  |                 |                                           |                |            |        |        |        |        |        |        |        |        |        | ★      |      |       |      |       |
| 淬硬钢 Hardened Steel        |                                                                                                  |                 |                                           |                |            |        |        |        |        |        |        |        |        | ★      |        |      |       |      |       |

★ 首选 Preferred ☆ 可选 optional ● 标准库存 standard stock ○ 订单生产 order production



车削刀片(正型)  
Turning Inserts (Positive)

VB..



| 型号<br>Model | 尺寸 Size<br>(mm) |      |     |
|-------------|-----------------|------|-----|
|             | d               | s    | d1  |
| VB..1103..  | 6.35            | 3.18 | 2.8 |
| VB..1604..  | 9.525           | 4.76 | 4.4 |

| 刀片外形<br>Insert shape                   |                                                                                                | 型号<br>Model   | 刀片材质及适用加工材料 Insert grades and application |                      |            |        |        |        |        |        |        |        |        |                        |        |      |       |      |       |
|----------------------------------------|------------------------------------------------------------------------------------------------|---------------|-------------------------------------------|----------------------|------------|--------|--------|--------|--------|--------|--------|--------|--------|------------------------|--------|------|-------|------|-------|
|                                        |                                                                                                |               | r                                         | 进给fn<br>mm/rev       | 切深ap<br>mm | KC3110 | KC3125 | KC1115 | KC1125 | KC1135 | KP1110 | KP2120 | KP2130 | KP6105                 | KP6110 | KT20 | KCT20 | KW20 | KCW20 |
| 半精加工<br>Semi-Finishing                 |               | VBMT160404GPK | 0.4                                       | 0.08-0.20            | 0.3-2.5    | ●      |        |        |        |        |        |        |        |                        |        |      |       |      |       |
|                                        |                                                                                                | VBMT160408GPK | 0.8                                       | 0.10-0.25            | 0.5-2.5    | ●      |        |        |        |        |        |        |        |                        |        |      |       |      |       |
|                                        |                                                                                                |               |                                           |                      |            |        |        |        |        |        |        |        |        |                        |        |      |       |      |       |
| 半精加工<br>Semi-Finishing                 |               | VBMT110304TMP | 0.4                                       | 0.03-0.20            | 0.15-2.7   |        |        | ●      | ●      |        | ●      | ●      |        |                        |        |      |       |      |       |
|                                        |                                                                                                | VBMT160404TMP | 0.4                                       | 0.07-0.20            | 0.2-2.7    |        |        | ●      | ●      |        | ●      | ●      |        |                        |        |      |       |      |       |
|                                        |                                                                                                | VBMT160408TMP | 0.8                                       | 0.09-0.27            | 0.5-2.7    |        |        | ●      | ●      |        | ●      | ●      |        |                        |        |      |       |      |       |
| 半精加工<br>Semi-Finishing                 |             |               |                                           |                      |            |        |        |        |        |        |        |        |        |                        |        |      |       |      |       |
|                                        |                                                                                                | VBMT110302    | 0.2                                       | 0.02-0.07            | 0.15-1.4   |        |        |        |        |        | ●      | ●      |        |                        |        |      |       |      |       |
|                                        |                                                                                                | VBMT110304    | 0.4                                       | 0.05-0.16            | 0.35-2.1   |        |        |        |        |        | ●      | ●      |        |                        |        |      |       |      |       |
| 半精加工 / 精加工<br>Semi-finishing/Finishing | <br>(有标准库存) | VBMT110308    | 0.8                                       | 0.10-0.32            | 0.70-2.1   |        |        |        |        |        | ●      | ●      |        |                        |        |      |       |      |       |
|                                        |                                                                                                | VBMT160404    | 0.4                                       | 0.05-0.16            | 0.35-3.1   |        |        |        |        |        | ●      | ●      |        |                        |        |      |       |      |       |
|                                        |                                                                                                | VBMT160408    | 0.8                                       | 0.10-0.32            | 0.70-3.1   |        |        |        |        |        | ●      | ●      |        |                        |        |      |       |      |       |
|                                        |                                                                                                |               |                                           |                      |            |        |        |        |        |        |        |        |        |                        |        |      |       |      |       |
|                                        |                                                                                                | VBGT110301R-F | 0.1                                       | 0.02-0.08            | 0.05-1.5   |        |        |        |        |        |        | ●      |        |                        |        | ●    |       |      |       |
|                                        |                                                                                                | VBGT110301L-F | 0.1                                       | 0.02-0.08            | 0.05-1.5   |        |        |        |        |        |        | ●      |        |                        |        |      |       |      |       |
|                                        |                                                                                                | VBGT110302R-F | 0.2                                       | 0.03-0.13            | 0.06-1.7   |        |        |        |        |        |        | ●      |        |                        |        | ●    |       |      |       |
|                                        |                                                                                                | VBGT110302L-F | 0.2                                       | 0.03-0.13            | 0.06-1.7   |        |        |        |        |        |        | ●      |        |                        |        |      |       |      |       |
|                                        |                                                                                                | VBGT110304R-F | 0.4                                       | 0.05-0.15            | 0.08-2.0   |        |        |        |        |        |        | ●      |        |                        |        |      |       |      |       |
|                                        |                                                                                                | VBGT110304L-F | 0.4                                       | 0.05-0.15            | 0.08-2.0   |        |        |        |        |        |        | ●      |        |                        |        |      |       |      |       |
|                                        |                                                                                                | VBGT160402R-F | 0.2                                       | 0.03-0.13            | 0.06-1.7   |        |        |        |        |        |        | ●      |        |                        |        |      |       |      |       |
|                                        |                                                                                                | VBGT160402L-F | 0.2                                       | 0.03-0.13            | 0.06-1.7   |        |        |        |        |        |        | ●      |        |                        |        |      |       |      |       |
|                                        |                                                                                                | VBGT160404R-F | 0.4                                       | 0.05-0.15            | 0.08-2.0   |        |        |        |        |        |        | ●      |        |                        |        |      |       |      |       |
|                                        |                                                                                                | VBGT160404L-F | 0.4                                       | 0.05-0.15            | 0.08-2.0   |        |        |        |        |        |        | ●      |        |                        |        |      |       |      |       |
| 半精加工<br>Semi-Finishing                 |             | VBGT110302R-U | 0.2                                       | 0.03-0.13            | 0.06-1.7   |        |        |        |        |        | ●      |        |        |                        |        | ●    |       |      |       |
|                                        |                                                                                                | VBGT110302L-U | 0.2                                       | 0.03-0.13            | 0.06-1.7   |        |        |        |        |        | ●      |        |        |                        |        | ●    |       |      |       |
|                                        |                                                                                                | VBGT110304R-U | 0.4                                       | 0.05-0.15            | 0.08-2.0   |        |        |        |        |        | ●      |        |        |                        |        | ●    |       |      |       |
|                                        |                                                                                                | VBGT110304L-U | 0.4                                       | 0.05-0.15            | 0.08-2.0   |        |        |        |        |        | ●      |        |        |                        |        | ●    |       |      |       |
|                                        |                                                                                                | VBGT110308R-U | 0.8                                       | 0.08-0.20            | 0.08-2.3   |        |        |        |        |        | ●      |        |        |                        |        |      |       |      |       |
|                                        |                                                                                                | VBGT110308L-U | 0.8                                       | 0.08-0.20            | 0.08-2.3   |        |        |        |        |        | ●      |        |        |                        |        |      |       |      |       |
|                                        |                                                                                                | VBGT160402R-U | 0.2                                       | 0.03-0.13            | 0.06-1.7   |        |        |        |        |        | ●      |        |        |                        |        |      |       |      |       |
|                                        |                                                                                                | VBGT160402L-U | 0.2                                       | 0.03-0.13            | 0.06-1.7   |        |        |        |        |        | ●      |        |        |                        |        |      |       |      |       |
|                                        |                                                                                                | VBGT160404R-U | 0.4                                       | 0.05-0.15            | 0.08-2.0   |        |        |        |        |        | ●      |        |        |                        |        | ●    |       |      |       |
|                                        |                                                                                                | VBGT160404L-U | 0.4                                       | 0.05-0.15            | 0.08-2.0   |        |        |        |        |        | ●      |        |        |                        |        |      |       |      |       |
|                                        |                                                                                                | VBGT110302APK | 0.2                                       | 0.02-0.15            | 0.05-3.0   |        |        |        |        |        |        | ●      |        |                        |        |      |       |      | ●     |
|                                        |                                                                                                | VBGT110304APK | 0.4                                       | 0.02-0.15            | 0.1-4.0    |        |        |        |        |        |        |        |        |                        |        |      |       |      | ●     |
|                                        |                                                                                                | VBGT110308APK | 0.8                                       | 0.03-0.18            | 0.1-5.0    |        |        |        |        |        |        |        |        |                        |        |      |       |      | ●     |
|                                        |                                                                                                | VBGT160402APK | 0.2                                       | 0.03-0.30            | 0.05-4.0   |        |        |        |        |        |        |        |        |                        |        |      |       |      | ●     |
| 半精加工<br>Semi-Finishing                 |             | VBGT160404APK | 0.4                                       | 0.03-0.40            | 0.1-5.0    |        |        |        |        |        |        |        |        |                        |        |      |       | ●    |       |
|                                        |                                                                                                | VBGT160408APK | 0.8                                       | 0.03-0.50            | 0.1-5.0    |        |        |        |        |        |        |        |        |                        |        |      |       | ●    |       |
|                                        |                                                                                                | VBGT160412APK | 1.2                                       | 0.05-0.60            | 0.1-5.5    |        |        |        |        |        |        |        |        |                        |        |      |       | ●    |       |
| 钢 Steel                                |                                                                                                |               |                                           |                      |            |        | ★      | ★      | ☆      | ☆      | ☆      |        | ★      |                        |        |      |       |      |       |
| 不锈钢 Stainless Steel                    |                                                                                                |               |                                           |                      |            |        |        |        |        | ★      | ★      |        |        |                        |        |      |       |      |       |
| 铸铁 Cast Iron                           |                                                                                                |               |                                           |                      | ★          |        |        |        |        |        |        |        |        |                        |        |      |       |      |       |
| 有色金属 Nonferrous Metal                  |                                                                                                |               |                                           |                      |            |        |        |        |        |        |        |        |        | ★                      |        | ★    |       |      |       |
| 耐热合金 Heat Resistant Alloy              |                                                                                                |               |                                           |                      |            |        |        |        |        |        |        |        |        |                        |        |      |       |      |       |
| 淬硬钢 Hardened Steel                     |                                                                                                |               |                                           |                      |            |        |        |        |        | ★      |        |        |        |                        |        |      |       |      |       |
| ★ 首选Preferred                          |                                                                                                | ☆ 可选optional  |                                           | ● 标准库存standard stock |            |        |        |        |        |        |        |        |        | ○ 订单生产order production |        |      |       |      |       |

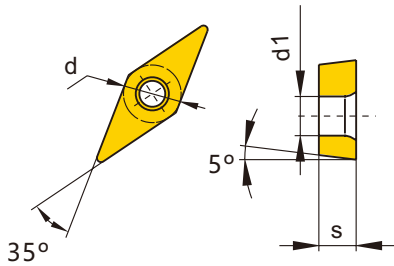
★ 首选 Preferred ☆ 可选 optional

● 标准库存 standard stock

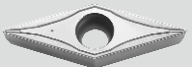
○ 订单生产 order production

车削刀片(正型)  
Turning Inserts (Positive)

VB..



| 型号<br>Model | 尺寸 Size<br>(mm) |      |     |
|-------------|-----------------|------|-----|
|             | d               | s    | d1  |
| VB..1103..  | 6.35            | 3.18 | 2.8 |
| VB..1604..  | 9.525           | 4.76 | 4.4 |

| 刀片外形<br>Insert shape      |                                                                                       | 型号<br>Model     | r   | 进给fn<br>mm/rev | 切深ap<br>mm            | 刀片材质及适用加工材料 Insert grades and application |        |        |        |                         |        |        |        |        |        |      |       |      |
|---------------------------|---------------------------------------------------------------------------------------|-----------------|-----|----------------|-----------------------|-------------------------------------------|--------|--------|--------|-------------------------|--------|--------|--------|--------|--------|------|-------|------|
|                           |                                                                                       |                 |     |                |                       | KC3110                                    | KC3125 | KC1115 | KC1125 | KC1135                  | KP1110 | KP2120 | KP2130 | KP6105 | KP6110 | KT20 | KCT20 | KW20 |
| 半精加工<br>Semi-Finishing    |    | VBMT110304SM    | 0.4 | 0.05-0.16      | 0.35-2.1              |                                           |        |        |        |                         |        |        |        | ●      | ●      |      |       |      |
|                           |                                                                                       | VBMT110308SM    | 0.8 | 0.10-0.32      | 0.70-2.1              |                                           |        |        |        |                         |        |        |        | ●      | ●      |      |       |      |
|                           |                                                                                       | VBMT160404SM    | 0.4 | 0.05-0.16      | 0.35-3.1              |                                           |        |        |        |                         |        |        |        | ●      | ●      |      |       |      |
|                           |                                                                                       | VBMT160408SM    | 0.8 | 0.10-0.32      | 0.70-3.1              |                                           |        |        |        |                         |        |        |        | ●      | ●      |      |       |      |
|                           |                                                                                       | VBMT160412SM    | 1.2 | 0.16-0.48      | 1.05-3.1              |                                           |        |        |        |                         |        |        |        | ●      | ●      |      |       |      |
| 半精加工<br>Semi-Finishing    |    | VBMT160404-FG   | 0.4 | 0.02-0.15      | 0.10-1.4              |                                           |        |        |        |                         |        |        |        |        |        | ●    |       |      |
|                           |                                                                                       |                 |     |                |                       |                                           |        |        |        |                         |        |        |        |        |        |      |       |      |
|                           |                                                                                       |                 |     |                |                       |                                           |        |        |        |                         |        |        |        |        |        |      |       |      |
| 半精加工<br>Semi-Finishing    |  | VBGT110301SA/AM | 0.1 | 0.02-0.15      | 0.1-1.5               |                                           |        |        |        |                         |        |        |        |        | ●      |      |       |      |
|                           |                                                                                       | VBGT110302SA/AM | 0.2 | 0.02-0.20      | 0.2-1.5               |                                           |        |        |        |                         |        |        |        |        |        | ●    |       |      |
|                           |                                                                                       | VBGT110304SA/AM | 0.4 | 0.05-0.20      | 0.2-1.5               |                                           |        |        |        |                         |        |        |        |        |        | ●    |       |      |
|                           |                                                                                       | VBGT160401SA/AM | 0.1 | 0.01-0.20      | 0.1-1.5               |                                           |        |        |        |                         |        |        |        |        |        | ●    |       |      |
|                           |                                                                                       | VBGT160402SA/AM | 0.2 | 0.02-0.20      | 0.2-1.5               |                                           |        |        |        |                         |        |        |        |        |        | ●    |       |      |
| 钢 Steel                   |                                                                                       |                 |     |                |                       |                                           |        |        |        |                         |        |        |        |        |        | ★    |       |      |
| 不锈钢 Stainless Steel       |                                                                                       |                 |     |                |                       |                                           |        |        |        |                         |        |        |        | ★      | ★      |      |       |      |
| 铸铁 Cast Iron              |                                                                                       |                 |     |                |                       |                                           |        |        |        |                         |        |        |        |        |        |      |       |      |
| 有色金属 Nonferrous Metal     |                                                                                       |                 |     |                |                       |                                           |        |        |        |                         |        |        |        |        |        |      |       |      |
| 耐热合金 Heat Resistant Alloy |                                                                                       |                 |     |                |                       |                                           |        |        |        |                         |        |        |        | ★      | ★      |      |       |      |
| 淬硬钢 Hardened Steel        |                                                                                       |                 |     |                |                       |                                           |        |        |        |                         |        |        |        |        |        |      |       |      |
| ★ 首选 Preferred            |                                                                                       | ☆ 可选 optional   |     |                | ● 标准库存 standard stock |                                           |        |        |        | ○ 订单生产 order production |        |        |        |        |        |      |       |      |

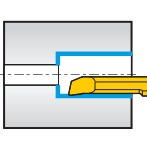
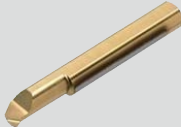
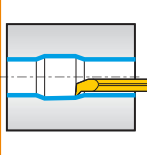
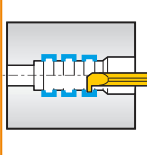
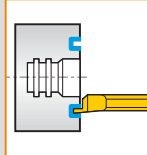
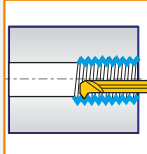
★ 首选 Preferred ☆ 可选 optional

● 标准库存 standard stock

○ 订单生产 order production



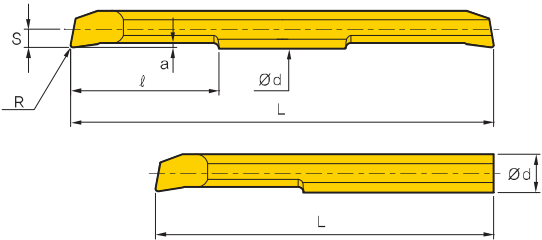
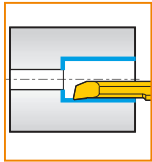
整体合金小径内孔车刀一览表  
Solid carbide mini boring bar

| 型号<br>Size | 刀片外形<br>Shape                                                                       | 应用范围<br>Applicable                                                                  | 特点<br>Features                                                                                                                        |
|------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| PSBR       |    |    | 内孔加工<br>最小加工直径3.2mm<br>Inner hole machining<br>Minimum machining diameter 3.2 mm                                                      |
| PSCR       |    |    | 内孔倒拉加工<br>最小加工直径3.2mm<br>Back turning machining for inner hole<br>Minimum machining diameter is 3.2mm                                 |
| PSGR       |    |    | 内孔切槽加工<br>最小加工直径3.2mm,槽宽1.0-2.5mm<br>Internal grooving machining<br>Minimum machining diameter is 3.2mm,<br>Groove width is 1.0-2.5mm |
| PSGFR      |  |  | 端面槽加工<br>最小加工直径6.0mm 槽宽1.0-4.5mm<br>Face grooving machining<br>Minimum machining diameter 6.0mm<br>Groove width 1.0-4.5mm             |
| PSTR       |  |  | 内螺纹加工<br>最小加工直径3.3mm 螺距0.5-1.5mm<br>Internal thread machining<br>Minimum machining diameter 3.3mm Pitch 0.5-1.5mm                     |

推荐切削条件表  
Recommended Cutting Conditions

| Material<br>被加工材料       | VC (m/min) | 孔径 boring bar Φ    |                    |                    |
|-------------------------|------------|--------------------|--------------------|--------------------|
|                         |            | Φ1.0-Φ2.0 (mm/rev) | Φ2.5-Φ4.0 (mm/rev) | Φ4.5-Φ5.5 (mm/rev) |
| Free-cutting steel 易削铁  | 60-100     | 0.02-0.03          | 0.02-0.08          | 0.03-0.10          |
| Low alloyed steel 低合金钢  | 50-80      | 0.01-0.03          | 0.02-0.05          | 0.03-0.06          |
| High alloyed steel 高合金钢 | 40-60      | 0.01-0.02          | 0.02-0.04          | 0.02-0.06          |
| Stainless steel 不锈钢     | 40-90      | 0.01-0.03          | 0.02-0.05          | 0.03-0.08          |
| Aluminium 铝合金           | 60-150     | 0.01-0.03          | 0.02-0.06          | 0.03-0.1           |
| Titanium 钛合金            | 30-70      | 0.01-0.03          | 0.02-0.05          | 0.03-0.1           |
| Copper 铜                | 60-150     | 0.01-0.03          | 0.02-0.05          | 0.03-0.08          |

镗孔  
Boring

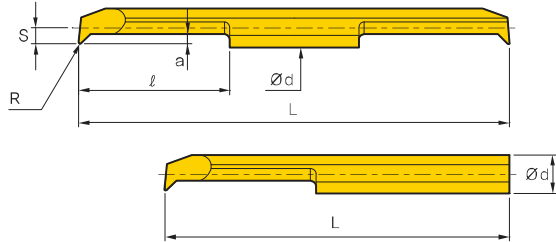
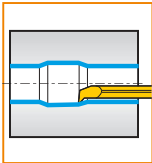


| 刀片外形<br>Insert shape                                                                 | 型号<br>Model | 尺寸与材质<br>Size and Grades |                    |     |    |    |   |      |     |     |      |
|--------------------------------------------------------------------------------------|-------------|--------------------------|--------------------|-----|----|----|---|------|-----|-----|------|
|                                                                                      |             | R                        | 最小直径<br>Min Dia mm | d   | l  | L  | w | a    | s   | KTX | KW20 |
|   | PSBR0310-1  | 0.05                     | 3.2                | 3.0 | 10 | 35 |   | 0.5  | 1.4 | ●   | ●    |
|                                                                                      | PSBR0315-1  | 0.05                     | 3.2                | 3.0 | 15 | 45 |   | 0.5  | 1.4 | ●   | ●    |
|                                                                                      | PSBR0410-1  | 0.05                     | 4.2                | 4.0 | 10 | 35 |   | 0.6  | 1.9 | ●   | ●    |
|                                                                                      | PSBR0415-1  | 0.05                     | 4.2                | 4.0 | 15 | 45 |   | 0.6  | 1.9 | ●   | ●    |
|                                                                                      | PSBR0420-1  | 0.05                     | 4.2                | 4.0 | 20 | 50 |   | 0.6  | 1.9 | ●   | ●    |
|                                                                                      | PSBR0610-1  | 0.05                     | 6.2                | 6.0 | 10 | 40 |   | 0.75 | 2.9 | ●   | ●    |
|  | PSBR0615-1  | 0.05                     | 6.2                | 6.0 | 15 | 45 |   | 0.75 | 2.9 | ●   | ●    |
|                                                                                      | PSBR0620-1  | 0.05                     | 6.2                | 6.0 | 20 | 50 |   | 0.75 | 2.9 | ●   | ●    |
|                                                                                      | PSBR0310    | 0.05                     | 3.2                | 3.0 | 10 | 40 |   | 0.5  | 1.4 | ●   | ●    |
|                                                                                      | PSBR0315    | 0.05                     | 3.2                | 3.0 | 15 | 50 |   | 0.5  | 1.4 | ●   | ●    |
|                                                                                      | PSBR0410    | 0.05                     | 4.2                | 4.0 | 10 | 40 |   | 0.6  | 1.9 | ●   | ●    |
|                                                                                      | PSBR0415    | 0.05                     | 4.2                | 4.0 | 15 | 50 |   | 0.6  | 1.9 | ●   | ●    |
|                                                                                      | PSBR0420    | 0.05                     | 4.2                | 4.0 | 20 | 60 |   | 0.6  | 1.9 | ●   | ●    |
|                                                                                      | PSBR0610    | 0.05                     | 6.2                | 6.0 | 10 | 45 |   | 0.75 | 2.9 | ●   | ●    |
|                                                                                      | PSBR0615    | 0.05                     | 6.2                | 6.0 | 15 | 55 |   | 0.75 | 2.9 | ●   | ●    |
|                                                                                      | PSBR0620    | 0.05                     | 6.2                | 6.0 | 20 | 65 |   | 0.75 | 2.9 | ●   | ●    |
| 钢 Steel                                                                              |             |                          |                    |     |    |    |   |      |     |     | ★    |
| 不锈钢 Stainless Steel                                                                  |             |                          |                    |     |    |    |   |      |     |     | ★    |
| 铸铁 Cast Iron                                                                         |             |                          |                    |     |    |    |   |      |     |     | ☆    |
| 有色金属 Nonferrous Metal                                                                |             |                          |                    |     |    |    |   |      |     |     | ★    |
| 耐热合金 Heat Resistant Alloy                                                            |             |                          |                    |     |    |    |   |      |     |     | ☆    |
| 淬硬钢 Hardened Steel                                                                   |             |                          |                    |     |    |    |   |      |     |     |      |

★首选 ☆可选

●标准库存 ○订单生产

仿形  
Copying

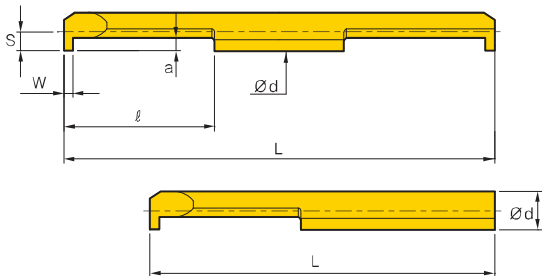
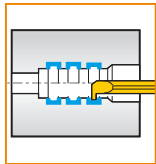


| 刀片外形<br>Insert shape      | 型号<br>Model | 尺寸与材质<br>Size and Grades |                    |     |    |    |   |     |      |     |      |
|---------------------------|-------------|--------------------------|--------------------|-----|----|----|---|-----|------|-----|------|
|                           |             | R                        | 最小直径<br>Min Dia mm | d   | l  | L  | w | a   | s    | KTX | KW20 |
|                           | PSCR0410-1  | 0.05                     | 4.2                | 4.0 | 10 | 35 |   | 1.0 | 1.9  | ●   | ●    |
|                           | PSCR0415-1  | 0.05                     | 4.2                | 4.0 | 15 | 45 |   | 1.0 | 1.9  | ●   | ●    |
|                           | PSCR0420-1  | 0.05                     | 4.2                | 4.0 | 20 | 50 |   | 1.0 | 1.9  | ●   | ●    |
|                           | PSCR0610-1  | 0.05                     | 6.2                | 6.0 | 10 | 40 |   | 1.3 | 2.9  | ●   | ●    |
|                           | PSCR0615-1  | 0.05                     | 6.2                | 6.0 | 15 | 45 |   | 1.3 | 2.9  | ●   | ●    |
|                           | PSCR0620-1  | 0.05                     | 6.2                | 6.0 | 20 | 50 |   | 1.3 | 2.9  | ●   | ●    |
|                           | PSCR0410    | 0.05                     | 4.2                | 4.0 | 10 | 40 |   | 1.0 | 1.9  | ●   | ●    |
|                           | PSCR0415    | 0.05                     | 4.2                | 4.0 | 15 | 50 |   | 1.0 | 1.9  | ●   | ●    |
|                           | PSCR0420    | 0.05                     | 4.2                | 4.0 | 20 | 60 |   | 1.0 | 1.9  | ●   | ●    |
|                           | PSCR0610    | 0.05                     | 6.2                | 6.0 | 10 | 45 |   | 1.3 | 2.9  | ●   | ●    |
|                           | PSCR0615    | 0.05                     | 6.2                | 6.0 | 15 | 55 |   | 1.3 | 2.9  | ●   | ●    |
|                           | PSCR0620    | 0.05                     | 6.2                | 6.0 | 20 | 65 |   | 1.3 | 2.69 | ●   | ●    |
| 钢 Steel                   |             |                          |                    |     |    |    |   |     |      |     | ★    |
| 不锈钢 Stainless Steel       |             |                          |                    |     |    |    |   |     |      |     | ★    |
| 铸铁 Cast Iron              |             |                          |                    |     |    |    |   |     |      |     | ☆    |
| 有色金属 Nonferrous Metal     |             |                          |                    |     |    |    |   |     |      |     | ★    |
| 耐热合金 Heat Resistant Alloy |             |                          |                    |     |    |    |   |     |      |     | ☆    |
| 淬硬钢 Hardened Steel        |             |                          |                    |     |    |    |   |     |      |     |      |

★首选 ☆可选

●标准库存 ○订单生产

切槽  
Square Grooving



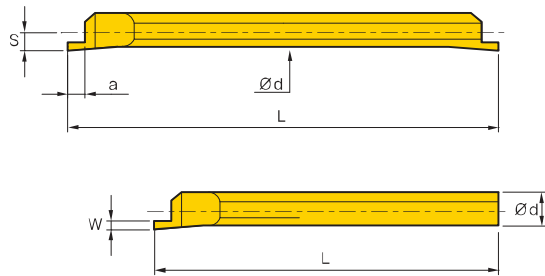
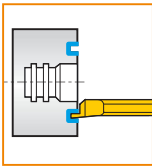
| 刀片外形<br>Insert shape      | 型号<br>Model    | 尺寸与材质<br>Size and Grades |                    |     |    |    |     |     |     |     |      |
|---------------------------|----------------|--------------------------|--------------------|-----|----|----|-----|-----|-----|-----|------|
|                           |                | R                        | 最小直径<br>Min Dia mm | d   | l  | L  | w   | a   | s   | KTX | KW20 |
|                           | PSGR0310-1.0-1 |                          | 3.2                | 3.0 | 10 | 35 | 1.0 | 0.8 | 1.4 | ●   | ●    |
|                           | PSGR0315-1.0-1 |                          | 3.2                | 3.0 | 15 | 45 | 1.0 | 0.8 | 1.4 | ●   | ●    |
|                           | PSGR0310-1.5-1 |                          | 3.2                | 3.0 | 10 | 35 | 1.5 | 0.8 | 1.4 | ●   | ●    |
|                           | PSGR0315-1.5-1 |                          | 3.2                | 3.0 | 15 | 45 | 1.5 | 0.8 | 1.4 | ●   | ●    |
|                           | PSGR0410-1.0-1 |                          | 4.2                | 4.0 | 10 | 35 | 1.0 | 1.4 | 1.9 | ●   | ●    |
|                           | PSGR0420-1.0-1 |                          | 4.2                | 4.0 | 20 | 50 | 1.0 | 1.4 | 1.9 | ●   | ●    |
|                           | PSGR0410-1.5-1 |                          | 4.2                | 4.0 | 10 | 35 | 1.5 | 1.4 | 1.9 | ●   | ●    |
|                           | PSGR0420-1.5-1 |                          | 4.2                | 4.0 | 20 | 50 | 1.5 | 1.4 | 1.9 | ●   | ●    |
|                           | PSGR0410-2.0-1 |                          | 4.2                | 4.0 | 10 | 35 | 2.0 | 1.4 | 1.9 | ●   | ●    |
|                           | PSGR0420-2.0-1 |                          | 4.2                | 4.0 | 20 | 50 | 2.0 | 1.4 | 1.9 | ●   | ●    |
|                           | PSGR0610-1.0-1 |                          | 6.2                | 6.0 | 10 | 40 | 1.0 | 1.8 | 2.9 | ●   | ●    |
|                           | PSGR0620-1.0-1 |                          | 6.2                | 6.0 | 20 | 50 | 1.0 | 1.8 | 2.9 | ●   | ●    |
|                           | PSGR0610-1.5-1 |                          | 6.2                | 6.0 | 10 | 40 | 1.5 | 1.8 | 2.9 | ●   | ●    |
|                           | PSGR0620-1.5-1 |                          | 6.2                | 6.0 | 20 | 50 | 1.5 | 1.8 | 2.9 | ●   | ●    |
|                           | PSGR0610-2.0-1 |                          | 6.2                | 6.0 | 10 | 40 | 2.0 | 1.8 | 2.9 | ●   | ●    |
|                           | PSGR0620-2.0-1 |                          | 6.2                | 6.0 | 20 | 50 | 2.0 | 1.8 | 2.9 | ●   | ●    |
|                           | PSGR0610-2.5-1 |                          | 6.2                | 6.0 | 10 | 40 | 2.5 | 2.0 | 2.9 | ●   | ●    |
|                           | PSGR0620-2.5-1 |                          | 6.2                | 6.0 | 20 | 50 | 2.5 | 2.0 | 2.9 | ●   | ●    |
|                           | PSGR0310-1.0   |                          | 3.2                | 3.0 | 10 | 40 | 1.0 | 0.8 | 1.4 | ●   | ●    |
|                           | PSGR0315-1.0   |                          | 3.2                | 3.0 | 15 | 50 | 1.0 | 0.8 | 1.4 | ●   | ●    |
|                           | PSGR0310-1.5   |                          | 3.2                | 3.0 | 10 | 40 | 1.5 | 0.8 | 1.4 | ●   | ●    |
|                           | PSGR0315-1.5   |                          | 3.2                | 3.0 | 15 | 50 | 1.5 | 0.8 | 1.4 | ●   | ●    |
|                           | PSGR0410-1.0   |                          | 4.2                | 4.0 | 10 | 40 | 1.0 | 1.4 | 1.9 | ●   | ●    |
|                           | PSGR0420-1.0   |                          | 4.2                | 4.0 | 20 | 60 | 1.0 | 1.4 | 1.9 | ●   | ●    |
|                           | PSGR0410-1.5   |                          | 4.2                | 4.0 | 10 | 40 | 1.5 | 1.4 | 1.9 | ●   | ●    |
|                           | PSGR0420-1.5   |                          | 4.2                | 4.0 | 20 | 60 | 1.5 | 1.4 | 1.9 | ●   | ●    |
|                           | PSGR0410-2.0   |                          | 4.2                | 4.0 | 10 | 40 | 2.0 | 1.4 | 1.9 | ●   | ●    |
|                           | PSGR0420-2.0   |                          | 4.2                | 4.0 | 20 | 60 | 2.0 | 1.4 | 1.9 | ●   | ●    |
|                           | PSGR0610-1.0   |                          | 6.2                | 6.0 | 10 | 45 | 1.0 | 1.8 | 2.9 | ●   | ●    |
|                           | PSGR0620-1.0   |                          | 6.2                | 6.0 | 20 | 65 | 1.0 | 1.8 | 2.9 | ●   | ●    |
|                           | PSGR0610-1.5   |                          | 6.2                | 6.0 | 10 | 45 | 1.5 | 1.8 | 2.9 | ●   | ●    |
|                           | PSGR0620-1.5   |                          | 6.2                | 6.0 | 20 | 65 | 1.5 | 1.8 | 2.9 | ●   | ●    |
|                           | PSGR0610-2.0   |                          | 6.2                | 6.0 | 10 | 45 | 2.0 | 1.8 | 2.9 | ●   | ●    |
|                           | PSGR0620-2.0   |                          | 6.2                | 6.0 | 20 | 65 | 2.0 | 1.8 | 2.9 | ●   | ●    |
|                           | PSGR0610-2.5   |                          | 6.2                | 6.0 | 10 | 45 | 2.5 | 2.0 | 2.9 | ●   | ●    |
|                           | PSGR0620-2.5   |                          | 6.2                | 6.0 | 20 | 65 | 2.5 | 2.0 | 2.9 | ●   | ●    |
| 钢 Steel                   |                |                          |                    |     |    |    |     |     |     |     | ★    |
| 不锈钢 Stainless Steel       |                |                          |                    |     |    |    |     |     |     |     | ★    |
| 铸铁 Cast Iron              |                |                          |                    |     |    |    |     |     |     |     | ☆    |
| 有色金属 Nonferrous Metal     |                |                          |                    |     |    |    |     |     |     |     | ★    |
| 耐热合金 Heat Resistant Alloy |                |                          |                    |     |    |    |     |     |     |     | ☆    |
| 淬硬钢 Hardened Steel        |                |                          |                    |     |    |    |     |     |     |     |      |

★首选 ☆可选

●标准库存 ○订单生产



端面槽  
Face Grooving

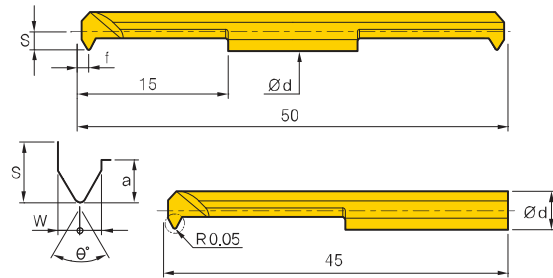
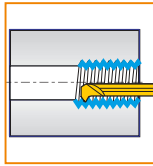


| 刀片外形<br>Insert shape      | 型 号<br>Model    | 尺寸与材质<br>Size and Grades |                    |      |   |    |     |     |     |     |      |
|---------------------------|-----------------|--------------------------|--------------------|------|---|----|-----|-----|-----|-----|------|
|                           |                 | R                        | 最小直径<br>Min Dia mm | d    | l | L  | w   | a   | s   | KTX | KW20 |
|                           | PSGFR0400-1.0-1 |                          | 6.0                | 4.0  |   | 45 | 1.5 | 1.5 | 1.8 | ●   | ●    |
|                           | PSGFR0400-1.5-1 |                          | 6.0                | 4.0  |   | 45 | 2.0 | 2.0 | 1.8 | ●   | ●    |
|                           | PSGFR0600-1.0-1 |                          | 8.5                | 6.0  |   | 45 | 1.0 | 1.5 | 2.9 | ●   | ●    |
|                           | PSGFR0600-1.5-1 |                          | 8.5                | 6.0  |   | 45 | 1.5 | 2.0 | 2.9 | ●   | ●    |
|                           | PSGFR0600-2.0-1 |                          | 8.5                | 6.0  |   | 45 | 2.0 | 2.5 | 2.9 | ●   | ●    |
|                           | PSGFR0800-1.0-1 |                          | 10.4               | 8.0  |   | 60 | 1.0 | 2.0 | 3.9 | ●   | ●    |
|                           | PSGFR0800-1.5-1 |                          | 10.4               | 8.0  |   | 60 | 1.5 | 2.5 | 3.9 | ●   | ●    |
|                           | PSGFR0800-2.0-1 |                          | 10.4               | 8.0  |   | 60 | 2.0 | 3.0 | 3.9 | ●   | ●    |
|                           | PSGFR1000-2.0-1 |                          | 12.4               | 10.0 |   | 70 | 2.0 | 2.5 | 4.9 | ●   | ●    |
|                           | PSGFR1000-2.5-1 |                          | 12.4               | 10.0 |   | 70 | 2.5 | 3.0 | 4.9 | ●   | ●    |
|                           | PSGFR1000-3.0-1 |                          | 12.4               | 10.0 |   | 70 | 3.0 | 3.5 | 4.9 | ●   | ●    |
|                           | PSGFR1000-3.5-1 |                          | 12.4               | 10.0 |   | 70 | 3.5 | 4.0 | 4.9 | ●   | ●    |
|                           | PSGFR1000-4.0-1 |                          | 12.4               | 10.0 |   | 70 | 4.0 | 4.5 | 4.9 | ●   | ●    |
|                           | PSGFR1000-4.5-1 |                          | 12.4               | 10.0 |   | 70 | 4.5 | 5.0 | 4.9 | ●   | ●    |
|                           | PSGFR0400-1.0   |                          | 6.0                | 4.0  |   | 50 | 1.5 | 1.5 | 1.8 | ●   | ●    |
|                           | PSGFR0400-1.5   |                          | 6.0                | 4.0  |   | 50 | 2.0 | 2.0 | 1.8 | ●   | ●    |
|                           | PSGFR0600-1.0   |                          | 8.5                | 6.0  |   | 50 | 1.0 | 1.5 | 2.9 | ●   | ●    |
|                           | PSGFR0600-1.5   |                          | 8.5                | 6.0  |   | 50 | 1.5 | 2.0 | 2.9 | ●   | ●    |
|                           | PSGFR0600-2.0   |                          | 8.5                | 6.0  |   | 50 | 2.0 | 2.5 | 2.9 | ●   | ●    |
|                           | PSGFR0800-1.0   |                          | 10.4               | 8.0  |   | 70 | 1.0 | 2.0 | 3.9 | ●   | ●    |
|                           | PSGFR0800-1.5   |                          | 10.4               | 8.0  |   | 70 | 1.5 | 2.5 | 3.9 | ●   | ●    |
|                           | PSGFR0800-2.0   |                          | 10.4               | 8.0  |   | 70 | 2.0 | 3.0 | 3.9 | ●   | ●    |
|                           | PSGFR1000-2.0   |                          | 12.4               | 10.0 |   | 80 | 2.0 | 2.5 | 4.9 | ●   | ●    |
|                           | PSGFR1000-2.5   |                          | 12.4               | 10.0 |   | 80 | 2.5 | 3.0 | 4.9 | ●   | ●    |
|                           | PSGFR1000-3.0   |                          | 12.4               | 10.0 |   | 80 | 3.0 | 3.5 | 4.9 | ●   | ●    |
|                           | PSGFR1000-3.5   |                          | 12.4               | 10.0 |   | 80 | 3.5 | 4.0 | 4.9 | ●   | ●    |
|                           | PSGFR1000-4.0   |                          | 12.4               | 10.0 |   | 80 | 4.0 | 4.5 | 4.9 | ●   | ●    |
|                           | PSGFR1000-4.5   |                          | 12.4               | 10.0 |   | 80 | 4.5 | 5.0 | 4.9 | ●   | ●    |
| 钢 Steel                   |                 |                          |                    |      | ★ |    |     |     |     |     |      |
| 不锈钢 Stainless Steel       |                 |                          |                    |      | ★ |    |     |     |     |     |      |
| 铸铁 Cast Iron              |                 |                          |                    |      | ☆ |    |     |     |     |     |      |
| 有色金属 Nonferrous Metal     |                 |                          |                    |      | ★ |    |     |     |     |     |      |
| 耐热合金 Heat Resistant Alloy |                 |                          |                    |      | ☆ |    |     |     |     |     |      |
| 淬硬钢 Hardened Steel        |                 |                          |                    |      |   |    |     |     |     |     |      |

