



*Carmex*  
*Precision Tools Ltd.*

# Swiss Line

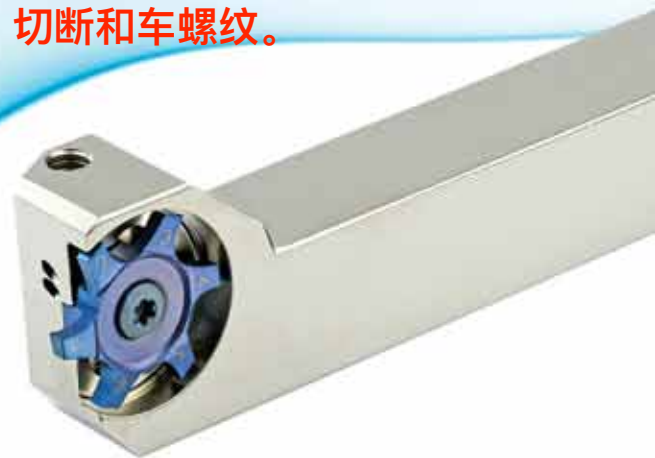
瑞士专机 (小型车床)

## New Products

新产品



Carmex开发了一个新类型的、瑞士专机和小型车床用的多种类刀片，专门用于小零部件的外圆车削、切槽、切断和车螺纹。



6个切削刃，用于前车、背车、切槽、仿形（R槽）、切断和车螺纹。

**Metric 2017**

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## Polygon Swiss Line

瑞士专机 (小型车床) 多用途刀具

**Carmex extends the Swiss Line range by offering a new type of polygon inserts and tool holders for external turning, grooving, parting and threading on Swiss-Type machines. Dedicated especially for small parts machining.**

Carmex开发了一个新类型的、瑞士专机和小型车床用的多用途刀片，专门用于小零部件的外圆车削、切槽、切断和车螺纹。



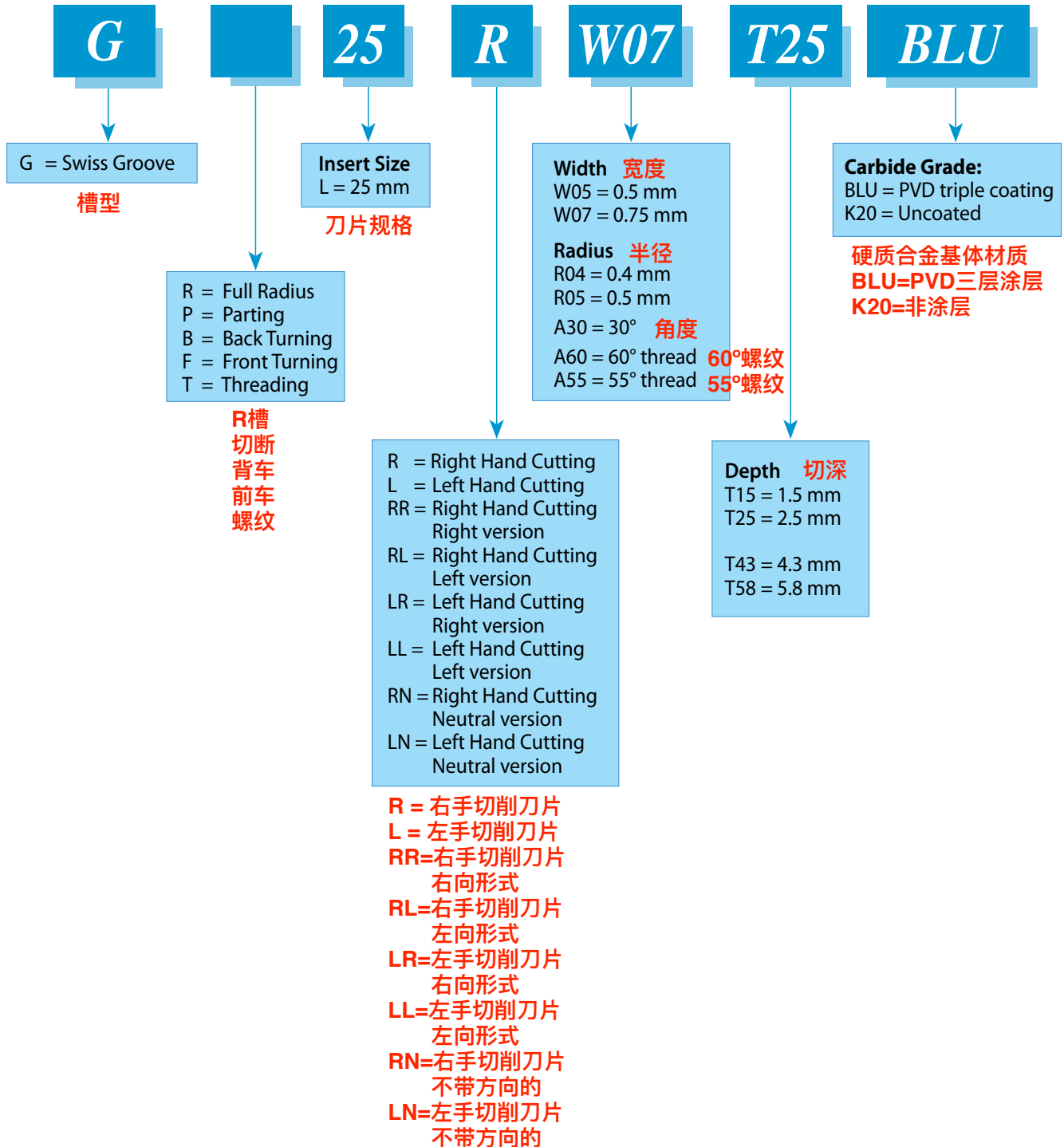
### Features 特点

- High precision ground inserts. 高精密切制刀片
- All inserts can be used with same tool holders. 全部刀片能用于所有刀杆
- A combination of carbide and the latest developed coating guarantees maximum tool life and improved productivity. 一个硬质合金和最新开发的涂层的结合，最大的保证了刀具寿命和提高生产效率。
- For a wide range of materials. 适用于宽范围金属材料
- Coated holders provides abrasive resistance. 涂层刀杆提高了耐磨损

