

DORMER PRAMET



GL槽刀扩展

ProLaunch 2021



SAFETY FIRST

Dormer Pramet's objective is **zero harm** to our people, the environment we work in, our customers and our suppliers.



ALARM



EMERGENCY
EXIT



ASSEMBLY
POINT



FIRST AID



PROTECTIVE
EQUIPMENT



EMERGENCY
NUMBER



PSYCHOLOGICAL
SAFETY



产品预览

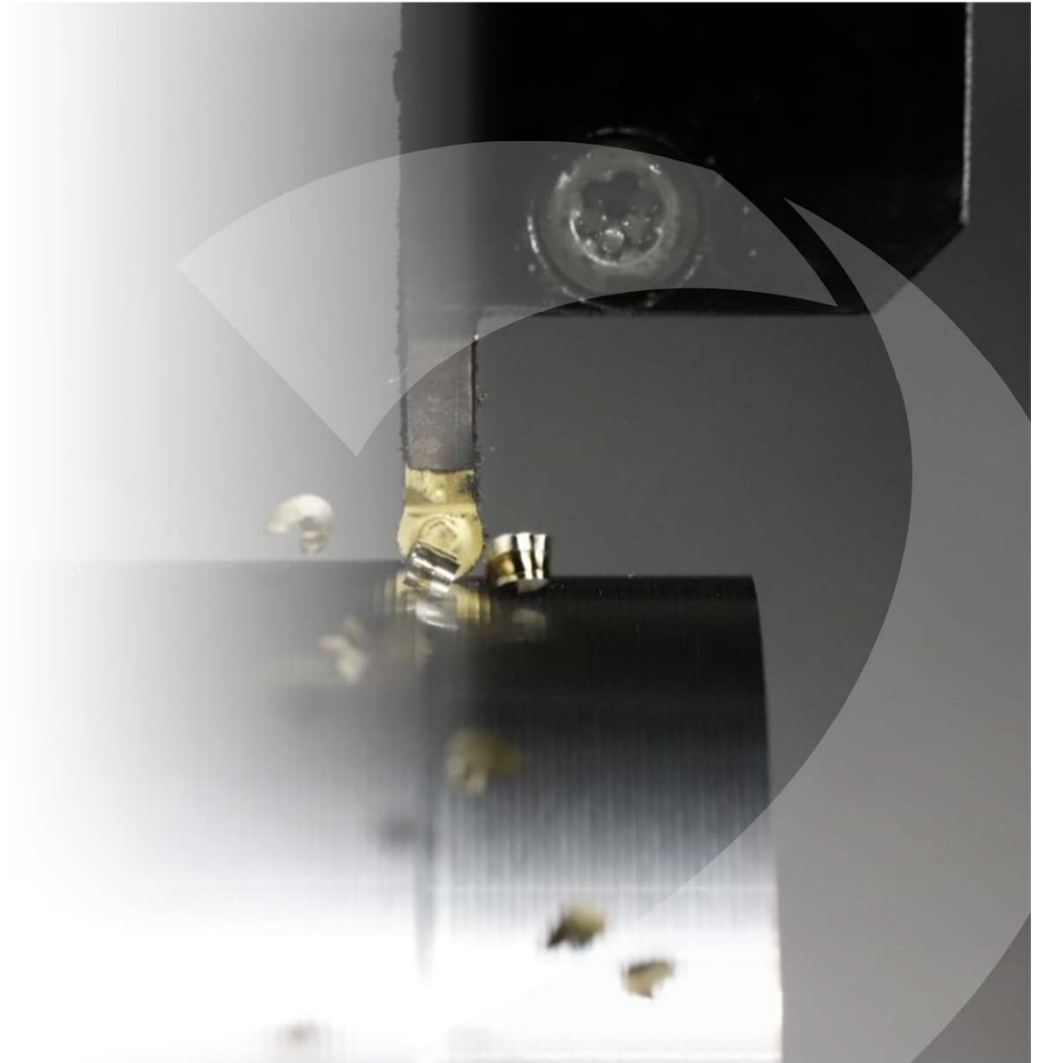
GL 槽刀扩展



DORMER PRAMET

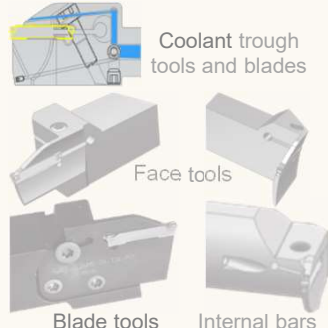
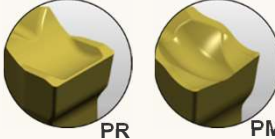
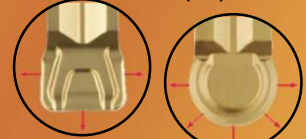
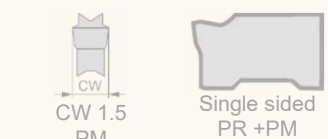
产品介绍

切槽&切断产品扩展



切槽&切断

产品介绍

	2019	ProLaunch 2021	In development
刀杆	 GLSF(RL) EXT GLS B	 GLSF(RL) EXT GLSF(RL) EXT-G GLSF(RL) EXT-S	 Coolant trough tools and blades Face tools Blade tools Internal bars
刀片	 PR PM	 GM MM	 CW 1.5 PM Single sided PR + PM
材质	G8330 T7325		G5325 G6310

• 为什么?

- 缺失小尺寸刀杆
- 缺失小切深刀杆
- 缺失仿形和车槽刀片

• 新品优点?

- 提供具有高刚性和抗振性能更广泛的产品
- GM 槽型用于切槽和车槽工序
- MM 槽型用于仿形工序

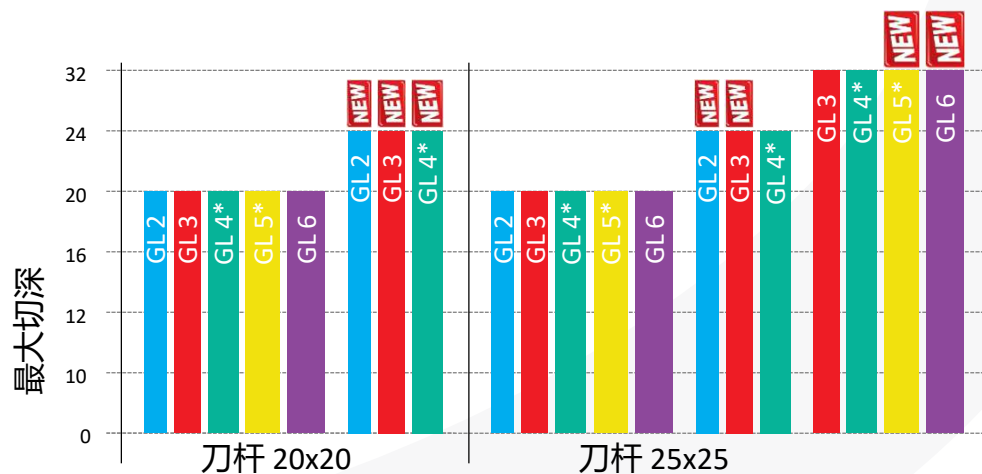
GL 产品概览

产品介绍 - GLSF(R/L) EXT

刀杆	CW	     	直径范围	CDX	H/B 	搭配刀片
GLSF(RL) EXT-G	2.0 - 6.0	     	20 - 24	10 - 12	20 x 20 - 25 x 25	GL2..; GL3..; GL4..; GL5..; GL6..;
GLSF(RL) EXT-S	2.0 - 4.0	     	40 - 45	12 - 16	12 x 12 - 16 x 16	GL2..; GL3..; GL4..;
GLSF(RL) EXT	2.0 - 6.0	     	80 - 100	24 - 32	20 x 20 - 25 x 25	GL2..; GL3..; GL4..; GL5..; GL6..;
GLS B	2.0 - 6.0	     	--	35 - 60	26, 32	GL2..; GL3..; GL4..; GL5..; GL6..;