★首选 ☆可选

●标准库存 ○订单生产

内螺纹  
Threading

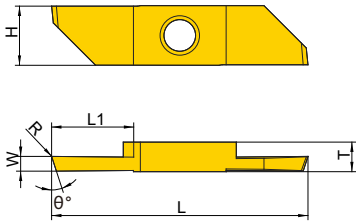


| 刀片外形<br>Insert shape                                                                 | 型号<br>Model    | 尺寸与材质<br>Size and Grades |                    |     |   |   |     |           |    |     |      |
|--------------------------------------------------------------------------------------|----------------|--------------------------|--------------------|-----|---|---|-----|-----------|----|-----|------|
|                                                                                      |                | R                        | 最小直径<br>Min Dia mm | d   | l | L | w   | 螺距<br>P/t | θ° | KTX | KW20 |
|   | PSTR0315-F60-1 | 0.05                     | 3.3                | 3.0 |   |   | 1.2 | 0.5-1.0   | 60 | ●   | ●    |
|                                                                                      | PSTR0415-F60-1 | 0.05                     | 4.3                | 4.0 |   |   | 1.2 | 0.5-1.0   | 60 | ●   | ●    |
|                                                                                      | PSTR0615-A60-1 | 0.05                     | 6.2                | 6.0 |   |   | 2.0 | 0.5-1.5   | 60 | ●   | ●    |
|                                                                                      | PSTR0315-F55-1 | 0.05                     | 3.3                | 3.0 |   |   | 1.2 | 48-24     | 55 | ●   | ●    |
|                                                                                      | PSTR0415-F55-1 | 0.05                     | 4.3                | 4.0 |   |   | 1.2 | 48-24     | 55 | ●   | ●    |
|                                                                                      | PSTR0615-A55-1 | 0.05                     | 6.2                | 6.0 |   |   | 2.0 | 28-16     | 55 | ●   | ●    |
|  | PSTR0315-F60   | 0.05                     | 3.3                | 3.0 |   |   | 1.2 | 0.5-1.0   | 60 | ●   | ●    |
|                                                                                      | PSTR0415-F60   | 0.05                     | 4.3                | 4.0 |   |   | 1.2 | 0.5-1.0   | 60 | ●   | ●    |
|                                                                                      | PSTR0615-A60   | 0.05                     | 6.2                | 6.0 |   |   | 2.0 | 0.5-1.5   | 60 | ●   | ●    |
|                                                                                      | PSTR0315-F55   | 0.05                     | 3.3                | 3.0 |   |   | 1.2 | 48-24     | 55 | ●   | ●    |
|                                                                                      | PSTR0415-F55   | 0.05                     | 4.3                | 4.0 |   |   | 1.2 | 48-24     | 55 | ●   | ●    |
|                                                                                      | PSTR0615-A55   | 0.05                     | 6.2                | 6.0 |   |   | 2.0 | 28-16     | 55 | ●   | ●    |
|                                                                                      |                |                          |                    |     |   |   |     |           |    |     |      |
| 钢 Steel                                                                              |                |                          |                    |     |   |   |     |           |    |     | ★    |
| 不锈钢 Stainless Steel                                                                  |                |                          |                    |     |   |   |     |           |    |     | ★    |
| 铸铁 Cast Iron                                                                         |                |                          |                    |     |   |   |     |           |    |     | ☆    |
| 有色金属 Nonferrous Metal                                                                |                |                          |                    |     |   |   |     |           |    |     | ★    |
| 耐热合金 Heat Resistant Alloy                                                            |                |                          |                    |     |   |   |     |           |    |     | ☆    |
| 淬硬钢 Hardened Steel                                                                   |                |                          |                    |     |   |   |     |           |    |     |      |

★首选 ☆可选

●标准库存 ○订单生产

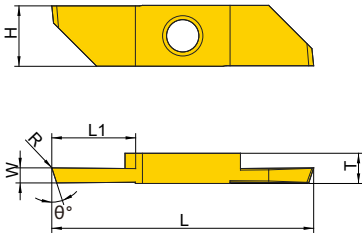
KTP28R..FA  
切断加工  
Parting off inserts



| 刀片外形<br>Insert shape      | 型号<br>Model   | 尺寸与材质<br>Size and Grades |     |      |     |     |    |    |     |     |      |
|---------------------------|---------------|--------------------------|-----|------|-----|-----|----|----|-----|-----|------|
|                           |               | w                        | L1  | R    | T   | H   | L  | θ° | KTX | KVX | KW20 |
|                           | KTP28R/L100FA | 1.0                      | 5.0 | 0.08 | 3.0 | 6.0 | 26 | 16 | ●   | ●   | ●    |
|                           | KTP28R/L150FA | 1.5                      | 7.0 | 0.08 | 3.0 | 6.0 | 26 | 16 | ●   | ●   | ●    |
|                           | KTP28R/L200FA | 2.0                      | 8.5 | 0.08 | 3.0 | 6.0 | 26 | 16 | ●   | ●   | ●    |
|                           | KTP28R/L250FA | 2.5                      | 8.5 | 0.08 | 3.0 | 6.0 | 26 | 16 | ●   | ●   | ●    |
|                           |               |                          |     |      |     |     |    |    |     |     |      |
|                           |               |                          |     |      |     |     |    |    |     |     |      |
| 钢 Steel                   |               |                          |     |      |     |     |    |    | ★   | ★   |      |
| 不锈钢 Stainless Steel       |               |                          |     |      |     |     |    |    |     | ★   |      |
| 铸铁 Cast Iron              |               |                          |     |      |     |     |    |    | ☆   | ☆   |      |
| 有色金属 Nonferrous Metal     |               |                          |     |      |     |     |    |    |     |     | ★    |
| 耐热合金 Heat Resistant Alloy |               |                          |     |      |     |     |    |    |     | ☆   |      |
| 淬硬钢 Hardened Steel        |               |                          |     |      |     |     |    |    |     |     |      |

★ 首选 Preferred    ☆ 可选 optional    ● 标准库存 standard stock    ○ 订单生产 order production

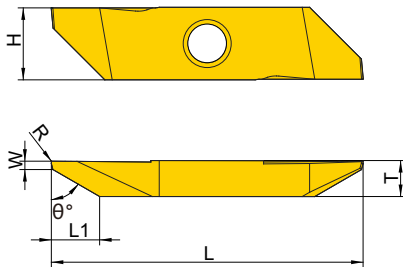
KTP28R..FN  
切槽加工  
Grooving inserts



| 刀片外形<br>Insert shape      | 型号<br>Model   | 尺寸与材质<br>Size and Grades |     |      |     |     |    |    |     |     |      |
|---------------------------|---------------|--------------------------|-----|------|-----|-----|----|----|-----|-----|------|
|                           |               | w                        | L1  | R    | T   | H   | L  | θ° | KTX | KVX | KW20 |
|                           | KTP28R/L050FN | 0.5                      | 2.0 | 0.05 | 3.0 | 8.0 | 25 | 0  | ●   | ●   | ●    |
|                           | KTP28R/L070FN | 0.7                      | 2.8 | 0.05 | 3.0 | 8.0 | 25 | 0  | ●   | ●   | ●    |
|                           | KTP28R/L100FN | 1.0                      | 4.0 | 0.05 | 3.0 | 8.0 | 25 | 0  | ●   | ●   | ●    |
|                           | KTP28R/L125FN | 1.25                     | 5.0 | 0.05 | 3.0 | 8.0 | 25 | 0  | ●   | ●   | ●    |
|                           | KTP28R/L150FN | 1.5                      | 5.5 | 0.05 | 3.0 | 8.0 | 25 | 0  | ●   | ●   | ●    |
|                           | KTP28R/L200FN | 2.0                      | 6.0 | 0.05 | 3.0 | 8.0 | 25 | 0  | ●   | ●   | ●    |
|                           | KTP28R/L250FN | 2.5                      | 6.5 | 0.05 | 3.0 | 8.0 | 25 | 0  | ●   | ●   | ●    |
|                           |               |                          |     |      |     |     |    |    |     |     |      |
| 钢 Steel                   |               |                          |     |      |     |     |    |    | ★   | ★   |      |
| 不锈钢 Stainless Steel       |               |                          |     |      |     |     |    |    |     | ★   |      |
| 铸铁 Cast Iron              |               |                          |     |      |     |     |    |    | ☆   | ☆   |      |
| 有色金属 Nonferrous Metal     |               |                          |     |      |     |     |    |    |     |     | ★    |
| 耐热合金 Heat Resistant Alloy |               |                          |     |      |     |     |    |    |     | ☆   |      |
| 淬硬钢 Hardened Steel        |               |                          |     |      |     |     |    |    |     |     |      |

★ 首选 Preferred    ☆ 可选 optional    ● 标准库存 standard stock    ○ 订单生产 order production

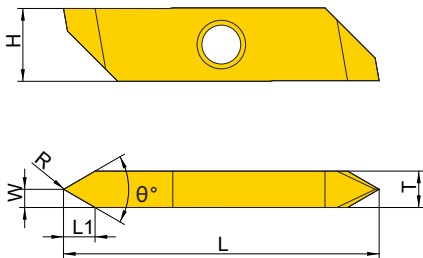
KTP28R..FB  
后扫加工  
Back turning inserts



| 刀片外形<br>Insert shape      | 型号<br>Model  | 尺寸与材质<br>Size and Grades |     |      |     |     |    |    |     |     |      |
|---------------------------|--------------|--------------------------|-----|------|-----|-----|----|----|-----|-----|------|
|                           |              | w                        | L1  | R    | T   | H   | L  | θ° | KTX | KVX | KW20 |
|                           | KTP28R/L05FB | 0.5                      | 4.0 | 0.05 | 3.0 | 8.0 | 26 | 60 | ●   | ●   | ●    |
|                           | KTP28R/L10FB | 1.0                      | 4.0 | 0.1  | 3.0 | 8.0 | 26 | 60 | ●   | ●   | ●    |
|                           |              |                          |     |      |     |     |    |    |     |     |      |
|                           |              |                          |     |      |     |     |    |    |     |     |      |
| 钢 Steel                   |              |                          |     |      |     |     |    |    |     | ★   | ★    |
| 不锈钢 Stainless Steel       |              |                          |     |      |     |     |    |    |     |     | ★    |
| 铸铁 Cast Iron              |              |                          |     |      |     |     |    |    |     | ☆   | ☆    |
| 有色金属 Nonferrous Metal     |              |                          |     |      |     |     |    |    |     |     | ★    |
| 耐热合金 Heat Resistant Alloy |              |                          |     |      |     |     |    |    |     | ☆   |      |
| 淬硬钢 Hardened Steel        |              |                          |     |      |     |     |    |    |     |     |      |

★ 首选Preferred    ☆ 可选optional    ● 标准库存standard stock    ○ 订单生产order production

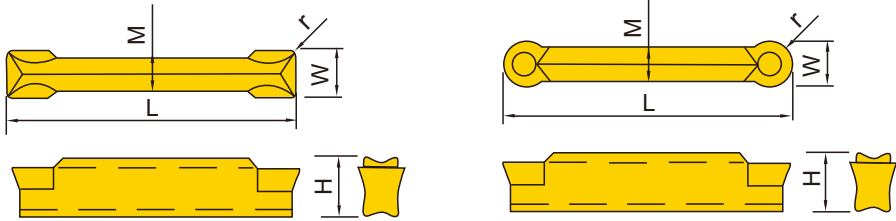
KTP28R..FT  
螺纹加工  
Threading inserts



| 刀片外形<br>Insert shape      | 型号<br>Model    | 尺寸与材质<br>Size and Grades |     |      |     |     |    |    |     |     |      |
|---------------------------|----------------|--------------------------|-----|------|-----|-----|----|----|-----|-----|------|
|                           |                | 螺距<br>Pitch              | W   | R    | T   | H   | L  | θ° | KTX | KVX | KW20 |
|                           | KTP28R/L6000FT | 0.2-0.6                  | 1.5 | 0.00 | 3.0 | 8.0 | 24 | 60 | ●   | ●   | ●    |
|                           | KTP28R/L6005FT | 0.5-1.25                 | 1.5 | 0.05 | 3.0 | 8.0 | 24 | 60 | ●   | ●   | ●    |
|                           | KTP28R/L5500FT | 64-48                    | 1.5 | 0.00 | 3.0 | 8.0 | 24 | 55 | ●   | ●   | ●    |
|                           | KTP28R/L5505FT | 48-24                    | 1.5 | 0.05 | 3.0 | 8.0 | 24 | 55 | ●   | ●   | ●    |
| 钢 Steel                   |                |                          |     |      |     |     |    |    |     | ★   | ★    |
| 不锈钢 Stainless Steel       |                |                          |     |      |     |     |    |    |     |     | ★    |
| 铸铁 Cast Iron              |                |                          |     |      |     |     |    |    |     | ☆   | ☆    |
| 有色金属 Nonferrous Metal     |                |                          |     |      |     |     |    |    |     |     | ★    |
| 耐热合金 Heat Resistant Alloy |                |                          |     |      |     |     |    |    |     | ☆   |      |
| 淬硬钢 Hardened Steel        |                |                          |     |      |     |     |    |    |     |     |      |

★ 首选Preferred    ☆ 可选optional    ● 标准库存standard stock    ○ 订单生产order production

切断切槽刀片  
Grooving inserts  
WD..



| 刀片外形<br>Insert shape      | 型号<br>Model     | 尺寸与材质<br>Size and Grades |    |     |     |   |  |  | KTX | KVX | KW20 |
|---------------------------|-----------------|--------------------------|----|-----|-----|---|--|--|-----|-----|------|
|                           |                 | W                        | L  | R   | H   | A |  |  |     |     |      |
|                           | WD22N2.00S-0.2T | 2.0                      | 22 | 0.2 | 4.0 |   |  |  | ●   |     |      |
|                           | WD22N3.00S-0.3T | 3.0                      | 22 | 0.3 | 4.0 |   |  |  | ●   |     |      |
|                           | WD25N4.00S-0.4T | 4.0                      | 25 | 0.4 | 4.0 |   |  |  | ●   |     |      |
|                           | WD25N5.00S-0.4T | 5.0                      | 25 | 0.4 | 4.0 |   |  |  | ●   |     |      |
|                           | WD22R-2.00S-06F | 2.0                      | 22 |     | 4.0 | 6 |  |  | ●   |     |      |
|                           | WD22R-3.00S-06F | 3.0                      | 22 |     | 4.0 | 6 |  |  | ●   |     |      |
|                           | WD22N3.00S-1.5R | 3.0                      | 22 | 1.5 | 4.0 |   |  |  | ●   |     |      |
|                           | WD25N4.00S-2.0R | 4.0                      | 25 | 2.0 | 4.0 |   |  |  | ●   |     |      |
|                           |                 |                          |    |     |     |   |  |  |     |     |      |
|                           |                 |                          |    |     |     |   |  |  |     |     |      |
|                           |                 |                          |    |     |     |   |  |  |     |     |      |
|                           |                 |                          |    |     |     |   |  |  |     |     |      |
| 钢 Steel                   |                 |                          |    |     |     |   |  |  | ★   | ★   |      |
| 不锈钢 Stainless Steel       |                 |                          |    |     |     |   |  |  |     | ★   |      |
| 铸铁 Cast Iron              |                 |                          |    |     |     |   |  |  | ☆   | ☆   |      |
| 有色金属 Nonferrous Metal     |                 |                          |    |     |     |   |  |  |     |     | ★    |
| 耐热合金 Heat Resistant Alloy |                 |                          |    |     |     |   |  |  |     | ☆   |      |
| 淬硬钢 Hardened Steel        |                 |                          |    |     |     |   |  |  |     |     |      |

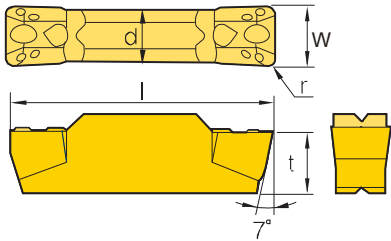
★ 首选Preferred ☆ 可选optional ● 标准库存standard stock ○ 订单生产order production

推荐切削条件表  
Recommended Cutting Conditions

| 工件材料<br>Workpiece Materials |                        | 加工形式<br>Processing the form         | 切削速度推荐值Vc(m/min)<br>Recommended Cutting Speed |             |      | 切削速度推荐值f(mm/rev)<br>Recommended Cutting Speed |           |           |           |  |  |
|-----------------------------|------------------------|-------------------------------------|-----------------------------------------------|-------------|------|-----------------------------------------------|-----------|-----------|-----------|--|--|
|                             |                        |                                     | KTX                                           | KVX         | KW20 | 2.0                                           | 3.0       | 4.0       | 5.0       |  |  |
|                             |                        |                                     |                                               |             |      | f(mm/rev)                                     | f(mm/rev) | f(mm/rev) | f(mm/rev) |  |  |
| P                           | 钢<br>Steel             | 外圆加工<br>Cylindrical processing      | 50-100-170                                    | 50-100-170  |      | 0.06-0.12                                     | 0.08-0.20 | 0.10-0.25 | 0.12-0.25 |  |  |
|                             |                        | 内孔端面加工<br>Inner hole and processing | 40-70-100                                     | 40-70-100   |      | 0.05-0.10                                     | 0.07-0.12 | 0.08-0.14 | 0.10-0.16 |  |  |
| M                           | 不锈钢<br>Stainless Steel | 外圆加工<br>Cylindrical processing      |                                               | 100-130-170 |      | 0.06-0.12                                     | 0.08-0.20 | 0.10-0.25 | 0.12-0.25 |  |  |
|                             |                        | 内孔端面加工<br>Inner hole and processing |                                               | 50-80-120   |      | 0.05-0.10                                     | 0.07-0.12 | 0.08-0.14 | 0.10-0.16 |  |  |
| K                           | 铸铁<br>Cast iron        | 外圆加工<br>Cylindrical processing      | 50-100-170                                    | 50-100-170  |      | 0.06-0.12                                     | 0.08-0.20 | 0.10-0.25 | 0.12-0.25 |  |  |
|                             |                        | 内孔端面加工<br>Inner hole and processing | 40-70-100                                     | 40-70-100   |      | 0.05-0.10                                     | 0.07-0.12 | 0.08-0.14 | 0.10-0.16 |  |  |

切断切槽刀片  
Grooving inserts

M.MN..



| 刀片外形<br>Insert shape      | 型号<br>Model | 尺寸与材质<br>Size and Grades |      |      |      |      |  |  | KTX | KVX | KW20 |
|---------------------------|-------------|--------------------------|------|------|------|------|--|--|-----|-----|------|
|                           |             | W                        | r    | l    | d    | t    |  |  |     |     |      |
|                           | MGMN150-G   | 1.5                      | 0.15 | 16.0 | 1.2  | 3.5  |  |  | ●   | ●   |      |
|                           | MGMN200-G   | 2.0                      | 0.2  | 16.0 | 1.6  | 3.5  |  |  | ●   | ●   |      |
|                           | MGMN250-G   | 2.5                      | 0.2  | 18.5 | 2.0  | 3.85 |  |  | ●   | ●   |      |
|                           | MGMN300-M   | 3.0                      | 0.4  | 21.0 | 2.35 | 4.8  |  |  | ●   | ●   |      |
|                           | MGMM400-M   | 4.0                      | 0.4  | 21.0 | 3.3  | 4.8  |  |  | ●   | ●   |      |
|                           | MGMN500-M   | 5.0                      | 0.8  | 26.0 | 4.1  | 5.8  |  |  | ●   | ●   |      |
|                           | MGMN600-M   | 6.0                      | 0.8  | 26.0 | 5.0  | 5.8  |  |  | ●   | ●   |      |
|                           | MRMN200-M   | 2.0                      | 1.0  | 16.0 | 1.5  | 3.5  |  |  | ●   | ●   |      |
|                           | MRMN300-M   | 3.0                      | 1.5  | 21.0 | 2.35 | 4.8  |  |  | ●   | ●   |      |
|                           | MRMN400-M   | 4.0                      | 2.0  | 21.0 | 3.3  | 4.8  |  |  | ●   | ●   |      |
|                           |             |                          |      |      |      |      |  |  |     |     |      |
|                           |             |                          |      |      |      |      |  |  |     |     |      |
| 钢 Steel                   |             |                          |      |      |      |      |  |  | ★   | ★   |      |
| 不锈钢 Stainless Steel       |             |                          |      |      |      |      |  |  |     | ★   |      |
| 铸铁 Cast Iron              |             |                          |      |      |      |      |  |  | ☆   | ☆   |      |
| 有色金属 Nonferrous Metal     |             |                          |      |      |      |      |  |  |     |     | ★    |
| 耐热合金 Heat Resistant Alloy |             |                          |      |      |      |      |  |  |     | ☆   |      |
| 淬硬钢 Hardened Steel        |             |                          |      |      |      |      |  |  |     |     |      |

★ 首选Preferred ☆ 可选optional ● 标准库存standard stock ○ 订单生产order production

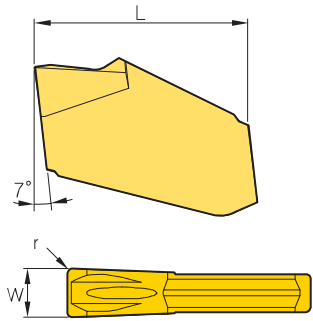
推荐切削条件表  
Recommended Cutting Conditions

| 工件材料<br>Workpiece Materials |                        | 加工形式<br>Processing the form         | 切削速度推荐值Vc(m/min)<br>Recommended Cutting Speed |            |      | 切削速度推荐值f(mm/rev)<br>Recommended Cutting Speed |           |           |           |           |           |
|-----------------------------|------------------------|-------------------------------------|-----------------------------------------------|------------|------|-----------------------------------------------|-----------|-----------|-----------|-----------|-----------|
|                             |                        |                                     | KTX                                           | KVX        | KW20 | 1.5/2.0                                       | 2.5       | 3.0       | 4.0       | 5.0       | 6.0       |
|                             |                        |                                     |                                               |            |      | f(mm/rev)                                     | f(mm/rev) | f(mm/rev) | f(mm/rev) | f(mm/rev) | f(mm/rev) |
| P                           | 钢<br>Steel             | 外圆加工<br>Cylindrical processing      | 50-100-130                                    | 50-100-130 |      | 0.06-0.12                                     | 0.07-0.15 | 0.08-0.20 | 0.10-0.25 | 0.12-0.25 | 0.15-0.25 |
|                             |                        | 内孔端面加工<br>Inner hole end processing | 40-70-100                                     | 40-70-100  |      | 0.05-0.10                                     | 0.06-0.10 | 0.07-0.12 | 0.08-0.14 | 0.10-0.16 | 0.10-0.18 |
| M                           | 不锈钢<br>Stainless Steel | 外圆加工<br>Cylindrical processing      |                                               | 60-110-150 |      | 0.06-0.12                                     | 0.07-0.15 | 0.08-0.20 | 0.10-0.25 | 0.12-0.25 | 0.15-0.25 |
|                             |                        | 内孔端面加工<br>Inner hole end processing |                                               | 50-80-120  |      | 0.05-0.10                                     | 0.06-0.10 | 0.07-0.12 | 0.08-0.14 | 0.10-0.16 | 0.10-0.18 |
| K                           | 铸铁<br>Cast Iron        | 外圆加工<br>Cylindrical processing      | 50-100-130                                    | 50-100-130 |      | 0.06-0.12                                     | 0.07-0.15 | 0.08-0.20 | 0.10-0.25 | 0.12-0.25 | 0.15-0.25 |
|                             |                        | 内孔端面加工<br>Inner hole end processing | 40-70-100                                     | 40-70-100  |      | 0.05-0.10                                     | 0.06-0.10 | 0.07-0.12 | 0.08-0.14 | 0.10-0.16 | 0.10-0.18 |



切断切槽刀片  
Grooving inserts

SP..

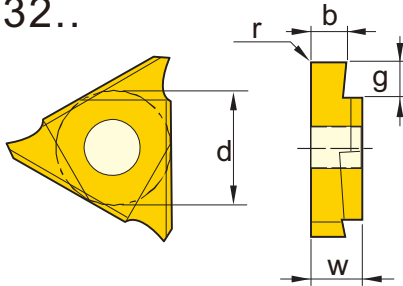


| 刀片外形<br>Insert shape      | 型号<br>Model | 尺寸与材质<br>Size and Grades |      |      |  |     |     |      |
|---------------------------|-------------|--------------------------|------|------|--|-----|-----|------|
|                           |             | W                        | I    | R    |  | KTX | KVX | KW20 |
|                           | SP200       | 2.0                      | 9.3  | 0.2  |  | ●   | ●   |      |
|                           | SP300       | 3.0                      | 11.3 | 0.2  |  | ●   | ●   |      |
|                           | SP400       | 4.0                      | 11.3 | 0.25 |  | ●   | ●   |      |
|                           | SP500       | 5.0                      | 11.4 | 0.3  |  | ●   | ●   |      |
|                           | SP600       | 6.4                      | 11.4 | 0.35 |  | ●   | ●   |      |
|                           |             |                          |      |      |  |     |     |      |
| 钢 Steel                   |             |                          |      |      |  | ★   | ★   |      |
| 不锈钢 Stainless Steel       |             |                          |      |      |  |     | ★   |      |
| 铸铁 Cast Iron              |             |                          |      |      |  | ☆   | ☆   |      |
| 有色金属 Nonferrous Metal     |             |                          |      |      |  |     |     | ★    |
| 耐热合金 Heat Resistant Alloy |             |                          |      |      |  |     | ☆   |      |
| 淬硬钢 Hardened Steel        |             |                          |      |      |  |     |     |      |

★ 首选Preferred    ☆ 可选optional    ● 标准库存standard stock    ○ 订单生产order production

切槽刀片  
Grooving inserts

TGF32..



| 型号<br>Model | 尺寸 Size<br>(mm) |      |     |
|-------------|-----------------|------|-----|
|             | d               | s    | d1  |
| TGF32..     | 9.525           | 3.18 | 4.6 |

| 刀片外形<br>Insert shape      | 型号<br>Model | 尺寸与材质<br>Size and Grades |     |      |  |     |     |      |
|---------------------------|-------------|--------------------------|-----|------|--|-----|-----|------|
|                           |             | W                        | B   | R    |  | KTX | KVX | KW20 |
|                           | TGF32R033   | 0.33                     | 0.8 | 0.05 |  |     | ●   | ●    |
|                           | TGF32R050   | 0.50                     | 1.2 | 0.05 |  |     | ●   | ●    |
|                           | TGF32R075   | 0.75                     | 2.0 | 0.1  |  |     | ●   | ●    |
|                           | TGF32R095   | 0.95                     | 2.0 | 0.1  |  |     | ●   | ●    |
|                           | TGF32R100   | 1.00                     | 2.0 | 0.1  |  |     | ●   | ●    |
|                           | TGF32R120   | 1.20                     | 2.0 | 0.1  |  |     | ●   | ●    |
|                           | TGF32R125   | 1.25                     | 2.0 | 0.1  |  |     | ●   | ●    |
|                           | TGF32R150   | 1.50                     | 2.0 | 0.1  |  |     | ●   | ●    |
|                           | TGF32R175   | 1.75                     | 2.0 | 0.1  |  |     | ●   | ●    |
|                           | TGF32R200   | 2.00                     | 2.5 | 0.1  |  |     | ●   | ●    |
|                           | TGF32R250   | 2.50                     | 2.5 | 0.1  |  |     | ●   | ●    |
|                           | TGF32L033   | 0.33                     | 0.8 | 0.05 |  |     |     |      |
|                           | TGF32L050   | 0.50                     | 1.2 | 0.05 |  |     |     |      |
|                           | TGF32L075   | 0.75                     | 2.0 | 0.1  |  |     |     |      |
|                           | TGF32L095   | 0.95                     | 2.0 | 0.1  |  |     |     |      |
|                           | TGF32L100   | 1.00                     | 2.0 | 0.1  |  |     |     |      |
|                           | TGF32L120   | 1.20                     | 2.0 | 0.1  |  |     |     |      |
|                           | TGF32L125   | 1.25                     | 2.0 | 0.1  |  |     |     |      |
|                           | TGF32L150   | 1.50                     | 2.0 | 0.1  |  |     |     |      |
|                           | TGF32L175   | 1.75                     | 2.0 | 0.1  |  |     |     |      |
|                           | TGF32L200   | 2.00                     | 2.5 | 0.1  |  |     |     |      |
|                           | TGF32L250   | 2.50                     | 2.5 | 0.1  |  |     |     |      |
|                           |             |                          |     |      |  |     |     |      |
|                           |             |                          |     |      |  |     |     |      |
|                           |             |                          |     |      |  |     |     |      |
| 钢 Steel                   |             |                          |     |      |  | ★   | ★   |      |
| 不锈钢 Stainless Steel       |             |                          |     |      |  |     | ★   |      |
| 铸铁 Cast Iron              |             |                          |     |      |  | ☆   | ☆   |      |
| 有色金属 Nonferrous Metal     |             |                          |     |      |  |     |     | ★    |
| 耐热合金 Heat Resistant Alloy |             |                          |     |      |  |     | ☆   |      |
| 淬硬钢 Hardened Steel        |             |                          |     |      |  |     |     |      |

★ 首选Preferred    ☆ 可选optional    ● 标准库存standard stock    ○ 订单生产order production

推荐切削条件表  
Recommended Cutting Conditions

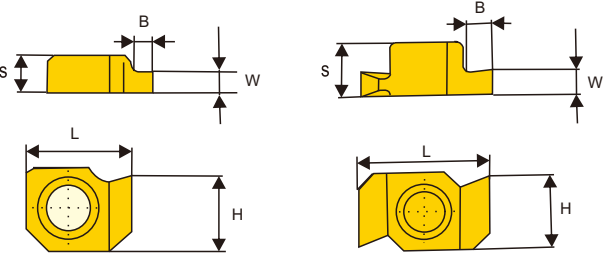
| 工件材料<br>Workpiece Materials |                        | 加工形式<br>Processing the form    | 切削速度推荐值Vc(m/min)<br>Recommended Cutting Speed |     |      | 切削速度推荐值f(mm/rev)<br>Recommended Cutting Speed |           |           |           |  |
|-----------------------------|------------------------|--------------------------------|-----------------------------------------------|-----|------|-----------------------------------------------|-----------|-----------|-----------|--|
|                             |                        |                                | KTX                                           | KVX | KW20 | 2.0                                           | 3.0       | 4.0       | 5.0       |  |
|                             |                        |                                |                                               |     |      | f(mm/rev)                                     | f(mm/rev) | f(mm/rev) | f(mm/rev) |  |
| P                           | 钢<br>Steel             | 外圆加工<br>Cylindrical processing | 60-100-150                                    |     |      | 0.07-0.12                                     | 0.08-0.15 | 0.09-0.20 | 0.10-0.25 |  |
|                             |                        |                                |                                               |     |      |                                               |           |           |           |  |
| M                           | 不锈钢<br>Stainless Steel | 外圆加工<br>Cylindrical processing |                                               |     |      |                                               |           |           |           |  |
| K                           | 铸铁<br>Cast iron        | 外圆加工<br>Cylindrical processing | 60-100-150                                    |     |      | 0.07-0.12                                     | 0.08-0.15 | 0.09-0.20 | 0.10-0.25 |  |
|                             |                        |                                |                                               |     |      |                                               |           |           |           |  |

推荐切削条件表  
Recommended Cutting Conditions

| 工件材料<br>Workpiece Materials |                          | 加工形式 | 切削速度推荐值Vc(m/min)<br>Recommended Cutting Speed |        |         | 切削速度推荐值f(mm/rev)<br>Recommended Cutting Speed |           |           |           |  |
|-----------------------------|--------------------------|------|-----------------------------------------------|--------|---------|-----------------------------------------------|-----------|-----------|-----------|--|
|                             |                          |      | KTX                                           | KVX    | KW20    | 0.33-0.50                                     | 0.75-0.95 | 1.00-1.45 | 1.50-2.50 |  |
|                             |                          |      |                                               |        |         | f(mm/rev)                                     | f(mm/rev) | f(mm/rev) | f(mm/rev) |  |
| P                           | 钢<br>Steel               | 切槽加工 |                                               | 80-180 |         | 0.01-0.05                                     | 0.02-0.07 | 0.03-0.08 | 0.03-0.08 |  |
|                             |                          | 横向加工 |                                               | 80-180 |         |                                               |           | 0.03-0.06 | 0.03-0.06 |  |
| M                           | 不锈钢<br>Stainless Steel   | 切槽加工 |                                               | 60-130 |         | 0.01-0.04                                     | 0.2-0.06  | 0.03-0.07 | 0.03-0.07 |  |
|                             |                          | 横向加工 |                                               | 60-130 |         |                                               |           | 0.02-0.05 | 0.02-0.05 |  |
| K                           | 铸铁<br>Cast iron          | 切槽加工 |                                               |        | 60-100  | 0.01-0.05                                     | 0.02-0.07 | 0.03-0.08 | 0.03-0.08 |  |
|                             |                          | 横向加工 |                                               |        | 60-100  |                                               |           | 0.03-0.06 | 0.03-0.06 |  |
| N                           | 有色金属<br>Nonferrous metal | 切槽加工 |                                               |        | 150-400 | 0.01-0.04                                     | 0.02-0.06 | 0.03-0.08 | 0.03-0.08 |  |
|                             |                          | 横向加工 |                                               |        | 150-400 |                                               |           | 0.03-0.06 | 0.03-0.06 |  |

切断切槽刀片  
Grooving inserts

MLG..



| 型号<br>Model | 尺寸 Size<br>(mm) |
|-------------|-----------------|
|             | s               |
| MLG10       | 2.38            |
| MLG14       | 4.76            |
| MLG20       | 6.35            |

| 刀片外形<br>Insert shape      | 型号<br>Model | 尺寸与材质<br>Size and Grades |   |     |      |      |  | KTX | KVX | KW20 |
|---------------------------|-------------|--------------------------|---|-----|------|------|--|-----|-----|------|
|                           |             | W                        | B | R   | L    | H    |  |     |     |      |
|                           | MLG1012L    | 1.2                      | 1 | 0.1 | 7    | 5.0  |  |     | ●   | ●    |
|                           | MLG1015L    | 1.5                      | 1 | 0.1 | 7    | 5.0  |  |     | ●   | ●    |
|                           | MLG1020L    | 2.0                      | 1 | 0.1 | 7    | 5.0  |  |     | ●   | ●    |
|                           | MLG1415L    | 1.5                      | 2 | 0.1 | 11.8 | 6.5  |  |     | ●   | ●    |
|                           | MLG1420L    | 2.0                      | 2 | 0.1 | 11.8 | 6.5  |  |     | ●   | ●    |
|                           | MLG1430L    | 3.0                      | 2 | 0.1 | 11.8 | 6.5  |  |     | ●   | ●    |
|                           | MLG2020L    | 2.0                      | 3 | 0.1 | 16.8 | 9.03 |  |     | ●   | ●    |
|                           | MLG2030L    | 3.0                      | 3 | 0.1 | 16.8 | 9.03 |  |     | ●   | ●    |
|                           | MLG2040L    | 4.0                      | 3 | 0.1 | 16.8 | 9.03 |  |     | ●   | ●    |
| 钢 Steel                   |             |                          |   |     |      |      |  | ★   | ★   |      |
| 不锈钢 Stainless Steel       |             |                          |   |     |      |      |  |     | ★   |      |
| 铸铁 Cast Iron              |             |                          |   |     |      |      |  | ☆   | ☆   |      |
| 有色金属 Nonferrous Metal     |             |                          |   |     |      |      |  |     |     | ★    |
| 耐热合金 Heat Resistant Alloy |             |                          |   |     |      |      |  |     | ☆   |      |
| 淬硬钢 Hardened Steel        |             |                          |   |     |      |      |  |     |     |      |

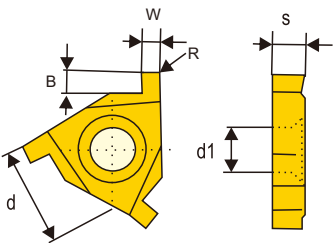
★首选 ☆可选      ●标准库存 ○订单生产

推荐切削条件表  
Recommended Cutting Conditions

| 工件材料<br>Workpiece Materials |                        | 加工形式 | 切削速度推荐值Vc(m/min)<br>Recommended Cutting Speed |        |      | 切削速度推荐值f(mm/rev)<br>Recommended Cutting Speed |           |           |           |  |
|-----------------------------|------------------------|------|-----------------------------------------------|--------|------|-----------------------------------------------|-----------|-----------|-----------|--|
|                             |                        |      | KTX                                           | KVX    | KW20 | 1.2-1.5                                       | 2.0       | 3.0       | 4.0       |  |
|                             |                        |      |                                               |        |      | f(mm/rev)                                     | f(mm/rev) | f(mm/rev) | f(mm/rev) |  |
| P                           | 钢<br>Steel             |      |                                               | 60-120 |      | 0.02-0.08                                     | 0.02-0.08 | 0.02-0.08 | 0.02-0.08 |  |
| M                           | 不锈钢<br>Stainless Steel |      |                                               | 50-100 |      | 0.02-0.04                                     | 0.02-0.04 | 0.02-0.04 | 0.02-0.04 |  |

切断切槽刀片  
Grooving inserts

CUT..



| 型号<br>Model | 尺寸 Size<br>(mm) |     |     |
|-------------|-----------------|-----|-----|
|             | d               | s   | d1  |
| 11NR..      | 6.35            | 3.1 | 3.0 |
| 16NR..      | 9.525           | 3.5 | 4.0 |

| 刀片外形<br>Insert shape      | 型号<br>Model | 尺寸与材质<br>Size and Grades |     |      |  |  |  | KTX | KVX | KW20 |
|---------------------------|-------------|--------------------------|-----|------|--|--|--|-----|-----|------|
|                           |             | W                        | B   | R    |  |  |  |     |     |      |
|                           | 11NR050CUT  | 0.50                     | 0.8 | 0.05 |  |  |  |     | ●   | ●    |
|                           | 11NR075CUT  | 0.75                     | 1.2 | 0.05 |  |  |  |     | ●   | ●    |
|                           | 11NR100CUT  | 1.0                      | 1.5 | 0.1  |  |  |  |     | ●   | ●    |
|                           | 11NR120CUT  | 1.2                      | 1.8 | 0.1  |  |  |  |     | ●   | ●    |
|                           | 11NR150CUT  | 1.5                      | 1.8 | 0.1  |  |  |  |     | ●   | ●    |
|                           | 16NR050CUT  | 0.5                      | 1.0 | 0.05 |  |  |  |     | ●   | ●    |
|                           | 16NR075CUT  | 0.75                     | 1.5 | 0.05 |  |  |  |     | ●   | ●    |
|                           | 16NR100CUT  | 1.0                      | 2.0 | 0.1  |  |  |  |     | ●   | ●    |
|                           | 16NR150CUT  | 1.5                      | 2.2 | 0.1  |  |  |  |     | ●   | ●    |
|                           | 16NR200CUT  | 2.0                      | 2.3 | 0.1  |  |  |  |     | ●   | ●    |
|                           | 16NR250CUT  | 2.5                      | 2.3 | 0.1  |  |  |  |     | ●   | ●    |
|                           | 16ER050CUT  | 0.5                      | 1.0 | 0.05 |  |  |  |     |     |      |
|                           | 16ER075CUT  | 0.75                     | 1.5 | 0.05 |  |  |  |     |     |      |
|                           | 16ER100CUT  | 1.0                      | 2.0 | 0.1  |  |  |  |     |     |      |
|                           | 16ER150CUT  | 1.5                      | 2.2 | 0.1  |  |  |  |     |     |      |
|                           | 16ER200CUT  | 2.0                      | 2.3 | 0.1  |  |  |  |     |     |      |
|                           | 16ER250CUT  | 2.5                      | 2.3 | 0.1  |  |  |  |     |     |      |
| 钢 Steel                   |             |                          |     |      |  |  |  | ★   | ★   |      |
| 不锈钢 Stainless Steel       |             |                          |     |      |  |  |  |     | ★   |      |
| 铸铁 Cast Iron              |             |                          |     |      |  |  |  | ☆   | ☆   |      |
| 有色金属 Nonferrous Metal     |             |                          |     |      |  |  |  |     |     | ★    |
| 耐热合金 Heat Resistant Alloy |             |                          |     |      |  |  |  |     | ☆   |      |
| 淬硬钢 Hardened Steel        |             |                          |     |      |  |  |  |     |     |      |

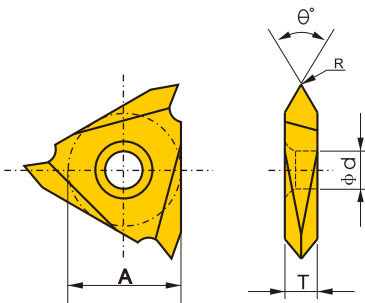
★首选 ☆可选      ●标准库存 ○订单生产

推荐切削条件表  
Recommended Cutting Conditions

| 工件材料<br>Workpiece Materials |                          | 加工形式 | 切削速度推荐值Vc(m/min)<br>Recommended Cutting Speed |        |         | 切削速度推荐值f(mm/rev)<br>Recommended Cutting Speed |           |           |           |  |  |
|-----------------------------|--------------------------|------|-----------------------------------------------|--------|---------|-----------------------------------------------|-----------|-----------|-----------|--|--|
|                             |                          |      | KTX                                           | KVX    | KW20    | 0.33-0.50                                     | 0.75-0.95 | 1.00-1.45 | 1.50-2.50 |  |  |
|                             |                          |      |                                               |        |         | f(mm/rev)                                     | f(mm/rev) | f(mm/rev) | f(mm/rev) |  |  |
| P                           | 钢<br>Steel               |      |                                               | 80-180 |         | 0.01-0.05                                     | 0.02-0.07 | 0.03-0.08 | 0.03-0.08 |  |  |
| M                           | 不锈钢<br>Stainless Steel   |      |                                               | 60-130 |         | 0.01-0.04                                     | 0.2-0.06  | 0.03-0.07 | 0.03-0.07 |  |  |
| K                           | 铸铁<br>Cast iron          |      |                                               |        | 60-100  | 0.01-0.05                                     | 0.02-0.07 | 0.03-0.08 | 0.03-0.08 |  |  |
| N                           | 有色金属<br>Nonferrous metal |      |                                               |        | 150-400 | 0.01-0.04                                     | 0.02-0.06 | 0.03-0.08 | 0.03-0.08 |  |  |

螺纹刀片  
Thread inserts

TT..60..