Carbide grade: BLU, K20 硬质合金基体材质: BLU, K20

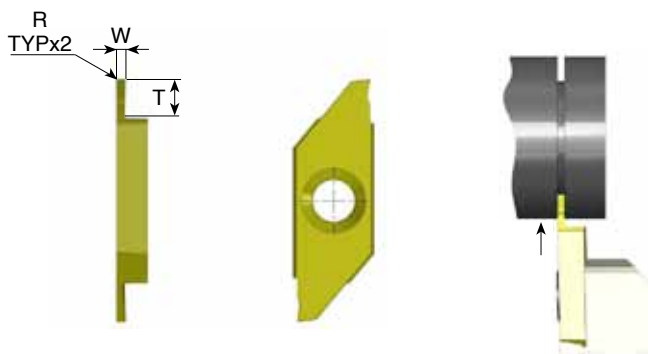
# Product Identification 产品识别

## Polygon Inserts 多用途刀片



# Grooving

切槽刀片



## Right hand cutting 右手切削刀片

每转进给 / mm/rev

订货号 Ordering Code	槽宽 W ± 0.02	切深 T max	刀尖R R	Feed mm/rev
G25 R W05 T15	0.5	1.5	0	0.01-0.06
G25 R W07 T25	0.75	2.5	0	0.02-0.07
G25 R W10 T27	1.0	2.7	0.05	0.02-0.09
G25 R W12 T30	1.2	3.0	0.05	0.02-0.10
G25 R W15 T38	1.5	3.8	0.05	0.02-0.12
G25 R W20 T38	2.0	3.8	0.05	0.02-0.13
G25 R W25 T38	2.5	3.8	0.05	0.02-0.14

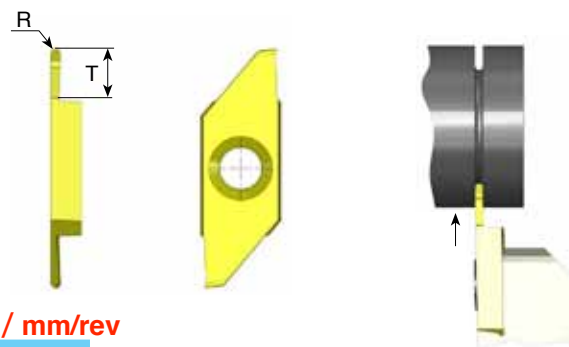
	K20	BLU
<b>P</b>		●
<b>M</b>	●	●
<b>K</b>	●	○
<b>N</b>	●	
<b>S</b>	●	●
<b>H</b>		≤45 HRc

\* For L.H, specify G25 L instead of G25 R

\* 左手刀杆指定G25 L, 不能以G25 R替代。

# Grooving and Profiling (full radius)

切槽和仿形 (R槽)



## Right hand cutting 右手切削刀片

每转进给 / mm/rev

订货号 Ordering Code	刀具半径 R ± 0.03	切深 T max	Feed mm/rev
GR25 R R02 T15	0.25	1.5	0.01-0.06
GR25 R R04 T25	0.40	2.5	0.02-0.07
GR25 R R05 T27	0.50	2.7	0.02-0.09

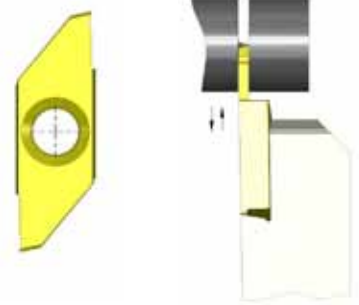
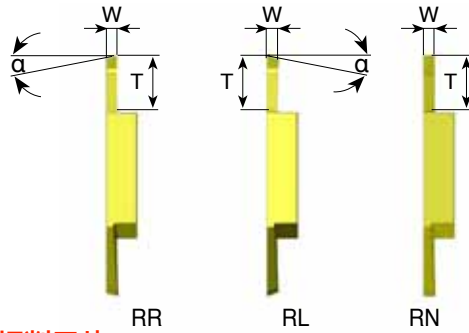
\* For L.H, specify GR25 L instead of GR25 R

\* 左手刀杆指定GR25 L, 不能以GR25 R替代。

- First choice
- Alternative
- 首选
- 第二选择

# Parting Off

切断



## Right hand cutting 右手切削刀片

每转进给 / mm/rev

订货号 Ordering Code	槽宽 W	切削刃角度 $\alpha^\circ$	切深 T max	Feed mm/rev
GP25 RR W07 T43	0.7	15	4.3	0.02-0.08
GP25 RL W07 T43	0.7	15	4.3	0.02-0.08
GP25 RN W07 T43	0.7	0	4.3	0.02-0.08
GP25 RR W15 T58	1.5	15	5.8	0.02-0.013
GP25 RL W15 T58	1.5	15	5.8	0.02-0.013
GP25 RN W15 T58	1.5	0	5.8	0.02-0.013
GP25 RR W20 T58	2.0	15	5.8	0.02-0.013
GP25 RL W20 T58	2.0	15	5.8	0.02-0.013
GP25 RN W20 T58	2.0	0	5.8	0.02-0.013
GP25 RR W25 T58	2.5	15	5.8	0.04-0.13
GP25 RL W25 T58	2.5	15	5.8	0.04-0.13
GP25 RN W25 T58	2.5	0	5.8	0.04-0.13

	K20	BLU
<b>P</b>		●
<b>M</b>	●	●
<b>K</b>	●	○
<b>N</b>	●	
<b>S</b>	●	●
<b>H</b>		≤45 HRc

\* For L.H, specify GP25 LR instead of GP25 RR  
 GP25 LL instead of GR25 RL  
 GP25 LN instead of GR25 RN

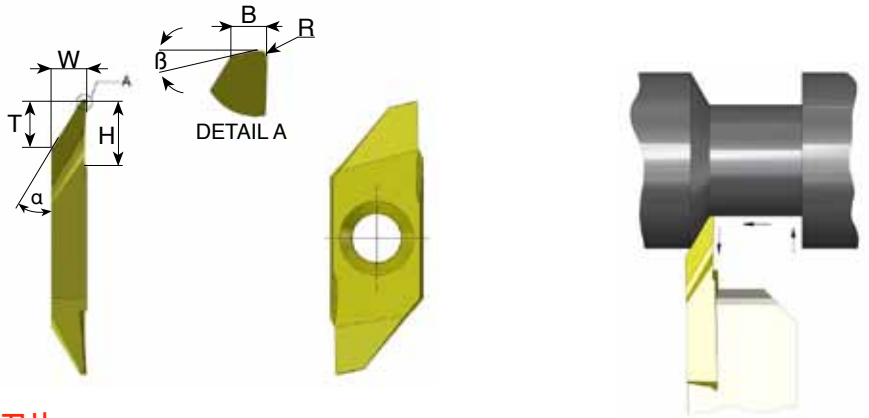
\* 左手刀杆指定GP25 LR, 不能以GP25 RR替代。  
 左手刀杆指定GP25 LL, 不能以GR25 RL替代。  
 左手刀杆指定GP25 LN, 不能以GR25 RN替代。