通用增强型刀杆

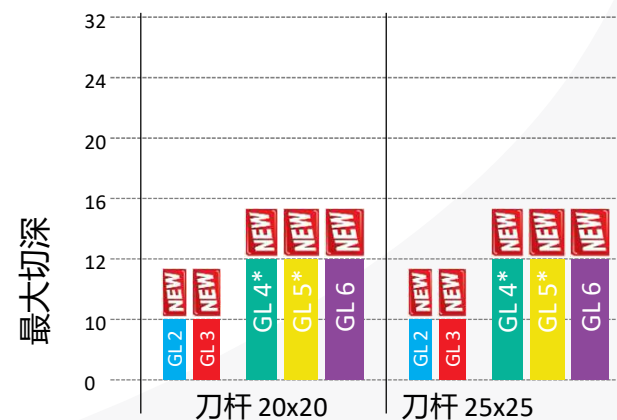
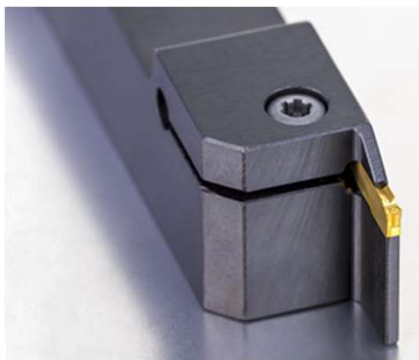


*GL4 刀杆也可安装GL5 & GL6 刀片/ GL5 也可安装GL6刀片

GL 产品概览

产品介绍 - GLSF(R/L) EXT-G

刀杆	CW	     	直径范围	CDX	H/B $\varnothing$	搭配刀片
GLSF(RL) EXT-G	2.0 - 6.0	■ ■ ■ ■ ■ ■	20 - 24	10 - 12	20 x 20 - 25 x 25	GL2., GL3., GL4., GL5., GL6.,
GLSF(RL) EXT-S	2.0 - 4.0	■ ■ ■ ■ ■ ■	40 - 45	12 - 16	12 x 12 - 16 x 16	GL2., GL3., GL4.,
GLSF(RL) EXT	2.0 - 6.0	■ ■ ■ ■ ■ ■	80 - 100	24 - 32	20 x 20 - 25 x 25	GL2., GL3., GL4., GL5., GL6.,
GLS B	2.0 - 6.0	■ ■ ■ ■ ■ ■	--	35 - 60	26, 32	GL2., GL3., GL4., GL5., GL6.,



*GL4 刀杆也可安装GL5 & GL6 刀片/ GL5 也可安装GL6刀片



不受工件直径限制

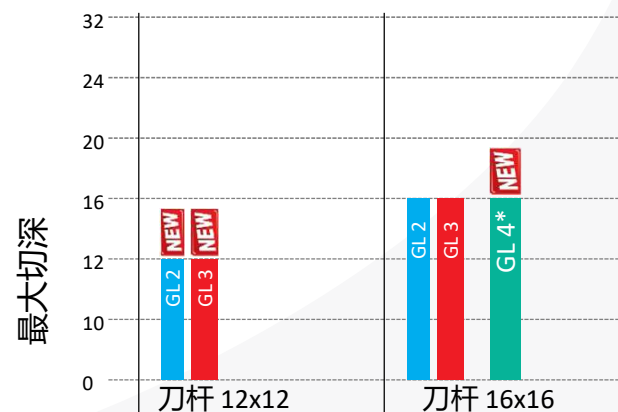
GL 产品概览

产品介绍

刀杆	CW							直径范围	CDX	H/B 	搭配刀片
GLSF(RL) EXT-G	2.0 – 6.0	■	■	■	■	■	■	20 - 24	10 - 12	20 x 20 – 25 x 25	GL2..; GL3..; GL4..; GL5..; GL6..;
GLSF(RL) EXT-S	2.0 – 4.0	■	■	■	■	■	■	40 - 45	12 - 16	12 x 12 – 16 x 16	GL2..; GL3..; GL4..;
GLSF(RL) EXT	2.0 – 6.0	■	■	■	■	■	■	80 - 100	24 - 32	20 x 20 – 25 x 25	GL2..; GL3..; GL4..; GL5..; GL6..;
GLS B	2.0 – 6.0	■	■	■				--	35 - 60	26, 32	GL2..; GL3..; GL4..; GL5..; GL6..;



可用于走心机的小尺寸刀杆

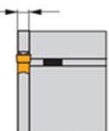
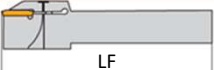
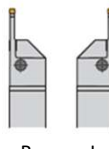
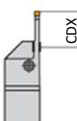


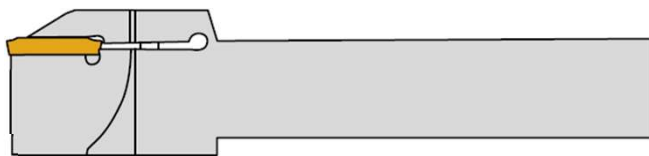
*GL4 刀杆也可安装GL5 & GL6 刀片

GL刀杆命名

介绍

1	2	3	4	5	6	7	8	9	10	11			
GL	3	–	S	2525	M	F	L	–	20	–	R	120	90

1	2	3	4	5	6	7	8																								
系列	刀座	刀杆类型	刀杆尺寸	刀杆长度 - LF		刀杆方向(R/L)	最大切深 - CDX																								
GL	2,3,4,5,6 	A 带内冷钢制刀杆 S 无内冷钢制刀杆	<table><tr><td>1212 -</td><td>12/12-</td></tr><tr><td>1616 -</td><td>16/16</td></tr><tr><td>2020 -</td><td>20/20</td></tr><tr><td>2525 -</td><td>25/25</td></tr></table>	1212 -	12/12-	1616 -	16/16	2020 -	20/20	2525 -	25/25	<table><tr><th colspan="2">LF [mm]</th></tr><tr><td>H</td><td>100</td></tr><tr><td>K</td><td>125</td></tr><tr><td>M</td><td>150</td></tr><tr><td>P</td><td>170</td></tr></table>	LF [mm]		H	100	K	125	M	150	P	170	<table><tr><th colspan="2">[°]</th></tr><tr><td>G</td><td>0</td></tr><tr><td>F</td><td>90</td></tr></table>	[°]		G	0	F	90	 R L	 CDX
	1212 -	12/12-																													
1616 -	16/16																														
2020 -	20/20																														
2525 -	25/25																														
LF [mm]																															
H	100																														
K	125																														
M	150																														
P	170																														
[°]																															
G	0																														
F	90																														