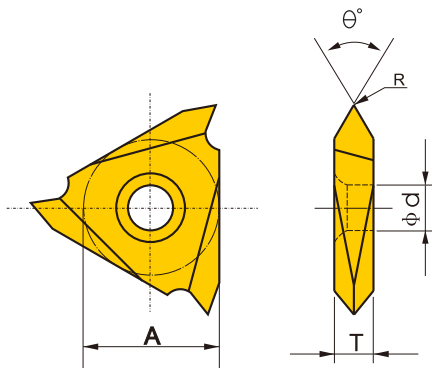


| 刀片外形<br>Insert shape      | 型号<br>Model | 尺寸与材质<br>Size and Grades |     |     |      |       |    |     |     |     |      |
|---------------------------|-------------|--------------------------|-----|-----|------|-------|----|-----|-----|-----|------|
|                           |             | 螺距<br>Pitch              | TPI | R   | T    | A     | θ° | KTX | KKX | KVX | KW20 |
|                           | TT32R6000   | 0.5~2.5                  |     | 0.0 | 3.18 | 9.525 | 60 |     |     | ●   | ●    |
|                           | TT32R6001   | 1.0~2.5                  |     | 0.1 | 3.18 | 9.525 | 60 |     |     | ●   | ●    |
|                           | TT32R6002   | 1.5~2.5                  |     | 0.2 | 3.18 | 9.525 | 60 |     |     |     |      |
|                           | TT32R6003   | 2.5~3.5                  |     | 0.3 | 3.18 | 9.525 | 60 |     |     |     |      |
|                           | TT43R6001   | 1.0~3.5                  |     | 0.1 | 4.76 | 12.70 | 60 |     |     | ●   | ●    |
|                           | TT43R6002   | 1.5~3.5                  |     | 0.2 | 4.76 | 12.70 | 60 |     |     |     |      |
|                           | TT43R6003   | 2.5~3.5                  |     | 0.3 | 4.76 | 12.70 | 60 |     |     |     |      |
|                           | TT43R6004   | 3.0~3.5                  |     | 0.4 | 4.76 | 12.70 | 60 |     |     |     |      |
|                           | TT32L6000   | 0.5~2.5                  |     | 0.0 | 3.18 | 9.525 | 60 |     |     |     |      |
|                           | TT32L6001   | 1.0~2.5                  |     | 0.1 | 3.18 | 9.525 | 60 |     |     |     |      |
|                           | TT32L6002   | 1.5~2.5                  |     | 0.2 | 3.18 | 9.525 | 60 |     |     |     |      |
|                           | TT32L6003   | 2.5~3.5                  |     | 0.3 | 3.18 | 9.525 | 60 |     |     |     |      |
|                           | TT43L6001   | 1.0~3.5                  |     | 0.1 | 4.76 | 12.70 | 60 |     |     |     |      |
|                           | TT43L6002   | 1.5~3.5                  |     | 0.2 | 4.76 | 12.70 | 60 |     |     |     |      |
|                           | TT43L6003   | 2.5~3.5                  |     | 0.3 | 4.76 | 12.70 | 60 |     |     |     |      |
|                           | TT43L6004   | 3.0~3.5                  |     | 0.4 | 4.76 | 12.70 | 60 |     |     |     |      |
|                           |             |                          |     |     |      |       |    |     |     |     |      |
| 钢 Steel                   |             |                          |     |     |      |       |    |     | ★   | ★   |      |
| 不锈钢 Stainless Steel       |             |                          |     |     |      |       |    |     |     | ★   |      |
| 铸铁 Cast Iron              |             |                          |     |     |      |       |    | ☆   |     | ☆   |      |
| 有色金属 Nonferrous Metal     |             |                          |     |     |      |       |    |     |     |     | ★    |
| 耐热合金 Heat Resistant Alloy |             |                          |     |     |      |       |    |     | ☆   |     |      |
| 淬硬钢 Hardened Steel        |             |                          |     |     |      |       |    |     |     |     |      |

★ 首选Preferred    ☆ 可选optional    ● 标准库存standard stock    ○ 订单生产order production

螺纹刀片  
Thread inserts

TT..55..

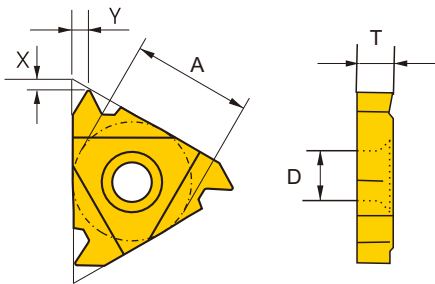


| 刀片外形<br>Insert shape      | 型号<br>Model | 尺寸与材质<br>Size and Grades |       |     |      |       |    |     |     |     |      |
|---------------------------|-------------|--------------------------|-------|-----|------|-------|----|-----|-----|-----|------|
|                           |             | 螺距<br>Pitch              | TPI   | R   | T    | A     | θ° | KTX | KKX | KVX | KW20 |
|                           | TT32R5501   |                          | 28-10 | 0.1 | 3.18 | 9.525 | 55 |     |     | ●   | ●    |
|                           | TT32R5502   |                          | 14-11 | 0.2 | 3.18 | 9.525 | 55 |     |     |     |      |
|                           | TT43R5501   |                          | 28-11 | 0.1 | 4.76 | 12.70 | 55 |     |     | ●   | ●    |
|                           | TT43R5502   |                          | 14-11 | 0.2 | 4.76 | 12.70 | 55 |     |     |     |      |
|                           | TT43R5503   |                          | 10-7  | 0.3 | 4.76 | 12.70 | 55 |     |     |     |      |
|                           | TT43R5504   |                          | 8-7   | 0.4 | 4.76 | 12.70 | 55 |     |     |     |      |
|                           |             |                          |       |     |      |       |    |     |     |     |      |
|                           | TT32L5501   |                          | 28-10 | 0.1 | 3.18 | 9.525 | 55 |     |     |     |      |
|                           | TT32L5502   |                          | 14-11 | 0.2 | 3.18 | 9.525 | 55 |     |     |     |      |
|                           | TT43L5501   |                          | 28-11 | 0.1 | 4.76 | 12.70 | 55 |     |     |     |      |
|                           | TT43L5502   |                          | 14-11 | 0.2 | 4.76 | 12.70 | 55 |     |     |     |      |
|                           | TT43L5503   |                          | 10-7  | 0.3 | 4.76 | 12.70 | 55 |     |     |     |      |
|                           | TT43L5504   |                          | 8-7   | 0.4 | 4.76 | 12.70 | 55 |     |     |     |      |
|                           |             |                          |       |     |      |       |    |     |     |     |      |
| 钢 Steel                   |             |                          |       |     |      |       |    |     | ★   | ★   |      |
| 不锈钢 Stainless Steel       |             |                          |       |     |      |       |    |     | ★   | ★   |      |
| 铸铁 Cast Iron              |             |                          |       |     |      |       |    | ☆   |     | ☆   |      |
| 有色金属 Nonferrous Metal     |             |                          |       |     |      |       |    |     |     |     | ★    |
| 耐热合金 Heat Resistant Alloy |             |                          |       |     |      |       |    |     | ☆   | ☆   |      |
| 淬硬钢 Hardened Steel        |             |                          |       |     |      |       |    |     |     |     |      |

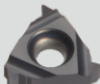
★ 首选Preferred    ☆ 可选optional    ● 标准库存standard stock    ○ 订单生产order production

螺纹刀片  
Thread inserts

60° 泛外螺纹  
60° full external thread



| 型号<br>Model | 尺寸 Size<br>(mm) |      |      |
|-------------|-----------------|------|------|
|             | A               | T    | D    |
| 16ER/L...   | 9.525           | 3.68 | 4.0  |
| 22ER/L...   | 12.70           | 4.9  | 4.85 |

| 刀片外形<br>Insert shape                                                                | 型号<br>Model | 尺寸与材质<br>Size and Grades |     |      |     |     |    |     |     |     |      |   |
|-------------------------------------------------------------------------------------|-------------|--------------------------|-----|------|-----|-----|----|-----|-----|-----|------|---|
|                                                                                     |             | 螺距<br>Pitch              | TPI | R    | X   | Y   | θ° | KTX | KKX | KVX | KW20 |   |
|    | 16ERM A60   | 0.5-1.5                  |     | 0.06 | 0.8 | 0.9 | 60 |     |     | ●   |      |   |
|                                                                                     | 16ERM G60   | 1.75-3                   |     | 0.22 | 1.2 | 1.7 | 60 |     |     | ●   |      |   |
|                                                                                     | 16ERM AG60  | 0.5-3                    |     | 0.06 | 1.2 | 1.7 | 60 |     |     | ●   |      |   |
|                                                                                     | 16ER A60    | 0.5-1.5                  |     | 0.06 | 0.8 | 0.9 | 60 | ●   | ●   | ●   | ●    |   |
|                                                                                     | 16ER G60    | 1.75-3                   |     | 0.22 | 1.2 | 1.7 | 60 | ●   | ●   | ●   | ●    |   |
|                                                                                     | 16ER AG60   | 0.5-3                    |     | 0.06 | 1.2 | 1.7 | 60 | ●   | ●   | ●   | ●    |   |
|  |             |                          |     |      |     |     |    |     |     |     |      |   |
|                                                                                     | 16ELM A60   | 0.5-1.5                  |     | 0.06 | 0.8 | 0.9 | 60 |     |     |     |      |   |
|                                                                                     | 16ELM G60   | 1.75-3                   |     | 0.22 | 1.2 | 1.7 | 60 |     |     |     |      |   |
|                                                                                     | 16ELM AG60  | 0.5-3                    |     | 0.06 | 1.2 | 1.7 | 60 |     |     |     |      |   |
|                                                                                     | 16EL A60    | 0.5-1.5                  |     | 0.06 | 0.8 | 0.9 | 60 |     |     |     |      |   |
|                                                                                     | 16EL G60    | 1.75-3                   |     | 0.22 | 1.2 | 1.7 | 60 |     |     |     |      |   |
|                                                                                     | 16EL AG60   | 0.5-3                    |     | 0.06 | 1.2 | 1.7 | 60 |     |     |     |      |   |
|                                                                                     |             |                          |     |      |     |     |    |     |     |     |      |   |
| 钢 Steel                                                                             |             |                          |     |      |     |     |    |     | ★   |     | ★    |   |
| 不锈钢 Stainless Steel                                                                 |             |                          |     |      |     |     |    |     |     | ★   | ★    |   |
| 铸铁 Cast Iron                                                                        |             |                          |     |      |     |     |    |     | ☆   |     | ☆    |   |
| 有色金属 Nonferrous Metal                                                               |             |                          |     |      |     |     |    |     |     |     |      | ★ |
| 耐热合金 Heat Resistant Alloy                                                           |             |                          |     |      |     |     |    |     |     | ☆   | ☆    |   |
| 淬硬钢 Hardened Steel                                                                  |             |                          |     |      |     |     |    |     |     |     |      |   |

★ 首选Preferred

☆ 可选optional

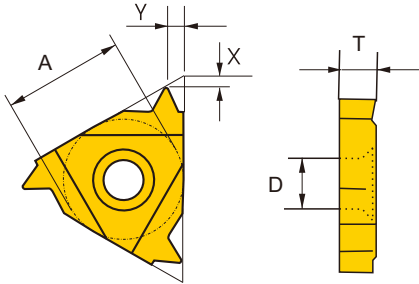
● 标准库存standard stock

○ 订单生产order production

★ 首选Preferred ☆ 可选optional ● 标准库存standard stock ○ 订单生产order production

螺纹刀片  
Thread inserts

60° 泛内螺纹  
60° full external thread



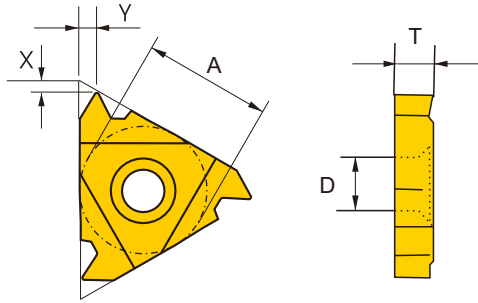
| 型号<br>Model | 尺寸 Size<br>(mm) |      |      |
|-------------|-----------------|------|------|
|             | A               | T    | D    |
| 06NR..      | 3.97            | 1.91 | 2.3  |
| 08NR..      | 4.76            | 2.38 | 2.3  |
| 11NR..      | 6.35            | 3.18 | 3.0  |
| 16NR..      | 9.525           | 3.68 | 4.0  |
| 22NR..      | 12.70           | 4.9  | 4.85 |

| 刀片外形<br>Insert shape                                                                  | 型号<br>Model | 尺寸与材质<br>Size and Grades |     |      |     |     |    |       |     |       |       |
|---------------------------------------------------------------------------------------|-------------|--------------------------|-----|------|-----|-----|----|-------|-----|-------|-------|
|                                                                                       |             | 螺距<br>Pitch              | TPI | R    | X   | Y   | θ° | KTX   | KKX | KVX   | KW20  |
|   | 06NR A60    | 0.75-1.25                |     | 0.05 | 0.6 | 0.6 | 60 |       |     | 48.00 | 44.00 |
|                                                                                       | 08NR A60    | 1.0-1.75                 |     | 0.07 | 0.6 | 0.7 | 60 |       |     | 48.00 | 30.00 |
|                                                                                       | 11NR A60    | 0.5-1.5                  |     | 0.02 | 0.8 | 0.9 | 60 | 22.00 | ●   | 29.00 | 22.00 |
|                                                                                       | 16NR A60    | 0.5-1.5                  |     | 0.02 | 0.8 | 0.9 | 60 | 22.00 | ●   | 29.00 | 22.00 |
|                                                                                       | 16NR G60    | 1.75-3                   |     | 0.11 | 1.2 | 1.7 | 60 | 22.00 | ●   | 29.00 | 22.00 |
|                                                                                       | 16NR AG60   | 0.5-3                    |     | 0.02 | 1.2 | 1.7 | 60 | 22.00 | ●   | 29.00 | 22.00 |
|                                                                                       | 22NR N60    | 3.5-5                    |     | 0.22 | 1.7 | 2.5 | 60 | 44.00 |     | 48.00 | 44.00 |
|                                                                                       |             |                          |     |      |     |     |    |       |     |       |       |
|  | 06NL A60    | 0.75-1.25                |     | 0.05 | 0.6 | 0.6 | 60 |       |     |       |       |
|                                                                                       | 08NL A60    | 1.0-1.75                 |     | 0.07 | 0.6 | 0.7 | 60 |       |     |       |       |
|                                                                                       | 11NL A60    | 0.5-1.5                  |     | 0.02 | 0.8 | 0.9 | 60 |       |     |       |       |
|                                                                                       | 16NL A60    | 0.5-1.5                  |     | 0.02 | 0.8 | 0.9 | 60 |       |     |       |       |
|                                                                                       | 16NL G60    | 1.75-3                   |     | 0.11 | 1.2 | 1.7 | 60 |       |     |       |       |
|                                                                                       | 16NL AG60   | 0.5-3                    |     | 0.02 | 1.2 | 1.7 | 60 |       |     |       |       |
|                                                                                       | 22NL N60    | 3.5-5                    |     | 0.22 | 1.7 | 2.5 | 60 |       |     |       |       |
|                                                                                       |             |                          |     |      |     |     |    |       |     |       |       |
| 钢 Steel                                                                               |             | ★                        |     |      |     |     |    |       |     |       |       |
| 不锈钢 Stainless Steel                                                                   |             | ★                        |     |      |     |     |    |       |     |       |       |
| 铸铁 Cast Iron                                                                          |             | ☆                        |     |      |     |     |    |       |     |       |       |
| 有色金属 Nonferrous Metal                                                                 |             |                          |     |      |     |     |    |       |     |       |       |
| 耐热合金 Heat Resistant Alloy                                                             |             | ☆                        |     |      |     |     |    |       |     |       |       |
| 淬硬钢 Hardened Steel                                                                    |             |                          |     |      |     |     |    |       |     |       |       |

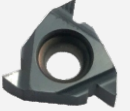
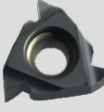
★ 首选Preferred ☆ 可选optional ● 标准库存standard stock ○ 订单生产order production

螺纹刀片  
Thread inserts

55°泛外螺纹  
55° full external thread



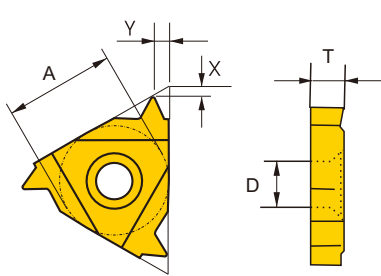
| 型号<br>Model | 尺寸 Size<br>(mm) |      |      |
|-------------|-----------------|------|------|
|             | A               | T    | D    |
| 16ER/L..    | 9.525           | 3.68 | 4.0  |
| 22ER/L..    | 12.70           | 4.9  | 4.85 |

| 刀片外形<br>Insert shape                                                                | 型号<br>Model | 尺寸与材质<br>Size and Grades |     |      |     |     |    |     |     |     |      |
|-------------------------------------------------------------------------------------|-------------|--------------------------|-----|------|-----|-----|----|-----|-----|-----|------|
|                                                                                     |             | 螺距<br>Pitch              | TPI | R    | X   | Y   | θ° | KTX | KKX | KVX | KW20 |
|   | 16ERM A55   | 40-16                    |     | 0.06 | 0.8 | 0.9 | 55 |     |     | ●   |      |
|                                                                                     | 16ERM G55   | 14-8                     |     | 0.22 | 1.2 | 1.7 | 55 |     |     | ●   |      |
|                                                                                     | 16ERM AG55  | 40-8                     |     | 0.06 | 1.2 | 1.7 | 55 |     |     | ●   |      |
|                                                                                     | 16ER A55    | 40-6                     |     | 0.06 | 0.8 | 0.9 | 55 | ●   | ●   | ●   | ●    |
|                                                                                     | 16ER G55    | 14-8                     |     | 0.22 | 1.2 | 1.7 | 55 | ●   | ●   | ●   | ●    |
|                                                                                     | 16ER AG55   | 40-8                     |     | 0.06 | 1.2 | 1.7 | 55 | ●   | ●   | ●   | ●    |
|                                                                                     | 22ER N55    | 7-5                      |     | 0.47 | 1.7 | 2.5 | 55 | ●   |     | ●   | ●    |
|  | 16ELM A55   | 40-16                    |     | 0.06 | 0.8 | 0.9 | 55 |     |     |     |      |
|                                                                                     | 16ELM G55   | 14-8                     |     | 0.22 | 1.2 | 1.7 | 55 |     |     |     |      |
|                                                                                     | 16ELM AG55  | 40-8                     |     | 0.06 | 1.2 | 1.7 | 55 |     |     |     |      |
|                                                                                     | 16EL A55    | 40-6                     |     | 0.06 | 0.8 | 0.9 | 55 |     |     |     |      |
|                                                                                     | 16EL G55    | 14-8                     |     | 0.22 | 1.2 | 1.7 | 55 |     |     |     |      |
|                                                                                     | 16EL AG55   | 40-8                     |     | 0.06 | 1.2 | 1.7 | 55 |     |     |     |      |
|                                                                                     | 22EL N55    | 7-5                      |     | 0.47 | 1.7 | 2.5 | 55 |     |     |     |      |
| 钢 Steel                                                                             |             |                          |     |      |     |     | ★  |     |     | ★   |      |
| 不锈钢 Stainless Steel                                                                 |             |                          |     |      |     |     |    | ★   |     | ★   |      |
| 铸铁 Cast Iron                                                                        |             |                          |     |      |     |     | ☆  |     |     | ☆   |      |
| 有色金属 Nonferrous Metal                                                               |             |                          |     |      |     |     |    |     |     | ★   |      |
| 耐热合金 Heat Resistant Alloy                                                           |             |                          |     |      |     |     |    | ☆   | ☆   |     |      |
| 淬硬钢 Hardened Steel                                                                  |             |                          |     |      |     |     |    |     |     |     |      |

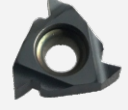
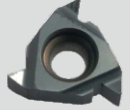
★ 首选Preferred ☆ 可选optional ● 标准库存standard stock ○ 订单生产order production

螺纹刀片  
Thread inserts

55°泛内螺纹  
55° universal internal thread



| 型号<br>Model | 尺寸 Size<br>(mm) |      |      |
|-------------|-----------------|------|------|
|             | A               | T    | D    |
| 06NR..      | 3.97            | 1.91 | 2.3  |
| 08NR..      | 4.76            | 2.38 | 2.3  |
| 11NR..      | 6.35            | 3.18 | 3.0  |
| 16NR..      | 9.525           | 3.68 | 4.0  |
| 22NR..      | 12.70           | 4.9  | 4.85 |

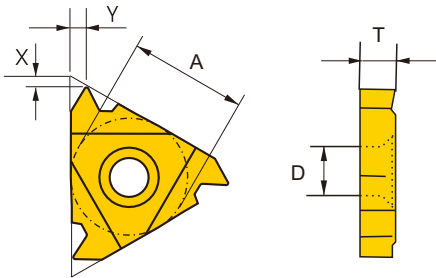
| 刀片外形<br>Insert shape                                                                  | 型号<br>Model | 尺寸与材质<br>Size and Grades |     |      |     |     |    |     |     |     |      |
|---------------------------------------------------------------------------------------|-------------|--------------------------|-----|------|-----|-----|----|-----|-----|-----|------|
|                                                                                       |             | 螺距<br>Pitch              | TPI | R    | X   | Y   | θ° | KTX | KKX | KVX | KW20 |
|    | 06NR A55    | 24                       |     | 0.10 | 0.6 | 0.6 | 55 |     |     | ●   | ●    |
|                                                                                       | 08NR A55    | 24,20                    |     | 0.10 | 0.6 | 0.7 | 55 |     |     | ●   | ●    |
|                                                                                       | 11NR A55    | 40-16                    |     | 0.06 | 0.8 | 0.9 | 55 | ●   | ●   | ●   | ●    |
|                                                                                       | 16NR A55    | 40-16                    |     | 0.06 | 0.8 | 0.9 | 55 | ●   | ●   | ●   | ●    |
|                                                                                       | 16NR G55    | 14-8                     |     | 0.22 | 1.2 | 1.7 | 55 | ●   | ●   | ●   | ●    |
|                                                                                       | 16NR AG55   | 40-8                     |     | 0.06 | 1.2 | 1.7 | 55 | ●   | ●   | ●   | ●    |
|                                                                                       | 22NR N55    | 7-5                      |     | 0.47 | 1.7 | 2.5 | 55 | ●   |     | ●   | ●    |
|  | 06NL A55    | 24                       |     | 0.10 | 0.6 | 0.6 | 55 |     |     |     |      |
|                                                                                       | 08NL A55    | 24,20                    |     | 0.10 | 0.6 | 0.7 | 55 |     |     |     |      |
|                                                                                       | 11NL A55    | 40-16                    |     | 0.06 | 0.8 | 0.9 | 55 |     |     |     |      |
|                                                                                       | 16NL A55    | 40-16                    |     | 0.06 | 0.8 | 0.9 | 55 |     |     |     |      |
|                                                                                       | 16NL G55    | 14-8                     |     | 0.22 | 1.2 | 1.7 | 55 |     |     |     |      |
|                                                                                       | 16NL AG55   | 40-8                     |     | 0.06 | 1.2 | 1.7 | 55 |     |     |     |      |
|                                                                                       | 22NL N55    | 7-5                      |     | 0.47 | 1.7 | 2.5 | 55 |     |     |     |      |
| 钢 Steel                                                                               |             |                          |     |      |     |     |    | ★   |     | ★   |      |
| 不锈钢 Stainless Steel                                                                   |             |                          |     |      |     |     |    |     | ★   | ★   |      |
| 铸铁 Cast Iron                                                                          |             |                          |     |      |     |     |    | ☆   |     | ☆   |      |
| 有色金属 Nonferrous Metal                                                                 |             |                          |     |      |     |     |    |     |     | ★   |      |
| 耐热合金 Heat Resistant Alloy                                                             |             |                          |     |      |     |     |    |     | ☆   | ☆   |      |
| 淬硬钢 Hardened Steel                                                                    |             |                          |     |      |     |     |    |     |     |     |      |

★ 首选Preferred ☆ 可选optional ● 标准库存standard stock ○ 订单生产order production

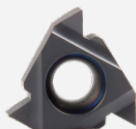
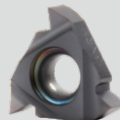


螺纹刀片  
Thread inserts

60°公制外螺纹  
60° metric external thread



| 型号<br>Model | 尺寸 Size<br>(mm) |      |      |
|-------------|-----------------|------|------|
|             | A               | T    | D    |
| 16ER/L...   | 9.525           | 3.68 | 4.0  |
| 22ER/L...   | 12.70           | 4.9  | 4.85 |

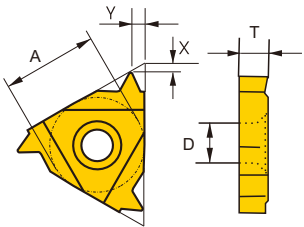
| 刀片外形<br>Insert shape                                                                | 型号<br>Model    | 尺寸与材质<br>Size and Grades |      |      |     |     |    |     |     |     |      |   |
|-------------------------------------------------------------------------------------|----------------|--------------------------|------|------|-----|-----|----|-----|-----|-----|------|---|
|                                                                                     |                | 螺距<br>Pitch              | TPI  | R    | X   | Y   | θ° | KTX | KKX | KVX | KW20 |   |
|   | 16ERM 1.00 ISO | 1.0                      |      | 0.12 | 0.7 | 0.7 | 60 |     |     | ●   |      |   |
|                                                                                     | 16ERM 1.25 ISO | 1.25                     |      | 0.15 | 0.8 | 0.9 | 60 |     |     | ●   |      |   |
|                                                                                     | 16ERM 1.50 ISO | 1.5                      |      | 0.19 | 0.8 | 1.0 | 60 |     |     | ●   |      |   |
|                                                                                     | 16ERM 1.75 ISO | 1.75                     |      | 0.22 | 0.9 | 1.2 | 60 |     |     | ●   |      |   |
|                                                                                     | 16ERM 2.00 ISO | 2.0                      |      | 0.25 | 1.0 | 1.3 | 60 |     |     | ●   |      |   |
|                                                                                     | 16ERM 2.50 ISO | 2.5                      |      | 0.33 | 1.1 | 1.5 | 60 |     |     | ●   |      |   |
|                                                                                     | 16ERM 3.00 ISO | 3.0                      |      | 0.41 | 1.2 | 1.6 | 60 |     |     | ●   |      |   |
|                                                                                     | 16ER 0.50 ISO  | 0.5                      |      | 0.06 | 0.6 | 0.6 | 60 | ●   | ●   | ●   | ●    |   |
|                                                                                     | 16ER 0.75 ISO  | 0.75                     |      | 0.09 | 0.6 | 0.6 | 60 | ●   | ●   | ●   | ●    |   |
|                                                                                     | 16ER 1.00 ISO  | 1.0                      |      | 0.12 | 0.7 | 0.7 | 60 | ●   | ●   | ●   | ●    |   |
|                                                                                     | 16ER 1.25 ISO  | 1.25                     |      | 0.15 | 0.8 | 0.9 | 60 | ●   | ●   | ●   | ●    |   |
|                                                                                     | 16ER 1.50 ISO  | 1.5                      |      | 0.19 | 0.8 | 1.0 | 60 | ●   | ●   | ●   | ●    |   |
|                                                                                     | 16ER 1.75 ISO  | 1.75                     |      | 0.22 | 0.9 | 1.2 | 60 | ●   | ●   | ●   | ●    |   |
|                                                                                     | 16ER 2.00 ISO  | 2.0                      |      | 0.25 | 1.0 | 1.3 | 60 | ●   | ●   | ●   | ●    |   |
|                                                                                     | 16ER 2.50 ISO  | 2.5                      |      | 0.32 | 1.1 | 1.5 | 60 | ●   | ●   | ●   | ●    |   |
|                                                                                     | 16ER 3.00 ISO  | 3.0                      |      | 0.41 | 1.2 | 1.6 | 60 | ●   | ●   | ●   | ●    |   |
|                                                                                     | 22ER 3.00 ISO  | 3.0                      |      | 0.41 | 1.2 | 1.6 | 60 | ●   |     | ●   | ●    |   |
|                                                                                     | 22ER 3.50 ISO  | 3.5                      |      | 0.48 | 1.6 | 2.3 | 60 | ●   |     | ●   | ●    |   |
|                                                                                     | 22ER 4.00 ISO  | 4.0                      |      | 0.55 | 1.6 | 2.3 | 60 | ●   |     | ●   | ●    |   |
|                                                                                     | 22ER 4.50 ISO  | 4.0                      |      | 0.62 | 1.7 | 2.4 | 60 | ●   |     | ●   | ●    |   |
| 22ER 5.00 ISO                                                                       | 5.0            |                          | 0.70 | 1.7  | 2.5 | 60  | ●  |     | ●   | ●   |      |   |
|  | 16ELM 1.00 ISO | 1.0                      |      | 0.12 | 0.7 | 0.7 | 60 |     |     |     |      |   |
|                                                                                     | 16ELM 1.25 ISO | 1.25                     |      | 0.15 | 0.8 | 0.9 | 60 |     |     |     |      |   |
|                                                                                     | 16ELM 1.50 ISO | 1.5                      |      | 0.19 | 0.8 | 1.0 | 60 |     |     |     |      |   |
|                                                                                     | 16ELM 1.75 ISO | 1.75                     |      | 0.22 | 0.9 | 1.2 | 60 |     |     |     |      |   |
|                                                                                     | 16ELM 2.00 ISO | 2.0                      |      | 0.25 | 1.0 | 1.3 | 60 |     |     |     |      |   |
|                                                                                     | 16ELM 2.50 ISO | 2.5                      |      | 0.33 | 1.1 | 1.5 | 60 |     |     |     |      |   |
|                                                                                     | 16ELM 3.00 ISO | 3.0                      |      | 0.41 | 1.2 | 1.6 | 60 |     |     |     |      |   |
|                                                                                     | 16EL 0.50 ISO  | 0.5                      |      | 0.06 | 0.6 | 0.6 | 60 |     |     |     |      |   |
|                                                                                     | 16EL 0.75 ISO  | 0.75                     |      | 0.09 | 0.6 | 0.6 | 60 |     |     |     |      |   |
|                                                                                     | 16EL 1.00 ISO  | 1.0                      |      | 0.12 | 0.7 | 0.7 | 60 |     |     |     |      |   |
|                                                                                     | 16EL 1.25 ISO  | 1.25                     |      | 0.15 | 0.8 | 0.9 | 60 |     |     |     |      |   |
|                                                                                     | 16EL 1.50 ISO  | 1.5                      |      | 0.19 | 0.8 | 1.0 | 60 |     |     |     |      |   |
|                                                                                     | 16EL 1.75 ISO  | 1.75                     |      | 0.22 | 0.9 | 1.2 | 60 |     |     |     |      |   |
|                                                                                     | 16EL 2.00 ISO  | 2.0                      |      | 0.25 | 1.0 | 1.3 | 60 |     |     |     |      |   |
|                                                                                     | 16EL 2.50 ISO  | 2.5                      |      | 0.32 | 1.1 | 1.5 | 60 |     |     |     |      |   |
|                                                                                     | 16EL 3.00 ISO  | 3.0                      |      | 0.41 | 1.2 | 1.6 | 60 |     |     |     |      |   |
|                                                                                     | 22EL 3.00 ISO  | 3.0                      |      | 0.41 | 1.2 | 1.6 | 60 |     |     |     |      |   |
|                                                                                     | 22EL 3.50 ISO  | 3.5                      |      | 0.48 | 1.6 | 2.3 | 60 |     |     |     |      |   |
|                                                                                     | 22EL 4.00 ISO  | 4.0                      |      | 0.55 | 1.6 | 2.3 | 60 |     |     |     |      |   |
|                                                                                     | 22EL 4.50 ISO  | 4.0                      |      | 0.62 | 1.7 | 2.4 | 60 |     |     |     |      |   |
| 22EL 5.00 ISO                                                                       | 5.0            |                          | 0.70 | 1.7  | 2.5 | 60  |    |     |     |     |      |   |
| 钢 Steel                                                                             |                |                          |      |      |     |     |    |     |     | ★   |      | ★ |
| 不锈钢 Stainless Steel                                                                 |                |                          |      |      |     |     |    |     |     |     | ★    | ★ |
| 铸铁 Cast Iron                                                                        |                |                          |      |      |     |     |    |     |     | ☆   |      | ☆ |
| 有色金属 Nonferrous Metal                                                               |                |                          |      |      |     |     |    |     |     |     |      |   |
| 耐热合金 Heat Resistant Alloy                                                           |                |                          |      |      |     |     |    |     |     |     | ☆    | ☆ |
| 淬硬钢 Hardened Steel                                                                  |                |                          |      |      |     |     |    |     |     |     |      |   |

★ 首选Preferred ☆ 可选optional

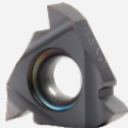
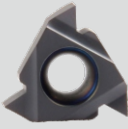
● 标准库存standard stock ○ 订单生产order production

螺纹刀片  
Thread inserts

60°公制内螺纹  
60° metric internal thread



| 型号<br>Model | 尺寸 Size<br>(mm) |      |      |
|-------------|-----------------|------|------|
|             | A               | T    | D    |
| 11NR..      | 6.35            | 3.18 | 3.0  |
| 16NR..      | 9.525           | 3.68 | 4.0  |
| 22NR..      | 12.70           | 4.9  | 4.85 |