● First choice    ○ Alternative

● 首选    ○ 第二选择

# Back Turning

背车



## Right hand cutting 右手切削刀片

每刃进给/mm/rev

订货号 Ordering Code	$\alpha^\circ$ $\alpha^\circ$	$\beta^\circ$ $\beta^\circ$	刀尖R R	切宽 W	切深 T max	刃宽 B	刃长 H	Feed mm/rev
GB25 R A30 R03	30	15	0.03	3.0	4.0	0.5	8.0	0.05-0.12
GB25 R A30 R10	30	15	0.10	3.0	4.0	0.5	8.0	0.05-0.12

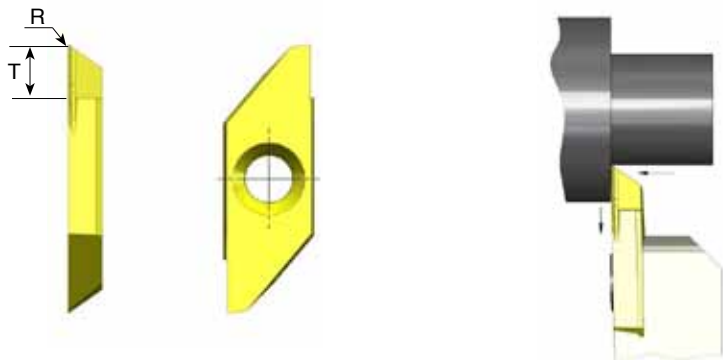
	K20	BLU
P		●
M	●	●
K	●	○
N	●	
S	●	●
H		≤45 HRc

\* For L.H, specify GB25 L instead of GB25 R

\* 左手刀杆指定GB25 L, 不能以GB25 R替代。

# Front Turning

前车



## Right hand cutting 右手切削刀片

每转进给/mm/rev

订货号 Ordering Code	切深 T max	刀尖R R	Feed mm/rev
GF25 R T40	4.0	0.03	0.05-0.12

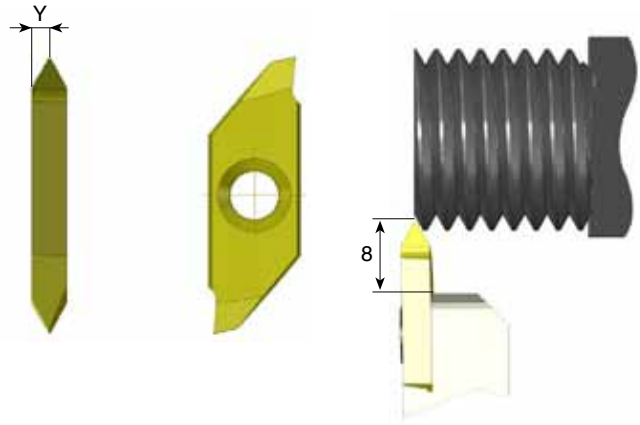
\* For L.H, specify GF25 L instead of GF25 R

\* 左手刀杆指定GF25 L, 不能以GF25 R替代。

- First choice      ○ Alternative
- 首选              ○ 第二选择

## Threading - Partial Profile 60°

60°不完全牙螺纹 (范围牙)



**Right hand cutting** 右手切削刀片

订货号 Ordering Code	螺距范围 Pitch Range		Y
	mm	TPI	
GT25 R A60	0.25-0.8	100-32	0.7
GT25 R G60	1.0-3.0	24-8	1.6

\* For L.H, specify GT25 L instead of GT25 R

\* 左手刀杆指定GT25 L, 不能以GT25 R替代。

	K20	BLU
P		●
M	●	●
K	●	○
N	●	
S	●	●
H		≤45 HRc

## Threading - Partial Profile 55°

55°不完全牙螺纹 (范围牙)

**Right hand cutting** 右手切削刀片

订货号 Ordering Code	螺距范围 Pitch Range		Y
	mm	TPI	
GT25 R A55	0.5-1.5	48-16	1.0
GT25 R G55	1.75-3.0	14-8	1.6

\* For L.H, specify GT25 L instead of GT25 R

\* 左手刀杆指定GT25 L, 不能以GT25 R替代。

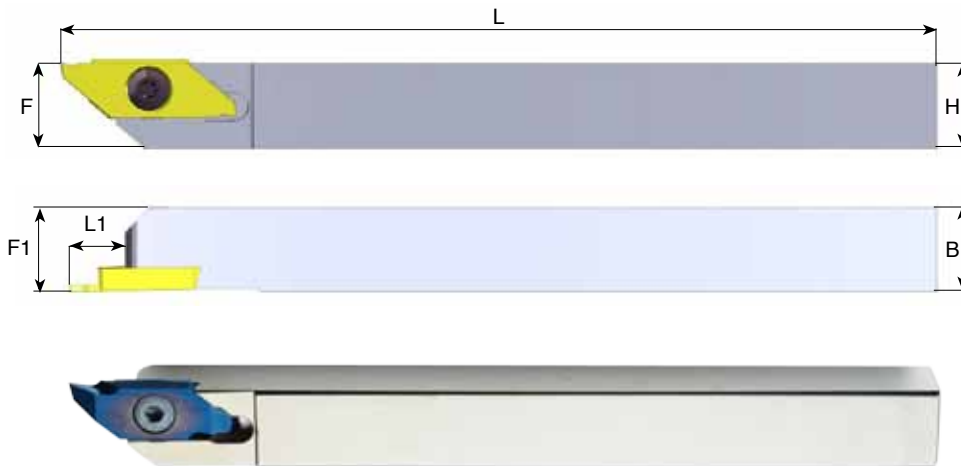
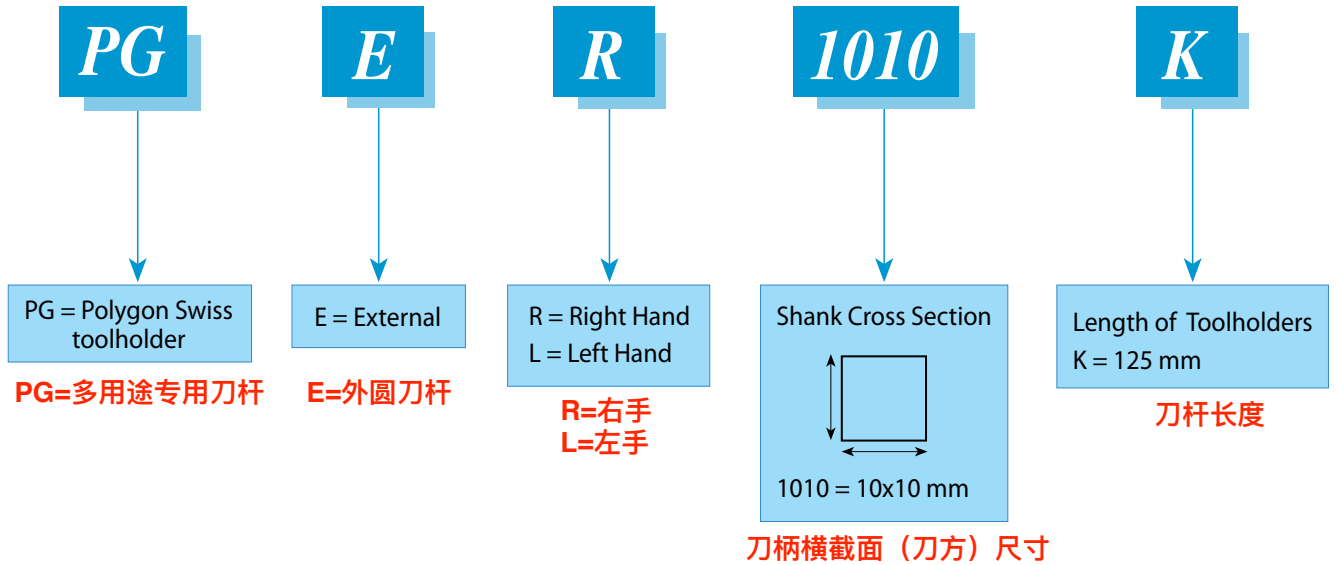
● First choice    ○ Alternative