9	10	11
曲率	最大直径	最小直径
 用于轴向切槽		

GLSF(RL) EXT刀杆范围

产品介绍

ISO	HF [mm]	HBH [mm]	H [mm]	B [mm]	LF [mm]	CW [mm]	CDX [mm]	CUTDIA [mm]
GL2-S2020KF(R/L)-20-80	20	-	20	20	125	2	20	80
GL2-S2020KF(R/L)-24-80	20	5	20	20	125	2	24	80
GL2-S2525MF(R/L)-20-80	25	-	25	25	150	2	20	80
GL2-S2525MF(R/L)-24-80	25	-	25	25	150	2	24	80
GL3-S2020KF(R/L)-20-80	20	-	20	20	125	3	20	80
GL3-S2020KF(R/L)-24-80	20	5	20	20	125	3	24	80
GL3-S2525MF(R/L)-20-80	25	-	25	25	150	3	20	80
GL3-S2525MF(R/L)-24-80	25	-	25	25	150	3	24	80
GL3-S2525PF(R/L)-32-80	25	5	25	25	170	3	32	80
GL4-S2020KF(R/L)-20-80	20	-	20	20	125	4	20	80
GL4-S2020KF(R/L)-24-80	20	5	20	20	125	4	24	80
GL4-S2525MF(R/L)-20-80	25	-	25	25	150	4	20	80
GL4-S2525MF(R/L)-24-80	25	-	25	25	150	4	24	80
GL4-S2525PF(R/L)-32-80	25	-	25	25	170	4	32	80
GL5-S2020KF(R/L)-20-80	20	-	20	20	125	5	20	80
GL5-S2525MF(R/L)-20-80	25	-	25	25	150	5	20	80
GL5-S2525PF(R/L)-32-100	25	5	25	25	170	5	32	100
GL6-S2020KF(R/L)-20-80	20	-	20	20	125	6	20	80
GL6-S2525MF(R/L)-20-80	25	-	25	25	150	6	20	80
GL6-S2525PF(R/L)-32-100	25	5	25	25	170	6	32	100



参数

HF
HBH
H
B
LF
CW
CDX
CUTDIA

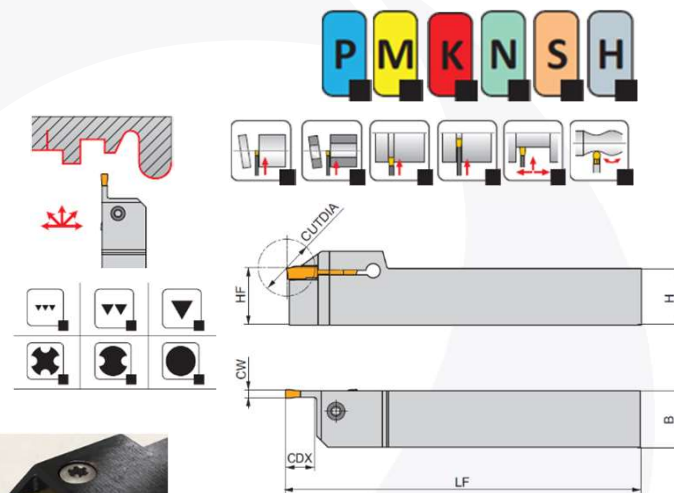
描述

有效高度
刀头底部偏移量
刀杆厚度
刀杆宽度
刀杆长度
切槽宽度
最大切削深度
切削直径

GLSF(RL) EXT-G刀杆范围

产品介绍

ISO	HF [mm]	H [mm]	B [mm]	LF [mm]	CW [mm]	CDX [mm]	CUTDIA [mm]
GL2-S2020KF(R/L)-10	20	20	20	125	2	10	20
GL2-S2525MF(R/L)-10	25	25	25	150	2	10	20
GL3-S2020KF(R/L)-10	20	20	20	125	3	10	20
GL3-S2525MF(R/L)-10	25	25	25	150	3	10	20
GL4-S2020KF(R/L)-12	20	20	20	125	4	12	24
GL4-S2525MF(R/L)-12	25	25	25	150	4	12	24
GL5-S2020KF(R/L)-12	20	20	20	125	5	12	24
GL5-S2525MF(R/L)-12	25	25	25	150	5	12	24
GL6-S2020KF(R/L)-12	20	20	20	125	6	12	24
GL6-S2525MF(R/L)-12	25	25	25	150	6	12	24



参数

HF
H
B
LF
CW
CDX
HBH
CUTDIA

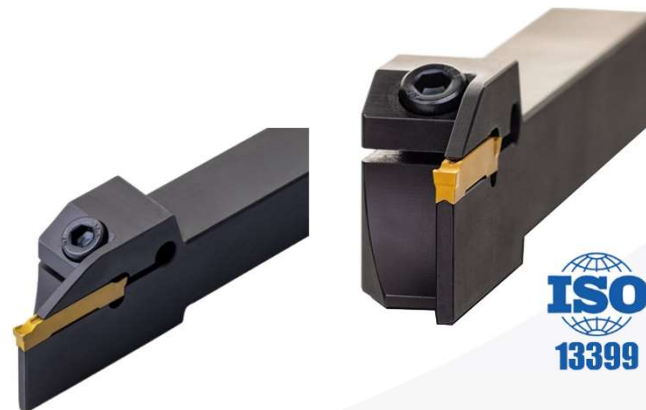
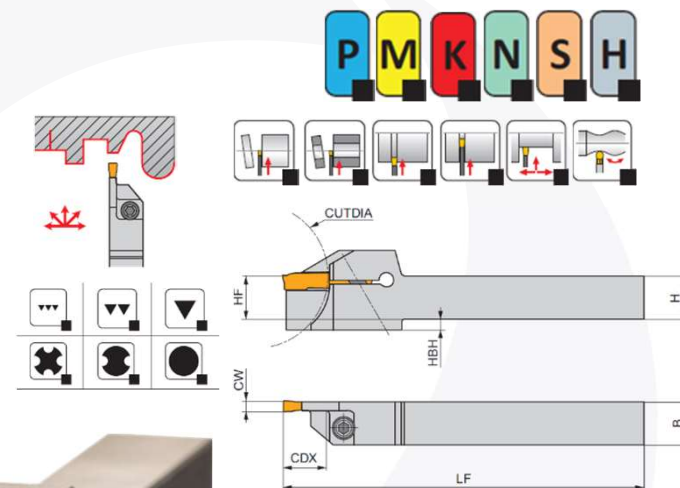
描述

有效高度
刀杆厚度
刀杆宽度
刀杆长度
切槽宽度
最大切削深度
刀头底部偏移量
切削直径

GLSF(RL) EXT-S刀杆范围

产品介绍

ISO	HF [mm]	HBH [mm]	H [mm]	B [mm]	LF [mm]	CW [mm]	CDX [mm]	CUTDIA [mm]
GL2-S1212HF(R/L)-12-40	12	3	12	12	100	2	12	40
GL3-S1212HF(R/L)-12-40	12	3	12	12	100	3	12	40
GL2-S1616KF(R/L)-16-45	16	3	16	16	125	2	16	45
GL3-S1616KF(R/L)-16-45	16	3	16	16	125	3	16	45
GL4-S1616KF(R/L)-16-45	16	4	16	16	125	4	16	45