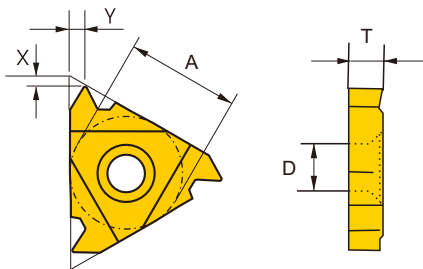
| 刀片外形<br>Insert shape                                                                | 型号<br>Model                                                                           | 尺寸与材质<br>Size and Grades |      |      |      |     |     |     |     |     |      |   |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--------------------------|------|------|------|-----|-----|-----|-----|-----|------|---|
|                                                                                     |                                                                                       | 螺距<br>Pitch              | TPI  | R    | X    | Y   | θ°  | KTX | KKX | KVX | KW20 |   |
|  | 11NRM 1.00 ISO                                                                        | 1.0                      |      | 0.07 | 0.6  | 0.7 | 60  |     |     | ●   |      |   |
|                                                                                     | 11NRM 1.25 ISO                                                                        | 1.25                     |      | 0.08 | 0.8  | 0.9 | 60  |     |     | ●   |      |   |
|                                                                                     | 11NRM 1.50 ISO                                                                        | 1.5                      |      | 0.11 | 0.8  | 1.0 | 60  |     |     | ●   |      |   |
|                                                                                     | 11NRM 1.75 ISO                                                                        | 1.75                     |      | 0.12 | 0.9  | 1.1 | 60  |     |     | ●   |      |   |
|                                                                                     | 16NRM 1.00 ISO                                                                        | 1.0                      |      | 0.07 | 0.6  | 0.7 | 60  |     |     | ●   |      |   |
|                                                                                     | 16NRM 1.25 ISO                                                                        | 1.25                     |      | 0.08 | 0.8  | 0.9 | 60  |     |     | ●   |      |   |
|                                                                                     | 16NRM 1.50 ISO                                                                        | 1.5                      |      | 0.11 | 0.8  | 1.0 | 60  |     |     | ●   |      |   |
|                                                                                     | 16NRM 1.75 ISO                                                                        | 1.75                     |      | 0.12 | 0.9  | 1.2 | 60  |     |     | ●   |      |   |
|                                                                                     | 16NRM 2.00 ISO                                                                        | 2.0                      |      | 0.14 | 1.0  | 1.3 | 60  |     |     | ●   |      |   |
|                                                                                     | 16NRM 2.50 ISO                                                                        | 2.5                      |      | 0.17 | 1.1  | 1.5 | 60  |     |     | ●   |      |   |
|                                                                                     | 16NRM 3.00 ISO                                                                        | 3.0                      |      | 0.19 | 1.1  | 1.5 | 60  |     |     | ●   |      |   |
|                                                                                     | 11NR 0.50 ISO                                                                         | 0.5                      |      | 0.03 | 0.6  | 0.6 | 60  | ●   | ●   | ●   | ●    |   |
|                                                                                     | 11NR 0.75 ISO                                                                         | 0.75                     |      | 0.05 | 0.6  | 0.6 | 60  | ●   | ●   | ●   | ●    |   |
|                                                                                     | 11NR 1.00 ISO                                                                         | 1.0                      |      | 0.07 | 0.6  | 0.7 | 60  | ●   | ●   | ●   | ●    |   |
|                                                                                     | 11NR 1.25 ISO                                                                         | 1.25                     |      | 0.08 | 0.8  | 0.9 | 60  | ●   | ●   | ●   | ●    |   |
|                                                                                     | 11NR 1.50 ISO                                                                         | 1.5                      |      | 0.11 | 0.8  | 1.0 | 60  | ●   | ●   | ●   | ●    |   |
|                                                                                     | 11NR 1.75 ISO                                                                         | 1.75                     |      | 0.12 | 0.9  | 1.1 | 60  | ●   | ●   | ●   | ●    |   |
|                                                                                     | 11NR 2.00 ISO                                                                         | 2.0                      |      | 0.14 | 0.8  | 0.9 | 60  | ●   | ●   | ●   | ●    |   |
|                                                                                     | 16NR 1.00 ISO                                                                         | 1.0                      |      | 0.07 | 0.6  | 0.7 | 60  | ●   | ●   | ●   | ●    |   |
|                                                                                     | 16NR 1.25 ISO                                                                         | 1.25                     |      | 0.08 | 0.8  | 0.9 | 60  | ●   | ●   | ●   | ●    |   |
|                                                                                     | 16NR 1.50 ISO                                                                         | 1.5                      |      | 0.11 | 0.8  | 1.0 | 60  | ●   | ●   | ●   | ●    |   |
|                                                                                     |  | 16NR 1.75 ISO            | 1.75 |      | 0.12 | 0.9 | 1.2 | 60  | ●   | ●   | ●    | ● |
| 16NR 2.00 ISO                                                                       |                                                                                       | 2.0                      |      | 0.14 | 1.0  | 1.3 | 60  | ●   | ●   | ●   | ●    |   |
| 16NR 2.50 ISO                                                                       |                                                                                       | 2.5                      |      | 0.16 | 1.1  | 1.5 | 60  | ●   | ●   | ●   | ●    |   |
| 16NR 3.00 ISO                                                                       |                                                                                       | 3.0                      |      | 0.19 | 1.1  | 1.5 | 60  | ●   | ●   | ●   | ●    |   |
| 22NR 3.00 ISO                                                                       |                                                                                       | 3.0                      |      | 0.19 | 1.1  | 1.5 | 60  | ●   |     | ●   | ●    |   |
| 22NR 3.50 ISO                                                                       |                                                                                       | 3.5                      |      | 0.23 | 1.6  | 2.3 | 60  | ●   |     | ●   | ●    |   |
| 22NR 4.00 ISO                                                                       |                                                                                       | 4.0                      |      | 0.26 | 1.6  | 2.3 | 60  | ●   |     | ●   | ●    |   |
| 22NR 4.50 ISO                                                                       |                                                                                       | 4.5                      |      | 0.30 | 1.6  | 2.3 | 60  | ●   |     | ●   | ●    |   |
| 22NR 5.00 ISO                                                                       |                                                                                       | 5.0                      |      | 0.34 | 1.6  | 2.3 | 60  | ●   |     | ●   | ●    |   |
| 11NRM 1.00 ISO                                                                      |                                                                                       | 1.0                      |      | 0.07 | 0.6  | 0.7 | 60  |     |     |     |      |   |
| 11NRM 1.25 ISO                                                                      |                                                                                       | 1.25                     |      | 0.08 | 0.8  | 0.9 | 60  |     |     |     |      |   |
| 11NRM 1.50 ISO                                                                      |                                                                                       | 1.5                      |      | 0.11 | 0.8  | 1.0 | 60  |     |     |     |      |   |
| 11NRM 1.75 ISO                                                                      |                                                                                       | 1.75                     |      | 0.12 | 0.9  | 1.1 | 60  |     |     |     |      |   |
| 16NRM 1.00 ISO                                                                      |                                                                                       | 1.0                      |      | 0.07 | 0.6  | 0.7 | 60  |     |     |     |      |   |
| 16NRM 1.25 ISO                                                                      |                                                                                       | 1.25                     |      | 0.08 | 0.8  | 0.9 | 60  |     |     |     |      |   |
| 16NRM 1.50 ISO                                                                      |                                                                                       | 1.5                      |      | 0.11 | 0.8  | 1.0 | 60  |     |     |     |      |   |
| 16NRM 1.75 ISO                                                                      |                                                                                       | 1.75                     |      | 0.12 | 0.9  | 1.2 | 60  |     |     |     |      |   |
| 16NRM 2.00 ISO                                                                      |                                                                                       | 2.0                      |      | 0.14 | 1.0  | 1.3 | 60  |     |     |     |      |   |
| 16NRM 2.50 ISO                                                                      |                                                                                       | 2.5                      |      | 0.17 | 1.1  | 1.5 | 60  |     |     |     |      |   |
| 16NRM 3.00 ISO                                                                      |                                                                                       | 3.0                      |      | 0.19 | 1.1  | 1.5 | 60  |     |     |     |      |   |
| 11NR 0.50 ISO                                                                       |                                                                                       | 0.5                      |      | 0.03 | 0.6  | 0.6 | 60  |     |     |     |      |   |
| 11NR 0.75 ISO                                                                       |                                                                                       | 0.75                     |      | 0.05 | 0.6  | 0.6 | 60  |     |     |     |      |   |
| 11NR 1.00 ISO                                                                       | 1.0                                                                                   |                          | 0.07 | 0.6  | 0.7  | 60  |     |     |     |     |      |   |
| 11NR 1.25 ISO                                                                       | 1.25                                                                                  |                          | 0.08 | 0.8  | 0.9  | 60  |     |     |     |     |      |   |
| 11NR 1.50 ISO                                                                       | 1.5                                                                                   |                          | 0.11 | 0.8  | 1.0  | 60  |     |     |     |     |      |   |
| 11NR 1.75 ISO                                                                       | 1.75                                                                                  |                          | 0.12 | 0.9  | 1.1  | 60  |     |     |     |     |      |   |
| 11NR 2.00 ISO                                                                       | 2.0                                                                                   |                          | 0.14 | 0.8  | 0.9  | 60  |     |     |     |     |      |   |
| 16NR 1.00 ISO                                                                       | 1.0                                                                                   |                          | 0.07 | 0.6  | 0.7  | 60  |     |     |     |     |      |   |
| 16NR 1.25 ISO                                                                       | 1.25                                                                                  |                          | 0.08 | 0.8  | 0.9  | 60  |     |     |     |     |      |   |
| 16NR 1.50 ISO                                                                       | 1.5                                                                                   |                          | 0.11 | 0.8  | 1.0  | 60  |     |     |     |     |      |   |
| 16NR 1.75 ISO                                                                       | 1.75                                                                                  |                          | 0.12 | 0.9  | 1.2  | 60  |     |     |     |     |      |   |
| 16NR 2.00 ISO                                                                       | 2.0                                                                                   |                          | 0.14 | 1.0  | 1.3  | 60  |     |     |     |     |      |   |
| 16NR 2.50 ISO                                                                       | 2.5                                                                                   |                          | 0.16 | 1.1  | 1.5  | 60  |     |     |     |     |      |   |
| 16NR 3.00 ISO                                                                       | 3.0                                                                                   |                          | 0.19 | 1.1  | 1.5  | 60  |     |     |     |     |      |   |
| 22NR 3.00 ISO                                                                       | 3.0                                                                                   |                          | 0.19 | 1.1  | 1.5  | 60  |     |     |     |     |      |   |
| 22NR 3.50 ISO                                                                       | 3.5                                                                                   |                          | 0.23 | 1.6  | 2.3  | 60  |     |     |     |     |      |   |
| 22NR 4.00 ISO                                                                       | 4.0                                                                                   |                          | 0.26 | 1.6  | 2.3  | 60  |     |     |     |     |      |   |
| 22NR 4.50 ISO                                                                       | 4.5                                                                                   |                          | 0.30 | 1.6  | 2.3  | 60  |     |     |     |     |      |   |
| 22NR 5.00 ISO                                                                       | 5.0                                                                                   |                          | 0.34 | 1.6  | 2.3  | 60  |     |     |     |     |      |   |
| 钢 Steel                                                                             |                                                                                       |                          |      |      |      |     |     |     | ★   |     | ★    |   |
| 不锈钢 Stainless Steel                                                                 |                                                                                       |                          |      |      |      |     |     |     |     | ★   | ★    |   |
| 铸铁 Cast Iron                                                                        |                                                                                       |                          |      |      |      |     |     |     | ☆   |     | ☆    |   |
| 有色金属 Nonferrous Metal                                                               |                                                                                       |                          |      |      |      |     |     |     |     |     |      | ★ |
| 耐热合金 Heat Resistant Alloy                                                           |                                                                                       |                          |      |      |      |     |     |     |     | ☆   | ☆    |   |
| 淬硬钢 Hardened Steel                                                                  |                                                                                       |                          |      |      |      |     |     |     |     |     |      |   |

★ 首选Preferred ☆ 可选optional

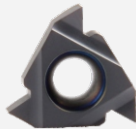
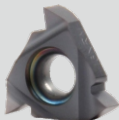
● 标准库存standard stock ○ 订单生产order production

螺纹刀片  
Thread inserts

60°英制外螺纹 (UN)  
60° Inch male thread (UN)



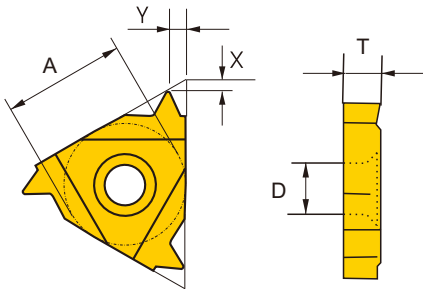
| 型号<br>Model | 尺寸 Size<br>(mm) |      |      |
|-------------|-----------------|------|------|
|             | A               | T    | D    |
| 16ER/L...   | 9.525           | 3.68 | 4.0  |
| 22ER/L...   | 12.70           | 4.9  | 4.85 |

| 刀片外形<br>Insert shape                                                                | 型号<br>Model | 尺寸与材质<br>Size and Grades |     |      |     |     |    |     |     |     |      |
|-------------------------------------------------------------------------------------|-------------|--------------------------|-----|------|-----|-----|----|-----|-----|-----|------|
|                                                                                     |             | 螺距<br>Pitch              | TPI | R    | X   | Y   | θ° | KTX | KKX | KVX | KW20 |
|   | 16ERM 24 UN |                          | 24  | 0.12 | 0.8 | 0.9 | 60 |     |     | ●   |      |
|                                                                                     | 16ERM 20 UN |                          | 20  | 0.15 | 0.8 | 1.0 | 60 |     |     | ●   |      |
|                                                                                     | 16ERM 18 UN |                          | 18  | 0.18 | 0.9 | 1.1 | 60 |     |     | ●   |      |
|                                                                                     | 16ERM 16 UN |                          | 16  | 0.20 | 1.0 | 1.2 | 60 |     |     | ●   |      |
|                                                                                     | 16ERM 14 UN |                          | 14  | 0.23 | 1.0 | 1.3 | 60 |     |     | ●   |      |
|                                                                                     | 16ERM 13 UN |                          | 13  | 0.25 | 1.1 | 1.4 | 60 |     |     | ●   |      |
|                                                                                     | 16ERM 12 UN |                          | 12  | 0.27 | 1.1 | 1.5 | 60 |     |     | ●   |      |
|                                                                                     | 16ERM 10 UN |                          | 10  | 0.34 | 1.1 | 1.5 | 60 |     |     | ●   |      |
|                                                                                     | 16ERM 08 UN |                          | 8   | 0.43 | 1.2 | 1.6 | 60 |     |     | ●   |      |
|                                                                                     | 16ER 24 UN  |                          | 24  | 0.13 | 0.7 | 0.8 | 60 | ●   | ●   | ●   | ●    |
|                                                                                     | 16ER 20 UN  |                          | 20  | 0.16 | 0.8 | 0.9 | 60 | ●   | ●   | ●   | ●    |
|                                                                                     | 16ER 18 UN  |                          | 18  | 0.18 | 0.8 | 1.0 | 60 | ●   | ●   | ●   | ●    |
|                                                                                     | 16ER 16 UN  |                          | 16  | 0.20 | 0.9 | 1.1 | 60 | ●   | ●   | ●   | ●    |
|                                                                                     | 16ER 14 UN  |                          | 14  | 0.23 | 1.0 | 1.2 | 60 | ●   | ●   | ●   | ●    |
|                                                                                     | 16ER 12UN   |                          | 12  | 0.27 | 1.1 | 1.4 | 60 | ●   | ●   | ●   | ●    |
|  | 22ER 08 UN  |                          | 8   | 0.43 | 1.2 | 1.6 | 60 | ●   |     | ●   |      |
|                                                                                     | 16ELM 24 UN |                          | 24  | 0.12 | 0.7 | 0.9 | 60 |     |     |     |      |
|                                                                                     | 16ELM 20 UN |                          | 20  | 0.15 | 0.8 | 1.0 | 60 |     |     |     |      |
|                                                                                     | 16ELM 18 UN |                          | 18  | 0.18 | 0.9 | 1.1 | 60 |     |     |     |      |
|                                                                                     | 16ELM 16 UN |                          | 16  | 0.20 | 1.0 | 1.2 | 60 |     |     |     |      |
|                                                                                     | 16ELM 14 UN |                          | 14  | 0.23 | 1.0 | 1.3 | 60 |     |     |     |      |
|                                                                                     | 16ELM 13 UN |                          | 13  | 0.25 | 1.1 | 1.4 | 60 |     |     |     |      |
|                                                                                     | 16ELM 12 UN |                          | 12  | 0.27 | 1.1 | 1.5 | 60 |     |     |     |      |
|                                                                                     | 16ELM 10 UN |                          | 10  | 0.34 | 1.1 | 1.5 | 60 |     |     |     |      |
|                                                                                     | 16ELM 08 UN |                          | 8   | 0.43 | 1.2 | 1.6 | 60 |     |     |     |      |
|                                                                                     | 16EL 24 UN  |                          | 24  | 0.13 | 0.7 | 0.8 | 60 |     |     |     |      |
|                                                                                     | 16EL 20 UN  |                          | 20  | 0.16 | 0.8 | 0.9 | 60 |     |     |     |      |
|                                                                                     | 16EL 18 UN  |                          | 18  | 0.18 | 0.8 | 1.0 | 60 |     |     |     |      |
|                                                                                     | 16EL 16 UN  |                          | 16  | 0.20 | 0.9 | 1.1 | 60 |     |     |     |      |
|                                                                                     | 16EL 14 UN  |                          | 14  | 0.23 | 1.0 | 1.2 | 60 |     |     |     |      |
|                                                                                     | 16EL12UN    |                          | 12  | 0.27 | 1.1 | 1.4 | 60 |     |     |     |      |
|                                                                                     | 22EL 08 UN  |                          | 8   | 0.43 | 1.2 | 1.6 | 60 |     |     |     |      |
| 钢 Steel                                                                             |             | ★                        |     |      |     |     |    |     |     |     |      |
| 不锈钢 Stainless Steel                                                                 |             | ★                        |     |      |     |     |    |     |     |     |      |
| 铸铁 Cast Iron                                                                        |             | ☆                        |     |      |     |     |    |     |     |     |      |
| 有色金属 Nonferrous Metal                                                               |             |                          |     |      |     |     |    |     |     |     |      |
| 耐热合金 Heat Resistant Alloy                                                           |             | ☆                        |     |      |     |     |    |     |     |     |      |
| 淬硬钢 Hardened Steel                                                                  |             | ☆                        |     |      |     |     |    |     |     |     |      |

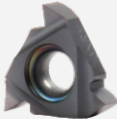
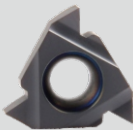
★ 首选 Preferred    ☆ 可选 optional    ● 标准库存 standard stock    ○ 订单生产 order production

螺纹刀片  
Thread inserts

60°英制内螺纹 (UN)  
60° Inch internal thread (UN)



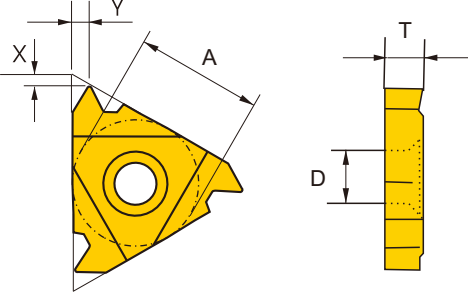
| 型号<br>Model | 尺寸 Size<br>(mm) |      |      |
|-------------|-----------------|------|------|
|             | A               | T    | D    |
| 16NR/L...   | 9.525           | 3.68 | 4.0  |
| 22NR/L...   | 12.70           | 4.9  | 4.85 |

| 刀片外形<br>Insert shape                                                                  | 型号<br>Model | 尺寸与材质<br>Size and Grades |     |      |     |     |    |     |     |     |      |
|---------------------------------------------------------------------------------------|-------------|--------------------------|-----|------|-----|-----|----|-----|-----|-----|------|
|                                                                                       |             | 螺距<br>Pitch              | TPI | R    | X   | Y   | θ° | KTX | KKX | KVX | KW20 |
|   | 16NRM 24 UN |                          | 24  | 0.06 | 0.7 | 0.8 | 60 |     |     | ●   |      |
|                                                                                       | 16NRM 20 UN |                          | 20  | 0.08 | 0.8 | 0.9 | 60 |     |     | ●   |      |
|                                                                                       | 16NRM 18 UN |                          | 18  | 0.09 | 0.8 | 1.0 | 60 |     |     | ●   |      |
|                                                                                       | 16NRM 16 UN |                          | 16  | 0.10 | 0.9 | 1.1 | 60 |     |     | ●   |      |
|                                                                                       | 16NRM 14 UN |                          | 14  | 0.12 | 0.9 | 1.2 | 60 |     |     | ●   |      |
|                                                                                       | 16NRM 13 UN |                          | 13  | 0.13 | 1.0 | 1.3 | 60 |     |     | ●   |      |
|                                                                                       | 16NRM 12 UN |                          | 12  | 0.14 | 1.1 | 1.4 | 60 |     |     | ●   |      |
|                                                                                       | 16NRM 10 UN |                          | 10  | 0.17 | 1.1 | 1.5 | 60 |     |     | ●   |      |
|                                                                                       | 16NRM 08 UN |                          | 8   | 0.21 | 1.1 | 1.5 | 60 |     |     | ●   |      |
|                                                                                       | 16NR 24 UN  |                          | 24  | 0.05 | 0.7 | 0.8 | 60 | ●   |     | ●   | ●    |
|                                                                                       | 16NR 20 UN  |                          | 20  | 0.07 | 0.8 | 0.9 | 60 | ●   | ●   | ●   | ●    |
|                                                                                       | 16NR 18 UN  |                          | 18  | 0.09 | 0.8 | 1.0 | 60 | ●   | ●   | ●   | ●    |
|                                                                                       | 16NR 16 UN  |                          | 16  | 0.10 | 0.9 | 1.1 | 60 | ●   | ●   | ●   | ●    |
|                                                                                       | 16NR 14 UN  |                          | 14  | 0.12 | 0.9 | 1.2 | 60 | ●   | ●   | ●   | ●    |
|                                                                                       | 16NR 12UN   |                          | 12  | 0.14 | 1.1 | 1.4 | 60 | ●   | ●   | ●   | ●    |
|  | 22NR 08 UN  |                          | 8   | 0.20 | 1.1 | 1.5 | 60 | ●   |     | ●   |      |
|                                                                                       | 16NLM 24 UN |                          | 24  | 0.06 | 0.7 | 0.8 | 60 |     |     |     |      |
|                                                                                       | 16NLM 20 UN |                          | 20  | 0.08 | 0.8 | 0.9 | 60 |     |     |     |      |
|                                                                                       | 16NLM 18 UN |                          | 18  | 0.09 | 0.8 | 1.0 | 60 |     |     |     |      |
|                                                                                       | 16NLM 16 UN |                          | 16  | 0.10 | 0.9 | 1.1 | 60 |     |     |     |      |
|                                                                                       | 16NLM 14 UN |                          | 14  | 0.12 | 0.9 | 1.2 | 60 |     |     |     |      |
|                                                                                       | 16NLM 13 UN |                          | 13  | 0.13 | 1.0 | 1.3 | 60 |     |     |     |      |
|                                                                                       | 16NLM 12 UN |                          | 12  | 0.14 | 1.1 | 1.4 | 60 |     |     |     |      |
|                                                                                       | 16NLM 10 UN |                          | 10  | 0.17 | 1.1 | 1.5 | 60 |     |     |     |      |
|                                                                                       | 16NLM 08 UN |                          | 8   | 0.21 | 1.1 | 1.5 | 60 |     |     |     |      |
|                                                                                       | 16NL 24 UN  |                          | 24  | 0.05 | 0.7 | 0.8 | 60 |     |     |     |      |
|                                                                                       | 16NL 20 UN  |                          | 20  | 0.07 | 0.8 | 0.9 | 60 |     |     |     |      |
|                                                                                       | 16NL 18 UN  |                          | 18  | 0.09 | 0.8 | 1.0 | 60 |     |     |     |      |
|                                                                                       | 16NL 16 UN  |                          | 16  | 0.10 | 0.9 | 1.1 | 60 |     |     |     |      |
|                                                                                       | 16NL 14 UN  |                          | 14  | 0.12 | 0.9 | 1.2 | 60 |     |     |     |      |
|                                                                                       | 16NL12UN    |                          | 12  | 0.14 | 1.1 | 1.4 | 60 |     |     |     |      |
|                                                                                       | 22NL 08 UN  |                          | 8   | 0.20 | 1.1 | 1.5 | 60 |     |     |     |      |
| 钢 Steel                                                                               |             | ★                        |     |      |     |     |    |     |     |     |      |
| 不锈钢 Stainless Steel                                                                   |             | ★                        |     |      |     |     |    |     |     |     |      |
| 铸铁 Cast Iron                                                                          |             | ☆                        |     |      |     |     |    |     |     |     |      |
| 有色金属 Nonferrous Metal                                                                 |             |                          |     |      |     |     |    |     |     |     |      |
| 耐热合金 Heat Resistant Alloy                                                             |             | ☆                        |     |      |     |     |    |     |     |     |      |
| 淬硬钢 Hardened Steel                                                                    |             | ☆                        |     |      |     |     |    |     |     |     |      |

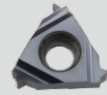
★ 首选 Preferred    ☆ 可选 optional    ● 标准库存 standard stock    ○ 订单生产 order production

螺纹刀片  
Thread inserts

55°惠氏外螺纹 (W) 管用平行螺纹G(PF)  
55° Wyeth external thread (W) pipe parallel thread G(PF)



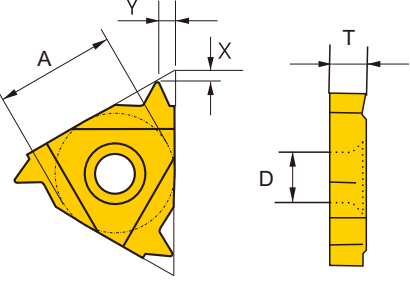
| 型号<br>Model | 尺寸 Size<br>(mm) |      |      |
|-------------|-----------------|------|------|
|             | A               | T    | D    |
| 16ER/L..    | 9.525           | 3.68 | 4.0  |
| 22ER/L..    | 12.70           | 4.9  | 4.85 |

| 刀片外形<br>Insert shape                                                                | 型号<br>Model | 尺寸与材质<br>Size and Grades |      |     |     |    |    |     |     |     |      |
|-------------------------------------------------------------------------------------|-------------|--------------------------|------|-----|-----|----|----|-----|-----|-----|------|
|                                                                                     |             | 螺距<br>Pitch              | TPI  | R   | X   | Y  | θ° | KTX | KKX | KVX | KW20 |
|    | 16ERM 19W   | 19                       | 0.16 | 0.8 | 1.0 | 55 |    |     |     | ●   |      |
|                                                                                     | 16ERM 16W   | 16                       | 0.19 | 0.9 | 1.1 | 55 |    |     |     | ●   |      |
|                                                                                     | 16ERM 14W   | 14                       | 0.23 | 1.0 | 1.2 | 55 |    |     |     | ●   |      |
|                                                                                     | 16ERM 11W   | 11                       | 0.30 | 1.1 | 1.5 | 55 |    |     |     | ●   |      |
|                                                                                     | 16ER 19W    | 19                       | 0.16 | 0.8 | 1.0 | 55 | ●  | ●   | ●   | ●   | ●    |
|  | 16ER14W     | 14                       | 0.23 | 1.0 | 1.2 | 55 | ●  | ●   | ●   | ●   | ●    |
|                                                                                     | 16ER 11W    | 11                       | 0.30 | 1.1 | 1.5 | 55 | ●  | ●   | ●   | ●   | ●    |
|                                                                                     | 16ELM 19W   | 19                       | 0.16 | 0.8 | 1.0 | 55 |    |     |     |     |      |
|                                                                                     | 16ELM 16W   | 16                       | 0.19 | 0.9 | 1.1 | 55 |    |     |     |     |      |
|                                                                                     | 16ELM 14W   | 14                       | 0.23 | 1.0 | 1.2 | 55 |    |     |     |     |      |
|                                                                                     | 16ELM 11W   | 11                       | 0.30 | 1.1 | 1.5 | 55 |    |     |     |     |      |
|                                                                                     | 16EL 19W    | 19                       | 0.16 | 0.8 | 1.0 | 55 |    |     |     |     |      |
|                                                                                     | 16EL14W     | 14                       | 0.23 | 1.0 | 1.2 | 55 |    |     |     |     |      |
|                                                                                     | 16EL 11W    | 11                       | 0.30 | 1.1 | 1.5 | 55 |    |     |     |     |      |
| 钢 Steel                                                                             |             |                          |      |     |     |    |    | ★   |     | ★   |      |
| 不锈钢 Stainless Steel                                                                 |             |                          |      |     |     |    |    |     | ★   | ★   |      |
| 铸铁 Cast Iron                                                                        |             |                          |      |     |     |    |    | ☆   |     | ☆   |      |
| 有色金属 Nonferrous Metal                                                               |             |                          |      |     |     |    |    |     |     |     | ★    |
| 耐热合金 Heat Resistant Alloy                                                           |             |                          |      |     |     |    |    |     | ☆   | ☆   |      |
| 淬硬钢 Hardened Steel                                                                  |             |                          |      |     |     |    |    |     |     |     |      |

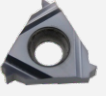
★ 首选Preferred    ☆ 可选optional    ● 标准库存standard stock    ○ 订单生产order production

螺纹刀片  
Thread inserts

55°惠氏内螺纹 (W) 管用平行螺纹G(PF)  
55° Wyeth internal thread (W) tube Parallel thread G(PF)



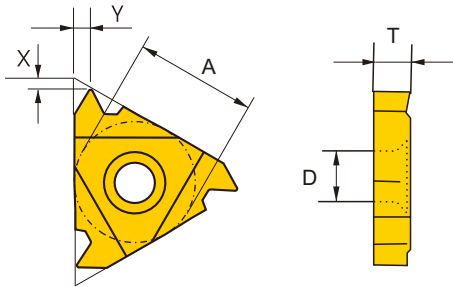
| 型号<br>Model | 尺寸 Size<br>(mm) |      |      |
|-------------|-----------------|------|------|
|             | A               | T    | D    |
| 16NR/L..    | 9.525           | 3.68 | 4.0  |
| 22NR/L..    | 12.70           | 4.9  | 4.85 |

| 刀片外形<br>Insert shape                                                                 | 型号<br>Model | 尺寸与材质<br>Size and Grades |      |     |     |    |    |     |     |     |      |
|--------------------------------------------------------------------------------------|-------------|--------------------------|------|-----|-----|----|----|-----|-----|-----|------|
|                                                                                      |             | 螺距<br>Pitch              | TPI  | R   | X   | Y  | θ° | KTX | KKX | KVX | KW20 |
|   | 16NRM 19W   | 19                       | 0.16 | 0.8 | 1.0 | 55 |    |     |     | ●   |      |
|                                                                                      | 16NRM 16W   | 16                       | 0.19 | 0.9 | 1.2 | 55 |    |     |     | ●   |      |
|                                                                                      | 16NRM 14W   | 14                       | 0.23 | 1.0 | 1.4 | 55 |    |     |     | ●   |      |
|                                                                                      | 16NRM 11W   | 11                       | 0.30 | 1.1 | 1.5 | 55 |    |     |     | ●   |      |
|                                                                                      | 16NR 14W    | 14                       | 0.23 | 1.0 | 1.2 | 55 | ●  | ●   | ●   | ●   | ●    |
|  | 16NR 11W    | 11                       | 0.30 | 1.1 | 1.5 | 55 | ●  | ●   | ●   | ●   | ●    |
|                                                                                      | 16NLM 19W   | 19                       | 0.16 | 0.8 | 1.0 | 55 |    |     |     |     |      |
|                                                                                      | 16NLM 16W   | 16                       | 0.19 | 0.9 | 1.2 | 55 |    |     |     |     |      |
|                                                                                      | 16NLM 14W   | 14                       | 0.23 | 1.0 | 1.4 | 55 |    |     |     |     |      |
|                                                                                      | 16NLM 11W   | 11                       | 0.30 | 1.1 | 1.5 | 55 |    |     |     |     |      |
|                                                                                      | 16NL 14W    | 14                       | 0.23 | 1.0 | 1.2 | 55 |    |     |     |     |      |
|                                                                                      | 16NL 11W    | 11                       | 0.30 | 1.1 | 1.5 | 55 |    |     |     |     |      |
| 钢 Steel                                                                              |             |                          |      |     |     |    |    | ★   |     | ★   |      |
| 不锈钢 Stainless Steel                                                                  |             |                          |      |     |     |    |    |     | ★   | ★   |      |
| 铸铁 Cast Iron                                                                         |             |                          |      |     |     |    |    | ☆   |     | ☆   |      |
| 有色金属 Nonferrous Metal                                                                |             |                          |      |     |     |    |    |     |     |     | ★    |
| 耐热合金 Heat Resistant Alloy                                                            |             |                          |      |     |     |    |    |     | ☆   | ☆   |      |
| 淬硬钢 Hardened Steel                                                                   |             |                          |      |     |     |    |    |     |     |     |      |

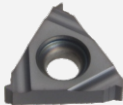
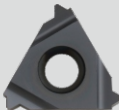
★ 首选Preferred    ☆ 可选optional    ● 标准库存standard stock    ○ 订单生产order production

螺纹刀片  
Thread inserts

55°锥度管螺纹 外螺纹 (BSPT)  
55° Taper Pipe thread external thread (BSPT)



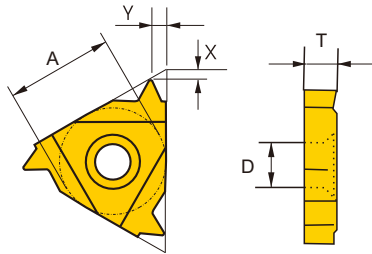
| 型号<br>Model | 尺寸 Size<br>(mm) |      |      |
|-------------|-----------------|------|------|
|             | A               | T    | D    |
| 16ER/L..    | 9.525           | 3.68 | 4.0  |
| 22ER/L..    | 12.70           | 4.9  | 4.85 |

| 刀片外形<br>Insert shape                                                                | 型号<br>Model  | 尺寸与材质<br>Size and Grades |      |     |     |    |    |     |     |     |      |   |
|-------------------------------------------------------------------------------------|--------------|--------------------------|------|-----|-----|----|----|-----|-----|-----|------|---|
|                                                                                     |              | 螺距<br>Pitch              | TPI  | R   | X   | Y  | θ° | KTX | KKX | KVX | KW20 |   |
|    | 16ERM 28BSPT | 28                       | 0.10 | 0.6 | 0.6 | 55 |    |     |     | ●   |      |   |
|                                                                                     | 16ERM 19BSPT | 19                       | 0.16 | 0.8 | 0.9 | 55 |    |     |     | ●   |      |   |
|                                                                                     | 16ERM 14BSPT | 14                       | 0.22 | 1.0 | 1.2 | 55 |    |     |     | ●   |      |   |
|                                                                                     | 16ERM 11BSPT | 11                       | 0.29 | 1.1 | 1.5 | 55 |    |     |     | ●   |      |   |
|                                                                                     | 16ER 28BSPT  | 28                       | 0.10 | 0.6 | 0.6 | 55 | ●  | ●   | ●   | ●   |      |   |
|                                                                                     | 16ER 19BSPT  | 19                       | 0.16 | 0.8 | 0.9 | 55 | ●  | ●   | ●   | ●   | ●    |   |
|                                                                                     | 16ER 14BSPT  | 14                       | 0.22 | 1.0 | 1.2 | 55 | ●  | ●   | ●   | ●   | ●    |   |
|  | 16ER 11BSPT  | 11                       | 0.29 | 1.1 | 1.5 | 55 | ●  | ●   | ●   | ●   | ●    |   |
|                                                                                     | 16ELM 28BSPT | 28                       | 0.10 | 0.6 | 0.6 | 55 |    |     |     |     |      |   |
|                                                                                     | 16ELM 19BSPT | 19                       | 0.16 | 0.8 | 0.9 | 55 |    |     |     |     |      |   |
|                                                                                     | 16ELM 14BSPT | 14                       | 0.22 | 1.0 | 1.2 | 55 |    |     |     |     |      |   |
|                                                                                     | 16ELM 11BSPT | 11                       | 0.29 | 1.1 | 1.5 | 55 |    |     |     |     |      |   |
|                                                                                     | 16EL 28BSPT  | 28                       | 0.10 | 0.6 | 0.6 | 55 |    |     |     |     |      |   |
|                                                                                     | 16EL 19BSPT  | 19                       | 0.16 | 0.8 | 0.9 | 55 |    |     |     |     |      |   |
|                                                                                     | 16EL 14BSPT  | 14                       | 0.22 | 1.0 | 1.2 | 55 |    |     |     |     |      |   |
|                                                                                     | 16EL 11BSPT  | 11                       | 0.29 | 1.1 | 1.5 | 55 |    |     |     |     |      |   |
|                                                                                     | 钢 Steel      |                          |      |     |     |    |    |     |     | ★   |      | ★ |
| 不锈钢 Stainless Steel                                                                 |              |                          |      |     |     |    |    |     |     | ★   | ★    |   |
| 铸铁 Cast Iron                                                                        |              |                          |      |     |     |    |    |     | ☆   |     | ☆    |   |
| 有色金属 Nonferrous Metal                                                               |              |                          |      |     |     |    |    |     |     |     |      | ★ |
| 耐热合金 Heat Resistant Alloy                                                           |              |                          |      |     |     |    |    |     |     |     |      |   |
| 淬硬钢 Hardened Steel                                                                  |              |                          |      |     |     |    |    |     |     |     |      |   |

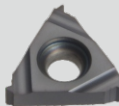
★ 首选Preferred    ☆ 可选optional    ● 标准库存standard stock    ○ 订单生产order production

螺纹刀片  
Thread inserts

55°锥度管螺纹 内螺纹 (BSPT)  
55° Taper pipe thread, Internal thread (BSPT)



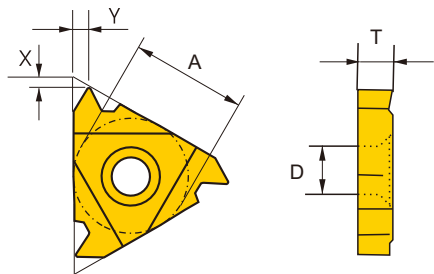
| 型号<br>Model | 尺寸 Size<br>(mm) |      |     |
|-------------|-----------------|------|-----|
|             | A               | T    | D   |
| 11NR..      | 6.35            | 3.18 | 3.0 |
| 16NR..      | 9.525           | 3.68 | 4.0 |

| 刀片外形<br>Insert shape                                                                  | 型号<br>Model  | 尺寸与材质<br>Size and Grades |     |      |     |     |    |     |     |     |      |
|---------------------------------------------------------------------------------------|--------------|--------------------------|-----|------|-----|-----|----|-----|-----|-----|------|
|                                                                                       |              | 螺距<br>Pitch              | TPI | R    | X   | Y   | θ° | KTX | KKX | KVX | KW20 |
|    | 11NRM 28BSPT |                          | 28  | 0.10 | 0.6 | 0.6 | 55 |     |     | ●   |      |
|                                                                                       | 11NRM 19BSPT |                          | 19  | 0.16 | 0.8 | 0.9 | 55 |     |     | ●   |      |
|                                                                                       | 11NRM 14BSPT |                          | 14  | 0.22 | 0.9 | 1.0 | 55 |     |     | ●   |      |
|                                                                                       | 16NRM 14BSPT |                          | 14  | 0.22 | 1.0 | 1.2 | 55 |     |     | ●   |      |
|                                                                                       | 16NRM 11BSPT |                          | 11  | 0.29 | 1.1 | 1.5 | 55 |     |     | ●   |      |
|                                                                                       | 11NR 28BSPT  |                          | 28  | 0.10 | 0.6 | 0.6 | 55 | ●   | ●   | ●   | ●    |
|                                                                                       | 11NR 19BSPT  |                          | 19  | 0.16 | 0.8 | 0.9 | 55 | ●   | ●   | ●   | ●    |
|                                                                                       | 11NR 14BSPT  |                          | 14  | 0.22 | 0.9 | 1.0 | 55 | ●   | ●   | ●   | ●    |
|                                                                                       | 16NR 14BSPT  |                          | 14  | 0.22 | 1.0 | 1.2 | 55 | ●   | ●   | ●   | ●    |
|                                                                                       | 16NR 11BSPT  |                          | 11  | 0.29 | 1.1 | 1.5 | 55 | ●   | ●   | ●   | ●    |
|  | 11NLM 28BSPT |                          | 28  | 0.10 | 0.6 | 0.6 | 55 |     |     |     |      |
|                                                                                       | 11NLM 19BSPT |                          | 19  | 0.16 | 0.8 | 0.9 | 55 |     |     |     |      |
|                                                                                       | 11NLM 14BSPT |                          | 14  | 0.22 | 0.9 | 1.0 | 55 |     |     |     |      |
|                                                                                       | 16NLM 14BSPT |                          | 14  | 0.22 | 1.0 | 1.2 | 55 |     |     |     |      |
|                                                                                       | 16NLM 11BSPT |                          | 11  | 0.29 | 1.1 | 1.5 | 55 |     |     |     |      |
|                                                                                       | 11NL 28BSPT  |                          | 28  | 0.10 | 0.6 | 0.6 | 55 |     |     |     |      |
|                                                                                       | 11NL 19BSPT  |                          | 19  | 0.16 | 0.8 | 0.9 | 55 |     |     |     |      |
|                                                                                       | 11NL 14BSPT  |                          | 14  | 0.22 | 0.9 | 1.0 | 55 |     |     |     |      |
|                                                                                       | 16NL 14BSPT  |                          | 14  | 0.22 | 1.0 | 1.2 | 55 |     |     |     |      |
|                                                                                       | 16NL 11BSPT  |                          | 11  | 0.29 | 1.1 | 1.5 | 55 |     |     |     |      |
| 钢 Steel                                                                               |              |                          |     |      |     |     |    | ★   |     | ★   |      |
| 不锈钢 Stainless Steel                                                                   |              |                          |     |      |     |     |    |     | ★   | ★   |      |
| 铸铁 Cast Iron                                                                          |              |                          |     |      |     |     |    | ☆   |     | ☆   |      |
| 有色金属 Nonferrous Metal                                                                 |              |                          |     |      |     |     |    |     |     |     | ★    |
| 耐热合金 Heat Resistant Alloy                                                             |              |                          |     |      |     |     |    |     | ☆   | ☆   |      |
| 淬硬钢 Hardened Steel                                                                    |              |                          |     |      |     |     |    |     |     |     |      |

★ 首选Preferred    ☆ 可选optional    ● 标准库存standard stock    ○ 订单生产order production

螺纹刀片  
Thread inserts

60°美式锥度管螺纹 外螺纹 (NPT)  
60° American Taper Pipe Thread, NPT



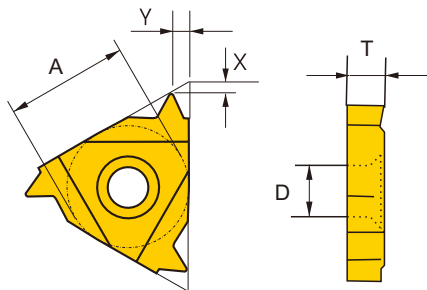
| 型号<br>Model | 尺寸 Size<br>(mm) |      |      |
|-------------|-----------------|------|------|
|             | A               | T    | D    |
| 16ER/L...   | 9.525           | 3.68 | 4.0  |
| 22ER/L...   | 12.70           | 4.9  | 4.85 |

| 刀片外形<br>Insert shape      | 型号<br>Model  | 尺寸与材质<br>Size and Grades |      |      |     |     |    |     |     |     |      |
|---------------------------|--------------|--------------------------|------|------|-----|-----|----|-----|-----|-----|------|
|                           |              | 螺距<br>Pitch              | TPI  | R    | X   | Y   | θ° | KTX | KKX | KVX | KW20 |
|                           | 16ER 18NPT   |                          | 18   | 0.04 | 0.8 | 1.0 | 60 | ●   | ●   | ●   | ●    |
|                           | 16ER 14NPT   |                          | 14   | 0.05 | 0.9 | 1.2 | 60 | ●   | ●   | ●   | ●    |
|                           | 16ER 11.5NPT |                          | 11.5 | 0.06 | 1.1 | 1.5 | 60 | ●   | ●   | ●   | ●    |
|                           |              |                          |      |      |     |     |    |     |     |     |      |
|                           | 16EL 18NPT   |                          | 18   | 0.04 | 0.8 | 1.0 | 60 |     |     |     |      |
|                           | 16EL 14NPT   |                          | 14   | 0.05 | 0.9 | 1.2 | 60 |     |     |     |      |
|                           | 16EL 11.5NPT |                          | 11.5 | 0.06 | 1.1 | 1.5 | 60 |     |     |     |      |
|                           |              |                          |      |      |     |     |    |     |     |     |      |
| 钢 Steel                   |              |                          |      |      |     |     |    | ★   |     | ★   |      |
| 不锈钢 Stainless Steel       |              |                          |      |      |     |     |    |     | ★   | ★   |      |
| 铸铁 Cast Iron              |              |                          |      |      |     |     |    | ☆   |     | ☆   |      |
| 有色金属 Nonferrous Metal     |              |                          |      |      |     |     |    |     |     |     | ★    |
| 耐热合金 Heat Resistant Alloy |              |                          |      |      |     |     |    |     | ☆   | ☆   |      |
| 淬硬钢 Hardened Steel        |              |                          |      |      |     |     |    |     |     |     |      |