● 首选            ○ 第二选择



# External Toolholders - Polygon 外圆刀杆-多用途

## Product Identification 产品识别



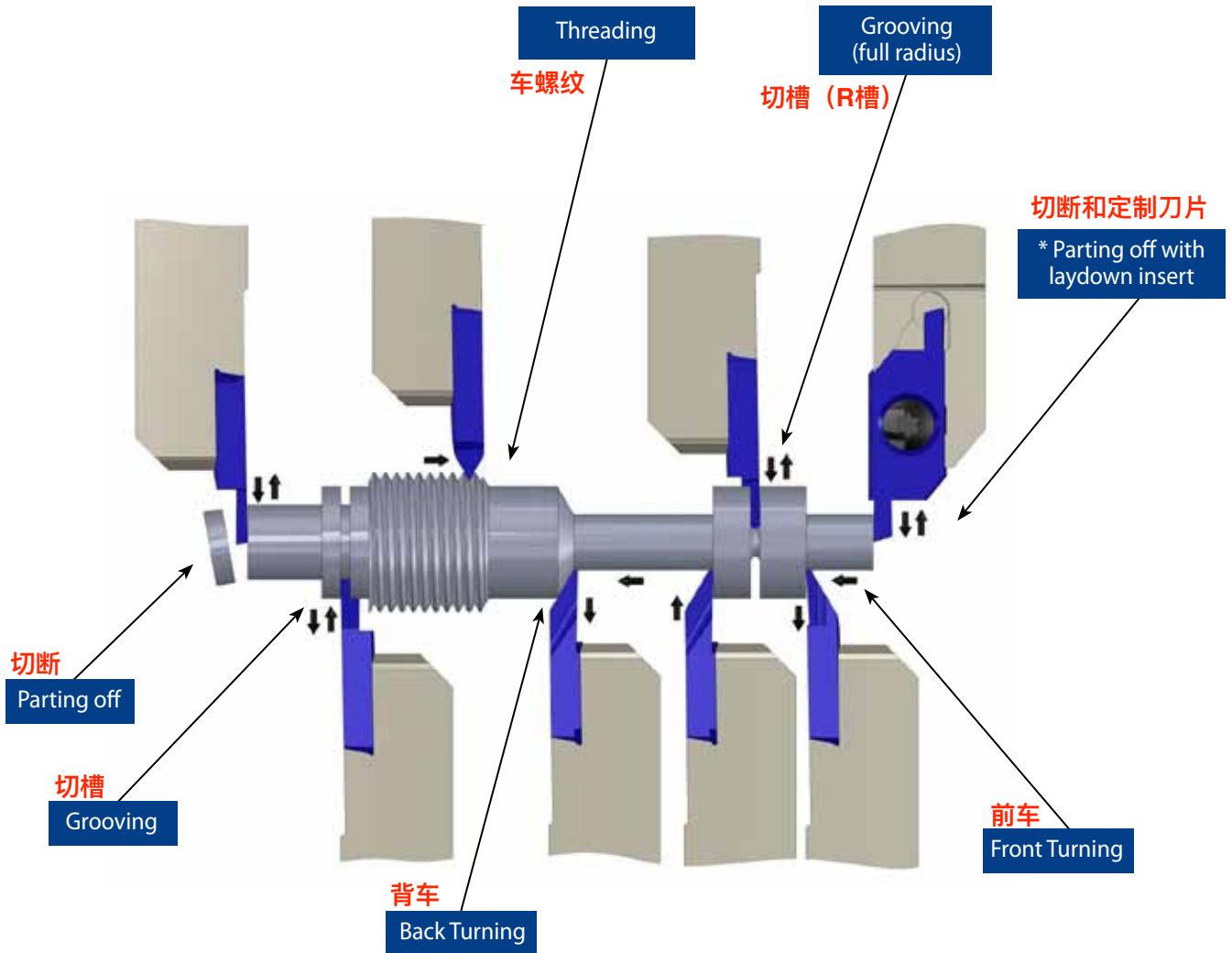
### Right hand cutting 右手刀杆

订货号 Ordering Code	刀杆宽 B	刀杆高 H	刀片伸出 L1	刀杆长度 L	中心高 F	宽 F1	刀片螺丝 Insert Screw Torx +	扳手 Key Torx +
<b>PGER 1010 K</b>	10	10	8	125	10	10	S26P	K11P
<b>PGER 1212 K</b>	12	12	8	125	12	12	S26P	K11P
<b>PGER 1616 K</b>	16	16	8	125	16	16	S26P	K11P