参数

HF
HBH
H
B
LF
CW
CDX
CUTDIA

描述

有效高度
刀头底部偏移量
刀杆厚度
刀杆宽度
刀杆长度
切槽宽度
最大切削深度
切削直径

GL刀片命名规则

介绍

1	2	3	4	5	6	7	8
GL	3	-	D	300	G	02	L06 - PM



1	2	3	4																		
Tool group	Pocket size	Number of edges	Cutting width - CW																		
GL	1, 2, 3, 4, 5, 6 	<table><tr><td>S</td><td>One edge</td></tr><tr><td>D</td><td>Two edges</td></tr></table>	S	One edge	D	Two edges	 <table><tr><th></th><th>CW</th></tr><tr><td>200</td><td>2,00</td></tr><tr><td>250</td><td>2,50</td></tr><tr><td>300</td><td>3,00</td></tr><tr><td>400</td><td>4,00</td></tr><tr><td>500</td><td>5,00</td></tr><tr><td>600</td><td>6,00</td></tr></table>		CW	200	2,00	250	2,50	300	3,00	400	4,00	500	5,00	600	6,00
S	One edge																				
D	Two edges																				
	CW																				
200	2,00																				
250	2,50																				
300	3,00																				
400	4,00																				
500	5,00																				
600	6,00																				

5	6	7	8																								
Edge design	Nose radius	Primary cutting edge angle	Chipbreaker designation																								
<table><tr><td>G</td><td>Ground</td></tr><tr><td>M</td><td>Direct pressed</td></tr></table>	G	Ground	M	Direct pressed	 <table><tr><th>RE, RER, REL [mm]</th><th>ROUND GEOMETRY</th></tr><tr><td>02</td><td>RE [mm]</td></tr><tr><td>03</td><td>RE = CW/2</td></tr><tr><td>04</td><td></td></tr><tr><td>08</td><td></td></tr></table>	RE, RER, REL [mm]	ROUND GEOMETRY	02	RE [mm]	03	RE = CW/2	04		08		 <table><tr><th></th><th>[°]</th></tr><tr><td>06</td><td>6</td></tr><tr><td>12</td><td>12</td></tr></table>		[°]	06	6	12	12	<table><tr><td>PM</td></tr><tr><td>PR</td></tr><tr><td>GM</td></tr><tr><td>MM</td></tr></table>	PM	PR	GM	MM
G	Ground																										
M	Direct pressed																										
RE, RER, REL [mm]	ROUND GEOMETRY																										
02	RE [mm]																										
03	RE = CW/2																										
04																											
08																											
	[°]																										
06	6																										
12	12																										
PM																											
PR																											
GM																											
MM																											



GL 系列刀片全览

产品介绍

槽型	CW	RE	PSIRL/R	刀片	G8330	T7325	P	M	K	N	S	H
GM	2.0 – 6.0	0.2 – 0.8		GL2..; GL3..; GL4..; GL5..; GL6..;	■	■	■	■	■		■	
MM	2.0 – 6.0	1.0 – 3.0		GL2..; GL3..; GL4..; GL5..; GL6..	■	■	■	■	■		■	
PM	2.0 – 6.0	0.2	0° / 6° / 15°	GL2..; GL3..; GL4..; GL5..; GL6..;	■	■	■	■	■		■	
PR	2.0 – 6.0	0.2	0° / 6° / 15°	GL2..; GL3..; GL4..; GL5..; GL6..;	■	■	■	■	■		■	

GM – 正前角T倒棱设计，多圆角选择，可用于P,M,K材料的加工

MM – 5mm和6mm宽刀片无需修改刀杆

PR – 强壮槽型，30°正前角和12°副倒棱设计，主要用于P,M材料的加工

PM – 正前角锋利槽型，首选用于不锈钢和钢管的切槽和切断



GL.-D.....-GM 槽型刀片

产品介绍

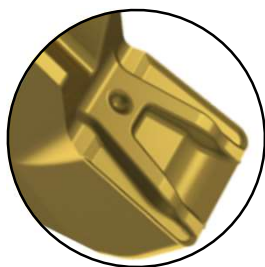
GM – 20°正前角T倒棱设计，主要用于P,M,K材料组，也可以用于S材料组

G8330 – 主要用于P,M,K材料，也可以用于S材料的加工

T7325 – 主要用于M材料，也可以用于P,S材料的加工，**部分工况可适用于K材料组的加工**



-GM

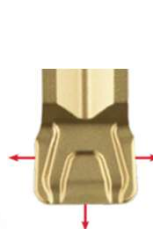


G8330 PVD		
P	25 – 40	■
M	20 – 35	■
K	20 – 40	■
N		
S	15 – 25	▣
H		

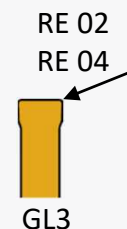
T7325 CVD		
P	15 – 35	▣
M	10 – 20	■
K		
N		
S	10 – 25	▣
H		



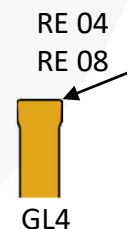
ISO	U E	CW	CW TOOL	CW TOLU	INSL	RE	G8330	T7325
GL2-	D200M02-GM	2.00	-0.05	0.05	25	02	●	●
GL3-	D300M02-GM	3.00	-0.05	0.05	25	02	●	●
GL3-	D300M04-GM	3.00	-0.05	0.05	25	04	●	●
GL4-	D400M04-GM	4.00	-0.05	0.05	25	04	●	●
GL4-	D400M08-GM	4.00	-0.05	0.05	25	08	●	●
GL5-	D500M08-GM	5.00	-0.05	0.05	25	08	●	●
GL6-	D600M08-GM	6.00	-0.05	0.05	25	08	●	●



切槽和车槽



GL3



GL4

GL.-D.....-MM 槽型刀片

产品介绍

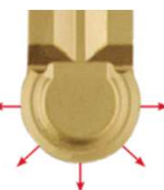
MM – 16°正前角带正4°的T倒棱设计，主要用于P,M,K材料组，也可以用于S材料组
 G8330 – 主要用于P,M,K材料，也可以用于S材料的加工
 T7325 – 主要用于M材料，也可以用于P,S材料的加工，**部分工况可适用于K材料组的加工**



G8330 PVD		
P	25 – 40	■
M	20 – 35	■
K	20 – 40	■
N		
S	15 – 25	▣
H		

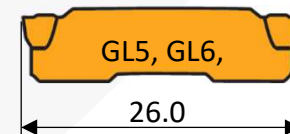
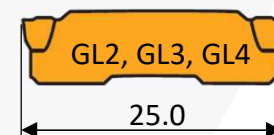