★ 首选Preferred    ☆ 可选optional    ● 标准库存standard stock    ○ 订单生产order production

螺纹刀片  
Thread inserts

60°美式锥度管螺纹 内螺纹 (NPT)  
60° American Taper Pipe Thread, INTERNAL thread (NPT)



| 型号<br>Model | 尺寸 Size<br>(mm) |      |      |
|-------------|-----------------|------|------|
|             | A               | T    | D    |
| 16NR/L...   | 9.525           | 3.68 | 4.0  |
| 22NR/L...   | 12.70           | 4.9  | 4.85 |

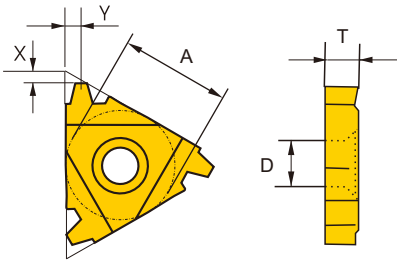
| 刀片外形<br>Insert shape      | 型号<br>Model  | 尺寸与材质<br>Size and Grades |      |      |     |     |    |     |     |     |      |
|---------------------------|--------------|--------------------------|------|------|-----|-----|----|-----|-----|-----|------|
|                           |              | 螺距<br>Pitch              | TPI  | R    | X   | Y   | θ° | KTX | KKX | KVX | KW20 |
|                           | 16NR 18NPT   |                          | 18   | 0.04 | 0.8 | 1.0 | 60 | ●   | ●   | ●   | ●    |
|                           | 16NR 14NPT   |                          | 14   | 0.05 | 0.9 | 1.2 | 60 | ●   | ●   | ●   | ●    |
|                           | 16NR 11.5NPT |                          | 11.5 | 0.06 | 1.1 | 1.5 | 60 | ●   | ●   | ●   | ●    |
|                           |              |                          |      |      |     |     |    |     |     |     |      |
|                           | 16NL 18NPT   |                          | 18   | 0.04 | 0.8 | 1.0 | 60 |     |     |     |      |
|                           | 16NL 14NPT   |                          | 14   | 0.05 | 0.9 | 1.2 | 60 |     |     |     |      |
|                           | 16NL 11.5NPT |                          | 11.5 | 0.06 | 1.1 | 1.5 | 60 |     |     |     |      |
|                           |              |                          |      |      |     |     |    |     |     |     |      |
| 钢 Steel                   |              |                          |      |      |     |     |    | ★   |     | ★   |      |
| 不锈钢 Stainless Steel       |              |                          |      |      |     |     |    |     | ★   | ★   |      |
| 铸铁 Cast Iron              |              |                          |      |      |     |     |    | ☆   |     | ☆   |      |
| 有色金属 Nonferrous Metal     |              |                          |      |      |     |     |    |     |     |     | ★    |
| 耐热合金 Heat Resistant Alloy |              |                          |      |      |     |     |    |     | ☆   | ☆   |      |
| 淬硬钢 Hardened Steel        |              |                          |      |      |     |     |    |     |     |     |      |

★ 首选Preferred    ☆ 可选optional    ● 标准库存standard stock    ○ 订单生产order production



螺纹刀片  
Thread inserts

30°梯形螺纹 外螺纹 (TR)  
30° Trapezoidal thread External thread (TR)



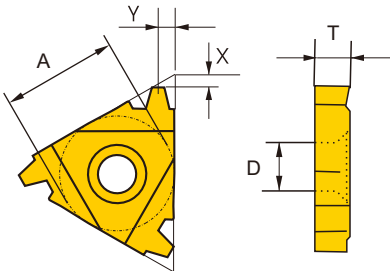
| 型号<br>Model | 尺寸 Size<br>(mm) |      |      |
|-------------|-----------------|------|------|
|             | A               | T    | D    |
| 16ER/L..    | 9.525           | 3.68 | 4.0  |
| 22ER/L..    | 12.70           | 4.9  | 4.85 |

| 刀片外形<br>Insert shape      | 型号<br>Model | 尺寸与材质<br>Size and Grades |     |      |     |     |    |     |     |     |      |
|---------------------------|-------------|--------------------------|-----|------|-----|-----|----|-----|-----|-----|------|
|                           |             | 螺距<br>Pitch              | TPI | R    | X   | Y   | θ° | KTX | KKX | KVX | KW20 |
|                           | 16ER 2.0TR  | 2.0                      |     | 0.20 | 1.1 | 1.3 | 30 | ●   | ●   | ●   | ●    |
|                           | 16ER 3.0TR  | 3.0                      |     | 0.20 | 1.3 | 1.5 | 30 | ●   | ●   | ●   | ●    |
|                           | 22ER 4.0TR  | 4.0                      |     | 0.20 | 1.7 | 1.9 | 30 | ●   |     | ●   | ●    |
|                           | 22ER 5.0TR  | 5.0                      |     | 0.20 | 2.1 | 2.5 | 30 | ●   |     | ●   | ●    |
|                           | 16EL 2.0TR  | 2.0                      |     | 0.20 | 1.1 | 1.3 | 30 |     |     |     |      |
|                           | 16EL 3.0TR  | 3.0                      |     | 0.20 | 1.3 | 1.5 | 30 |     |     |     |      |
|                           | 22EL 4.0TR  | 4.0                      |     | 0.20 | 1.7 | 1.9 | 30 |     |     |     |      |
|                           | 22EL 5.0TR  | 5.0                      |     | 0.20 | 2.1 | 2.5 | 30 |     |     |     |      |
| 钢 Steel                   |             |                          |     |      |     |     |    | ★   |     | ★   |      |
| 不锈钢 Stainless Steel       |             |                          |     |      |     |     |    |     | ★   | ★   |      |
| 铸铁 Cast Iron              |             |                          |     |      |     |     |    | ☆   |     | ☆   |      |
| 有色金属 Nonferrous Metal     |             |                          |     |      |     |     |    |     |     |     | ★    |
| 耐热合金 Heat Resistant Alloy |             |                          |     |      |     |     |    |     | ☆   | ☆   |      |
| 淬硬钢 Hardened Steel        |             |                          |     |      |     |     |    |     |     |     |      |

★ 首选Preferred ☆ 可选optional ● 标准库存standard stock ○ 订单生产order production

螺纹刀片  
Thread inserts

30°梯形螺纹 内螺纹 (TR)  
30° Trapezoidal thread Internal thread (TR)



| 型号<br>Model | 尺寸 Size<br>(mm) |      |      |
|-------------|-----------------|------|------|
|             | A               | T    | D    |
| 16NR/L..    | 9.525           | 3.68 | 4.0  |
| 22NR/L..    | 12.70           | 4.9  | 4.85 |

| 刀片外形<br>Insert shape      | 型号<br>Model | 尺寸与材质<br>Size and Grades |     |      |     |     |    |     |     |     |      |
|---------------------------|-------------|--------------------------|-----|------|-----|-----|----|-----|-----|-----|------|
|                           |             | 螺距<br>Pitch              | TPI | R    | X   | Y   | θ° | KTX | KKX | KVX | KW20 |
|                           | 16NR 2.0TR  | 2.0                      |     | 0.20 | 1.1 | 1.3 | 30 | ●   | ●   | ●   | ●    |
|                           | 16NR 3.0TR  | 3.0                      |     | 0.20 | 1.3 | 1.5 | 30 | ●   | ●   | ●   | ●    |
|                           | 22NR 4.0TR  | 4.0                      |     | 0.20 | 1.7 | 1.9 | 30 | ●   |     | ●   | ●    |
|                           | 22NR 5.0TR  | 5.0                      |     | 0.20 | 2.1 | 2.5 | 30 | ●   |     | ●   | ●    |
|                           | 16NL 2.0TR  | 2.0                      |     | 0.20 | 1.1 | 1.3 | 30 |     |     |     |      |
|                           | 16NL 3.0TR  | 3.0                      |     | 0.20 | 1.3 | 1.5 | 30 |     |     |     |      |
|                           | 22NL 4.0TR  | 4.0                      |     | 0.20 | 1.7 | 1.9 | 30 |     |     |     |      |
|                           | 22NL 5.0TR  | 5.0                      |     | 0.20 | 2.1 | 2.5 | 30 |     |     |     |      |
| 钢 Steel                   |             |                          |     |      |     |     |    | ★   |     | ★   |      |
| 不锈钢 Stainless Steel       |             |                          |     |      |     |     |    |     | ★   | ★   |      |
| 铸铁 Cast Iron              |             |                          |     |      |     |     |    | ☆   |     | ☆   |      |
| 有色金属 Nonferrous Metal     |             |                          |     |      |     |     |    |     |     |     | ★    |
| 耐热合金 Heat Resistant Alloy |             |                          |     |      |     |     |    |     | ☆   | ☆   |      |
| 淬硬钢 Hardened Steel        |             |                          |     |      |     |     |    |     |     |     |      |

★ 首选Preferred ☆ 可选optional ● 标准库存standard stock ○ 订单生产order production

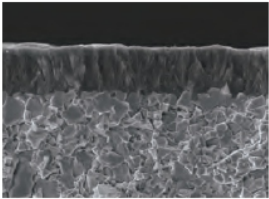
推荐切削条件表  
Recommended Cutting Conditions

| 工件材料<br>Workpiece Materials |                                   |                                  | 布氏硬度<br>HB | 切削速度推荐值Vc(m/min)<br>Recommended Cutting Speed |         |        |        |         |         |         |         |
|-----------------------------|-----------------------------------|----------------------------------|------------|-----------------------------------------------|---------|--------|--------|---------|---------|---------|---------|
|                             |                                   |                                  |            | KTX                                           |         | KKX    |        | KVX     |         | KW20    |         |
|                             |                                   |                                  |            | ER                                            | NR      | ER     | NR     | ER      | NR      | ER      | NR      |
| P                           | 碳素钢<br>Carbon Steel               | 低碳钢<br>C=0.1-0.25%               | 125        | 100-190                                       | 90-180  |        |        | 130-190 | 110-180 |         |         |
|                             |                                   | 中碳钢<br>C=0.25-0.55%              | 150        | 100-170                                       | 90-160  |        |        | 130-170 | 110-160 |         |         |
|                             |                                   | 高碳钢<br>C=0.55-0.85%              | 170        | 80-160                                        | 70-150  |        |        | 110-160 | 100-150 |         |         |
|                             | 合金钢<br>Alloy Steel                | 易车铁                              | 180        | 80-160                                        | 70-150  |        |        | 120-170 | 110-150 |         |         |
|                             |                                   | 淬火钢 HRC=28-40                    |            | 70-130                                        | 60-120  |        |        | 100-150 | 80-120  |         |         |
|                             |                                   | 淬火钢 HRC=41-48                    |            | 60-100                                        | 50-80   |        |        | 80-130  | 60-90   |         |         |
|                             |                                   | 淬火钢 HRC=49-55                    |            | 40-60                                         | 40-60   |        |        | 50-70   | 40-70   |         |         |
|                             | 铸造钢<br>Casting Steel              | 低碳钢<br>Low Carbon Steel          | 200        | 70-140                                        | 70-130  |        |        | 100-180 | 100-160 |         |         |
|                             |                                   | 中碳钢<br>Medium Carbon Steel       | 250        | 60-130                                        | 60-120  |        |        | 90-170  | 90-150  |         |         |
|                             | 锻造钢<br>Forging Steel              | 低碳钢<br>Low Carbon Steel          | 230        | 60-130                                        | 60-120  |        |        | 100-150 | 100-130 |         |         |
|                             |                                   | 中碳钢<br>Medium Carbon Steel       | 280        | 60-120                                        | 60-110  |        |        | 100-130 | 100-120 |         |         |
| M                           | 不锈钢-棒料/锻料<br>Stainless Steel      | 奥氏体<br>Austenite                 | 200        |                                               |         | 80-120 | 60-100 | 100-150 | 80-130  |         |         |
|                             |                                   | 预淬火<br>Pre quenching             | 330        |                                               |         | 60-80  | 50-80  | 70-100  | 70-100  |         |         |
|                             | 不锈钢-棒料/锻料<br>Stainless Steel      | 易车锈钢<br>Easy car stainless steel | 200        |                                               |         | 80-120 | 60-100 | 100-150 | 80-130  |         |         |
|                             |                                   | 预淬火<br>Pre quenching             | 330        |                                               |         | 50-70  | 50-70  | 80-100  | 60-80   |         |         |
|                             | 铁素体/马氏体<br>Ferrite/Martensite     | 淬硬<br>hardened                   | 330        |                                               |         | 60-90  | 50-80  | 60-90   | 50-80   |         |         |
|                             | 不锈钢-棒料/锻料<br>Stainless Steel      | C≥0.05%                          | 230        |                                               |         | 40-60  | 40-60  | 50-70   | 45-70   |         |         |
|                             |                                   | 铁素体/奥氏体<br>Ferrite/Austenite     | 260        |                                               |         | 70-80  | 50-70  | 70-80   | 55-80   |         |         |
|                             | 不锈钢-铸造<br>Stainless Steel Casting | 奥氏体<br>Austenite                 | 200        |                                               |         | 80-120 | 60-100 | 100-150 | 100-130 |         |         |
|                             |                                   | 淬硬                               | 330        |                                               |         | 45-70  | 50-70  | 70-90   | 60-80   |         |         |
|                             | 不锈钢-铸造<br>Stainless Steel Casting | 马氏体<br>Martensite                | 200        |                                               |         | 80-120 | 60-100 | 100-150 | 100-130 |         |         |
|                             |                                   | 铁素体/马氏体<br>Ferrite/Martensite    | 330        |                                               |         | 45-60  | 45-70  | 45-70   | 45-70   |         |         |
|                             | 不锈钢-铸造<br>Stainless Steel Casting | 淬硬                               | 330        |                                               |         | 45-60  | 45-70  | 45-70   | 45-70   |         |         |
|                             |                                   | 铁素体/马氏体<br>Ferrite/Martensite    | 330        |                                               |         | 45-60  | 45-70  | 45-70   | 45-70   |         |         |
|                             | 不锈钢-铸造<br>Stainless Steel Casting | C≥0.05%                          | 230        |                                               |         | 40-60  | 40-65  | 45-70   | 45-70   |         |         |
|                             |                                   | 铁素体/奥氏体<br>Ferrite/Austenite     | 260        |                                               |         | 45-70  | 45-70  | 50-80   | 50-80   |         |         |
| K                           | 灰口铸铁<br>Gray Cast iron            | 铁素体<br>Ferrite                   | 130        | 100-190                                       | 100-180 |        |        | 100-190 | 100-180 |         |         |
|                             |                                   | 球光体<br>Pearlite                  | 230        | 80-150                                        | 80-150  |        |        | 80-150  | 80-150  |         |         |
|                             | 球墨铸铁<br>Nodular Cast iron         | 铁素体<br>Ferrite                   | 180        | 100-160                                       | 90-160  |        |        | 100-160 | 90-160  |         |         |
|                             |                                   | 球光体<br>Pearlite                  | 260        | 100-150                                       | 90-150  |        |        | 100-150 | 90-150  |         |         |
|                             | 可锻铸铁<br>Malleable Cast iron       | 铁素体<br>Ferrite                   | 160        | 110-170                                       | 110-170 |        |        | 110-170 | 110-170 |         |         |
|                             |                                   | 球光体<br>Pearlite                  | 260        | 100-120                                       | 100-120 |        |        | 100-120 | 100-120 |         |         |
| N                           | 铝合金<br>Aluminium Alloys           | 非时效淬硬<br>Non-aging Hardened      | 60         |                                               |         |        |        |         |         | 180-280 | 180-300 |
|                             |                                   | 时效淬硬<br>Aging Hardened           | 100        |                                               |         |        |        |         |         | 100-220 | 100-220 |
|                             |                                   | 高硅合金<br>13-22% Si                | 130        |                                               |         |        |        |         |         | 80-180  | 80-180  |
|                             | 铜和铜合金<br>Copper Alloy             | 黄铜<br>Brass                      | 100        |                                               |         |        |        |         |         | 100-220 | 100-220 |
|                             |                                   | 青铜<br>Bronze                     | 100        |                                               |         |        |        |         |         | 100-220 | 100-220 |
|                             |                                   |                                  |            |                                               |         |        |        |         |         |         |         |

铣削刀片材质简介  
Milling Insert Grades

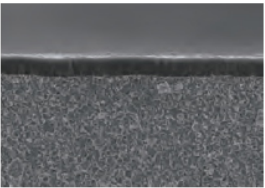
KP1230

高耐磨性晶粒基体与纳米结构的TiAlN涂层完美结合，具有良好的耐磨性和抗崩刃性。  
Nano-structure TiAlN coating on micro-grain carbide, superior wear resistance and fracture resistance



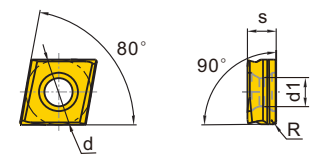
KP1110

高韧性高强度的硬质合金基体结合耐磨的TiAlN涂层，具有良好的韧性和耐磨性，适合中高硬度钢件和铸铁的加工  
The highly hard and thin grained substrate combines with wearing resistance AlTiN coating, it is optimized for impact resistance, suited for mid-high hardness steel and cost iron in milling



刀片材质一览表  
Summary of Insert Grades

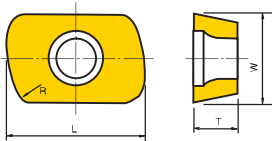
铣削刀片  
Milling inserts  
CTHQ..



| 刀片外形<br>Insert shape      | 型号<br>Model  | 尺寸与材质<br>Size and Grades |       |      |     |        |        |        |        |      |      |
|---------------------------|--------------|--------------------------|-------|------|-----|--------|--------|--------|--------|------|------|
|                           |              | R                        | d     | s    | d1  | KP1110 | KP1230 | KP2220 | KP3220 | KT20 | KW20 |
|                           | CTHQ090508KF | 0.8                      | 9.525 | 5.56 | 4.4 |        | ●      |        | ●      |      |      |
|                           |              |                          |       |      |     |        |        |        |        |      |      |
|                           |              |                          |       |      |     |        |        |        |        |      |      |
|                           |              |                          |       |      |     |        |        |        |        |      |      |
|                           |              |                          |       |      |     |        |        |        |        |      |      |
| 钢 Steel                   |              | ★                        |       |      |     |        |        |        |        |      |      |
| 不锈钢 Stainless Steel       |              | ★                        |       |      |     |        |        |        |        |      |      |
| 铸铁 Cast Iron              |              | ★                        |       |      |     |        |        |        |        |      |      |
| 有色金属 Nonferrous Metal     |              | ★                        |       |      |     |        |        |        |        |      |      |
| 耐热合金 Heat Resistant Alloy |              | ★                        |       |      |     |        |        |        |        |      |      |
| 淬硬钢 Hardened Steel        |              | ★                        |       |      |     |        |        |        |        |      |      |

★首选 ☆可选 ●标准库存 ○订单生产

铣削刀片  
Milling inserts  
EP..



| 刀片外形<br>Insert shape                                                                | 型号<br>Model | 尺寸与材质<br>Size and Grades |    |      |      |        |        |        |      |      |   |
|-------------------------------------------------------------------------------------|-------------|--------------------------|----|------|------|--------|--------|--------|------|------|---|
|                                                                                     |             | R                        | L  | T    | W    | KP1110 | KP1230 | KP2220 | KT20 | KW20 |   |
|  | EPMT0603-8R | 8                        | 10 | 3.18 | 6.35 |        | ●      |        |      |      |   |
|                                                                                     | EPMW0603-8R | 8                        | 10 | 3.18 | 6.35 |        | ●      |        |      |      |   |
|                                                                                     |             |                          |    |      |      |        |        |        |      |      |   |
|                                                                                     |             |                          |    |      |      |        |        |        |      |      |   |
|                                                                                     |             |                          |    |      |      |        |        |        |      |      |   |
| 钢 Steel                                                                             |             |                          |    |      |      |        | ★      | ★      |      | ★    |   |
| 不锈钢 Stainless Steel                                                                 |             |                          |    |      |      |        |        | ★      | ★    | ★    |   |
| 铸铁 Cast Iron                                                                        |             |                          |    |      |      |        |        | ★      |      | ☆    |   |
| 有色金属 Nonferrous Metal                                                               |             |                          |    |      |      |        |        |        |      |      | ★ |
| 耐热合金 Heat Resistant Alloy                                                           |             |                          |    |      |      |        |        |        | ☆    | ☆    |   |
| 淬硬钢 Hardened Steel                                                                  |             |                          |    |      |      |        | ★      |        |      |      |   |

★首选 ☆可选 ●标准库存 ○订单生产

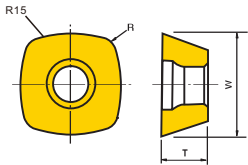
推荐切削条件表  
Recommended Cutting Conditions

| 工件材料<br>Workpiece Materials |                         | 布氏硬度<br>HB | 材质牌号<br>Grade | 切削速度推荐值<br>Recommended Cutting Speed |          |         |
|-----------------------------|-------------------------|------------|---------------|--------------------------------------|----------|---------|
|                             |                         |            |               | Vc(m/min)                            | f(mm/z)  | ap(mm)  |
| P                           | 钢<br>Steel              | <180       | KP1230        | 80-180                               | 0.1-0.25 | 2.0-4.0 |
|                             |                         | 180-280    | KP1230        | 80-180                               | 0.1-0.25 | 2.0-4.0 |
|                             |                         | 280-350    | KP1230        | 80-180                               | 0.1-0.25 | 2.0-4.0 |
| M                           | 不锈钢<br>Stainless Steel  | <270       | KP1230        | 80-180                               | 0.1-0.25 | 2.0-4.0 |
| K                           | 铸铁<br>Cast iron         | 180-250    | KP3220        | 80-180                               | 0.1-0.25 | 2.0-4.0 |
| N                           | 铝合金<br>Aluminium Alloys |            |               |                                      |          |         |
| H                           | 高硬钢<br>Hardness         | HRC50-60   |               |                                      |          |         |

推荐切削条件表  
Recommended Cutting Conditions

| 工件材料<br>Workpiece Materials |                         | 布氏硬度<br>HB | 材质牌号<br>Grade | 切削速度推荐值<br>Recommended Cutting Speed |         |         |
|-----------------------------|-------------------------|------------|---------------|--------------------------------------|---------|---------|
|                             |                         |            |               | Vc(m/min)                            | f(mm/z) | ap(mm)  |
| P                           | 钢<br>Steel              | <180       | KP1230        | 220-280                              | 0.5-1.0 | 0.5-1.5 |
|                             |                         | 180-280    | KP1230        | 220-280                              | 0.5-1.0 | 0.5-1.5 |
|                             |                         | 280-350    | KP1230        | 150-200                              | 0.5-1.0 | 0.5-1.5 |
| M                           | 不锈钢<br>Stainless Steel  | <270       | KP1230        | 100-150                              | 0.3-0.5 | 0.5-1.5 |
| K                           | 铸铁<br>Cast iron         | 180-250    |               |                                      |         |         |
| N                           | 铝合金<br>Aluminium Alloys |            |               |                                      |         |         |
| H                           | 高硬钢<br>Hardness         | HRC50-60   |               |                                      |         |         |

铣削刀片  
Milling inserts  
SDMT..



| 刀片外形<br>Insert shape      | 型号<br>Model   | 尺寸与材质<br>Size and Grades |      |      |        |        |
|---------------------------|---------------|--------------------------|------|------|--------|--------|
|                           |               | R                        | W    | T    | KP1110 | KP1230 |
|                           | SDMT120512-GM | 1.2                      | 12.7 | 5.56 | ●      |        |
|                           |               |                          |      |      |        |        |
|                           |               |                          |      |      |        |        |
|                           |               |                          |      |      |        |        |
| 钢 Steel                   |               |                          |      |      | ★      | ★      |
| 不锈钢 Stainless Steel       |               |                          |      |      |        | ★      |
| 铸铁 Cast Iron              |               |                          |      |      | ★      | ☆      |
| 有色金属 Nonferrous Metal     |               |                          |      |      |        |        |
| 耐热合金 Heat Resistant Alloy |               |                          |      |      | ☆      | ☆      |
| 淬硬钢 Hardened Steel        |               |                          |      |      | ★      |        |

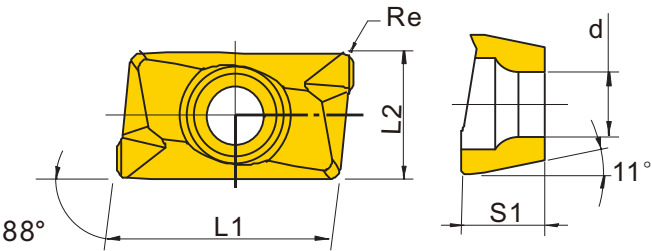
★首选 ☆可选

●标准库存 ○订单生产

推荐切削条件表  
Recommended Cutting Conditions

| 工件材料<br>Workpiece Materials |                         | 布氏硬度<br>HB | 材质牌号<br>Grade | 切削速度推荐值<br>Recommended Cutting Speed |         |         |
|-----------------------------|-------------------------|------------|---------------|--------------------------------------|---------|---------|
|                             |                         |            |               | Vc(m/min)                            | f(mm/z) | ap(mm)  |
| P                           | 钢<br>Steel              | <180       | KP1230        | 150-200                              | 0.8-1.5 | 0.4-2.0 |
|                             |                         | 180-280    | KP1230        | 120-180                              | 0.8-1.5 | 0.4-2.0 |
|                             |                         | 280-350    | KP1230        | 90-140                               | 0.8-1.5 | 0.4-2.0 |
| M                           | 不锈钢<br>Stainless Steel  | <270       | KP1230        | 90-140                               | 0.6-1.0 | 0.4-2.0 |
| K                           | 铸铁<br>Cast iron         | 180-250    | KP1230        | 150-200                              | 0.8-1.5 | 0.4-2.0 |
| N                           | 铝合金<br>Aluminium Alloys |            |               |                                      |         |         |
| H                           | 高硬钢<br>Hardness         | HRC50-60   |               |                                      |         |         |

铣削刀片  
Milling inserts  
APKT..



| 刀片外形<br>Insert shape      | 型号<br>Model     | 尺寸与材质<br>Size and Grades |        |      |      |     |        |
|---------------------------|-----------------|--------------------------|--------|------|------|-----|--------|
|                           |                 | Re                       | L1     | L2   | S1   | d   | KP1110 |
|                           | APKT11T304-PM   | 0.4                      | 12.24  | 6.5  | 3.6  | 2.8 | ●      |
|                           | APKT160408-PM   | 0.8                      | 17.878 | 9.33 | 5.76 | 4.4 | ●      |
|                           | APKT1604PDFR MA | 0.8                      | 17.878 | 9.33 | 5.76 | 4.4 | ●      |
|                           |                 |                          |        |      |      |     |        |
| 钢 Steel                   |                 |                          |        |      |      |     | ★      |
| 不锈钢 Stainless Steel       |                 |                          |        |      |      |     | ★      |
| 铸铁 Cast Iron              |                 |                          |        |      |      |     | ★      |
| 有色金属 Nonferrous Metal     |                 |                          |        |      |      |     |        |
| 耐热合金 Heat Resistant Alloy |                 |                          |        |      |      |     | ☆      |
| 淬硬钢 Hardened Steel        |                 |                          |        |      |      |     | ★      |

★首选Preferred ☆ 可选optional

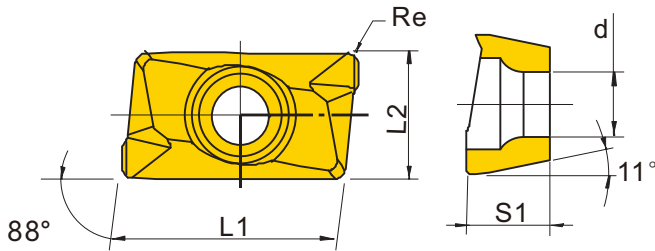
●标准库存standard stock ○ 订单生产order production

推荐切削条件表  
Recommended Cutting Conditions

| 工件材料<br>Workpiece Materials |                         | 布氏硬度<br>Brinell hardness<br>HB | 材质牌号<br>Grade | 切削速度推荐值<br>Recommended Cutting Speed |          |        |
|-----------------------------|-------------------------|--------------------------------|---------------|--------------------------------------|----------|--------|
|                             |                         |                                |               | Vc(m/min)                            | f(mm/z)  | ap(mm) |
| P                           | 钢<br>Steel              | <180                           | KP1230        | 200-360                              | 0.1-0.3  |        |
|                             |                         | 180-280                        | KP1230        | 180-360                              | 0.1-0.3  |        |
|                             |                         | 280-350                        | KP1230        | 160-340                              | 0.1-0.3  |        |
| M                           | 不锈钢<br>Stainless Steel  | <270                           | KP1230        | 110-270                              | 0.1-0.3  |        |
| K                           | 铸铁<br>Cast iron         | 180-250                        | KP1230        | 120-300                              | 0.1-0.3  |        |
| N                           | 铝合金<br>Aluminium Alloys |                                | KW20          | 300                                  | 0.08-0.4 |        |
| H                           | 高硬钢<br>Hardness         | HRC50-60                       |               |                                      |          |        |

铣削刀片  
Milling inserts

APMT..

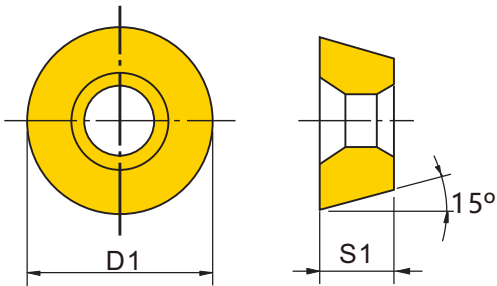


| 刀片外形<br>Insert shape                                                              | 型号<br>Model  | 尺寸与材质<br>Size and Grades |       |      |      |     |        |        |        |      |      |
|-----------------------------------------------------------------------------------|--------------|--------------------------|-------|------|------|-----|--------|--------|--------|------|------|
|                                                                                   |              | Re                       | L1    | L2   | S1   | d   | KP1110 | KP1230 | KP2220 | KT20 | KW20 |
|  | APMT1135PDER | 0.8                      | 11.25 | 6.2  | 3.5  | 2.8 | ●      | ●      |        |      |      |
|                                                                                   | APMT1604PDER | 0.8                      | 17.25 | 9.25 | 4.76 | 4.4 | ●      | ●      |        |      |      |
|                                                                                   |              |                          |       |      |      |     |        |        |        |      |      |
|                                                                                   |              |                          |       |      |      |     |        |        |        |      |      |
|                                                                                   |              |                          |       |      |      |     |        |        |        |      |      |
| 钢 Steel                                                                           |              |                          |       |      |      |     |        | ★      | ★      |      | ★    |
| 不锈钢 Stainless Steel                                                               |              |                          |       |      |      |     |        |        | ★      | ★    |      |
| 铸铁 Cast Iron                                                                      |              |                          |       |      |      |     |        | ★      |        | ☆    |      |
| 有色金属 Nonferrous Metal                                                             |              |                          |       |      |      |     |        |        |        |      | ★    |
| 耐热合金 Heat Resistant Alloy                                                         |              |                          |       |      |      |     |        |        | ☆      | ☆    |      |
| 淬硬钢 Hardened Steel                                                                |              |                          |       |      |      |     |        | ★      |        |      |      |

★ 首选 Preferred    ☆ 可选 optional    ● 标准库存 standard stock    ○ 订单生产 order production

铣削刀片  
Milling inserts

RD..



| 刀片外形<br>Insert shape                                                                | 型号<br>Model | 尺寸与材质<br>Size and Grades |      |  |        |        |        |      |  |      |   |
|-------------------------------------------------------------------------------------|-------------|--------------------------|------|--|--------|--------|--------|------|--|------|---|
|                                                                                     |             | D1                       | S1   |  | KP1110 | KP1230 | KP2220 | KT20 |  | KW20 |   |
|  | RDKW0702MO  | 07                       | 2.38 |  | ●      |        |        |      |  |      |   |
|                                                                                     | RDKW0803MO  | 08                       | 3.18 |  | ●      |        |        |      |  |      |   |
|                                                                                     | RDMW10T3MO  | 10                       | 3.97 |  | ●      | ●      |        |      |  |      |   |
|                                                                                     | RDMW1204MO  | 12                       | 4.76 |  | ●      | ●      |        |      |  |      |   |
|                                                                                     |             |                          |      |  |        |        |        |      |  |      |   |
| 钢 Steel                                                                             |             |                          |      |  | ★      | ★      |        |      |  | ★    |   |
| 不锈钢 Stainless Steel                                                                 |             |                          |      |  |        | ★      | ★      |      |  | ★    |   |
| 铸铁 Cast Iron                                                                        |             |                          |      |  |        | ★      |        |      |  | ☆    |   |
| 有色金属 Nonferrous Metal                                                               |             |                          |      |  |        |        |        |      |  |      | ★ |
| 耐热合金 Heat Resistant Alloy                                                           |             |                          |      |  |        |        | ☆      | ☆    |  |      |   |
| 淬硬钢 Hardened Steel                                                                  |             |                          |      |  | ★      |        |        |      |  |      |   |

★ 首选 Preferred    ☆ 可选 optional    ● 标准库存 standard stock    ○ 订单生产 order production

推荐切削条件表  
Recommended Cutting Conditions

| 工件材料<br>Workpiece Materials |                         | 布氏硬度<br>Brinell hardness<br>HB | 材质牌号<br>Grade | 切削速度推荐值<br>Recommended Cutting Speed |           |        |
|-----------------------------|-------------------------|--------------------------------|---------------|--------------------------------------|-----------|--------|
|                             |                         |                                |               | Vc(m/min)                            | f(mm/z)   | ap(mm) |
| P                           | 钢<br>Steel              | <180                           | KP1230        | 140-250                              | 0.04-0.15 |        |
|                             |                         | 180-280                        | KP1230        | 130-250                              | 0.04-0.15 |        |
|                             |                         | 280-350                        | KP1230        | 110-240                              | 0.04-0.15 |        |
| M                           | 不锈钢<br>Stainless Steel  | <270                           | KP1230        | 80-190                               | 0.04-0.15 |        |
| K                           | 铸铁<br>Cast iron         | 180-250                        | KP1230        | 80-210                               | 0.04-0.15 |        |
| N                           | 铝合金<br>Aluminium Alloys |                                |               |                                      |           |        |
| H                           | 高硬钢<br>Hardness         | HRC50-60                       | KP1110        | 70-120                               |           |        |

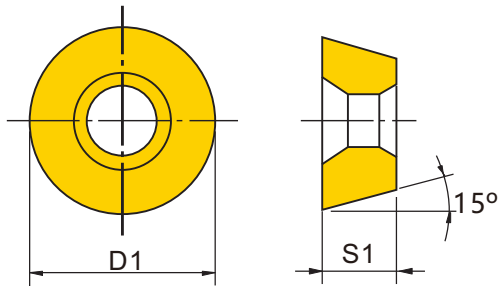
推荐切削条件表  
Recommended Cutting Conditions

| 工件材料<br>Workpiece Materials |                         | 布氏硬度<br>Brinell hardness<br>HB | 材质牌号<br>Grade | 切削速度推荐值<br>Recommended Cutting Speed |          |        |
|-----------------------------|-------------------------|--------------------------------|---------------|--------------------------------------|----------|--------|
|                             |                         |                                |               | Vc(m/min)                            | f(mm/z)  | ap(mm) |
| P                           | 钢<br>Steel              | <180                           | KP1230        | 200-360                              | 0.1-0.45 |        |
|                             |                         | 180-280                        | KP1230        | 180-350                              | 0.1-0.45 |        |
|                             |                         | 280-350                        | KP1230        | 170-340                              | 0.1-0.45 |        |
|                             |                         |                                |               |                                      |          |        |
| M                           | 不锈钢<br>Stainless Steel  | <270                           | KP1230        | 110-270                              | 0.1-0.45 |        |
| K                           | 铸铁<br>Cast iron         | 180-250                        | KP1230        | 120-300                              | 0.1-0.45 |        |
| N                           | 铝合金<br>Aluminium Alloys |                                |               |                                      |          |        |
| H                           | 高硬钢<br>Hardness         | HRC50-60                       | KP1110        | 70-120                               |          |        |



铣削刀片  
Milling inserts

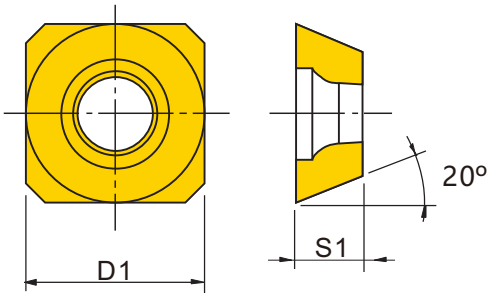
RP..



| 刀片外形<br>Insert shape                                                                  | 型号<br>Model | 尺寸与材质<br>Size and Grades |      |        |        |        |      |      |
|---------------------------------------------------------------------------------------|-------------|--------------------------|------|--------|--------|--------|------|------|
|                                                                                       |             | D1                       | S1   | KP1110 | KP1230 | KP2220 | KT20 | KW20 |
|      | RPMW1003MOE | 10                       | 3.18 |        | ●      |        |      |      |
|                                                                                       | RPMW10T3MOE | 10                       | 3.97 |        | ●      |        |      |      |
|                                                                                       | RPMW1204MOE | 12                       | 4.76 |        | ●      |        |      |      |
|                                                                                       |             |                          |      |        |        |        |      |      |
|                                                                                       |             |                          |      |        |        |        |      |      |
| 钢 Steel                                                                               |             |                          |      |        | ★      | ★      |      | ★    |
| 不锈钢 Stainless Steel                                                                   |             |                          |      |        |        | ★      | ★    | ★    |
| 铸铁 Cast Iron                                                                          |             |                          |      |        |        | ★      |      | ☆    |
| 有色金属 Nonferrous Metal                                                                 |             |                          |      |        |        |        |      | ★    |
| 耐热合金 Heat Resistant Alloy                                                             |             |                          |      |        |        |        | ☆    | ☆    |
| 淬硬钢 Hardened Steel                                                                    |             |                          |      |        | ★      |        |      |      |
| ★ 首选Preferred      ☆ 可选optional      ● 标准库存standard stock      ○ 订单生产order production |             |                          |      |        |        |        |      |      |

铣削刀片  
Milling inserts

SE..