\* For L.H, specify **PGEL** instead of **PGER** \* 左手刀杆指定PGEL, 不能以PGER替代。

Coated holders provides high abrasive resistance 涂层刀杆提高了耐磨损

# Working method 加工方法



\* Available upon request (grooving, parting, threading). 可根据要求定制 (切槽、切断、车螺纹)

# Cutting Data 切削参数

## Polygon Swiss Line 多用途瑞士专机 (小型车床) 用

**Carbide grades:** 硬质合金基体材质

**BLU** PVD triple layer coated Sub-Micron grade for Steel, Stainless Steels, Titanium and hard materials. 亚微颗粒级, 三层PVD涂层, 用于钢、不锈钢、钛合金和硬材料。

**K20** Uncoated Sub-Micron carbide grade for Aluminum and non-ferrous materials, Stainless Steels and Titanium. 非涂层亚微颗粒级, 用于铝盒非铁金属材料, 不锈钢和钛合金。

ISO Standard	Material 材料	Cutting Speed m/min 切削速度	
		K20	BLU
P	Low and Medium Carbon Steels <0.55%C	-	80-150
	High Carbon Steels ≥0.55%C 低碳钢 高碳钢	-	70-120
	Alloy Steels, Treated Steels 合金钢	-	40-80
M	Stainless Steel-Free Cutting 易切不锈钢	30-80	60-120
	Stainless Steel-Austenitic 奥氏体不锈钢 铸造不锈钢	20-70	30-90
	Cast Steels	30-80	50-120
K	Cast Iron 铸铁	50-120	60-130
N	Aluminum ≤12%Si, Copper 铝 / 铜 高硅铝	120-250	-
	Aluminum >12%Si 合成橡胶 / 塑料 / 热塑性塑料	90-200	-
	Synthetics, Duroplastics, Thermoplastics	70-150	-
S	Nickel Alloys, Titanium Alloys. 镍基合金 钛合金	20-50	30-70
H	Hardened Steel, ≤45 HRc 硬钢, 小于HRC45	-	20-50

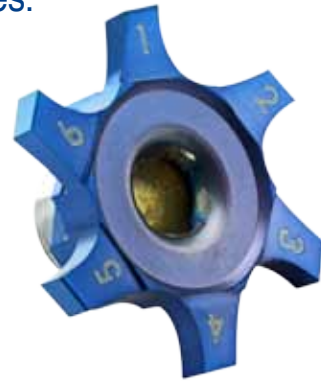
# 6 Cutting Edges Turning Insert - G6

## Grooving, parting-off and threading

6个切削刃车刀片-G6  
切槽、切断和车螺纹

### Benefits 好处

- High productivity and cost efficiency due to six cutting edges.
- One holder for all insert types - Maximum versatility.
- High precision thanks to the fully ground profile.
- 由于6个切削刃，高效率 and 低成本效益。
- 一个刀杆适用于全部刀片-最大的多功能性。
- 高精度全部来自研磨光的外形。



### Features 特点

- Strong and stable clamping due to the unique insert shape.
- Can be used with high machining parameters, and provides high surface finish.
- Internal coolant provides the coolant liquid towards the cutting edge.
- 强大和稳定的夹持力来自于形状独特的刀片。
- 可用于高的加工参数，并获得高表面光洁度。
- 提供内冷，冷却液射向切削刃。

### Application 应用

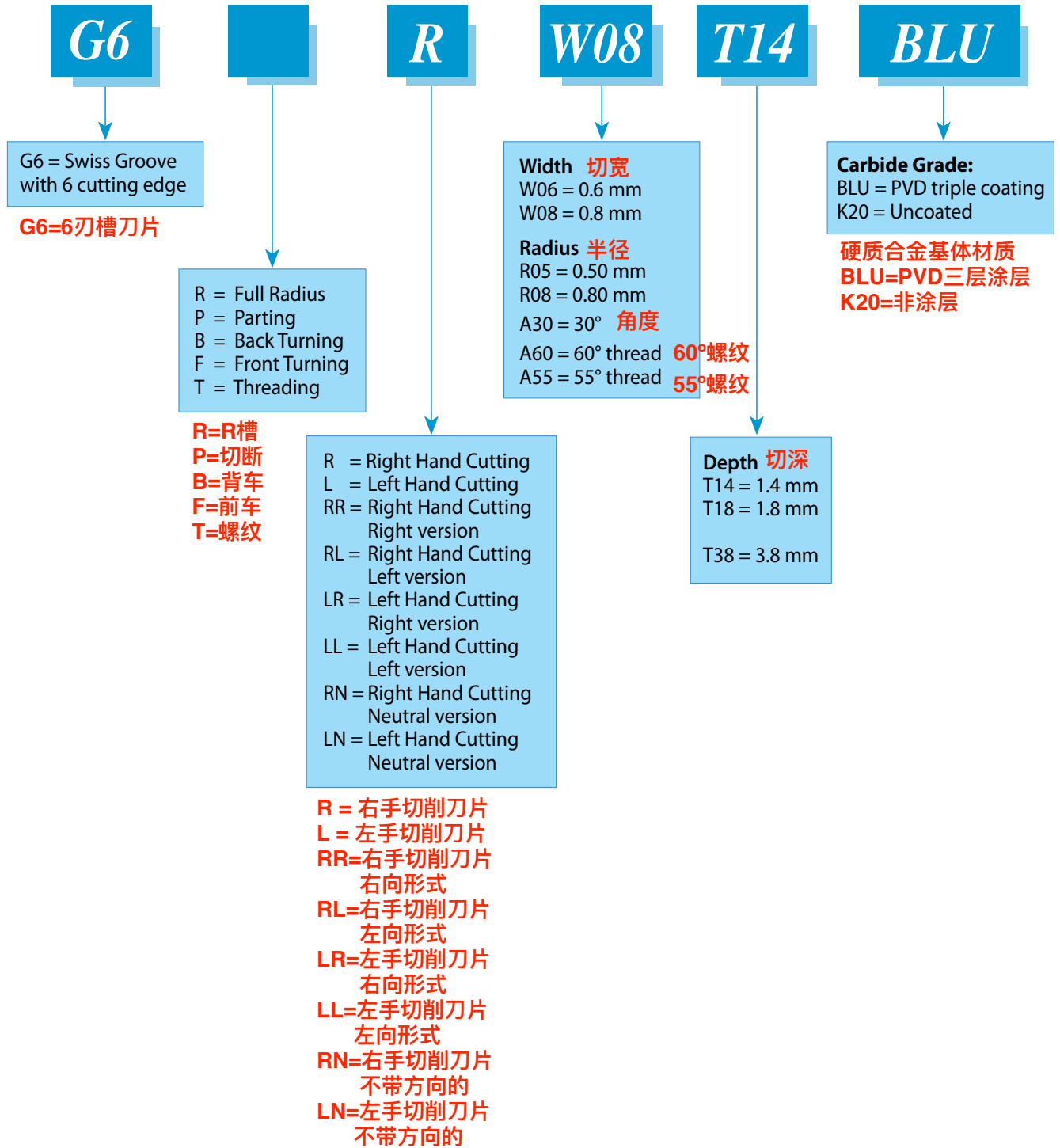
- Multi-function inserts for grooving, parting, turning and threading.
- Fit to a large range of diameters from very small applications with a thin wall up to 60 mm diameter.
- 多功能的刀片用于切槽、切断、车削和车螺纹。
- 适用于从非常小的直径到60mm的大直径范围。

Carbide grade: BLU, K20.