T7325 CVD		
P	15 – 35	▣
M	10 – 20	■
K		
N		
S	10 – 25	▣
H		



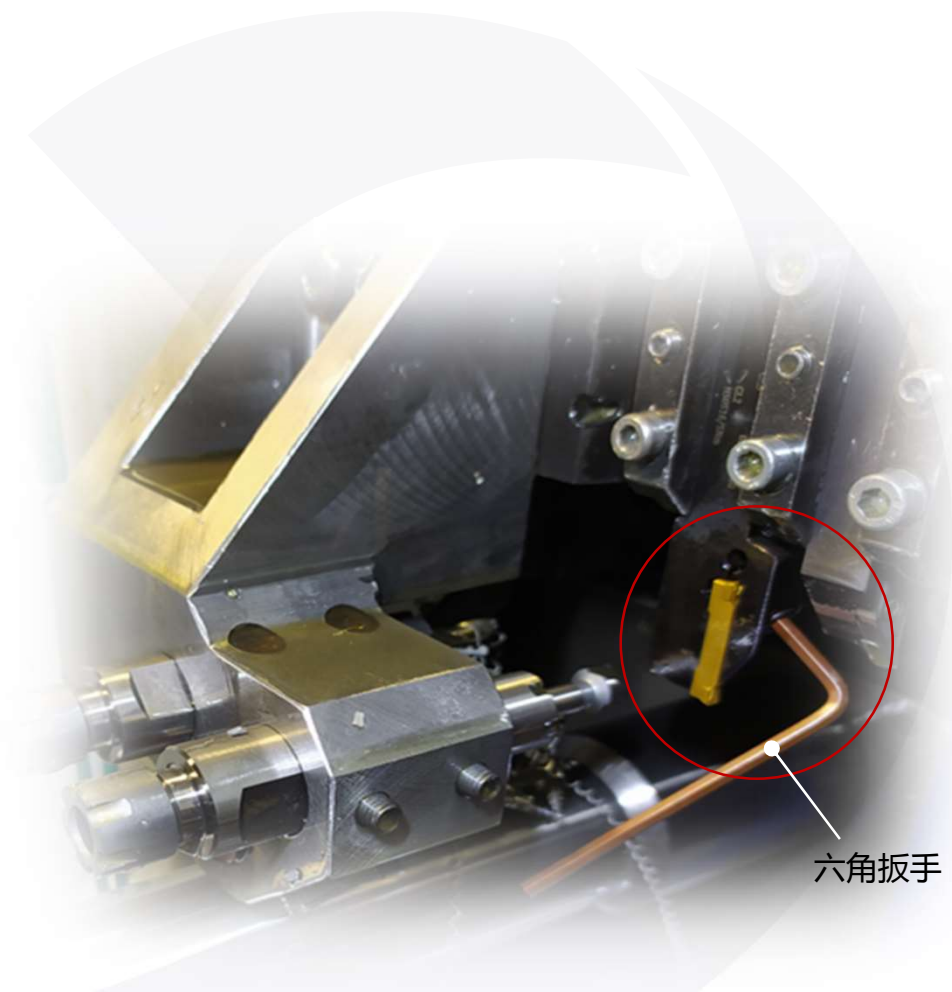
仿形和车槽工序

ISO	U S	CW	CW TOOL	CW TOLU	INSL	RE	G8330	T7325
GL2-	D200MMO-MM	2.00	-0.05	0.05	25	1.0	●	●
GL3-	D300MMO-MM	3.00	-0.05	0.05	25	1.5	●	●
GL4-	D400MMO-MM	4.00	-0.05	0.05	25	2.0	●	●
GL5-	D500MMO-MM	5.00	-0.05	0.05	26	2.5	●	●
GL6-	D600MMO-MM	6.00	-0.05	0.05	26	3.0	●	●



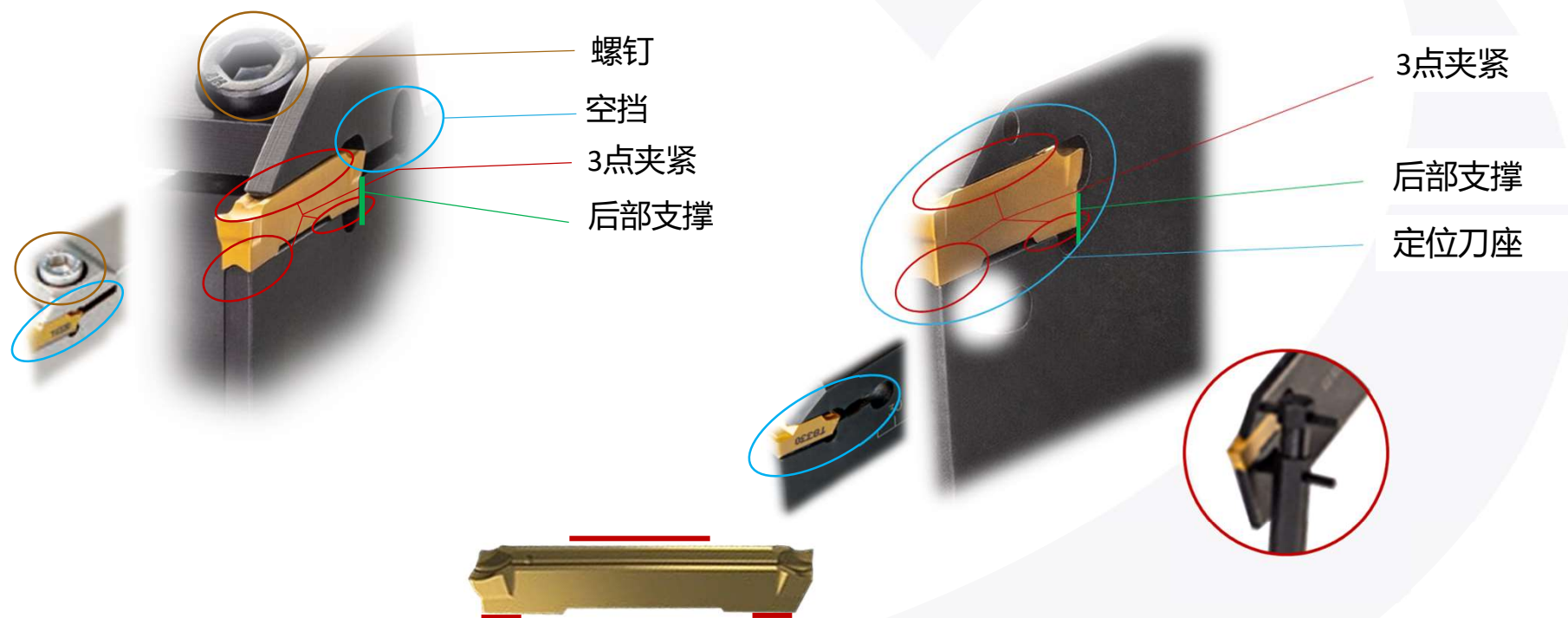
GL 刀体设计

30° 夹紧角度



GL 刀体设计

特点和优势



市场&应用&工况

推荐



DORMER PRAMET

特点 & 优势

切槽&切断产品扩展



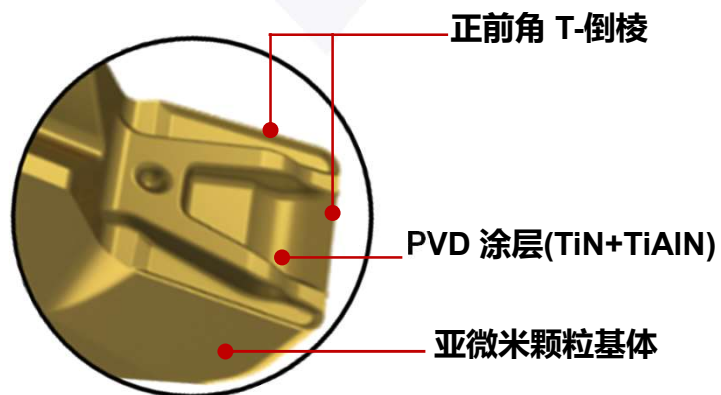
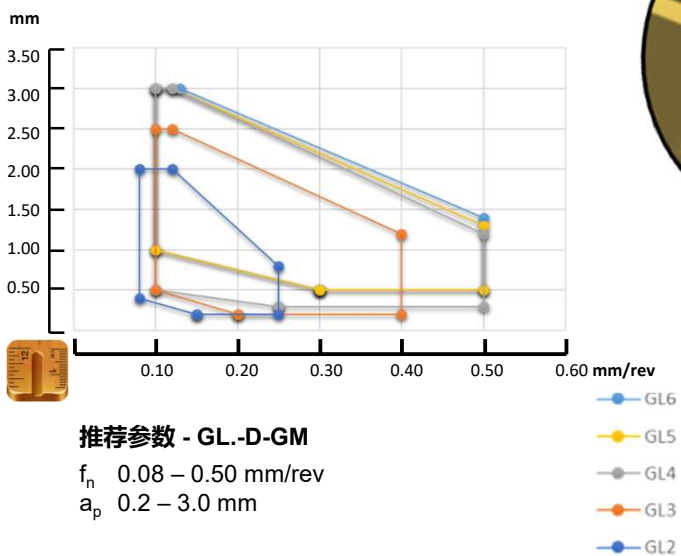
钢和铸钢 (P-材料组)