| 刀片外形<br>Insert shape                                                                  | 型号<br>Model     | 尺寸与材质<br>Size and Grades |      |        |        |        |        |      |      |
|---------------------------------------------------------------------------------------|-----------------|--------------------------|------|--------|--------|--------|--------|------|------|
|                                                                                       |                 | D1                       | S1   | KP3220 | KP1110 | KP1230 | KP2220 | KT20 | KW20 |
|    | SEKT1204AFEN-11 | 12.7                     | 4.76 |        |        | ●      |        |      |      |
|                                                                                       | SEHW1204AFSN    | 12.7                     | 4.76 | ●      |        | ●      |        |      |      |
|                                                                                       | SEHT1204AFFN    | 12.7                     | 4.76 |        |        | ●      |        |      | ●    |
|                                                                                       |                 |                          |      |        |        |        |        |      |      |
|                                                                                       |                 |                          |      |        |        |        |        |      |      |
| 钢 Steel                                                                               |                 |                          |      |        | ★      | ★      |        | ★    |      |
| 不锈钢 Stainless Steel                                                                   |                 |                          |      |        |        | ★      | ★      | ★    |      |
| 铸铁 Cast Iron                                                                          |                 |                          |      |        |        |        | ★      | ☆    |      |
| 有色金属 Nonferrous Metal                                                                 |                 |                          |      |        |        |        |        |      | ★    |
| 耐热合金 Heat Resistant Alloy                                                             |                 |                          |      |        |        |        |        | ☆    | ☆    |
| 淬硬钢 Hardened Steel                                                                    |                 |                          |      |        |        | ★      |        |      |      |
| ★ 首选Preferred      ☆ 可选optional      ● 标准库存standard stock      ○ 订单生产order production |                 |                          |      |        |        |        |        |      |      |

推荐切削条件表  
Recommended Cutting Conditions

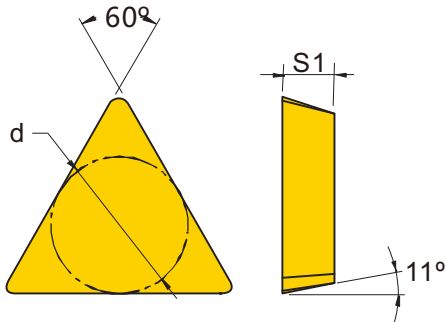
| 工件材料<br>Workpiece Materials |                         | 布氏硬度<br>Brinell hardness<br>HB | 材质牌号<br>Grade | 切削速度推荐值<br>Recommended Cutting Speed |          |        |
|-----------------------------|-------------------------|--------------------------------|---------------|--------------------------------------|----------|--------|
|                             |                         |                                |               | Vc(m/min)                            | f(mm/z)  | ap(mm) |
| P                           | 钢<br>Steel              | <180                           | KP1230        | 200-360                              | 0.1-0.45 |        |
|                             |                         | 180-280                        | KP1230        | 180-350                              | 0.1-0.45 |        |
|                             |                         | 280-350                        | KP1230        | 170-340                              | 0.1-0.45 |        |
| M                           | 不锈钢<br>Stainless Steel  | <270                           | KP1230        | 110-270                              | 0.1-0.45 |        |
| K                           | 铸铁<br>Cast iron         | 180-250                        | KP1230        | 120-300                              | 0.1-0.45 |        |
| N                           | 铝合金<br>Aluminium Alloys |                                |               |                                      |          |        |
| H                           | 高硬钢<br>Hardness         | HRC50-60                       |               |                                      |          |        |

推荐切削条件表  
Recommended Cutting Conditions

| 工件材料<br>Workpiece Materials |                         | 布氏硬度<br>Brinell hardness<br>HB | 材质牌号<br>Grade | 切削速度推荐值<br>Recommended Cutting Speed |         |        |
|-----------------------------|-------------------------|--------------------------------|---------------|--------------------------------------|---------|--------|
|                             |                         |                                |               | Vc(m/min)                            | f(mm/z) | ap(mm) |
| P                           | 钢<br>Steel              | <180                           | KP1230        | 200-360                              | 0.1-0.3 |        |
|                             |                         | 180-280                        | KP1230        | 180-350                              | 0.1-0.3 |        |
|                             |                         | 280-350                        | KP1230        | 170-340                              | 0.1-0.3 |        |
| M                           | 不锈钢<br>Stainless Steel  | <270                           | KP1230        | 110-270                              | 0.1-0.3 |        |
| K                           | 铸铁<br>Cast iron         | 180-250                        | KP1230        | 120-300                              | 0.1-0.3 |        |
| N                           | 铝合金<br>Aluminium Alloys |                                | KW20          | 300                                  | 0.1-0.4 |        |
| H                           | 高硬钢<br>Hardness         | HRC50-60                       |               |                                      |         |        |

铣削刀片  
Milling inserts

TP..



| 刀片外形<br>Insert shape                                                              | 型号<br>Model  | 尺寸与材质<br>Size and Grades |      |        |        |        |      |      |
|-----------------------------------------------------------------------------------|--------------|--------------------------|------|--------|--------|--------|------|------|
|                                                                                   |              | d                        | S1   | KP1110 | KP1230 | KP2220 | KT20 | KW20 |
|  | TPUN160308   | 9.525                    | 3.18 |        | ●      |        |      |      |
|                                                                                   | TPKN1603PDTR | 9.525                    | 3.18 |        | ●      |        |      |      |
|                                                                                   | TPKR1603PDTR | 9.525                    | 3.18 |        | ●      |        |      |      |
|                                                                                   | TPKN2204PDTR | 12.7                     | 4.76 |        | ●      |        |      |      |
|                                                                                   | TPKR2204PDTR | 12.7                     | 4.76 |        | ●      |        |      |      |
|                                                                                   |              |                          |      |        |        |        |      |      |
| 钢 Steel                                                                           |              |                          |      |        | ★      | ★      |      | ★    |
| 不锈钢 Stainless Steel                                                               |              |                          |      |        |        | ★      | ★    |      |
| 铸铁 Cast Iron                                                                      |              |                          |      |        |        | ★      |      | ☆    |
| 有色金属 Nonferrous Metal                                                             |              |                          |      |        |        |        |      | ★    |
| 耐热合金 Heat Resistant Alloy                                                         |              |                          |      |        |        |        | ☆    | ☆    |
| 淬硬钢 Hardened Steel                                                                |              |                          |      |        | ★      |        |      |      |

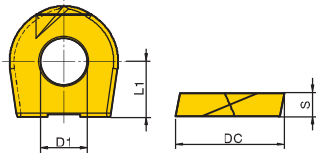
★ 首选 Preferred    ☆ 可选 optional

● 标准库存 standard stock    ○ 订单生产 order production

推荐切削条件表  
Recommended Cutting Conditions

| 工件材料<br>Workpiece Materials |                         | 布氏硬度<br>Brinell hardness<br>HB | 材质牌号<br>Grade | 切削速度推荐值<br>Recommended Cutting Speed |         |        |
|-----------------------------|-------------------------|--------------------------------|---------------|--------------------------------------|---------|--------|
|                             |                         |                                |               | Vc(m/min)                            | f(mm/z) | ap(mm) |
| P                           | 钢<br>Steel              | <180                           | KP1230        | 200-360                              | 0.1-0.3 |        |
|                             |                         | 180-280                        | KP1230        | 180-350                              | 0.1-0.3 |        |
|                             |                         | 280-350                        | KP1230        | 170-340                              | 0.1-0.3 |        |
| M                           | 不锈钢<br>Stainless Steel  | <270                           | KP1230        | 100-250                              | 0.1-0.3 |        |
| K                           | 铸铁<br>Cast iron         | 180-250                        | KP1230        | 120-300                              | 0.1-0.3 |        |
| N                           | 铝合金<br>Aluminium Alloys |                                |               |                                      |         |        |
| H                           | 高硬钢<br>Hardness         | HRC50-60                       |               |                                      |         |        |

铣削刀片  
Milling inserts  
RHB..



| 刀片外形<br>Insert shape                                                                | 型号<br>Model | 尺寸与材质<br>Size and Grades |    |    |     |        |        |        |      |      |   |
|-------------------------------------------------------------------------------------|-------------|--------------------------|----|----|-----|--------|--------|--------|------|------|---|
|                                                                                     |             | DC                       | D1 | L1 | S   | KP1110 | KP1230 | KP2220 | KT20 | KW20 |   |
|  | RHB080      | 8                        | 3  | 4  | 2.0 | ●      |        |        |      |      |   |
|                                                                                     | RHB100      | 10                       | 4  | 5  | 2.5 | ●      |        |        |      |      |   |
|                                                                                     | RHB120      | 12                       | 5  | 6  | 2.5 | ●      |        |        |      |      |   |
|                                                                                     | RHB160      | 16                       | 5  | 6  | 3.0 | ●      |        |        |      |      |   |
|                                                                                     | RHB200      | 20                       | 5  | 6  | 3.0 | ●      |        |        |      |      |   |
|                                                                                     | RHB250      | 25                       | 6  | 9  | 4.0 | ●      |        |        |      |      |   |
| 钢 Steel                                                                             |             |                          |    |    |     |        | ★      | ★      |      | ★    |   |
| 不锈钢 Stainless Steel                                                                 |             |                          |    |    |     |        |        | ★      | ★    | ★    |   |
| 铸铁 Cast Iron                                                                        |             |                          |    |    |     |        |        | ★      |      | ☆    |   |
| 有色金属 Nonferrous Metal                                                               |             |                          |    |    |     |        |        |        |      |      | ★ |
| 耐热合金 Heat Resistant Alloy                                                           |             |                          |    |    |     |        |        |        | ☆    | ☆    |   |
| 淬硬钢 Hardened Steel                                                                  |             |                          |    |    |     |        | ★      |        |      |      |   |

★ 首选    ☆ 可选

● 标准库存    ○ 订单生产

推荐切削条件表  
Recommended Cutting Conditions

| 工件材料<br>Workpiece Materials |                         | 布氏硬度<br>HB | 材质牌号<br>Grade | 切削速度推荐值<br>Recommended Cutting Speed |          |          |
|-----------------------------|-------------------------|------------|---------------|--------------------------------------|----------|----------|
|                             |                         |            |               | Vc(m/min)                            | f(mm/z)  | ap(mm)   |
| P                           | 钢<br>Steel              | <180       | KP1110        | 100-200                              | 0.15-0.3 | 0.8-1.25 |
|                             |                         | 180-280    | KP1110        | 180-350                              | 0.15-0.3 | 0.8-1.25 |
|                             |                         | 280-350    | KP1110        | 180-350                              | 0.15-0.3 | 0.8-1.25 |
| M                           | 不锈钢<br>Stainless Steel  | <270       | KP1110        | 70-150                               | 0.1-0.25 | 0.6-1.0  |
| K                           | 铸铁<br>Cast iron         | 180-250    | KP1110        | 160-300                              | 0.2-0.3  | 1.0-1.8  |
| N                           | 铝合金<br>Aluminium Alloys |            |               |                                      | 0.15-0.3 | 0.4-0.6  |
| H                           | 高硬钢<br>Hardness         | HRC50-60   | KP1110        | 70-120                               |          |          |

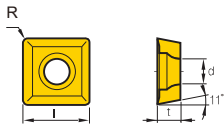
钻削刀片材质简介  
Drilling Insert Grades

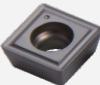
KP2230

高耐磨性晶粒基体与纳米结构的PVD涂层完美结合，具有良好的耐磨性和抗崩刃性。  
Nano-structure PVD coating on micro-grain carbide, superior wear resistance and fracture resistance



钻削刀片  
Drilling inserts  
SPMT..

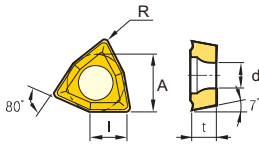


| 刀片外形<br>Insert shape                                                                | 型号<br>Model  | 尺寸与材质<br>Size and Grades |       |      |      |  |  | KP1320 | KP2330 | KW20 |
|-------------------------------------------------------------------------------------|--------------|--------------------------|-------|------|------|--|--|--------|--------|------|
|                                                                                     |              | R                        | l     | t    | d    |  |  |        |        |      |
|  | SPMT050204KM | 0.4                      | 5.3   | 2.4  | 2.3  |  |  |        | ●      |      |
|                                                                                     | SPMT060204KM | 0.4                      | 6.2   | 2.55 | 2.5  |  |  |        | ●      |      |
|                                                                                     | SPMT07T308KM | 0.8                      | 7.2   | 3.99 | 2.8  |  |  |        | ●      |      |
|                                                                                     | SPMT090408KM | 0.8                      | 9.79  | 4.35 | 4.0  |  |  |        | ●      |      |
|                                                                                     | SPMT110408KM | 0.8                      | 11.5  | 4.76 | 4.44 |  |  |        | ●      |      |
|                                                                                     | SPMT140512KM | 1.2                      | 17.23 | 6.45 | 6.87 |  |  |        | ●      |      |
| 钢 Steel                                                                             |              |                          |       |      |      |  |  | ★      | ★      |      |
| 不锈钢 Stainless Steel                                                                 |              |                          |       |      |      |  |  |        | ★      |      |
| 铸铁 Cast Iron                                                                        |              |                          |       |      |      |  |  | ☆      | ☆      |      |
| 有色金属 Nonferrous Metal                                                               |              |                          |       |      |      |  |  |        |        | ★    |
| 耐热合金 Heat Resistant Alloy                                                           |              |                          |       |      |      |  |  |        | ☆      |      |
| 淬硬钢 Hardened Steel                                                                  |              |                          |       |      |      |  |  |        |        |      |
| ★首选   ☆可选   ●标准库存   ○订单生产                                                           |              |                          |       |      |      |  |  |        |        |      |

推荐切削条件表  
Recommended Cutting Conditions

| 工件材料<br>Workpiece Materials |                         | 布氏硬度<br>HB | 切削速度推荐值<br>Recommended Cutting Speed |                          |                          |                          |                          |
|-----------------------------|-------------------------|------------|--------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
|                             |                         |            | Vc(m/min)                            | D16.0-D25.4<br>f(mm/rev) | D26.0-D30.0<br>f(mm/rev) | D31.0-D41.3<br>f(mm/rev) | D42.0-D80.0<br>f(mm/rev) |
| P                           | 钢<br>Steel              | <180       | 100-250                              | 0.04-0.12                | 0.09-0.19                | 0.11-0.20                | 0.14-0.25                |
|                             |                         | 180-280    | 90-250                               | 0.08-0.12                | 0.09-0.16                | 0.11-0.20                | 0.14-0.22                |
|                             |                         | 280-350    | 100-200                              | 0.08-0.12                | 0.09-0.18                | 0.11-0.22                | 0.14-0.25                |
| M                           | 不锈钢<br>Stainless Steel  | <270       | 150-220                              | 0.08-0.12                | 0.08-0.15                | 0.08-0.15                | 0.09-0.16                |
| K                           | 铸铁<br>Cast iron         | 180-250    | 80-180                               | 0.09-0.15                | 0.11-0.19                | 0.12-0.20                | 0.18-0.30                |
| N                           | 铝合金<br>Aluminium Alloys |            |                                      |                          |                          |                          |                          |
| H                           | 高硬钢<br>Hardness         | 250-400    | 90-200                               | 0.08-0.12                | 0.08-0.15                | 0.11-0.17                | 0.11-0.20                |

钻削刀片  
Drilling inserts  
WCMX..



| 刀片外形<br>Insert shape      | 型号<br>Model  | 尺寸与材质<br>Size and Grades |     |      |       |     | KP1320 | KP2330 | KW20 |
|---------------------------|--------------|--------------------------|-----|------|-------|-----|--------|--------|------|
|                           |              | R                        | l   | t    | A     | d   |        |        |      |
|                           | WCMX030208KM | 0.8                      | 3.8 | 2.38 | 5.56  | 2.5 |        | ●      |      |
|                           | WCMX040208KM | 0.8                      | 4.3 | 2.38 | 6.35  | 2.8 |        | ●      |      |
|                           | WCMX050308KM | 0.8                      | 5.4 | 3.18 | 7.94  | 3.4 |        | ●      |      |
|                           | WCMX06T308KM | 0.8                      | 6.5 | 3.97 | 9.525 | 4.4 |        | ●      |      |
|                           | WCMX080412KM | 1.2                      | 8.7 | 4.76 | 12.7  | 5.5 |        | ●      |      |
|                           |              |                          |     |      |       |     |        |        |      |
| 钢 Steel                   |              |                          |     |      |       |     | ★      | ★      |      |
| 不锈钢 Stainless Steel       |              |                          |     |      |       |     |        | ★      |      |
| 铸铁 Cast Iron              |              |                          |     |      |       |     | ☆      | ☆      |      |
| 有色金属 Nonferrous Metal     |              |                          |     |      |       |     |        |        | ★    |
| 耐热合金 Heat Resistant Alloy |              |                          |     |      |       |     |        | ☆      |      |
| 淬硬钢 Hardened Steel        |              |                          |     |      |       |     |        |        |      |

★首选 ☆可选 ●标准库存 ○订单生产

推荐切削条件表  
Recommended Cutting Conditions

| 工件材料<br>Workpiece Materials |                         | 布氏硬度<br>HB | 切削速度推荐值<br>Recommended Cutting Speed |                          |                          |                          |                          |
|-----------------------------|-------------------------|------------|--------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
|                             |                         |            | Vc(m/min)                            | D16.0-D25.4<br>f(mm/rev) | D26.0-D30.0<br>f(mm/rev) | D31.0-D41.3<br>f(mm/rev) | D42.0-D80.0<br>f(mm/rev) |
| P                           | 钢<br>Steel              | <180       | 100-250                              | 0.04-0.12                | 0.09-0.19                | 0.11-0.20                | 0.14-0.25                |
|                             |                         | 180-280    | 90-250                               | 0.08-0.12                | 0.09-0.16                | 0.11-0.20                | 0.14-0.22                |
|                             |                         | 280-350    | 100-200                              | 0.08-0.12                | 0.09-0.18                | 0.11-0.22                | 0.14-0.25                |
| M                           | 不锈钢<br>Stainless Steel  | <270       | 150-220                              | 0.08-0.12                | 0.08-0.15                | 0.08-0.15                | 0.09-0.16                |
| K                           | 铸铁<br>Cast iron         | 180-250    | 80-180                               | 0.09-0.15                | 0.11-0.19                | 0.12-0.20                | 0.18-0.30                |
| N                           | 铝合金<br>Aluminium Alloys |            |                                      |                          |                          |                          |                          |
| H                           | 高硬钢<br>Hardness         | 250-400    | 90-200                               | 0.08-0.12                | 0.08-0.15                | 0.11-0.17                | 0.11-0.20                |

SI 单位换算表  
SI Unit Conversion Table

■ 粗线表格灰色部分即SI单位  
Bold lined units marked with gray background are SI Units

力  
Force

| N                  | Kgf                      | dyn                     |
|--------------------|--------------------------|-------------------------|
| 1                  | 1.01972X10 <sup>-1</sup> | 1X10 <sup>5</sup>       |
| 9.080665           | 1                        | 9.80665X10 <sup>5</sup> |
| 1X10 <sup>-5</sup> | 1.01972X10 <sup>-6</sup> | 1                       |

应力  
Stress

1pa=1N/m<sup>2</sup>, 1Mpa=1N/mm<sup>2</sup>

| Pa or N/m <sup>2</sup>  | MPa or N/mm <sup>2</sup> | kgf/mm <sup>2</sup>      | kgf/cm <sup>2</sup>      | kgf/m <sup>2</sup>       |
|-------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 1                       | 1X10 <sup>-6</sup>       | 1.01972X10 <sup>-7</sup> | 1.01972X10 <sup>-5</sup> | 1.01972X10 <sup>-1</sup> |
| 1X10 <sup>6</sup>       | 1                        | 1.01972X10 <sup>1</sup>  | 1.01972X10               | 1.01972X10 <sup>5</sup>  |
| 9.80665X10 <sup>6</sup> | 9.80665                  | 1                        | 1X10 <sup>2</sup>        | 1X10 <sup>6</sup>        |
| 9.80665X10 <sup>4</sup> | 9.80665X10 <sup>-2</sup> | 1X10 <sup>-2</sup>       | 1                        | 1X10 <sup>4</sup>        |
| 9.80665                 | 9.80665X10 <sup>-6</sup> | 1X10 <sup>-6</sup>       | 1X10 <sup>-4</sup>       | 1                        |

压力  
Pressure

1pa=1N/m<sup>2</sup>

| Pa                      | Kpa                | Mpa                      | Bar                      | kgf/cm <sup>2</sup>      |
|-------------------------|--------------------|--------------------------|--------------------------|--------------------------|
| 1                       | 1X10 <sup>-3</sup> | 1X10 <sup>-6</sup>       | 1X10 <sup>-5</sup>       | 1.01972X10 <sup>-5</sup> |
| 1X10 <sup>3</sup>       | 1                  | 1X10 <sup>-3</sup>       | 1X10 <sup>-2</sup>       | 1.01972X10 <sup>-2</sup> |
| 1X10 <sup>6</sup>       | 1X10 <sup>3</sup>  | 1                        | 1X10                     | 1.01972X10               |
| 1X10 <sup>5</sup>       | 1X10 <sup>2</sup>  | 1X10 <sup>-1</sup>       | 1                        | 1.01972                  |
| 9.80665X10 <sup>4</sup> | 9.80665X10         | 9.80665X10 <sup>-2</sup> | 9.80665X10 <sup>-1</sup> | 1                        |

■ JIS  
Extracted from JIS Handbook"steel"

硬度换算表

Hardness Conversion Table

| 韦氏硬度<br>Vickers<br>Hardness<br>(HV) | 布式硬度<br>Brinell Hardness (HB) |                                     | 洛式硬度<br>Rockwell Hardness                                                      |                                                                                         |                                                                  | Shore<br>Hardness<br>(HS) | Tensile<br>Strength<br>Mpa* |
|-------------------------------------|-------------------------------|-------------------------------------|--------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|------------------------------------------------------------------|---------------------------|-----------------------------|
|                                     | 标准球<br>Standard<br>Ball       | 碳化钨球<br>Tungsten<br>Carbide<br>Ball | A量规<br>荷重60KGgf金钢石<br>圆锥压子<br>A Scale Load:<br>60kgf Diamond<br>point<br>(HRA) | B<br>100Kgf, 1.6mm<br>(1/16 in),球HRB<br>B Scale Load: 100kgf<br>1.6mm Dia.Ball<br>(HRB) | C<br>150kgf HRC<br>C Scale Load:150kgf<br>Diamond Point<br>(HRC) |                           |                             |
| 940                                 | -                             | -                                   | 85.6                                                                           | -                                                                                       | 68.0                                                             | 97                        | -                           |
| 920                                 | -                             | -                                   | 85.3                                                                           | -                                                                                       | 67.5                                                             | 96                        | -                           |
| 900                                 | -                             | -                                   | 85.0                                                                           | -                                                                                       | 67.0                                                             | 95                        | -                           |
| 880                                 | -                             | 767                                 | 84.7                                                                           | -                                                                                       | 66.4                                                             | 93                        | -                           |
| 860                                 | -                             | 757                                 | 84.4                                                                           | -                                                                                       | 65.9                                                             | 92                        | -                           |
| 840                                 | -                             | 745                                 | 84.1                                                                           | -                                                                                       | 65.3                                                             | 91                        | -                           |
| 820                                 | -                             | 733                                 | 83.8                                                                           | -                                                                                       | 64.7                                                             | 90                        | -                           |
| 800                                 | -                             | 722                                 | 83.4                                                                           | -                                                                                       | 64.0                                                             | 88                        | -                           |
| 780                                 | -                             | 710                                 | 83.0                                                                           | -                                                                                       | 63.3                                                             | 87                        | -                           |
| 760                                 | -                             | 698                                 | 82.6                                                                           | -                                                                                       | 62.5                                                             | 86                        | -                           |
| 740                                 | -                             | 684                                 | 82.2                                                                           | -                                                                                       | 61.8                                                             | 84                        | -                           |
| 720                                 | -                             | 670                                 | 81.8                                                                           | -                                                                                       | 61.0                                                             | 83                        | -                           |
| 700                                 | -                             | 656                                 | 81.3                                                                           | -                                                                                       | 60.1                                                             | 81                        | -                           |
| 690                                 | -                             | 647                                 | 81.1                                                                           | -                                                                                       | 59.7                                                             | -                         | -                           |
| 680                                 | -                             | 638                                 | 80.8                                                                           | -                                                                                       | 59.2                                                             | 80                        | -                           |
| 670                                 | -                             | 630                                 | 80.6                                                                           | -                                                                                       | 58.8                                                             | -                         | -                           |
| 660                                 | -                             | 620                                 | 80.3                                                                           | -                                                                                       | 58.3                                                             | 79                        | -                           |
| 650                                 | -                             | 611                                 | 80.0                                                                           | -                                                                                       | 57.8                                                             | -                         | -                           |
| 640                                 | -                             | 601                                 | 79.8                                                                           | -                                                                                       | 57.3                                                             | 77                        | -                           |
| 630                                 | -                             | 591                                 | 79.5                                                                           | -                                                                                       | 56.8                                                             | -                         | -                           |
| 620                                 | -                             | 582                                 | 79.2                                                                           | -                                                                                       | 56.3                                                             | 75                        | -                           |
| 610                                 | -                             | 573                                 | 78.9                                                                           | -                                                                                       | 55.7                                                             | -                         | -                           |
| 600                                 | -                             | 564                                 | 78.6                                                                           | -                                                                                       | 55.2                                                             | 74                        | -                           |
| 590                                 | -                             | 554                                 | 78.4                                                                           | -                                                                                       | 54.7                                                             | -                         | 2055                        |
| 580                                 | -                             | 545                                 | 78.0                                                                           | -                                                                                       | 54.1                                                             | 72                        | 2020                        |
| 570                                 | -                             | 535                                 | 77.8                                                                           | -                                                                                       | 53.6                                                             | -                         | 1985                        |
| 560                                 | -                             | 525                                 | 77.4                                                                           | -                                                                                       | 53.0                                                             | 71                        | 1950                        |
| 550                                 | -                             | 517                                 | 77.0                                                                           | -                                                                                       | 52.3                                                             | -                         | 1905                        |
| 540                                 | -                             | 507                                 | 76.7                                                                           | -                                                                                       | 51.7                                                             | 69                        | 1860                        |
| 530                                 | -                             | 497                                 | 76.4                                                                           | -                                                                                       | 51.1                                                             | -                         | 1825                        |
| 520                                 | -                             | 488                                 | 76.1                                                                           | -                                                                                       | 50.5                                                             | 67                        | 1795                        |
| 510                                 | -                             | 479                                 | 75.7                                                                           | -                                                                                       | 49.8                                                             | -                         | 1750                        |
| 500                                 | -                             | 471                                 | 75.3                                                                           | -                                                                                       | 49.1                                                             | 66                        | 1705                        |
| 490                                 | -                             | 460                                 | 74.9                                                                           | -                                                                                       | 48.4                                                             | -                         | 1660                        |
| 480                                 | -                             | 452                                 | 74.5                                                                           | -                                                                                       | 47.7                                                             | 64                        | 1620                        |
| 470                                 | -                             | 442                                 | 74.1                                                                           | -                                                                                       | 46.9                                                             | -                         | 1570                        |
| 460                                 | -                             | 433                                 | 73.6                                                                           | -                                                                                       | 46.1                                                             | 62                        | 1530                        |
| 450                                 | -                             | 425                                 | 73.3                                                                           | -                                                                                       | 45.3                                                             | -                         | 1495                        |
| 440                                 | -                             | 415                                 | 72.8                                                                           | -                                                                                       | 44.5                                                             | 59                        | 1460                        |
| 430                                 | -                             | 405                                 | 72.3                                                                           | -                                                                                       | 43.6                                                             | -                         | 1410                        |
| 420                                 | -                             | 397                                 | 71.8                                                                           | -                                                                                       | 42.7                                                             | 57                        | 1370                        |
| 410                                 | -                             | 288                                 | 71.4                                                                           | -                                                                                       | 41.8                                                             | -                         | 1330                        |
| 400                                 | -                             | 379                                 | 70.8                                                                           | -                                                                                       | 40.8                                                             | 55                        | 1290                        |
| 390                                 | -                             | 369                                 | 70.3                                                                           | -                                                                                       | 39.8                                                             | -                         | 1240                        |
| 380                                 | -                             | 360                                 | 69.8                                                                           | (110.0)                                                                                 | 38.8                                                             | 52                        | 1205                        |
| 370                                 | -                             | 350                                 | 69.2                                                                           | -                                                                                       | 37.7                                                             | -                         | 1170                        |
| 360                                 | -                             | 341                                 | 68.7                                                                           | (109.0)                                                                                 | 36.6                                                             | 50                        | 1130                        |
| 350                                 | -                             | 331                                 | 68.1                                                                           | -                                                                                       | 35.5                                                             | -                         | 1095                        |
| 340                                 | -                             | 322                                 | 67.6                                                                           | (108.0)                                                                                 | 34.4                                                             | 47                        | 1070                        |
| 330                                 | -                             | 313                                 | 67.0                                                                           | -                                                                                       | 33.3                                                             | -                         | 1035                        |

硬度换算表

Hardness Conversion Table

| 韦氏硬度<br>Vickers<br>Hardness<br>(HV) | 布式硬度<br>Brinell Hardness (HB) |                                     | 洛式硬度<br>Rockwell Hardness                                                      |                                                                                         |                                                                  | Shore<br>Hardness<br>(HS) | Tensile<br>Strength<br>Mpa* |
|-------------------------------------|-------------------------------|-------------------------------------|--------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|------------------------------------------------------------------|---------------------------|-----------------------------|
|                                     | 标准球<br>Standard<br>Ball       | 碳化钨球<br>Tungsten<br>Carbide<br>Ball | A量规<br>荷重60KGgf金钢石<br>圆锥压子<br>A Scale Load:<br>60kgf Diamond<br>point<br>(HRA) | B<br>100Kgf, 1.6mm<br>(1/16 in),球HRB<br>B Scale Load: 100kgf<br>1.6mm Dia.Ball<br>(HRB) | C<br>150kgf HRC<br>C Scale Load:150kgf<br>Diamond Point<br>(HRC) |                           |                             |
| 320                                 | 303                           | 303                                 | 66.4                                                                           | (107.0)                                                                                 | 32.2                                                             | 45                        | 1005                        |
| 310                                 | 294                           | 294                                 | 65.8                                                                           | -                                                                                       | 31                                                               | -                         | 980                         |
| 300                                 | 284                           | 284                                 | 65.2                                                                           | -105.5                                                                                  | 29.8                                                             | 42                        | 950                         |
| 295                                 | 280                           | 280                                 | 64.8                                                                           | -                                                                                       | 29.2                                                             | -                         | 935                         |
| 290                                 | 275                           | 275                                 | 64.5                                                                           | -104.5                                                                                  | 28.5                                                             | 41                        | 915                         |
| 285                                 | 270                           | 270                                 | 64.2                                                                           | -                                                                                       | 27.8                                                             | -                         | 905                         |
| 280                                 | 265                           | 265                                 | 63.8                                                                           | 103.5                                                                                   | 27.1                                                             | 40                        | 890                         |
| 275                                 | 261                           | 261                                 | 63.5                                                                           | -                                                                                       | 26.4                                                             | -                         | 875                         |
| 270                                 | 256                           | 256                                 | 63.1                                                                           | 102                                                                                     | 25.6                                                             | 38                        | 855                         |
| 265                                 | 252                           | 252                                 | 62.7                                                                           | -                                                                                       | 24.8                                                             | -                         | 840                         |
| 260                                 | 247                           | 247                                 | 62.4                                                                           | (101.0)                                                                                 | 24.0                                                             | 37                        | 825                         |
| 255                                 | 243                           | 243                                 | 62.0                                                                           | -                                                                                       | 23.1                                                             | -                         | 805                         |
| 250                                 | 238                           | 238                                 | 61.6                                                                           | 99.5                                                                                    | 22.2                                                             | 36                        | 795                         |
| 245                                 | 233                           | 233                                 | 61.2                                                                           | -                                                                                       | 21.3                                                             | -                         | 780                         |
| 240                                 | 228                           | 228                                 | 60.7                                                                           | 98.1                                                                                    | 20.3                                                             | 34                        | 765                         |
| 230                                 | 219                           | 219                                 | -                                                                              | 96.7                                                                                    | (18.0)                                                           | 33                        | 730                         |
| 220                                 | 209                           | 209                                 | -                                                                              | 95.0                                                                                    | (15.7)                                                           | 32                        | 695                         |
| 210                                 | 200                           | 200                                 | -                                                                              | 93.4                                                                                    | (13.4)                                                           | 30                        | 670                         |
| 200                                 | 190                           | 190                                 | -                                                                              | 91.5                                                                                    | (11.0)                                                           | 29                        | 635                         |
| 190                                 | 181                           | 181                                 | -                                                                              | 89.5                                                                                    | (8.5)                                                            | 28                        | 605                         |
| 180                                 | 171                           | 171                                 | -                                                                              | 87.1                                                                                    | (6.0)                                                            | 26                        | 580                         |
| 170                                 | 162                           | 162                                 | -                                                                              | 85.0                                                                                    | (3.0)                                                            | 25                        | 545                         |
| 160                                 | 152                           | 152                                 | -                                                                              | 81.7                                                                                    | (0.0)                                                            | 24                        | 515                         |
| 150                                 | 143                           | 143                                 | -                                                                              | 78.7                                                                                    | -                                                                | 22                        | 490                         |
| 140                                 | 133                           | 133                                 | -                                                                              | 75.0                                                                                    | -                                                                | 21                        | 455                         |
| 130                                 | 124                           | 124                                 | -                                                                              | 71.2                                                                                    | -                                                                | 20                        | 425                         |
| 120                                 | 114                           | 114                                 | -                                                                              | 66.7                                                                                    | -                                                                | -                         | 390                         |
| 110                                 | 105                           | 105                                 | -                                                                              | 62.3                                                                                    | -                                                                | -                         | -                           |
| 100                                 | 95                            | 95                                  | -                                                                              | 56.2                                                                                    | -                                                                | -                         | -                           |
| 95                                  | 90                            | 90                                  | -                                                                              | 52.0                                                                                    | -                                                                | -                         | -                           |
| 90                                  | 86                            | 86                                  | -                                                                              | 48.0                                                                                    | -                                                                | -                         | -                           |
| 85                                  | 81                            | 81                                  | -                                                                              | 41.0                                                                                    | -                                                                | -                         | -                           |

■ 此表摘录自 JIS 钢铁手册 (SAE J417)

注 (1) 1MPa=1N/mm<sup>2</sup>

(2) 表中( )内值不是实际使用值,仅做参考使用

Extracted from JIS Handbook "Iron & Steel" (SAE J 417)

Note(1)1MPa=1N/mm<sup>2</sup>

(2)Value in ( ) is not in practical use, but reference only



表面粗糙度

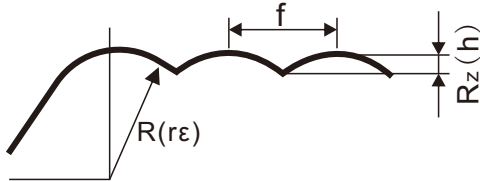
Surface Roughness

理论（几何）表面粗糙度

Theoretical(Geometrical) surface Roughness

$$-R_z[h]=\frac{f^2}{8XR[r\epsilon]}\times 1,000$$

- $R_z(h)$ :理论表面粗糙度 Theoretical Surface Roughness(um)
- $f$ :每旋转一周的进给量Feed Rare(mm/rev)
- $R(r\epsilon)$ :刀尖圆弧半径Corner Radius of Insert (mm)



表面粗糙度的计算方法

How to Obtain Surface Roughness Values

| 种类<br>Type                             | 记号<br>Symbol | 计算方法<br>How to obtain                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 说明图<br>Explanation                                                                                                                                                                                                                                                                                                 |
|----------------------------------------|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 最大粗糙度<br>Max.Height Roughness          | $R_z$        | 从粗曲线上沿平均线方向选取基准长度 (l) ,<br>在这部分中的最高峰高度与最低谷深度的和以微米表示的值,<br>这个就是Ry值。<br>$R_z=R_p+R_v$<br>Ry is a mean value in micron meter obtained from the distance of the highest peaks and the lowest valleys within the range of sampled reference lengths( l ) in the direction of the center line of the roughness curve.<br>$R_z=R_p+R_v$                                                                                                                                       |                                                                                                                                                                                                                                                                                                                    |
| 十点平均粗糙度<br>Ten Points Mean Roughness   | $R_{zJS}$    | 从粗曲线上沿平均线方向选取基准长度 (l) , 在此长度中,<br>分别计算5个最高峰的平均值 (YP)<br>和5个最低谷的平均值 (YV) 。然后相加, 以微米表示,<br>就得到RZ值。<br>$RZ_{JIS}=\frac{(Yp1+Yp2+Yp3+Yp4+Yp5)+(Yv1+Yv2+Yv3+Yv4+Yv5)}{5}$<br>Rz is a mean value in micron meter obtained from the distance of 5 highest peaks (YP) and the 5 lowest valleys (YV) measured from the center line of the roughness curve within the range of sampled reference length( l )<br>$RZ_{JIS}=\frac{(Yp1+Yp2+Yp3+Yp4+Yp5)+(Yv1+Yv2+Yv3+Yv4+Yv5)}{5}$ | <p>Yp1,Yp2,Yp3,Yp4,Yp5:<br/>基准长度 (l) 内的5个最高峰到中心线距离的和<br/>Distance from the mean line to highest 5 peaks in the range of sampled reference length(l)<br/>Yv1,Yv2,Yv3,Yv4,Yv5:<br/>在基准长度 (l) 内的5个最低谷到中心线距离的和<br/>Distance from the mean line to the lowest 5 valleys in the range of sampled reference length(l)</p> |
| 算术平均粗糙度<br>Arithmetical Mean Roughness | $R_a$        | 从粗曲线上沿平均线方向选取基准长度 (l) ,<br>把中心线方向看出X轴方向, 与其垂直的为Y轴方向。<br>若粗曲线可以有方程y=f(x)表示,<br>则以微米表示RA值可以由以下<br>方程式求出。<br>$Ra=\frac{1}{l}\int_0^l f(x) dx$<br>Ra is obtained from the following formula inmicron meter,<br>the roughness curve is expressed by y=f(x),the X-axis is in the direction of the center line and the Y-axis is the vertical magnification of the roughness curve in the range of sampled reference lengths( l ).<br>$Ra=\frac{1}{l}\int_0^l f(x) dx$        |                                                                                                                                                                                                                                                                                                                    |

与三角记号的关系

Relationship with Triangle Symbol

| 算术平均粗糙度<br>Arithmetical Mean Roughness<br>$R_a(\mu m)$ | 最大粗糙度<br>Max.Height Roughness<br>$R_z(\mu m)$ | 十点平均粗糙度<br>Ten Points Mean Roughness<br>$R_{zJIS}(\mu m)$ | 三角记号<br>Triangle Note |
|--------------------------------------------------------|-----------------------------------------------|-----------------------------------------------------------|-----------------------|
| 0.025<br>0.05<br>0.1<br>0.2                            | 0.1<br>0.2<br>0.3<br>0.4<br>0.8               | 0.1<br>0.2<br>0.4<br>0.8                                  |                       |
| 0.4<br>0.8<br>1.6                                      | 1.6<br>3.2<br>6.3                             | 1.6<br>3.2<br>6.3                                         |                       |
| 3.2<br>6.3                                             | 12.5<br>25                                    | 12.5<br>25                                                |                       |
| 12.5<br>25                                             | 50<br>100                                     | 50<br>100                                                 |                       |

JIS标准记号的表示例

Indication in JIS Standard

| Ra的记号表示例<br>Example of Ra Indication                                                                                                                                                                                                                  | Rz的记号表示例<br>Example of Rz Indication                                                                                                                                                                                                                                                                                               |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ①仅表示上限的场合<br>(上限为6.3umRa时)<br>When indication the upper limit only<br>(when upper limit is 6.3umRa)<br>②表示上限和下限的场合<br>( 上限为6.3umRa、下限为1.6umRa时)<br>When indication both lower and upper limit<br>(when upper limit is 6.3umRa,lower limit is 1.6umRa) | ①仅表示上限的场合, 在参数记号<br>后面列出表面粗糙度<br>When indication upper limit only indicate<br>surface roughness following the parameter symbol.<br>②表示上限和下限的场合, 在参数<br>记号后面, 按照“上限~下限”的<br>形式表示表面粗糙度。<br>When indication both lower and upper limit indication surface<br>roughness as (upper limit ~lower limit) following the paramenter symbol. |

请注意Ra和Rz的表示方式各不相同

Note:The indications of  $R_a$  and  $R_z$  are different.

■ 使用表面粗糙度标记的注意事项

Surface Roughness Symbol Caution

以上资料是根据 JIS B 0601-2001编制的。

为了与ISO标准一致, 从JIS B 0601-2001版开始, 变更为右表的记号。

The above information is based on JIS B 0601-2001.