硬质合金基体材质: BLU, K20

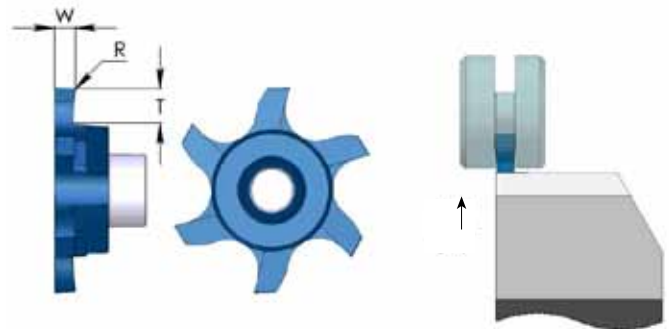
# Product Identification 产品识别

## G6 Inserts G6 刀片



# Grooving

切槽



## Right hand cutting 右手切削刀片

每转进给 / mm/rev

订货号 Ordering Code	刃宽 W ± 0.02	切深 T max	刀尖R R	Feed mm/rev
G6 R W06 T11	0.6	1.1	0	0.01-0.06
G6 R W08 T14	0.8	1.4	0	0.02-0.07
G6 R W10 T18	1.0	1.8	0.05	0.02-0.09
G6 R W15 T33	1.5	3.3	0.05	0.02-0.12
G6 R W20 T38	2.0	3.8	0.10	0.02-0.13
G6 R W25 T38	2.5	3.8	0.10	0.02-0.14

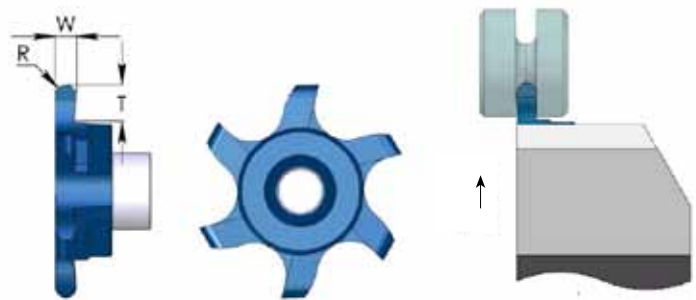
	K20	BLU
<b>P</b>		●
<b>M</b>	●	●
<b>K</b>	●	○
<b>N</b>	●	
<b>S</b>	●	●
<b>H</b>		≤45 HRc

\* For L.H, specify G6 L instead of G6 R

\* 左手刀杆指定G6 L, 不能以G6 R替代。

# Grooving and Profiling (full radius)

切槽和仿形 (R槽)



## Right hand cutting 右手切削刀片

每转进给/mm/rev

订货号 Ordering Code	刀具半径 R±0.03	切深 T max	Feed mm/rev
G6R R R05 T25	0.50	2.5	0.02-0.09
G6R R R08 T30	0.80	3.0	0.02-0.09
G6R R R10 T38	1.0	3.8	0.02-0.13
G6R R R12 T38	1.25	3.8	0.02-0.14

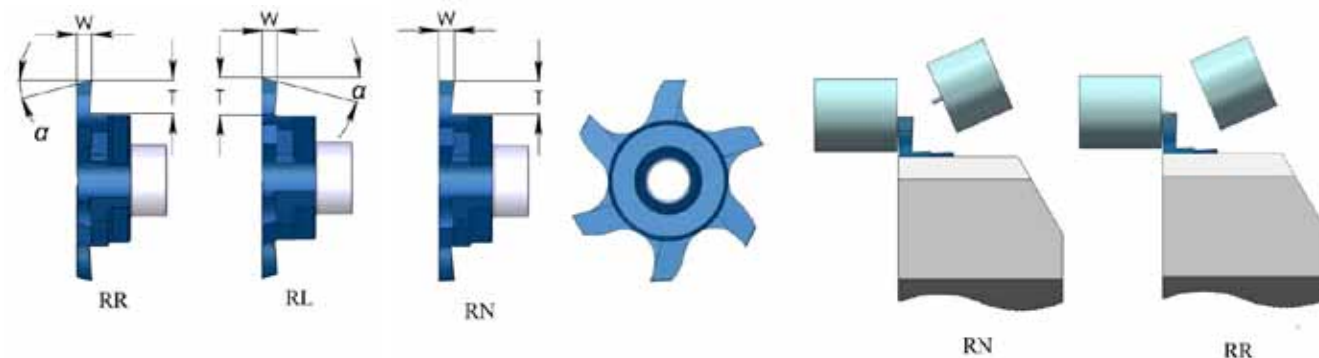
\* For L.H, specify G6R L instead of G6R R

\* 左手刀杆指定G6R L, 不能以G6R R替代。

● First choice    ○ Alternative

● 首选            ○ 第二选择

# Parting Off



## Right hand cutting 右手切削刀片

每转进给/mm/rev

订货号 Ordering Code	刃宽 W	角度 $\alpha^\circ$	切深 T max	Feed mm/rev
G6P RR W10 T38	1.0	15	3.8	0.02-0.09
G6P RL W10 T38	1.0	15	3.8	0.02-0.09
G6P RN W10 T38	1.0	0	3.8	0.02-0.09
G6P RR W15 T38	1.5	15	3.8	0.02-0.13
G6P RL W15 T38	1.5	15	3.8	0.02-0.13
G6P RN W15 T38	1.5	0	3.8	0.02-0.13
G6P RR W20 T38	2.0	15	3.8	0.02-0.13
G6P RL W20 T38	2.0	15	3.8	0.02-0.13
G6P RN W20 T38	2.0	0	3.8	0.02-0.13