ISO group		WMG (Work Material Group)		Hardness (HB or HRC)	Ultimate Tensile Strength (MPa)	Examples of material (AISI, EN, DIN, SS, STN, BS, UNE, GB, AFNOR, GOST, UNI)	
P	P1	■ P1.1	Free machining steel <i>(carbon steels with increased machinability)</i>	sulfurized	< 240 HB	≤ 830	AISI 1108, EN 15S22, DIN 1.0723, SS 1922, ČSN 11120, BS 210A15, UNE F.210F, GB Y15, AFNOR 10F1, GOST A30, UNI CF10S20
		■ P1.2		sulfurized and phosphorized	< 180 HB	≤ 620	AISI 1211, EN 11SMn30, DIN 1.0715, SS 1912, ČSN 11109, BS 230M7, UNE F.2111, GB Y15, AFNOR S250, GOST A40G, UNI CF9SMn28
		■ P1.3		sulfurized/phosphorized and leaded	< 180 HB	≤ 620	AISI 12L13, EN 11SMnPb30, DIN 1.0718, SS 1914, ČSN 12110, BS 210M16, UNE F.2114, GB Y15Pb, AFNOR S250Pb, GOST AS35G2, UNI CF10SPb20
	P2	■ P2.1	Plain carbon steel <i>(steels comprised of mainly iron and carbon)</i>	containing <0.25%C	< 180 HB	≤ 620	AISI 1015, EN C15, DIN 1.0401, SS 1350, ČSN 11301 , BS 080A15, UNE F.111, GB 15, AFNOR C18RR, GOST St2ps, UNI Fe360
		■ P2.2		containing <0.55%C	< 240 HB	≤ 830	AISI 1030, EN C30, DIN 1.0528, SS 1550, ČSN 12031, BS 080M32, UNE F.1130, GB 30, AFNOR AF50C30, GOST 30G, UNI Fe590
		■ P2.3		containing >0.55%C	< 300 HB	≤ 1030	AISI 1060, EN C60, DIN 1.0601, SS 1655, ČSN 12061, BS 080A62, UNE F513, GB 60, AFNOR 1C60, GOST 60G, UNI C60
	P3	■ P3.1	Alloy steel <i>(carbon steels with an alloying content ≤ 10%)</i>	annealed	< 180 HB	≤ 620	AISI 3415, 4140, 4340, 6150, 8620, EN 15NiCr13, 42CrMo4, 41NiCrMo7-3-2, DIN 1.5732, 1.7223, 1.6563, 1.8159, 1.6523, SS 2244, 2541, 2230, 2506, ČSN 15020, BS 1501-240, UNE F.2601, GB 16Mo, AFNOR 15D3, GOST 15M, UNI 16Mo3KW
		■ P3.2		hardened and tempered	180 - 260 HB	> 620 ≤ 900	
		■ P3.3			260 - 360 HB	> 900 ≤ 1240	
	P4	■ P4.1	Tool steel <i>(special alloy steel for tools, dies and molds)</i>	annealed	< 26 HRC	≤ 900	AISI D2, EN X155CrVMo12-1, DIN 1.2370, SS 2736, ČSN 19573, BS BD2, UNE F.520A, GB Cr12Mo1V1, AFNOR Z160CDV12, GOST Ch12MF, UNI X155CrVMo121KU
		■ P4.2		hardened and tempered	26 - 39 HRC	> 900 ≤ 1240	
		■ P4.3			39 - 45 HRC	> 1240 ≤ 1450	



GL.-D-GM

特点和优势 – 车槽

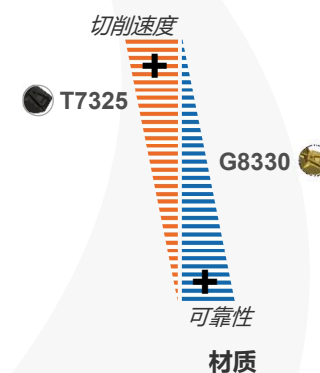


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ProLaunch 2019

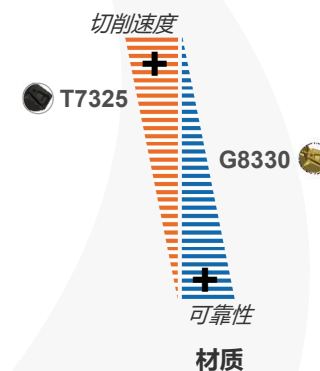
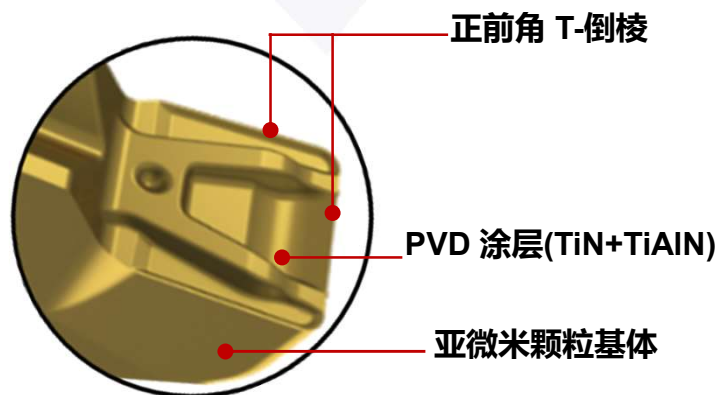
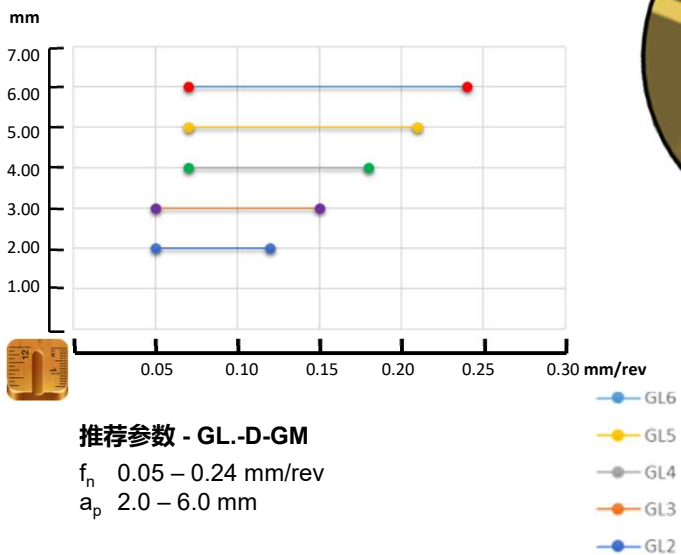
G8330