However,some symbols were revised as shown in the right table in accordance with ISO standard from JIS B 0601-2001 version.

| 种类<br>Type                                | 记号Symbol<br>(JIS B 0601-1994) | 记号Symbol<br>(JIS B 0601-2001) |
|-------------------------------------------|-------------------------------|-------------------------------|
| 最大粗糙度<br>Max.Height<br>Roughness          | $R_y$                         | $R_z$                         |
| 十点平均粗糙度<br>Ten Points<br>Mean Roughness   | $R_z$                         | $(R_{zjis})$                  |
| 算术平均粗糙度<br>Arithmetical Mean<br>Roughness | $R_a$                         | $R_a$                         |

## 车削加工的计算公式 Basic Formylas of Turning

### 所需功率 Power Requirement

$$P_C = \frac{K_s X V_c X a_p X f}{6120 X \eta}$$

$$P_{HP} = \frac{K_s X V_c X a_p X f}{4500 X \eta}$$

### 切削速度 Cutting Speed

$$V_c = \frac{\pi X D_m X n}{1000}$$

### 表面粗糙度 Surface Roughness

$$R_z = h = \frac{f^2}{8 X R(\gamma \epsilon)} X 1000$$

- $P_C$ : 所需功率 Power Requirement(KW)
- $P_{HP}$ : 所需功率 Power Requirement(Horse Power)(HP)
- $V_c$ : 切削速度 Cutting Speed(m/min)
- $f$ : 每转进给量 Feed Rate(mm/rev)
- $a_p$ : 切深 Depth pf Cut(mm)
- $K_s$ : 比切削阻力 Specific Cutting Resistance(kgf/mm<sup>2</sup>)
- $\eta$ : 机械效率 Mechanical Efficiency(0.7~0.8)

$$f = \frac{l}{n}$$

$l$  (mm/min):每分钟切削长度  
Length of cut per minute

$K_s$ 的概略值 approximate value of  $K_s$

铝 Aluminum: 800MPa  
普通钢 General Steel: 2,500~3,000MPa

|                              |     |                             |     |
|------------------------------|-----|-----------------------------|-----|
| 软钢 (低碳钢)<br>Low Carbon Steel | 190 | 高碳合金钢<br>High Alloy Steel   | 245 |
| 中碳钢<br>Medium Carbon Steel   | 210 | 铸铁<br>Cast Iron             | 93  |
| 高碳钢<br>High Carbon Steel     | 240 | 可锻铸铁<br>Malleable Cast Iron | 120 |
| 低碳合金钢<br>Low Alloy Steel     | 190 | 青铜/黄铜                       | 70  |

- $V_c$ : 切削速度 Cutting Speed(m/min)
- $n$ : 转速 Spindle Revolution(min<sup>-1</sup>)

- $R_z = h$ : 理论表面粗糙度 Theoretical Surface Roughness(um)
- $f$ : 每转进给量 Feed Rate(mm/rev)

|                                     |                                                                                                                        |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| 实际表面粗糙度<br>Actual Surface Roughness | 钢的场合: 理论粗糙度 ( $R_z$ ) X1.5~3<br>steel: Theoretical Surface Roughness( $R_z$ )X1.5~3<br><br>铸铁的场合: 理论粗糙度 ( $R_z$ ) X3~5 |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------|

## 铣削加工的计算公式 Basic Formylas of Milling

### 所需功率 Power Requirement

$$\begin{aligned} P_C &= \frac{K_s X Q}{6120 X \eta} \\ &= \frac{K_s X a_e X V_f X a_p}{6120000 X \eta} \\ &= \frac{K_s X a_e X f_z X z X n X a_p}{6120000 X \eta} \end{aligned}$$

$$P_{HP} = \frac{6120}{4500} P_C$$

### 切削排出量计算法 Chip Removal Volume

$$\begin{aligned} Q &= \frac{a_c X v_f X a_p}{1000} \\ &= \frac{a_e X f_z X z X n X a_p}{1000} \end{aligned}$$

### 工作台进给量和每刃进给量 Table Feed & Per Touth

$$f_z = \frac{V_f}{z X n}$$

### 切削速度 Cutting Speed

$$V_c = \frac{\pi X D_s X n}{1000}$$

- $P_C$ : 所需功率 Power Requirement(KW)
- $P_{HP}$ : 所需功率 Power Requirement(Horse Power)(HP)
- $a_e$ : 切削宽度 Width of Cut(mm)
- $V_f$ : 工作台进给速度 Table Feed(mm/min)
- $f_z$ : 每刃进给量 Feed per Tooth(mm/t)
- $Z$ : 刀盘刃数 Number of Inserts(pcs)
- $n$ : 主轴旋转数 Spindle Revolution(min<sup>-1</sup>)
- $a_p$ : 切深 Depth of Cut(mm)
- $K_s$ : 比切削阻力 Specific Cutting Resistance(kgf/mm<sup>2</sup>)
- $\eta$ : 机械效率 Mechanical Efficiency(0.7~0.8)
- $Q$ : 切削排出量 Chip Removal Volume(cm<sup>3</sup>/min)
- $K_s$ 的概略值 approximate value of  $K_s$

铝 Aluminum: 800MPa  
普通钢 General Steel: 2,500~3,000MPa

|                              |     |                             |     |
|------------------------------|-----|-----------------------------|-----|
| 软钢 (低碳钢)<br>Low Carbon Steel | 190 | 高碳合金钢<br>High Alloy Steel   | 245 |
| 中碳钢<br>Medium Carbon Steel   | 210 | 铸铁<br>Cast Iron             | 93  |
| 高碳钢<br>High Carbon Steel     | 240 | 可锻铸铁<br>Malleable Cast Iron | 120 |
| 低碳合金钢<br>Low Alloy Steel     | 190 | 青铜/黄铜                       | 70  |

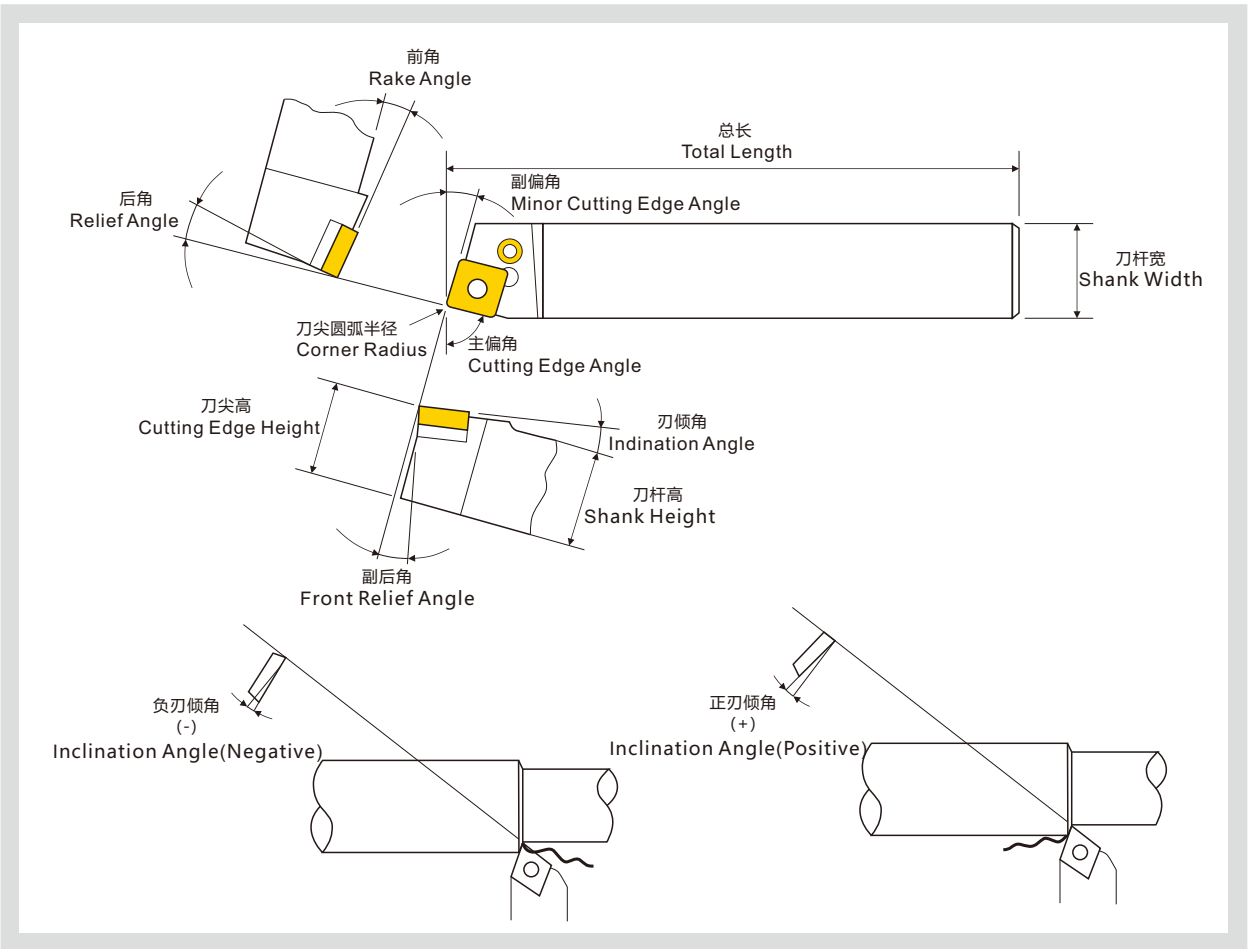
- $Q$ : 切削排出量 Chip Removal Volume(cm<sup>3</sup>/min)
- $a_e$ : 切削宽度 Width of Cut(mm)
- $V_f$ : 工作台进给速度 Table Feed(mm/min)
- $f_z$ : 每刃进给量 Feed per Tooth(mm/t)
- $Z$ : 刀盘刃数 Number of Inserts(pcs)
- $n$ : 主轴旋转数 Spindle Revolution(min<sup>-1</sup>)
- $a_p$ : 切深 Depth of Cut(mm)

- $f_z$ : 每刃进给量 Feed per Tooth(mm/t)
- $V_f$ : 工作台进给速度 Table Feed(mm/min)
- $Z$ : 刀盘刃数 Number of Inserts(pcs)
- $n$ : 主轴旋转数 Spindle Revolution(min<sup>-1</sup>)

- $V_c$ : 切削速度 Cutting Speed(m/min)
- $n$ : 主轴旋转数 Spindle Revolution(min<sup>-1</sup>)
- $D_s$ : 铣刀公称直径 Cutter Diameter(mm)

车刀各部分的名称角度

Terms and Angles of Turning Toolholder



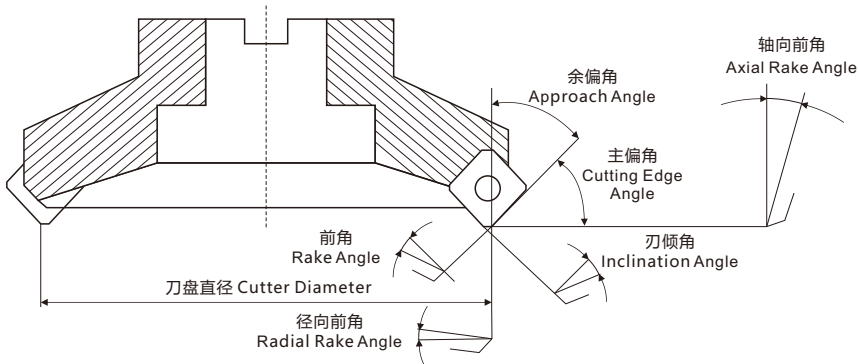
■ 刀尖各角度的功能  
Function of Tool Angle

| 刀尖角度<br>Tool Angle | 作用<br>Function                                                                                                                                  | 效果<br>Effect                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 前角<br>Rake Angle   | 对切削阻力，切削热，切削排出，工具寿命产生影响。<br><ul style="list-style-type: none"><li>Affects cutting force, cutting heat, chip evacuation and tool life.</li></ul> | 正角时，可得到更锋利的切削效果，切削阻力减少，但刀尖强度降低。<br>加工科加工性好或细工件时，推荐使用正角。<br>若在黑皮或继续加工需要较强的刀尖强度时，推荐使用较小的前角或负角。<br><ul style="list-style-type: none"><li>When it is positive (+) angle, sharper cutting performance is obtained, less cutting resistance but less edge strength.</li><li>Positive (+) angle is recommended for easy to machine workpieces or thin workpieces.</li><li>Smaller rake angle or negative (-) angle is recommended when a stronger edge is required like scale cutting or interrupted cutting.</li></ul> |

| 刀尖角度<br>Tool Angle              | 作用<br>Function                                                                                                                                                                                                                            | 效果<br>Effect                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 刃倾度<br>Inclination Angle        | 重切削时，切削开始点的刀尖上要承受很大的冲击力，为防止刀尖受此力而发生脆性损伤，故需有刃倾角。<br><ul style="list-style-type: none"><li>The corner will bear a strong impact when heavy cutting</li><li>It needs a suitable cutting edge inclination angle to prevent fracture</li></ul> | 刃倾角为负时，切屑流向工件，为正时反向排出；刃倾角为正时，切削刃强度增大，但切削背分力也增加，易产生振动。推荐车削时为3°~5°，铣削时10°~15°。<br><ul style="list-style-type: none"><li>When it is negative---chip flows to the workpiece and vice versa.</li><li>When it is positive---cutting edge strength improves, but the back cutting force also increases and it is inclined to produce vibration.</li><li>Recommended values: Turning 3°~5°, Milling 10°~15°.</li></ul>                                       |
| 主后角<br>Relief Angle             | 避免切削以外的部分与加工面接触。<br><ul style="list-style-type: none"><li>Prevents the tool's contact to the workpiece surface, except the cutting edge</li></ul>                                                                                         | 若后角小，刀尖强度变大，但后面磨损在短时间内变大，刀具寿命也会变短。<br><ul style="list-style-type: none"><li>When it is small, the cutting edge strength improves, but the wear at relief face increases, and tool life may decrease.</li></ul>                                                                                                                                                                                                                                       |
| 主偏角<br>Cutting Edge Angle       | 影响切屑控制能力与切削力方向。<br><ul style="list-style-type: none"><li>Affects chip control and the direction of cutting force</li></ul>                                                                                                                | 主偏角大时。切屑变厚且切屑控制能力提高<br><ul style="list-style-type: none"><li>When it is large, chip thickness becomes thick and chip control improves.</li></ul>                                                                                                                                                                                                                                                                                                     |
| 副偏角<br>Minor Cutting Edge Angle | 减少已加工表面与刀具摩擦。<br><ul style="list-style-type: none"><li>Prevents friction between cutting edge and work surface</li></ul>                                                                                                                  | 副偏角小，切削刃强度增加，但刀尖发热；副偏角小，背分力增加，切削时易产生振动；粗加工时副偏角宜小些，而精加工时则宜大些。一般为5°~15°。<br><ul style="list-style-type: none"><li>When it is small, the cutting edge strength will improve, but the tip is heated.</li><li>When it is small, back cutting force increases and it is inclined to produce cutting vibration.</li><li>It should be smaller for rough finishing, while it can be larger for rough finishing.</li><li>Recommended values: 5°~15°.</li></ul> |
| 刀尖圆弧半径<br>Corner Radius         | 对刀尖的强度及加工表面粗糙度影响很大。<br><ul style="list-style-type: none"><li>Affects tool nose strength and roughness of the finished surface</li></ul>                                                                                                   | 一般适宜值选进给量的2~3倍。<br><ul style="list-style-type: none"><li>Recommended values: 2~3 times of feed rate.</li></ul>                                                                                                                                                                                                                                                                                                                                       |

铣刀各部分的名称角度

Terms and Angles of Milling Cutter

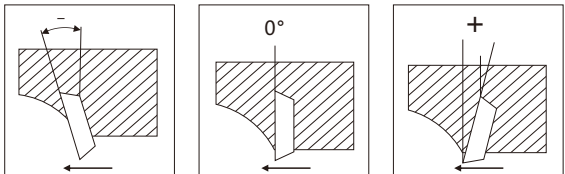


刀尖各角度的功能  
Function of Tool Angle

| 刀尖角度<br>Tool Angle        | 作用<br>Function                                                     | 效果<br>Effect                                                                                                                                                                                                                   |
|---------------------------|--------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 轴向前角<br>Axial Rake Angle  | 控制切屑排出方向和切削力<br>• Controls chip flow direction and cutting force   | 正角时，切削性能好，且不易发生切屑粘连。<br>• When it is positive---Good cutting performance and less chip welding                                                                                                                                 |
| 径向前角<br>Radial Rake Angle | 控制切屑排出方向和切削力<br>• Controls chip flow direction and cutting force   | 负角时，切屑排出性能好<br>• When it is negative---Good chip evacuation                                                                                                                                                                    |
| 前角<br>Rake Angle          | 决定实际切削刃锋利程度<br>• Determines the real sharp degree of tool edge     | 正角时，切削性能好且不易发生切屑粘连，但切削强度下降<br>负角时，切削性能差，易发生切屑粘连，但是切削强度高。<br>• When it is positive---Good cutting performance and less chip welding, but lower edge strength<br>• When it is negative---Higher edge strength but easier to weld |
| 余偏角<br>Approach Angle     | 决定切屑厚度和切屑排出方向<br>• Controls chip thickness and chip flow direction | 角度大时，切屑厚度变小，切屑负荷变小，但背分力大。<br>• When it is large---Thinner chip thickness and lower cutting load                                                                                                                                |
| 刃倾角<br>Inclination Angle  | 决定切屑排出方向<br>• Controls chip flowdirection                          | 正角时，切屑排出好切屑阻力小，但切削强度较小。<br>• When it is positive---Good chip evacuation, less cutting resistance and lower edge stability of the corner part                                                                                   |

不同前角的组合特征  
Characteristic Of Different Rake Angle Combination

前角的正负  
Positive/Negative Rake Angle



不同前角的组合特征  
Characteristics Of Different Rake Angle Combination

| 基本刃型的组合<br>Combination of Rake Angles |                                        | (+)轴向正前角<br>Positive Axial Rake angle                   | (-)轴向负前角<br>Negative Axial Rake angle                   | (+)轴向正前角<br>Positive Axial Rake angle                   |
|---------------------------------------|----------------------------------------|---------------------------------------------------------|---------------------------------------------------------|---------------------------------------------------------|
|                                       |                                        |                                                         |                                                         |                                                         |
|                                       |                                        | (+)径向正前角<br>Positive Radia Rake angle                   | (-)径向负前角<br>Negative Radial Rake Angle                  | (-)径向负前角<br>Negative Radial Rake Angle                  |
|                                       |                                        | 双重正角刃型<br>Double Positive                               | 双重负角刃型<br>Double Negative                               | 正负角刃型<br>Positive + Negative                            |
| 轴向前角<br>Axial Rake Angle              |                                        | 正<br>Positive<br>(+)                                    | 负<br>Negative<br>(-)                                    | 正<br>Positive<br>(+)                                    |
| 径向前角<br>Radial Rake Angle             |                                        | 正<br>Positive<br>(+)                                    | 负<br>Negative<br>(-)                                    | 负<br>Negative<br>(-)                                    |
| 刀片样式<br>Tool Style                    |                                        | 正角型刀片<br>Positive Angle<br>(单面使用)<br>(Single Side Used) | 负角型刀片<br>Negative Angle<br>(双面使用)<br>(Double Side Used) | 正角型刀片<br>Positive Angle<br>(单面使用)<br>(Single Side Used) |
| 工件材料<br>Workpiece Material            | 钢<br>Steel                             | ●                                                       | —                                                       | ●                                                       |
|                                       | 铸铁<br>Cast Iron                        | —                                                       | ●                                                       | ●                                                       |
|                                       | 轻合金<br>Light Alloy                     | ●                                                       | —                                                       | —                                                       |
|                                       | 难加工材料<br>Difficult-to-machine Material | ●                                                       | —                                                       | ●                                                       |



国内外品牌刀具牌号对照表

Grade Table

CVD涂层刀片厂家牌号对照表

Grade table of CVD coating

| 加工类别<br>Machining Type | 工件材料<br>Workpiece Material | 分类代号<br>Code | 各厂家牌号对照列表 Grade table of competitors and KOVES |                                                |                                              |                                                         |                  |               |                                                |                  |                 |                                      |                        |                          |                 |                                      |                  |
|------------------------|----------------------------|--------------|------------------------------------------------|------------------------------------------------|----------------------------------------------|---------------------------------------------------------|------------------|---------------|------------------------------------------------|------------------|-----------------|--------------------------------------|------------------------|--------------------------|-----------------|--------------------------------------|------------------|
|                        |                            |              | 科维丝<br>KOVES                                   | 山特维克<br>SANDVIK                                | 伊斯卡<br>ISCAR                                 | 肯纳金属<br>KENNAMETAL                                      | 特固克<br>TAEGUTEC  | 瓦尔特<br>WALTER | 三菱<br>MITSUBISHI                               | 住友<br>SUMITOMO   | 泰珂洛<br>TUNGALOY | 京瓷<br>KYOCERA                        | 戴杰<br>DIJET            | 日立<br>HITACHI            | 科罗伊<br>KORLOY   | 山高<br>SCEO                           | 株洲钻石<br>ZCC.CT   |
| 车削<br>Turning          | P                          | P01          |                                                | GC4005                                         | IC9150                                       | KC9105                                                  |                  | WAP01         | UE6050                                         | AC700G           | T9005           | CA5505                               | JC110V                 | HC5000                   |                 | TP1000<br>TK1000                     |                  |
|                        |                            | P10          | KC1115                                         | GC4015                                         | IC9150<br>IC9015                             | KC9110<br>TN7005<br>TN7010                              | TT1300           | WAP10         | UE6050<br>UE6110<br>UE6010<br>UC6020<br>UC6010 | AC700G<br>AC2000 | T9005<br>T9015  | CA5505<br>CA5515                     | JC110V<br>JC215V       | HG8010<br>GM8015<br>GM10 | NC310<br>NC3015 | TP1000<br>TK1000<br>TP2000<br>TK2000 | YBC152<br>YBC151 |
|                        |                            | P20          | KC1115<br>KC1125                               | GC4015<br>GC4225<br>GC4025<br>GC2015           | IC9250<br>IC9025<br>IC9054                   | KC9125<br>KC9225<br>TN7015                              | TT1500           | WAP20         | UE6110<br>UE6010<br>UE6020<br>UC6010           | AC2000<br>AC3000 | T9015<br>T9025  | CA5515<br>CA5525<br>CA5025<br>CR9025 | JC110V<br>JC215V       | HG8025<br>GM8020         | NC3020          | TP2000<br>TK2000<br>TP200            | YBC251<br>YBC252 |
|                        |                            | P30          | KC1125                                         | GC4225<br>GC4025<br>GC4035<br>GC2025<br>GC2135 | IC9350<br>IC656                              | KC8050<br>TN7025                                        | TT3500<br>TT5100 | WAP30         | UE6035<br>UH6400<br>US735                      | AC3000<br>AC630M | T9025<br>T9035  | CA5535                               | JC215V<br>JC325        | GM25                     | NC330           | TP3000<br>TP300                      | YBC252<br>YBC351 |
|                        |                            | P40          |                                                | GC4035<br>GC235                                | IC635                                        | KC9140<br>KC9040<br>KC9240<br>KX9245<br>TN7035<br>TPC35 | TT450            |               | UE6035<br>UH6400<br>US735                      | AC630M           | T9035           | CA5535                               | JC325V<br>JC450V       | GM8035<br>GX30           |                 | TP3000<br>TP400                      | YBC351           |
|                        |                            | M10          |                                                | GC2015                                         | IC9250                                       | TN7010                                                  |                  | WAM10         | US7020                                         | AC610M           | T9015           | CA6515<br>CA6015                     | JC110V                 | GM10                     |                 | TP200                                |                  |
|                        |                            | M20          |                                                | GC2025                                         | IC9250<br>IC9025<br>IC9054                   | KC9225<br>TN7015                                        | TT2500           | WAM20         | US7020                                         | AC610M<br>AC630M | T6020<br>T9025  | CA6525<br>CA6015                     | JC110V<br>JC215V       | GM8020                   | NC9020          | TP200                                | YBM151           |
|                        |                            | M30          |                                                | GC2135<br>GC235                                | IC9350<br>IC9025                             | KC8050<br>TN8025                                        | TT3500           | WAM30         | US735                                          | AC630M           | T6030           |                                      | JC215V<br>JC325V       | HG8025<br>GM25           | NC330           | TP300<br>TP400<br>TP40               | YBM151<br>YBC251 |
|                        | M                          | M40          |                                                |                                                | IC656<br>IC635                               | KC9240<br>KC9245<br>TPC35                               | TT5100           |               | US735                                          |                  |                 |                                      | JC325V<br>JC450V       | GX30                     |                 | TP400<br>TP40                        |                  |
|                        |                            | K01          |                                                | GC3205<br>GC3210                               | IC9150                                       |                                                         |                  |               | UC5015                                         | AC300G           | T5010           | CA4010                               | JC105V                 | GM3005                   |                 | TK1000                               | YBD052           |
|                        |                            | K10          | KC3110                                         | GC3205<br>GC3210<br>GC3015                     | IC9150<br>IC9015<br>IC4010<br>IC418<br>IC428 | KC9315<br>KC9110<br>TN5015                              | TT1300           | WAK10         | UC5115                                         | AC700G           | T5010           | CA4010<br>AC4115                     | JC110V                 | HG8010<br>GM8015         | N305K           | TK1000<br>TK2000                     | YBD102<br>YBD151 |
|                        |                            | K20          |                                                | GC3215                                         | IC9015                                       | KC9320<br>TN5020                                        | TT1500           | WAK20         | UC5115                                         | AC700G           | T5020           | CA4120                               | JC110V<br>JC215V       | HG8025<br>GM8020         | N315K           | TK2000<br>TP200                      | YBD152<br>YBD252 |
| 铣削<br>Milling          | P                          | P01          |                                                |                                                |                                              |                                                         |                  |               |                                                |                  |                 |                                      |                        |                          |                 |                                      |                  |
|                        |                            | P10          |                                                |                                                | IC9080<br>IC4100                             | TN2510<br>TN25M                                         |                  |               |                                                | ACP100           |                 |                                      | JC730U                 |                          |                 |                                      |                  |
|                        |                            | P20          |                                                | GC4020                                         | IC520M                                       | TN7525                                                  |                  | WAP25         | FH7020<br>F7030                                | ACP100           |                 |                                      | JC730U                 |                          |                 | T200M<br>T250M                       | YBM251           |
|                        |                            | P30          |                                                | GC4030                                         | IC4050                                       | KC930M                                                  | TT7300           | WAP35         | F7030                                          | AC230            | T3030           |                                      |                        |                          | NCM335          | T250M<br>T350M<br>T25M               | YBM351           |
|                        |                            | P40          |                                                | GC4240<br>GC4040                               |                                              | KC935M<br>TN7535                                        |                  |               |                                                | AC230            |                 |                                      | GF30<br>GX2030<br>GX30 |                          |                 | T350M                                |                  |
|                        | M                          | M01          |                                                |                                                |                                              |                                                         |                  |               |                                                |                  |                 |                                      |                        |                          |                 |                                      |                  |
|                        |                            | M10          |                                                |                                                |                                              | TN25M                                                   |                  |               |                                                |                  |                 |                                      |                        |                          |                 |                                      |                  |
|                        |                            | M20          |                                                |                                                | IC520M                                       | TN7525                                                  |                  |               | F7030                                          |                  |                 |                                      | JC730U                 |                          |                 | T350M<br>T25M                        | YBM251           |
|                        |                            | M30          |                                                | GC2040                                         | IC4050                                       | KC930M<br>TN7535                                        |                  | WTP35         | F7030                                          |                  | T3030           |                                      |                        |                          | NCM335          | T250M<br>T25M                        | YBM351           |
|                        | K                          | M40          |                                                |                                                |                                              |                                                         |                  |               |                                                |                  |                 |                                      | GF30<br>GX30           |                          |                 |                                      |                  |
|                        |                            | K01          |                                                |                                                | IC9080                                       |                                                         |                  |               |                                                |                  |                 |                                      | JC600                  |                          |                 |                                      |                  |
|                        |                            | K10          |                                                |                                                | IC4100                                       | TN5505<br>TN5515                                        |                  | WAK15         | F5010                                          | ACK200<br>AC211  | T1015           |                                      | JC600                  |                          | NCM310          |                                      | YBD152           |
|                        |                            | K20          |                                                | GC3220<br>GC3020<br>K20D<br>K21W               | C520M<br>DT7150                              | KC915M<br>TN5520                                        |                  | WAK25         | F5020                                          | ACK200           | T1015           |                                      | JC610                  |                          | NCM320          | T150M<br>T200M                       | YBD252           |
|                        |                            | K30          |                                                | GC3040                                         | IC4050                                       | KC930M<br>KC935M                                        |                  |               |                                                |                  |                 |                                      | JC610                  |                          |                 | T200M                                |                  |

国内外品牌刀具牌号对照表

Grade Table

PVD涂层刀片厂家牌号对照表

Grade table of PVD coating

| 加工类别<br>Machining Type | 工件材料<br>Workpiece Material | 分类代号<br>Code | 各厂家牌号对照列表 Grade table of competitors and KOVES |                  |                                    |                           |                            |                |                            |                            |                                           |                                  |                            |                                               |                 |                |                |
|------------------------|----------------------------|--------------|------------------------------------------------|------------------|------------------------------------|---------------------------|----------------------------|----------------|----------------------------|----------------------------|-------------------------------------------|----------------------------------|----------------------------|-----------------------------------------------|-----------------|----------------|----------------|
|                        |                            |              | 科维丝<br>KOVES                                   | 山特维克<br>SANDVIK  | 伊斯卡<br>ISCAR                       | 肯纳金属<br>KENNAMETAL        | 特固克<br>TAEGUTEC            | 瓦尔特<br>WALTER  | 三菱<br>MITSUBISHI           | 住友<br>SUMITOMO             | 泰珂洛<br>TUNGALOY                           | 京瓷<br>KYOCERA                    | 戴杰<br>DIJET                | 日立<br>HITACHI                                 | 科罗伊<br>KORLOY   | 山高<br>SCEO     | 株洲钻石<br>ZCC.CT |
| 车削<br>Turning          | P                          | P01          |                                                |                  |                                    |                           |                            |                |                            |                            |                                           | PR915                            | JC5003                     |                                               |                 |                |                |
|                        |                            | P10          |                                                |                  | IC507                              | KC5010<br>KC5510          |                            |                | VP10MF                     |                            | AH710                                     | PR915<br>PR930                   | JC5003                     |                                               |                 | CP200          | YBG102         |
|                        |                            | P20          | KP2120<br>KTX                                  | GC1020<br>GC1025 | IC928<br>IC1008<br>IC1028          | KC5025                    |                            |                | VP15TF<br>VP20MF           |                            | AH710<br>AH330                            | PR630<br>PR915<br>PR930<br>PR660 | JC5015                     |                                               | PC230           | CP250          | YBG202         |
|                        |                            | P30          | KP2130<br>KVX                                  | GC1025<br>GC4125 | IC928<br>IC1008<br>IC1028          | K7010<br>K7020<br>K7235   |                            |                | VP15TF<br>VP20MF           |                            | GH330<br>GH730<br>AH120<br>AH330<br>AH740 | PR630<br>PR660                   | JC5015                     |                                               |                 | CP500          | YBG202         |
|                        |                            | P40          |                                                | GC1020<br>GC2145 | IC928<br>IC1008<br>IC1028          | K7030                     |                            |                | VP15TF<br>VP20MF           |                            | AH120                                     | PR660                            |                            |                                               | PC240           | CP500          | YBG302         |
|                        | M                          | M01          |                                                |                  |                                    |                           |                            |                |                            | EH510Z<br>EH10Z            |                                           | PR915                            |                            |                                               |                 |                |                |
|                        |                            | M10          |                                                | GC1005<br>GC1025 | IC507<br>IC907                     | KC5010<br>KC5510          |                            |                | VP10MF                     |                            | EH510Z<br>EH10Z                           | PR915<br>PR930                   | JC5003                     |                                               |                 | CP200          | YBG102         |
|                        |                            | M20          | KP2120<br>KKX                                  | GC1020<br>GC1025 | IC354<br>IC3028                    | KC5025<br>KC730<br>KC5525 |                            |                | VP15TF<br>VP20MF           | EH520Z<br>EH20Z            | GH330<br>GH730                            | PR630<br>PR915<br>PR930          | JC5015                     |                                               | PC9030          | CP200<br>CP500 | YBG202         |
|                        |                            | M30          | KP2130<br>KVX                                  | GC1020<br>GC2035 | IC908<br>IC928<br>IC1008<br>IC1028 | KC5025<br>KC5525          |                            |                | VP15TF<br>VP20MF           |                            | AH120                                     | PR630<br>PR660                   | JC5015                     |                                               | PC9030          | CP500          | YBG302         |
|                        | K                          | M40          |                                                | GC2145           | IC228<br>IC328                     |                           |                            |                |                            |                            |                                           | PR660                            |                            |                                               |                 |                |                |
|                        |                            | K01          |                                                |                  |                                    |                           |                            |                |                            | EA10Z                      | AH110                                     |                                  | JC5003                     |                                               |                 |                |                |
|                        |                            | K10          |                                                |                  |                                    | KC5010<br>KC5510          |                            |                |                            | EA10Z                      | GH110<br>AH110                            |                                  | JC5003<br>JC5015           |                                               | PC205K          | CP200          | YBG102         |
|                        |                            | K20          |                                                | GC1020           | IC928<br>IC1008<br>IC908<br>IC22   | KC7015                    |                            |                | VP15TF                     | EH20Z                      | AH120                                     |                                  | JC5015                     |                                               | PC205K          | CP200<br>CP250 | YBG202         |
|                        | S                          | K30          |                                                | GC4125           | IC928<br>IC1008<br>IC908<br>IC22   | KC7225                    |                            |                | VP15TF                     |                            |                                           |                                  |                            |                                               |                 | CP500          |                |
|                        |                            | S01          |                                                | GC1005           |                                    |                           |                            |                | VP05RT                     |                            | AH110                                     | PR915                            | JC5003                     |                                               |                 |                |                |
|                        |                            | S10          |                                                | GC1005<br>GC1025 |                                    | KC5410<br>KC5010          |                            |                | VP05RT<br>VP10RT           | EH510Z<br>EH10Z            | AH120                                     | PR915                            | JC5015                     |                                               |                 | CP200<br>CP250 | YBG102         |
|                        |                            | S20          |                                                | GC4125           |                                    | KC5025<br>KC5525          |                            |                | VP10RT<br>VP15TF           | EH20Z<br>EH520Z            |                                           | PR915                            |                            |                                               |                 | CP250<br>CP500 |                |
|                        |                            | S30          |                                                | GC2145           |                                    |                           |                            |                | VP15TF                     |                            |                                           |                                  |                            |                                               |                 |                |                |
| 铣削<br>Milling          | P                          | P01          |                                                |                  |                                    |                           |                            |                |                            | APC100                     |                                           |                                  | JC5003                     | PTH08M<br>PAC08M<br>TB6005<br>JX1005          |                 |                |                |
|                        |                            | P10          | KP1110                                         |                  | IC903<br>IC950                     | KC715M                    |                            | WXH15<br>WXM15 |                            | ACZ310<br>ACP100           |                                           | PR730<br>PR830                   | JC5003<br>JC5030           | CY9020<br>PCA12M<br>TB6005<br>JX1020<br>PC20M |                 |                |                |
|                        |                            | P20          | KP1210                                         | GC1025           | IC950<br>IC900<br>IC908<br>IC910   | KC522M<br>KC525M          |                            |                | VP15TF                     | ACZ310<br>ACZ330<br>ACZ200 |                                           | PR630<br>PR730<br>PR830<br>PR660 | JC5015<br>JC5030<br>JC5040 | TB6020<br>CY150<br>JX1015                     | PC230           | F25M           | YBG202         |
|                        |                            | P30          |                                                | GC1030           | IC900<br>IC928<br>IC300<br>IC328   | KC725M                    | TT7030<br>TT7070<br>TT9030 | WXM35          | VP15TF<br>VP30RT           | ACZ300<br>ACZ350<br>ACZ200 | GH330<br>AH330<br>AH120<br>AH740          | PR630<br>PR660<br>PR730<br>PR830 | JC5015<br>JC5040           | TB6020<br>CY250<br>HC844<br>JX1045<br>PTH30E  | PC3530<br>PC130 | F25M<br>F30M   | YBG302         |
|                        |                            | P40          |                                                |                  | IC900<br>IC928<br>IC300<br>IC328   | KC735M                    | TT8020<br>TT8030           | WXP45          | VP30RT                     | ACZ350<br>ACP300           | AH120                                     | PA660                            | JC5040                     | PTH30E<br>TB6060<br>PTH40H                    |                 | F40M<br>T60M   |                |
|                        | M                          | M01          |                                                |                  |                                    |                           |                            |                |                            |                            |                                           |                                  |                            | PCS08M                                        |                 |                |                |
|                        |                            | M10          |                                                | GC1025           |                                    | KC715M                    |                            | WXM15          |                            |                            |                                           | PR630<br>PR730<br>PR830          | JC5003                     | CY9020<br>JX1020                              |                 |                |                |
|                        |                            | M20          | KP2220                                         | GC2030           | IC900<br>IC903<br>IC908<br>IC928   | KC522M<br>KC525M          | TT8020<br>TT9030           |                | VP15TF<br>VP20RT           | ACZ310<br>EH20Z            | GH330                                     | PR630<br>PR730<br>PR830<br>PR660 | JC5015<br>JC5030<br>JC5040 | TB6020<br>CY150<br>JX1015                     |                 | F25M           | YBG202         |
|                        |                            | M30          |                                                | GC2030           | IC928<br>IC328                     | KC725M<br>KC735M          | TT8030                     | WXM35          | VP15TF<br>VP20RT<br>VP30RT | ACZ330<br>EH20Z<br>ACZ350  | AH120                                     | PR630<br>PR660<br>PR730<br>PR830 | JC5015<br>JC5030<br>JC5040 | TB6045<br>CY250<br>HC844                      | PC9530          | F30M<br>F40M   | YBG302         |
|                        |                            | M40          |                                                |                  | IC928<br>IC328                     |                           |                            |                | VP30RT                     | ACZ350<br>ACP300           | AH140                                     | PR660                            | JC5015                     | TB6060<br>PTH40H<br>JX1060                    |                 |                |                |
|                        |                            |              |                                                |                  |                                    |                           |                            |                |                            |                            |                                           |                                  |                            |                                               |                 |                |                |
|                        |                            |              |                                                |                  |                                    |                           |                            |                |                            |                            |                                           |                                  |                            |                                               |                 |                |                |
|                        |                            |              |                                                |                  |                                    |                           |                            |                |                            |                            |                                           |                                  |                            |                                               |                 |                |                |