	K20	BLU
P		●
M	●	●
K	●	○
N	●	
S	●	●
H		≤45 HRc

\* For L.H, specify G6P LR instead of G6P RR  
 G6P LL instead of G6P RL  
 G6P LN instead of G6P RN

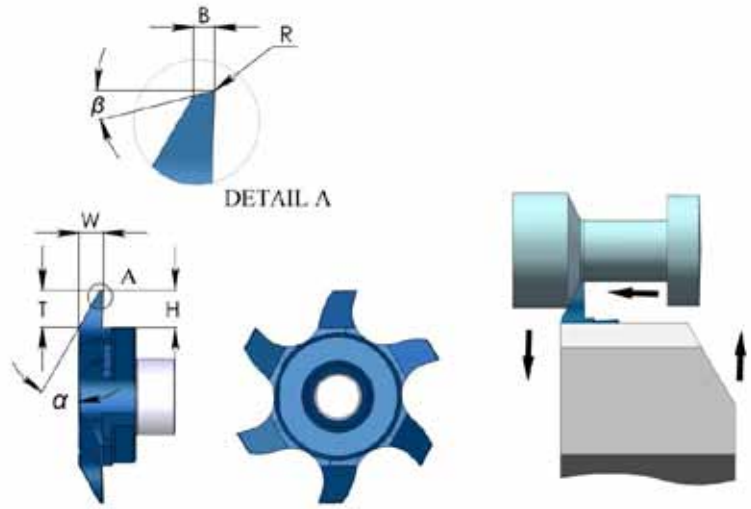
※ 左手刀杆指定G6P LR, 不能以G6P RR替代。  
 左手刀杆指定G6PLL, 不能以G6P RR替代。  
 左手刀杆指定G6P LN, 不能以G6P RN替代

● First choice    ○ Alternative

● 首选            ○ 第二选择

# Back Turning

背车



**Right hand cutting** 右手切削刀片

每转进给/mm/rev

订货号 Ordering Code	$\alpha^\circ$ $\alpha^\circ$	$\beta^\circ$ $\beta^\circ$	刀尖R R	刃宽 W	切深 max	刀尖宽 B	刃深 H	Feed mm/rev
<b>G6B R A30</b>	30	12	0.1	2.6	3.8	0.5	3.8	0.05-0.12

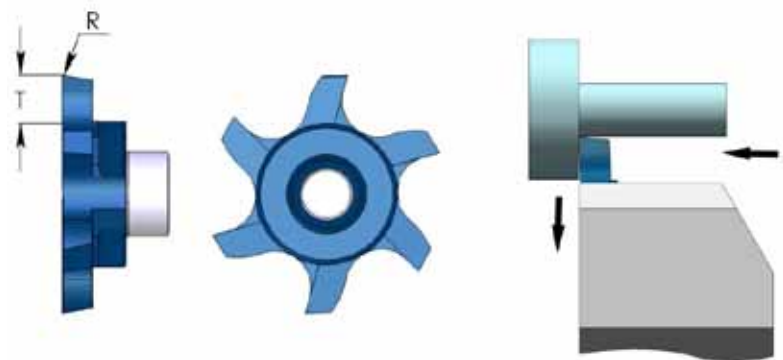
	K20	BLU
<b>P</b>		●
<b>M</b>	●	●
<b>K</b>	●	○
<b>N</b>	●	
<b>S</b>	●	●
<b>H</b>		≤45 HRc

\* For L.H, specify G6B L instead of G6B R

\* 左手刀杆指定**G6B L**, 不能以**G6B R**替代。

# Front Turning

前车



**Right hand cutting**

每转进给/mm/rev

订货号 Ordering Code	切深 max	刀尖R R	Feed mm/rev
<b>G6F R T38</b>	3.8	0.1	0.05-0.12

\* For L.H, specify G6F L instead of G6F R

\* 左手刀杆指定**G6F L**, 不能以**G6F R**替代。

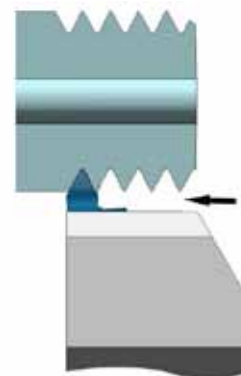
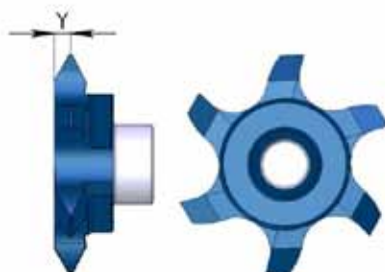
● First choice    ○ Alternative

● 首选            ○ 第二选择



# Threading - Partial Profile 60°

60°不完全牙 (范围牙)



## Right hand cutting 右手切削刀片

订货号 Ordering Code	螺距范围 Pitch Range		Y
	mm	TPI	
G6T R A60	0.5-1.5	48-16	0.8
G6T R G60	1.75-3.0	14-8	1.5
G6T R AG60	0.5-3.0	48-8	1.5

	K20	BLU
P		●
M	●	●
K	●	○
N	●	
S	●	●
H		≤45 HRc

\* For L.H, specify G6T L instead of G6T R

\* 左手刀杆指定G6T L, 不能以G6T R替代。

# Threading - Partial Profile 55°

55°不完全牙 (范围牙)

## Right hand cutting 右手切削刀片

订货号 Ordering Code	螺距范围 Pitch Range		Y
	TPI	mm	
G6T R A55	48-16	0.5-1.5	0.8
G6T R G55	14-8	1.75-3.0	1.5
G6T R AG55	48-8	0.5-3.0	1.5