P	M	K	N	S	H
■	■	■	■	■	■



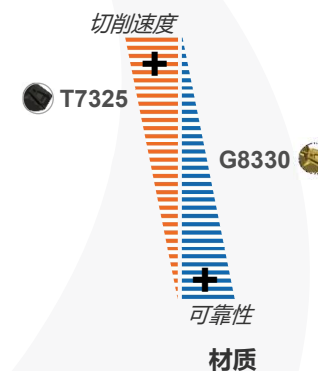
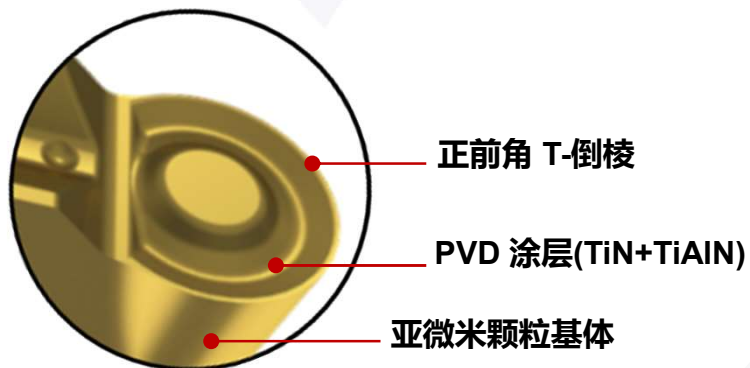
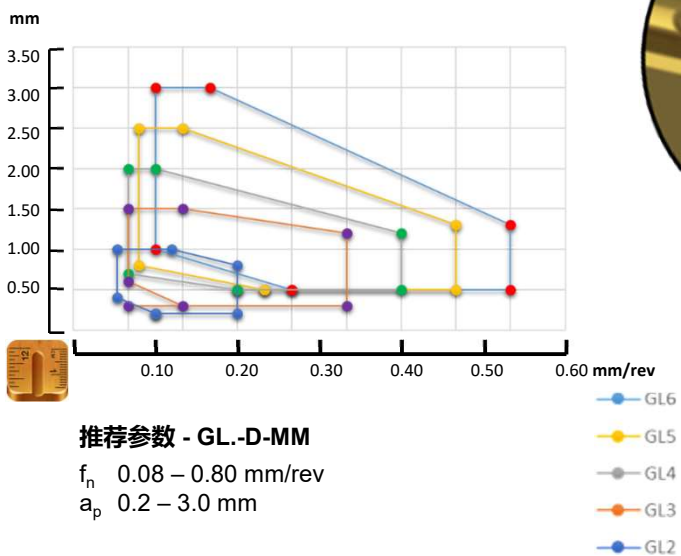
GL.-D-GM

特点和优势 – 切槽



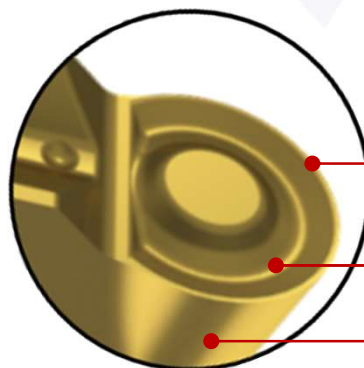
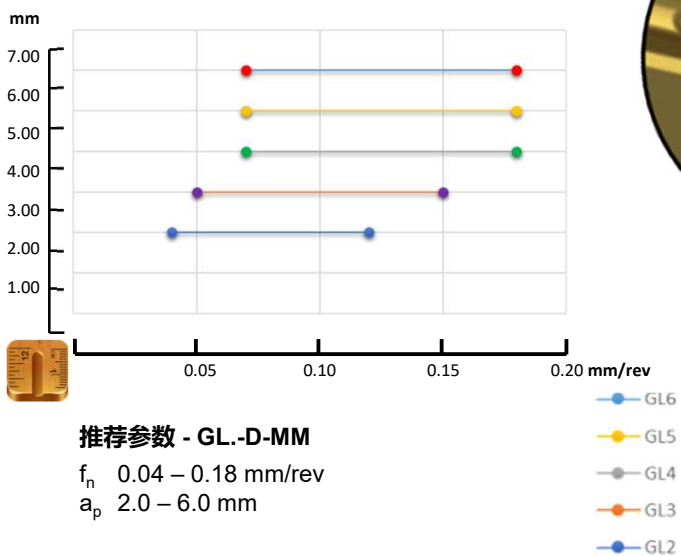
GL.-D-MM

特点和优势 – 仿形车槽



GL.-D-MM

特点和优势 – 仿形切槽



正前角 T-倒棱

PVD 涂层(TiN+TiAlN)

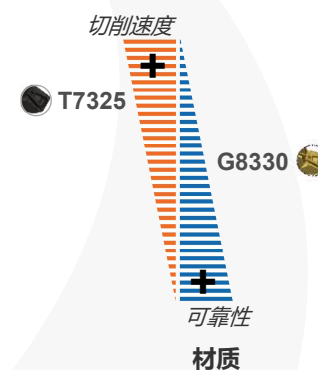
亚微米颗粒基体



ProLaunch 2019

G8330

P	M	K	N	S	H
■	■	■	■	■	■



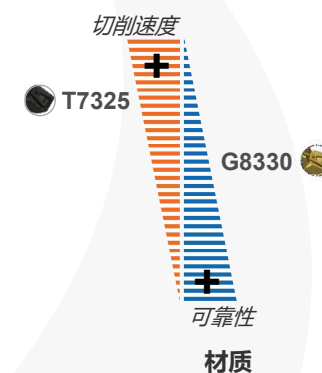
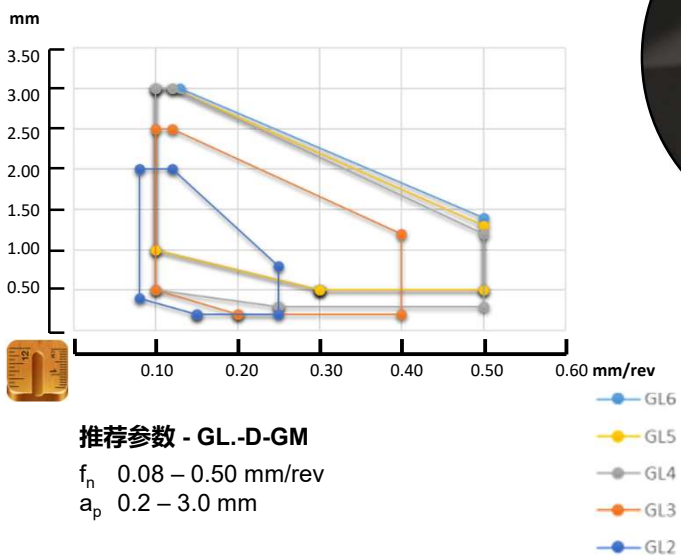
不锈钢 (M-材料组)