国内外品牌刀具牌号对照表

Grade Table

硬质合金刀片厂家牌号对照表

Grade table of un coated carbide

| 加工类别<br>Machining type | 工件材料<br>Workpiece Material | 分类代号<br>Code | 各厂家牌号对照列表 Grade table of competitors and KOVES |                             |               |                               |                 |               |                  |                       |                            |               |                    |               |               |                               |                |
|------------------------|----------------------------|--------------|------------------------------------------------|-----------------------------|---------------|-------------------------------|-----------------|---------------|------------------|-----------------------|----------------------------|---------------|--------------------|---------------|---------------|-------------------------------|----------------|
|                        |                            |              | 科维丝<br>KOVES                                   | 山特维克<br>SANDVIK             | 伊斯卡<br>ISACR  | 肯纳金属<br>KENNAMETAL            | 特固克<br>TAEGUTEK | 瓦尔特<br>WALTER | 三菱<br>MITSUBISHI | 住友<br>SUMITOMO        | 泰珂洛<br>TUNGALOY            | 京瓷<br>KYOCERA | 黛杰<br>DIJET        | 日立<br>HITACHI | 科罗伊<br>KORLOY | 山高<br>SCEO                    | 株洲钻石<br>ZCC.CT |
| 车削<br>Turning          | P                          | P01          |                                                |                             |               |                               |                 |               |                  |                       |                            |               |                    | ST05          |               |                               |                |
|                        |                            | P10          |                                                | SIP                         | IC70          | P10                           | P10             |               |                  | ST10P                 | TX10S                      |               | SRT                | WS10          | ST10          | YC10                          |                |
|                        |                            | P20          |                                                | SMA                         | IC70<br>IC50M | K125M<br>TTM                  | P20             |               | UTi20t           | ST20E                 | TX20<br>TX25               |               | SRT<br>DX30        | EX35          | ST20          |                               |                |
|                        |                            | P30          |                                                | SM30                        | IC50M<br>IC54 | GK<br>K600<br>TTR             | P30             |               | UTi20t           | A30<br>A30N           | TX30<br>UX30               | PW30          | SR30<br>DX30       | EX35<br>EX40  | ST30A         |                               |                |
|                        |                            | P40          |                                                | S6                          | IC54          | G13                           |                 |               |                  | ST40E                 | TX40                       |               | SR30<br>DX35       | EX45          |               | YC40                          |                |
|                        | M                          | M10          |                                                | H10A                        |               | K313                          | M10             |               |                  | EH510<br>U10E         | TU10                       |               | UMN                | WA10B         | U10           | 890                           | YC10           |
|                        |                            | M20          |                                                | H13A                        | IC08          | K68<br>KMF<br>K125M<br>TTM    | M20             |               | UTi20t           | EH520<br>U2           | TU20<br>UX30               |               | DX25<br>UMS        | EX35          | U20           | HX<br>883                     |                |
|                        |                            | M30          |                                                | H19F<br>SM30                | IC08<br>IC28  | K600<br>TTR                   |                 |               | UTi20t           | A30<br>A30N           | UX30                       |               | DX25<br>UMS        | EX40<br>EX45  | ST30A         |                               | YC40           |
|                        |                            | M40          |                                                | S6                          | IC128         | G13                           | M40             |               |                  |                       | TU40                       |               | UM40               | EX45          | U40           |                               |                |
|                        | K                          | K01          |                                                | H1P                         |               | K605                          |                 |               | UTi05t           | H1<br>H2              | TH03<br>KS05F              |               | KG03               | WH05          | H02           |                               | YD051          |
|                        |                            | K10          |                                                | H1P<br>H10<br>HM            | IC20          | K313<br>K110M<br>THM<br>THM-U | K10             |               | HTi10            | EH10<br>EH510         | G1F<br>TH10                | KW10          | KG10<br>KT9        | WH10          | H01           | 890                           | YD101          |
|                        |                            | K20          |                                                | H13A                        | IC20<br>IC10  | K715<br>KMF<br>K600           | K20             |               | UTi20t           | G10E<br>EH20<br>EH520 | G2F<br>KS15F<br>G2<br>KS20 | GW10          | CR1<br>KG20        | WH20          | G10           | 890<br>HX<br>883              | YD201          |
|                        |                            | K30          |                                                |                             | IC10<br>IC28  | THR                           |                 |               | UTi20t           | G10E                  | G3                         |               | KG30               |               | G3            | 883                           |                |
|                        | N                          | N01          |                                                | H10<br>H13A                 |               | K605                          |                 |               |                  | H1<br>H2              | KS05F                      |               | KG03               |               |               |                               |                |
|                        |                            | N10          |                                                |                             |               | K313<br>K110M<br>THM<br>THM-U | K10             |               | HTi10            | EH10<br>EH510         | TH10<br>H10T               |               | KG10<br>KT9        |               | H01           | 890<br>H15                    | YD101          |
|                        |                            | N20          | KW20                                           |                             |               | K715<br>KMF<br>K600           | K20             |               |                  | G10E<br>EH20<br>EH520 | KS15F                      |               | CR1<br>KG20        |               |               | HX<br>KX<br>883<br>H15<br>H25 | YD201          |
|                        |                            | N30          |                                                |                             |               | G13<br>THR                    |                 |               |                  |                       |                            |               | KG30               |               |               | H25                           |                |
|                        | S                          | S01          |                                                |                             |               |                               |                 |               | RT9005           |                       |                            |               | KG03               |               |               |                               |                |
|                        |                            | S10          |                                                | H10<br>H10A<br>H10F<br>H13A |               | K10<br>K313<br>THM            | K10             |               | RT9005<br>RT9010 | EH10<br>EH510         | KS05F<br>TH10              |               | FZ05<br>KG10       |               | H01           | 890                           | YD101          |
|                        |                            | S20          |                                                |                             |               | K715<br>KMF                   |                 |               | RT9010<br>TF15   | EH20<br>EH520         | KS15F<br>KS20              |               | FZ15<br>KG20       |               |               | 890<br>883<br>HX<br>H25       |                |
|                        |                            | S30          |                                                |                             |               | G13<br>K600<br>THR            |                 |               | TF15             |                       |                            |               | KG30               |               |               |                               |                |
|                        | 铣削<br>Milling              | P            | P10                                            |                             | S1P           |                               |                 |               |                  |                       |                            |               | SRT                |               |               |                               | YC10           |
|                        |                            |              | P20                                            |                             |               | IC50M<br>IC28                 | K125            | P10           |                  | UTi20t                | A30N                       | TX25          |                    | SRT<br>DX30   | EX35          | ST20                          |                |
|                        |                            |              | P30                                            |                             |               | IC50M<br>IC28                 | GX<br>K600      | P20           |                  | UTi20t                | A30N                       | UX30          | PW30               | SR30<br>DX30  | EX35<br>EX40  | ST30A                         |                |
| P40                    |                            |              |                                                |                             | IC28          |                               | P30             |               |                  |                       |                            | PW30          | SR30               | EX45          | ST40          | YC40                          |                |
| M                      |                            | M10          |                                                |                             |               | K110M                         | M10             |               |                  |                       |                            |               | UMN                |               | U10           | YC10                          |                |
|                        |                            | M20          |                                                |                             |               | K313                          | M20             |               | UTi20t           | A30N                  |                            |               | DX25<br>UMS        | EX35          | U20           |                               |                |
|                        |                            | M30          |                                                |                             | IC28          | KFM<br>K600                   |                 |               | UTi20t           | A30N                  | UX30                       |               | DX25<br>UMS        | EX40<br>EX45  |               | YC40                          |                |
|                        |                            | M40          |                                                |                             | IC28          |                               | M40             |               |                  |                       | TU40                       |               |                    | EX45          | U40           |                               |                |
| K                      |                            | K01          |                                                |                             |               |                               |                 |               | UTi05t           |                       |                            |               | KG03               |               | H01           |                               | YD051          |
|                        |                            | K10          |                                                | H1P                         | IC20          | K110M<br>K313                 | K10             | WK10          | HTi10            | G10E                  | TH10                       | KW10          | KG10               | WH10          | H05<br>H10    |                               | YD101          |
|                        |                            | K20          |                                                |                             | IC20<br>IC10  | KFM                           | K20             |               | UTi20t           | G10E                  |                            |               | KT9<br>CR1<br>KG20 | WH20          | G10           | HX                            | YD201          |
|                        |                            | K30          |                                                |                             | IC20<br>IC28  |                               |                 |               | UTi20t           |                       |                            |               | KG30               |               |               |                               |                |

加工故障分析及对策

Trouble Shooting Guide

车削加工问题及对策

Trouble Shooting (Turning)

| 故障内容<br>Trouble                                                        |                                                                                     |                                                          | 对策与检查要点<br>Measures                                            |   | 刀具材质<br>Insert Grade              |                                    | 切削条件<br>Cutting Conditions                         |                                                       |                          |                     | 刀具几何形状<br>Tool Geometry |                            |                         |           | 机床装夹<br>Setting/<br>Machine     |                  |                    |                       |                                       |                                           |                                |                                      |                            |                             |
|------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------|----------------------------------------------------------------|---|-----------------------------------|------------------------------------|----------------------------------------------------|-------------------------------------------------------|--------------------------|---------------------|-------------------------|----------------------------|-------------------------|-----------|---------------------------------|------------------|--------------------|-----------------------|---------------------------------------|-------------------------------------------|--------------------------------|--------------------------------------|----------------------------|-----------------------------|
|                                                                        |                                                                                     |                                                          |                                                                |   | 硬度更高的材质<br>change to harder grade | 韧性更大的材质<br>change to tougher grade | 耐冲击性更好的材质<br>More thermal shock<br>resistant grade | 耐粘性更好的材质<br>Change to more welding<br>resistant grade | 切削速度 Vc<br>Cutting speed | 进给量 fz<br>Feed rate | 切深 ap<br>Depth of cut   | 改变走刀路线<br>Tool path review | 切削液<br>Coolant          |           | 校正刀片断屑槽槽形<br>Chipbreaker review | 前角<br>Rake angle | 刀尖圆弧半径<br>Corner-R | 余偏角<br>Approach angle | 切削刃强度/磨耗式<br>Edge strength/<br>honing | 提高刀片精度等级<br>Change to higher<br>tolerance | 提高刀杆刚性<br>Tool holder rigidity | 工件刀具的安装<br>Workpiece/tool instalaton | 刀柄悬伸长度<br>Over hang length | 动力、机械松动情况<br>Power,rigidity |
|                                                                        |                                                                                     |                                                          |                                                                |   |                                   |                                    |                                                    |                                                       |                          |                     |                         |                            | 喷雾式<br>Usage of<br>mist | 干式<br>Dry |                                 |                  |                    |                       |                                       |                                           |                                |                                      |                            |                             |
|                                                                        |                                                                                     |                                                          |                                                                |   |                                   |                                    |                                                    |                                                       |                          |                     |                         |                            |                         |           |                                 |                  |                    |                       |                                       |                                           |                                |                                      |                            |                             |
| 尺寸的不稳定<br>Unstable dimension                                           | 工件尺寸不稳定<br>Unstable workpiece<br>dimension                                          | 刀片精度不适应<br>Unsuitable insert tolerance                   |                                                                |   |                                   |                                    |                                                    |                                                       |                          |                     |                         |                            |                         |           |                                 |                  |                    |                       |                                       |                                           |                                |                                      |                            |                             |
|                                                                        |                                                                                     | 刀具或工件的逃屑<br>Tool or workpiece evacuation                 |                                                                |   |                                   |                                    |                                                    |                                                       |                          |                     |                         |                            | ●                       | ●         | ↑                               | ●                | ↓                  | ↓                     |                                       |                                           | ●                              | ●                                    | ●                          | ●                           |
|                                                                        | 切削中频繁偏心<br>Frequent offset<br>during cutting                                        | 后刀面磨损增大<br>Flank wear increase                           | ●                                                              |   |                                   |                                    |                                                    |                                                       |                          |                     |                         |                            |                         |           |                                 | ●                | ↑                  |                       |                                       |                                           |                                |                                      |                            |                             |
|                                                                        |                                                                                     | 切削条件不适应<br>Unsuitable cutting conditions                 |                                                                |   |                                   |                                    | ●                                                  | ↓                                                     | ●                        | ↑                   |                         |                            |                         |           |                                 |                  |                    |                       |                                       |                                           |                                |                                      |                            |                             |
|                                                                        |                                                                                     | 刀口切削瘤<br>Built-up edge                                   |                                                                |   |                                   |                                    | ●                                                  | ●                                                     | ↑                        |                     |                         |                            |                         |           |                                 |                  |                    |                       |                                       |                                           |                                |                                      |                            |                             |
| 表面粗糙度<br>Surface roughness                                             | 表面粗糙度差<br>Poor surface roughness                                                    | 刀具磨损使切削性能不佳<br>Poor cutting by tool wear                 | ●                                                              |   | ●                                 | ●                                  | ↓                                                  |                                                       |                          |                     |                         | ●                          |                         | ●         | ↑                               | ●                | ↑                  | ●                     | ↓                                     | ●                                         |                                |                                      |                            |                             |
|                                                                        |                                                                                     | 崩损<br>Chipping                                           |                                                                | ● |                                   |                                    |                                                    | ●                                                     | ↓                        | ●                   | ↓                       |                            |                         |           | ●                               |                  | ●                  | ↑                     | ●                                     | ↑                                         |                                | ●                                    | ●                          | ●                           |
|                                                                        |                                                                                     | 粘刀，刀口积屑瘤<br>Welding，built-up edge                        |                                                                |   | ●                                 | ●                                  | ↑                                                  |                                                       |                          |                     |                         | ●                          |                         | ●         | ↑                               |                  |                    | ●                     | ↓                                     | ●                                         |                                |                                      | ●                          | ●                           |
|                                                                        |                                                                                     | 切削条件不适应<br>Unsuitable cutting conditions                 |                                                                |   |                                   |                                    | ●                                                  | ↑                                                     | ●                        | ↓                   | ●                       | ↓                          |                         | ●         |                                 |                  |                    |                       |                                       |                                           |                                |                                      |                            |                             |
|                                                                        |                                                                                     | 刀具材质/几何形状不适应<br>Unsuitable tool geometry/geometry        |                                                                |   |                                   |                                    |                                                    |                                                       |                          |                     |                         |                            |                         | ●         |                                 | ●                | ↑                  | ●                     | ↓                                     | ●                                         |                                |                                      |                            |                             |
| 发热<br>Heat                                                             | 切削发热使加工精度恶化或<br>刀具寿命降低<br>Deterioration of accuracy or<br>tool life by cutting heat | 振动，振刀<br>Vibration, chattering                           |                                                                | ● |                                   | ●                                  | ↓                                                  | ●                                                     | ↓                        | ●                   | ↓                       |                            | ●                       | ●         | ↑                               | ●                | ↓                  | ●                     | ↓                                     |                                           | ●                              | ●                                    | ●                          | ●                           |
|                                                                        |                                                                                     | 切削条件不适应<br>Unsuitable cutting conditions                 |                                                                |   |                                   |                                    | ●                                                  | ↓                                                     | ●                        | ↓                   | ●                       | ↓                          |                         | ●         |                                 | ●                | ↑                  |                       | ●                                     | ↓                                         |                                |                                      |                            |                             |
| 毛刺、欠损、毛边<br>Burr, Chipping, Scuffing                                   | 钢，铝—毛刺<br>Steel, Aluminium - Burr                                                   | 切削条件不适应<br>Unsuitable cutting conditions                 |                                                                |   |                                   | ●                                  | ↓                                                  | ●                                                     | ↑                        |                     | ●                       | ●                          |                         |           |                                 |                  |                    |                       |                                       |                                           |                                |                                      |                            |                             |
|                                                                        |                                                                                     | 刀具材质/几何形状不适应<br>Unsuitable tool geometry/geometry        | ●                                                              |   |                                   |                                    |                                                    |                                                       |                          |                     |                         |                            | ●                       | ●         | ↑                               | ●                | ↓                  | ●                     | ↓                                     | ●                                         |                                |                                      |                            |                             |
|                                                                        | 铸铁-欠损<br>Cast iron workpiece chip off                                               | 切削条件不适应<br>Unsuitable cutting conditions                 |                                                                |   |                                   |                                    | ●                                                  | ↓                                                     | ●                        | ↓                   | ●                       | ↓                          |                         | ●         | ●                               | ↑                | ●                  | ↑                     | ●                                     | ↑                                         |                                | ●                                    | ●                          | ●                           |
|                                                                        |                                                                                     | 刀具材质/几何形状不适应<br>Unsuitable tool geometry/geometry        | ●                                                              |   |                                   |                                    |                                                    |                                                       |                          |                     |                         |                            | ●                       | ●         | ↑                               | ●                | ↑                  | ●                     | ↑                                     | ●                                         | ↑                              |                                      | ●                          | ●                           |
|                                                                        | 软钢-毛边<br>Mild steel scuffing                                                        | 切削条件不适应<br>Unsuitable cutting conditions                 |                                                                |   |                                   | ●                                  | ↑                                                  | ●                                                     | ↓                        | 2                   |                         | ●                          |                         |           |                                 | ●                | ↑                  |                       | ●                                     | ↓                                         |                                |                                      |                            |                             |
|                                                                        |                                                                                     | 刀具材质/几何形状不适应<br>Unsuitable tool geometry/geometry        | ●                                                              |   | ●                                 |                                    |                                                    |                                                       |                          |                     |                         |                            | ●                       | ●         | ↑                               |                  |                    | ●                     | ↓                                     |                                           |                                |                                      |                            |                             |
| 切刃的损伤<br>Edge damage                                                   | 后刀面和前刀面磨损增大<br>Wear increase at relief face<br>rake face                            | 后刀面的磨损<br>Flank wear                                     | ●                                                              |   |                                   |                                    | ●                                                  | ↓                                                     |                          |                     |                         | ●                          |                         | ●         | ↑                               | ●                | ↑                  | ●                     | ↓                                     |                                           |                                |                                      |                            |                             |
|                                                                        |                                                                                     | 前刀面的磨损<br>Rake face wear                                 | ●                                                              |   |                                   |                                    | ●                                                  | ↓                                                     | ●                        | ↓                   | ●                       | ↓                          |                         | ●         |                                 | ●                | ↑                  | ●                     | ↑                                     |                                           |                                |                                      |                            |                             |
|                                                                        |                                                                                     | 境界磨损<br>Notching                                         |                                                                |   | ●                                 | ●                                  | ↓                                                  |                                                       |                          |                     | ●                       |                            |                         |           |                                 |                  |                    |                       |                                       |                                           |                                |                                      |                            |                             |
|                                                                        | 崩损<br>Chipping                                                                      | 振动，振刀<br>Vibration, chattering                           |                                                                | ● |                                   |                                    |                                                    | ●                                                     | ↓                        | ●                   | ↓                       |                            | ●                       |           |                                 |                  | ●                  | ↑                     | ●                                     | ↑                                         |                                | ●                                    | ●                          | ●                           |
|                                                                        |                                                                                     | 刀具材质/切削条件不适应<br>Unsuitable tool grade/cutting conditions | ●                                                              | ● |                                   |                                    |                                                    | ●                                                     | ↓                        | ●                   | ↓                       |                            | ●                       |           | ●                               | ↑                | ●                  | ↑                     | ●                                     | ↑                                         |                                | ●                                    | ●                          | ●                           |
|                                                                        |                                                                                     | 刀具材质/切削条件不适应<br>Unsuitable tool grade/cutting conditions |                                                                |   | ●                                 |                                    |                                                    | ●                                                     | ↓                        | ●                   | ↓                       | ●                          |                         | ●         | ●                               | ↑                |                    | ●                     | ↓                                     |                                           |                                |                                      |                            |                             |
|                                                                        |                                                                                     | 热龟裂<br>Thermal Crack                                     |                                                                |   |                                   | ●                                  |                                                    | ●                                                     | ↓                        | ●                   | ↓                       | ●                          |                         | ●         | ●                               | ↑                |                    | ●                     | ↓                                     |                                           |                                |                                      |                            |                             |
|                                                                        |                                                                                     | 切刃刀尖角部的变形<br>Edge nose deformation                       | 继续加工时刀尖部变形<br>Edge nose deformation during interrupted cutting | ● |                                   |                                    |                                                    | ●                                                     | ↓                        | ●                   | ↓                       | ●                          |                         | ●         | ●                               | ↓                | ●                  | ↑                     | ●                                     | ↑                                         |                                |                                      |                            |                             |
|                                                                        |                                                                                     | 刀口积屑瘤<br>Built-up edge                                   | 刀具材质/切削条件不适应<br>Unsuitable tool grade/cutting conditions       |   |                                   | ●                                  | ●                                                  | ↑                                                     | ●                        | ↑                   |                         | ●                          |                         | ●         | ●                               | ↑                |                    | ●                     | ↓                                     | ●                                         |                                |                                      |                            |                             |
| 切屑处理<br>Chip control                                                   | 长切屑缠绕<br>Long, tangling chips                                                       | 切削条件不适应<br>Unsuitable cutting conditions                 |                                                                |   |                                   |                                    | ●                                                  | ↓                                                     | ●                        | ↑                   | ●                       |                            | ●                       |           |                                 |                  |                    |                       |                                       |                                           |                                |                                      |                            |                             |
|                                                                        |                                                                                     | 刀具切刃形状不适应<br>Unsuitable tool geometry                    |                                                                |   |                                   |                                    |                                                    |                                                       |                          |                     |                         |                            | ●                       |           | ●                               | ↓                | ●                  | ↓                     |                                       |                                           |                                |                                      |                            |                             |
|                                                                        | 短切屑四处飞溅<br>Chips scattering                                                         | 切削条件不适应<br>Unsuitable cutting conditions                 |                                                                |   |                                   |                                    |                                                    | ●                                                     | ↓                        | ●                   | ↓                       |                            | ●                       |           |                                 |                  |                    |                       |                                       |                                           |                                |                                      |                            |                             |
|                                                                        |                                                                                     | 刀具切刃形状不适应<br>Unsuitable tool geometry                    |                                                                |   |                                   |                                    |                                                    |                                                       |                          |                     |                         |                            | ●                       |           | ●                               | ↑                | ●                  | ↑                     |                                       |                                           |                                |                                      |                            |                             |
| (1)为防止振刀，可采用较大的进给量。To prevent chattering, the higher f may be suitable |                                                                                     |                                                          |                                                                |   |                                   |                                    |                                                    |                                                       |                          |                     |                         |                            |                         |           |                                 |                  |                    |                       |                                       |                                           |                                |                                      |                            |                             |
| (2)为避免毛边，可采用较大的进给量。To prevent scuffing, the higher f may be suitable   |                                                                                     |                                                          |                                                                |   |                                   |                                    |                                                    |                                                       |                          |                     |                         |                            |                         |           |                                 |                  |                    |                       |                                       |                                           |                                |                                      |                            |                             |



铣削加工问题及对策  
Trouble Shooting (Milling)

| 故障内容<br>Trouble                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                          |                                                           | 对策与检查要点<br>Measures                                    |   |   | 刀具材质<br>Insert Grade              |                                    |                                                 | 切削条件<br>Cutting Conditions                          |                          |                     |                       |                            | 刀具几何形状<br>Tool Geometry    |                     |           |                                    |                      | 机床装夹<br>Setting/<br>Machine |                                 |                       |                         |                                                      |                                   |                            |                                        |                            |                             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|-----------------------------------------------------------|--------------------------------------------------------|---|---|-----------------------------------|------------------------------------|-------------------------------------------------|-----------------------------------------------------|--------------------------|---------------------|-----------------------|----------------------------|----------------------------|---------------------|-----------|------------------------------------|----------------------|-----------------------------|---------------------------------|-----------------------|-------------------------|------------------------------------------------------|-----------------------------------|----------------------------|----------------------------------------|----------------------------|-----------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                          |                                                           |                                                        |   |   | 硬度更高的材质<br>change to harder grade | 韧性更大的材质<br>change to tougher grade | 耐冲击性更好的材质<br>More thermal shock resistant grade | 耐粘结性更好的材质<br>Change to more welding resistant grade | 切削速度 Vc<br>Cutting speed | 进给量 fz<br>Feed rate | 切深 ap<br>Depth of cut | 刀盘直径与切削宽度<br>review review | 改变走刀路线<br>Tool path review | 切削液<br>Coolant      |           | 附断屑槽刀片<br>Insert with chip breaker | 刀片后角<br>Relief angle | 刀尖角<br>Corner angle         | 切削刃强度钝化<br>Edge strength honing | 刀盘刃数<br>Insert number | 刀片安装凹槽<br>Insert pocket | 修光刃形状逼刀槽（<br>的检查<br>Wiper edge (relief angle) review | 刀刃振动精度的检查<br>Insert run out check | 刀具刚性的检查<br>Cutter rigidity | 工件刀具的安装<br>Workpiece/tool installation | 刀柄悬伸长度<br>Over hang length | 动力、机械松动情况<br>Power/rigidity |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                          |                                                           |                                                        |   |   |                                   |                                    |                                                 |                                                     |                          |                     |                       |                            |                            | 喷雾<br>Usage of mist | 干式<br>Dry |                                    |                      |                             |                                 |                       |                         |                                                      |                                   |                            |                                        |                            |                             |
| 主要原因<br>Trouble Item                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                          |                                                           | 提高/增加<br>Higher(Larger) ↑<br>降低/减少<br>Lower(Smaller) ↓ |   |   |                                   |                                    |                                                 |                                                     |                          |                     |                       |                            |                            |                     |           |                                    |                      |                             |                                 |                       |                         |                                                      |                                   |                            |                                        |                            |                             |
| 切刃的损伤<br>Edge damage                                                                                                                                                                                                                                                                                                                                                                                                                                              | 后刀面<br>磨损增大<br>Flank wear increase       | 切削条件不当<br>Unsuitable cutting conditions                   |                                                        |   |   | ↓                                 |                                    |                                                 |                                                     |                          |                     |                       | ●                          |                            |                     |           |                                    |                      |                             |                                 |                       |                         |                                                      |                                   |                            |                                        |                            |                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                          | 刀具切刃形状不当<br>Unsuitable tool geometry                      | ●                                                      |   |   |                                   |                                    |                                                 |                                                     |                          |                     |                       |                            |                            | ↑                   |           | ↓                                  |                      |                             | ●                               |                       |                         |                                                      |                                   |                            |                                        |                            |                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 前刀面<br>磨损增大<br>Rake face wear increase   | 切削条件不当<br>Unsuitable cutting conditions                   |                                                        |   |   | ↓                                 | ↓                                  | ↓                                               |                                                     |                          |                     |                       | ●                          |                            |                     |           |                                    |                      |                             |                                 |                       |                         |                                                      |                                   |                            |                                        |                            |                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                          | 刀具切刃形状不当<br>Unsuitable tool geometry                      | ●                                                      |   |   |                                   |                                    |                                                 |                                                     |                          |                     |                       |                            |                            | ↑                   | ↑         | ↓                                  |                      |                             |                                 |                       |                         |                                                      |                                   |                            |                                        |                            |                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 切削刃崩损<br>Chipping cracking               | 切削条件不当<br>Unsuitable cutting conditions                   |                                                        |   |   | ↓                                 | ↓                                  | ↓                                               | ●                                                   |                          |                     | ●                     |                            |                            |                     |           |                                    |                      |                             |                                 |                       |                         |                                                      |                                   |                            |                                        |                            |                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                          | 刀具切刃形状不当<br>Unsuitable tool geometry                      |                                                        | ● |   |                                   |                                    |                                                 |                                                     |                          |                     |                       |                            |                            | ↓                   | ●         | ↑                                  |                      |                             | ●                               | ●                     | ●                       | ●                                                    | ●                                 | ●                          |                                        |                            |                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 热冲击破损<br>Edge breakage by thermal shock  | 切削条件不当<br>Unsuitable cutting conditions                   |                                                        |   |   | ↓                                 | ↓                                  | ↓                                               |                                                     |                          |                     |                       | ●                          |                            |                     |           |                                    |                      |                             |                                 |                       |                         |                                                      |                                   |                            |                                        |                            |                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                          | 刀具切刃形状不当<br>Unsuitable tool geometry                      |                                                        |   | ● |                                   |                                    |                                                 |                                                     |                          |                     |                       |                            |                            | ↑                   |           | ↓                                  |                      |                             |                                 |                       |                         |                                                      |                                   |                            |                                        |                            |                             |
| 刃口积屑瘤<br>Built-up edge                                                                                                                                                                                                                                                                                                                                                                                                                                            | 切削条件不当<br>Unsuitable cutting conditions  |                                                           |                                                        |   | ↑ | ↑                                 |                                    |                                                 |                                                     |                          |                     | ●                     |                            |                            |                     |           |                                    |                      |                             |                                 |                       |                         |                                                      |                                   |                            |                                        |                            |                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 刀具切刃形状不当<br>Unsuitable tool geometry     |                                                           |                                                        | ● |   |                                   |                                    |                                                 |                                                     |                          |                     |                       |                            |                            | ↑                   |           | ↓                                  |                      |                             |                                 |                       |                         |                                                      |                                   |                            |                                        |                            |                             |
| 加工精度<br>Machining accuracy                                                                                                                                                                                                                                                                                                                                                                                                                                        | 精加工<br>表面不佳<br>Poor surface finish       | 切削条件不当<br>Unsuitable cutting conditions                   |                                                        |   |   | ↑                                 | ↓                                  | ↓                                               |                                                     |                          |                     | ●                     |                            |                            |                     |           |                                    |                      |                             |                                 |                       |                         |                                                      |                                   |                            |                                        |                            |                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                          | 刀具切刃形状不当<br>Unsuitable tool geometry                      | ●                                                      |   | ● |                                   |                                    |                                                 |                                                     |                          |                     |                       |                            |                            |                     |           | ↓                                  | ↓                    |                             | ●                               | ●                     |                         | ●                                                    | ●                                 |                            |                                        |                            |                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 毛刺<br>Burr                               | 切削条件不当<br>Unsuitable cutting conditions                   |                                                        |   |   | ↓                                 | ↓                                  | ↓                                               | ↓                                                   | ●                        |                     |                       |                            |                            |                     |           |                                    |                      | ●                           |                                 |                       |                         |                                                      |                                   |                            |                                        |                            |                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                          | 刀具切刃形状不当<br>Unsuitable tool geometry                      |                                                        |   |   |                                   |                                    |                                                 |                                                     |                          |                     |                       |                            |                            | ↑                   | ↓         | ↓                                  |                      |                             |                                 |                       |                         |                                                      |                                   |                            |                                        |                            |                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 欠损<br>Workpiece chip off                 | 切削条件不当<br>Unsuitable cutting conditions                   |                                                        |   |   |                                   |                                    |                                                 |                                                     |                          |                     |                       |                            |                            |                     |           |                                    |                      |                             |                                 |                       |                         |                                                      |                                   |                            |                                        |                            |                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                          | 刀具切刃形状不当<br>Unsuitable tool geometry                      |                                                        |   |   |                                   |                                    |                                                 |                                                     |                          |                     |                       |                            |                            | ↑                   | ↑         | ↓                                  | ↑                    |                             | ●                               |                       |                         |                                                      |                                   |                            |                                        |                            |                             |
| 平面度/<br>平行度差<br>Poor planeness parallelness                                                                                                                                                                                                                                                                                                                                                                                                                       | 工具或刀具的逃隙<br>Tool or workpiece evacuation |                                                           |                                                        |   |   | ↓                                 | ↓                                  |                                                 |                                                     |                          | ● <sub>1</sub>      |                       | ●                          | ↑                          | ↓                   | ↓         | ↓                                  |                      | ●                           | ●                               | ●                     | ●                       | ●                                                    | ●                                 |                            |                                        |                            |                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                          |                                                           |                                                        |   |   |                                   |                                    |                                                 |                                                     |                          |                     |                       |                            |                            |                     |           |                                    |                      |                             |                                 |                       |                         |                                                      |                                   |                            |                                        |                            |                             |
| 其他<br>Others                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 振动/振刀大<br>Heavy chattering vibration     | 安装过程/切削条件不当<br>Unsuitable cutting conditions installation |                                                        |   |   | ↓                                 | ↓                                  | ↓                                               | ↓                                                   | ●                        |                     | ● <sub>4</sub>        |                            | ●                          | ↑                   | ↓         | ↓                                  | ↓                    |                             |                                 |                       | ●                       | ●                                                    | ●                                 |                            |                                        |                            |                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                          |                                                           |                                                        |   |   |                                   |                                    |                                                 |                                                     |                          |                     |                       |                            |                            |                     |           |                                    |                      |                             |                                 |                       |                         |                                                      |                                   |                            |                                        |                            |                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 切削缠绕堵塞<br>Damaging chips                 | 切削条件不当<br>Unsuitable cutting conditions                   |                                                        |   |   | ↑                                 | ↑                                  | ↓ <sub>5</sub>                                  |                                                     | ●                        |                     | ● <sub>6</sub>        | ●                          |                            |                     |           |                                    |                      |                             |                                 |                       |                         |                                                      |                                   |                            |                                        |                            |                             |
| 刀具切刃形状不当<br>Unsuitable tool geometry                                                                                                                                                                                                                                                                                                                                                                                                                              |                                          |                                                           |                                                        |   |   |                                   |                                    |                                                 |                                                     |                          |                     |                       |                            | ●                          | ↑                   |           | ↓                                  | ●                    |                             |                                 |                       |                         |                                                      |                                   |                            |                                        |                            |                             |
| <div>(1) 由于切削热，使工件表面变形<br/>If the surface is warped by cutting heat</div> <div>(2) 为了防止振刀，可采用较大进给量<br/>To prevent chattering, the higher fz may be suitable</div> <div>(3) 为防止振刀，可采用较大的切深<br/>To prevent chattering, the larger ap may be suitable</div> <div>(4) 螺旋加工时推荐使用逆铣加工方法<br/>Down-cut method is recommended for helical end milling</div> <div>(5) 大进给量也可以<br/>Higher fz may be suitable</div> <div>(6) 推荐使用压缩空气<br/>Compressed air is recommended</div> |                                          |                                                           |                                                        |   |   |                                   |                                    |                                                 |                                                     |                          |                     |                       |                            |                            |                     |           |                                    |                      |                             |                                 |                       |                         |                                                      |                                   |                            |                                        |                            |                             |

非标刀具

Non-standard cutter

根据要求制作各种尺寸的非标刀具，提供完美的加工方案，解决以往加工效率差，精度低，表面光洁度差，耗时长等各种问题！

According to the requirements of various sizes of non-standard tool, We can provide perfect machining way to solve the poor efficiency, low accuracy, poor surface finishing, long time consuming problems!



客户单位  
Customer Company

联系人  
Name

电话 TEL

刀具名称  
Request tool

图号  
Part No.

规格Specification

日期  
DATE

填表人  
Applicant

|                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                             |                          |                                                                                        |                               |                             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|----------------------------------------------------------------------------------------|-------------------------------|-----------------------------|
| 机床<br>Machine                                                                                                                                                     | 机床名称:<br>Machine Name                                                                                                                                                                                                                                                                                                                       |                          |                                                                                        |                               |                             |
|                                                                                                                                                                   | ★机床类型: <input type="checkbox"/> 数控车 <input type="checkbox"/> 立式加工中心 <input type="checkbox"/> 卧式加工中心 <input type="checkbox"/> 专机 <input type="checkbox"/> 其他<br>Machine type: CNC Lathe Vertical machining center Horizontal machining center Special machine Other machine                                                                  |                          |                                                                                        |                               |                             |
|                                                                                                                                                                   | ★夹柄型号: <input type="checkbox"/> 热膨胀夹头 <input type="checkbox"/> 液压夹头 <input type="checkbox"/> 弹簧夹头 <input type="checkbox"/> 侧固式 <input type="checkbox"/> 专用丝锥夹头 <input type="checkbox"/> 钻夹头 <input type="checkbox"/> 其他<br>Holder type: Shrink fit chuck Hydraulic chuck Collet chuck Side lock chuck Special taps chuck Drill chuck Others |                          |                                                                                        |                               |                             |
|                                                                                                                                                                   | ★机床主轴类型: <input type="checkbox"/> BT30 <input type="checkbox"/> BT40 <input type="checkbox"/> BT50 <input type="checkbox"/> HSK <input type="checkbox"/> 其他<br>Machine Spindle Type Others                                                                                                                                                  |                          |                                                                                        |                               |                             |
|                                                                                                                                                                   | ★冷却类型: <input type="checkbox"/> 内冷 <input type="checkbox"/> 外冷 <input type="checkbox"/> 干式切削<br>Cooling type: internal cooling external cooling dry cutting                                                                                                                                                                                 |                          | 机床冷却压力:<br>Machine Cooling pressure                                                    |                               |                             |
| 加工工艺<br>Processing technic                                                                                                                                        | ★工件材料:<br>Workpiece Material                                                                                                                                                                                                                                                                                                                |                          | ★提供零件简图 Workpiece Picture                                                              |                               |                             |
|                                                                                                                                                                   | ★硬度:<br>Hardness                                                                                                                                                                                                                                                                                                                            |                          |                                                                                        |                               |                             |
|                                                                                                                                                                   | ★加工表面状态 <input type="checkbox"/> 毛坯表面 <input type="checkbox"/> 已加工过表面<br>Machined surface Base Surface Machined Surface                                                                                                                                                                                                                     |                          |                                                                                        |                               |                             |
|                                                                                                                                                                   | ★是否干涉 <input type="checkbox"/> 无 <input type="checkbox"/> 干涉 干涉长___mm<br>Interference NO Interference Length                                                                                                                                                                                                                                |                          |                                                                                        |                               |                             |
|                                                                                                                                                                   | Interference NO Interference Length                                                                                                                                                                                                                                                                                                         |                          |                                                                                        |                               |                             |
|                                                                                                                                                                   | Turning Boring Milling Forming                                                                                                                                                                                                                                                                                                              |                          |                                                                                        |                               |                             |
|                                                                                                                                                                   | <input type="checkbox"/> 钻孔 <input type="checkbox"/> 扩孔 <input type="checkbox"/> 铰孔 <input type="checkbox"/> 复合加工<br>Drilling Enlargement hole Reaming Compound machining                                                                                                                                                                   |                          |                                                                                        |                               |                             |
|                                                                                                                                                                   | <input type="checkbox"/> 攻丝 <input type="checkbox"/> 铣槽 <input type="checkbox"/> 三维加工 <input type="checkbox"/> 其他<br>Tapping Grooving 3D machining Others                                                                                                                                                                                   |                          |                                                                                        |                               |                             |
|                                                                                                                                                                   | ★工况 <input type="checkbox"/> 通孔 <input type="checkbox"/> 盲孔 <input type="checkbox"/> 平面 <input type="checkbox"/> 外圆 <input type="checkbox"/> 成型表面<br>Working condition Through hole Blind hole Flat External Forming surface                                                                                                                |                          |                                                                                        |                               |                             |
|                                                                                                                                                                   | ★产品加工状况 预孔 <input type="checkbox"/> 无 No<br>Product processing status <input type="checkbox"/> 有 D___mm孔, 切削余量                                                                                                                                                                                                                              |                          |                                                                                        |                               |                             |
| Hole Yes Hole Cutting allowance                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                             |                          |                                                                                        |                               |                             |
| 中间是否有断差孔、斜孔 <input type="checkbox"/> 无 <input type="checkbox"/> 有 <input type="checkbox"/> 断续<br>Is there a gap hole or a slant hole in the miNo Yes Intermittent |                                                                                                                                                                                                                                                                                                                                             |                          |                                                                                        |                               |                             |
| 孔/外圆 (直径)                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                             |                          |                                                                                        |                               |                             |
| ★孔要求 Inner/Outter Diameter<br>Hole requirement 孔深度<br>Hole Depth                                                                                                  |                                                                                                                                                                                                                                                                                                                                             |                          |                                                                                        |                               |                             |
| 质量 (公差、表面粗糙度、直线度) 见右图<br>Quality (tolerance, surface roughness, straightness) See right                                                                           |                                                                                                                                                                                                                                                                                                                                             |                          |                                                                                        |                               |                             |
| 应用<br>Application                                                                                                                                                 | ★客户对刀具耐用度要求:<br>Customer requirements for tool durability:                                                                                                                                                                                                                                                                                  |                          |                                                                                        |                               |                             |
|                                                                                                                                                                   | 目前客户使用状况Current customer usage                                                                                                                                                                                                                                                                                                              | 新产品<br>New Products      | <input type="checkbox"/> 是 参数是否由我司提供<br>Yes Condition provide by our Company           |                               |                             |
|                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                             | 替换刀具<br>Replace tool     | <input type="checkbox"/> 不是 请填写替换刀具内容<br>NO Please write replace tool details as below |                               |                             |
|                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                             |                          | 刀具品牌:<br>Tool Brand                                                                    | ★寿命<br>Tool Life              | ★进给fn (mm/rev)<br>Feederate |
|                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                             |                          | 切削速度Vc (m/min)<br>Cutting Speed                                                        | ★转速n(r/min)<br>Rotation Speed |                             |
| ★失效形式 Invalid Mode                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                             |                          |                                                                                        |                               |                             |
| 申请人<br>Applicant:                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                             | 销售主管<br>Sales Executive: |                                                                                        | 技术主管<br>Technical director:   |                             |
| 备注: 打★为必填项目<br>Remark: ★ Necessary filling item                                                                                                                   |                                                                                                                                                                                                                                                                                                                                             |                          |                                                                                        |                               |                             |
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超硬刀具

Diamond tool

我们注重细节的控制，无论是简单的刀片还是到复杂的钻铰刀，在每一道工序做质量的  
检验与控制，强调质量是生产出来的而不是检验出来的，确保满足并超越您的预想！



we pay attention to detail control,whether it is a simple blade or complex drilling and reamer,we  
care every processing testing and controlling,we always keep in mind the quality is not only by  
checking but also by controlling when production.we promise you we will satisfy you and exceed your  
expectation.

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