\* For L.H, specify G6T L instead of G6T R

\* 左手刀杆指定G6T L, 不能以G6T R替代。

● First choice    ○ Alternative

● 首选            ○ 第二选择

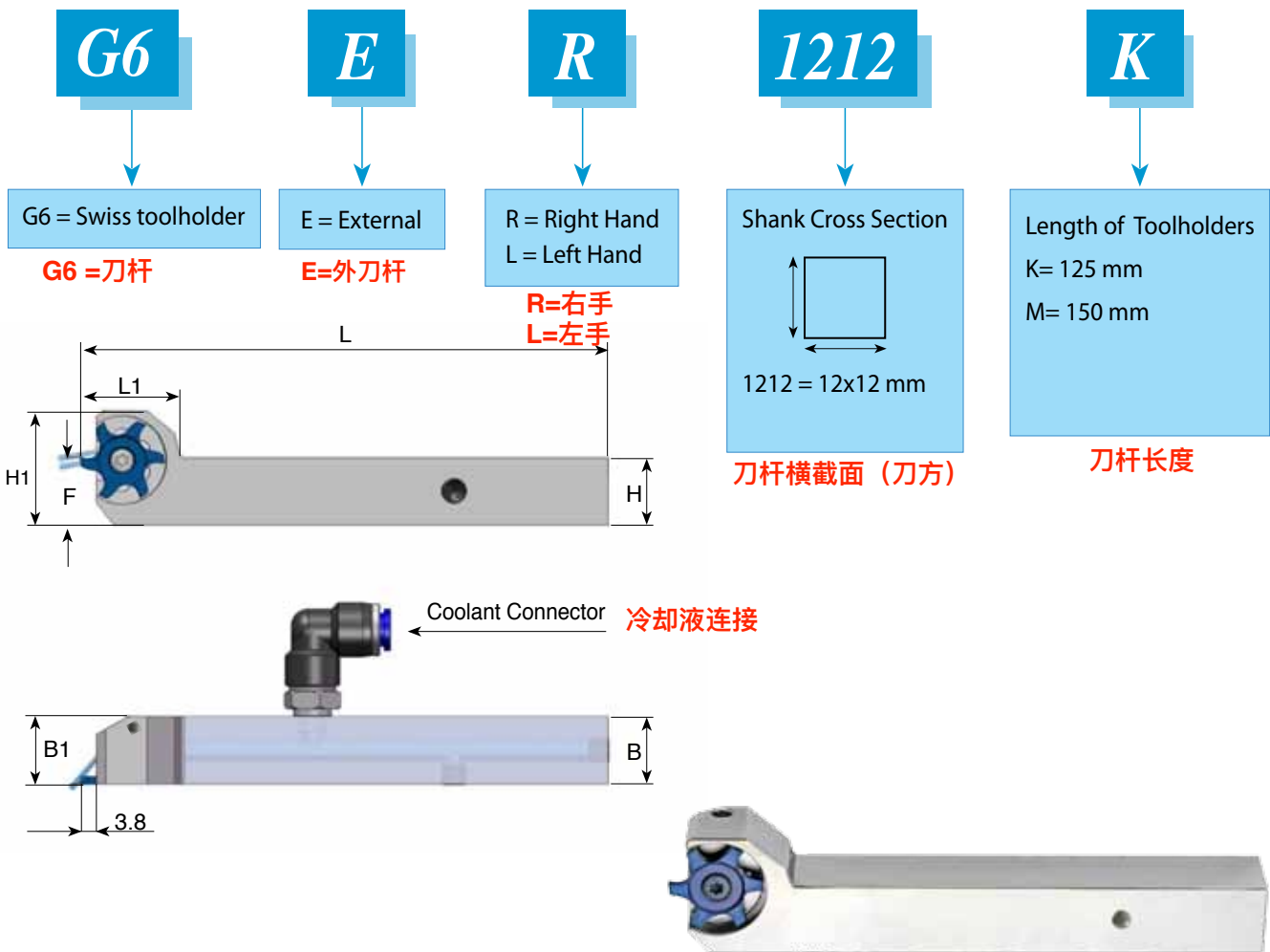
# External Toolholders - G6 外圆刀杆-G6

Coolant through toolholders, for external turning in Swiss type lathes machines. The high pressure coolant is directed towards the insert cutting edge in order to evacuate the chips created and avoid build up edge.

Including a coolant connector for fast attachment on the machine.

冷却通过刀杆，用于瑞士专机（小型车床）外圆车削。高压冷却液被引向切削刃，以便排出切屑避免切屑阻塞和形成积屑瘤。包括一个冷却管连接装置，用于与机床的冷却系统快速连接。

## Product Identification 产品识别



## Right hand cutting 右手切削刀片

Ordering Code	刀宽 B	刀杆高 H	刀片位 L1	总长 L	刀座高 H1	中心高 F	B1	刀片螺丝 Insert Screw Torx +	扳手 Torx + Key	冷却连接 **Coolant connector (mm)
* G6ER 1212 K	12	12	20	125	23	12	16	S16LP	K16P	Ø4 / Ø6
G6ER 1616 K	16	16	20	125	27	16	16	S16LP	K16P	Ø4 / Ø6
G6ER 2020 K	20	20	20	125	31	20	20	S16LP	K16P	Ø4 / Ø6
G6ER 2525 M	25	25	20	150	36	15	25	S16LP	K16P	Ø4 / Ø6

\* Without internal coolant \* 不带内冷

\*\* Coolant pipe diameter \*\* 内冷管直径

For L.H, specify G6EL instead of G6ER 左手刀杆指定G6E L，不能以G6E R替代。

Coated holders provides high abrasive resistance 涂层刀杆提高耐磨损性

# Cutting Data 切削参数

## G6 Inserts G6刀片

### Carbide grades:

**BLU** PVD triple layer coated Sub-Micron grade for Steel, Stainless Steels, Titanium and hard materials. 亚微颗粒级, 三层PVD涂层, 用于钢、不锈钢、钛合金和硬材料。

**K20** Uncoated Sub-Micron carbide grade for Aluminum and non-ferrous materials, Stainless Steels and Titanium. 非涂层亚微颗粒级, 用于铝盒非铁金属材料, 不锈钢和钛合金。

ISO Standard	Material 材料	Cutting Speed m/min 切削线速度	
		K20	BLU
<b>P</b>	Low and Medium Carbon Steels <0.55%C	-	80-150
	High Carbon Steels ≥0.55%C 低碳钢 高碳钢	-	70-120
	Alloy Steels, Treated Steels 合金钢	-	40-80
<b>M</b>	Stainless Steel-Free Cutting 易切不锈钢	30-80	60-120
	Stainless Steel-Austenitic 奥氏体不锈钢	20-70	30-90
	Cast Steels 铸造不锈钢	30-80	50-120
<b>K</b>	Cast Iron 铸铁	50-120	60-130
<b>N</b>	Aluminum ≤12%Si, Copper 铝 / 铜 高硅铝	120-250	-
	Aluminum >12%Si 合成橡胶 / 塑料 / 热塑性塑料	90-200	-
	Synthetics, Duroplastics, Thermoplastics	70-150	-
<b>S</b>	Nickel Alloys, Titanium Alloys. 镍基合金 钛合金	20-50	30-70
<b>H</b>	Hardened Steel, ≤45 HRc 硬钢, 小于HRC45	-	20-50



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