ISO group		WMG (Work Material Group)		Hardness (HB or HRC)	Ultimate Tensile Strength (MPa)	Examples of material (AISI, EN, DIN, SS, STN, B.S, UNE, CN, AFNOR, GOST, UNI)	
M	M1	■ M1.1	Ferritic stainless steel <i>(straight chromium non-hardenable alloys)</i>	< 160 HB	≤ 520	AISI S429, EN X7Cr14, DIN 1.4001, SS 2326, BS 434S17, UNE F.3401, AFNOR Z8C12, GOST 08Ch13, UNI X6CrTi12	
		■ M1.2		160 - 220 HB	> 520 ≤ 700	AISI 446, EN X10CrAl24, DIN 1.4762, SS 2322, ČSN 17113, BS 430S17, UNE F.3154, GB 10Cr17, AFNOR Z10CAS24, GOST 12Ch17, UNI X16Cr26	
	M2	■ M2.1	Martensitic stainless steel <i>(straight chromium hardenable alloys)</i>	annealed	< 200 HB	≤ 670	AISI 430F, EN X14CrMoS17, DIN 1.4104, SS 2383, ČSN 17140, BS 410S21, UNE F.3117, AFNOR Z10CF17, UNI X10CrS17
		■ M2.2		quenched and tempered	200 - 280 HB	> 670 ≤ 950	AISI 440C, EN X105CrMo17, DIN 1.4125, SS 2385, ČSN 17023, BS 425C11, UNE F.3402; GB 102Cr17Mo, AFNOR Z100CD17, GOST 95Ch18, UNI GX6CrNi 13 04
		■ M2.3		precipitation-hardened	280 - 380 HB	> 950 ≤ 1300	AISI 420, EN X45Cr13, DIN 1.4034, ČSN 17029, BS 425C11, UNE F.3405, AFNOR Z44C14, GOST 20X17H12, UNI X30Cr13
	M3	■ M3.1	Austenitic stainless steel <i>(chromium-nickel and chromium-nickel-manganese alloys)</i>	< 200 HB	≤ 750	AISI 304, 309, 5848 EN X5CrNi18-12, X15CrNiSi20-12, X45CrNiW18-9, DIN 1.4303, 1.4828, 1.4873, SS 2352, ČSN 17249, BS 305S17, UNE F.3513, GB 10Cr18Ni12, AFNOR Z8CN18.12, UNI X7CrNi18 10	
		■ M3.2		200 - 260 HB	> 750 ≤ 870		
		▣ M3.3		260 - 300 HB	> 870 ≤ 1040		
	M4	▣ M4.1	Austenitic-ferritic (DUPLEX) or super-austenitic stainless steel <i>(alloys with austenitic-ferritic microstructure, austenitic alloys with > 20%Ni)</i>	< 300 HB	≤ 990	AISI 329, EN X1-NiCrMoCU25-20-5, DIN 1.4539, SS 2562, ČSN 17265, BS 318S13, UNE F.3552, GB 022Cr25NiMo2N, AFNOR Z1NCDU25.20	
		▣ M4.2	Precipitation hardening austenitic stainless steel	300 - 380 HB	≤ 1320	AISI 631 (17-7PH), EN X7CrNiAl17-7, DIN 1.4568, SS 2388, ČSN 17465, BS 301S13, UNE F.3217, GB 07Cr17Ni7Al, AFNOR 29CNA17-07	



GL.-D-GM

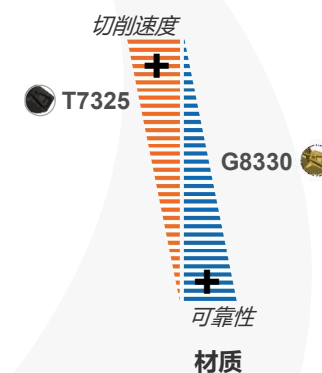
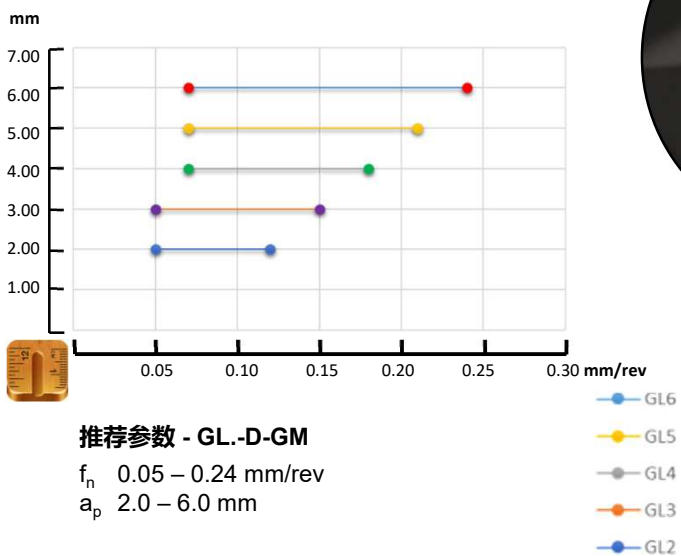
特点和优势 – 车槽



FGM – 功能梯度基体：特殊的烧结工艺，获取基体表面和芯部的Co含量不同

GL.-D-GM

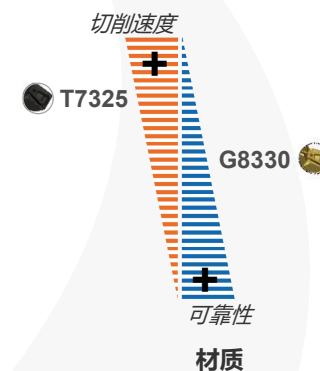
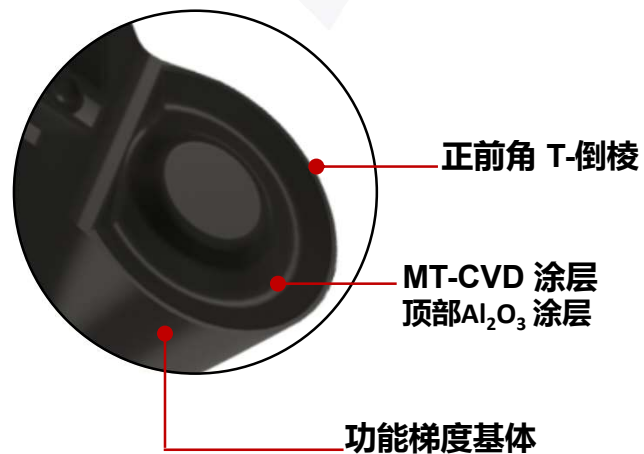
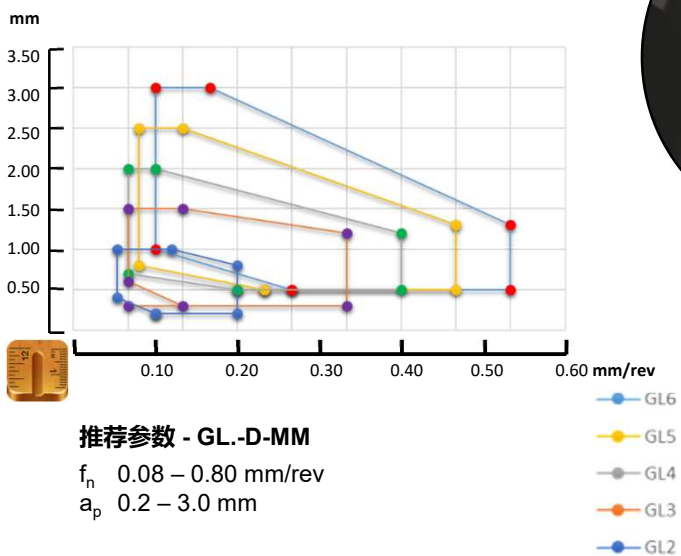
特点和优势 – 切槽



FGM – 功能梯度基体：特殊的烧结工艺，获取基体表面和芯部的Co含量不同

GL.-D-MM

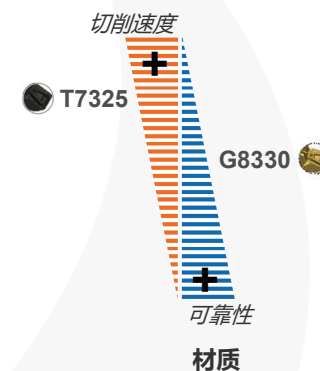
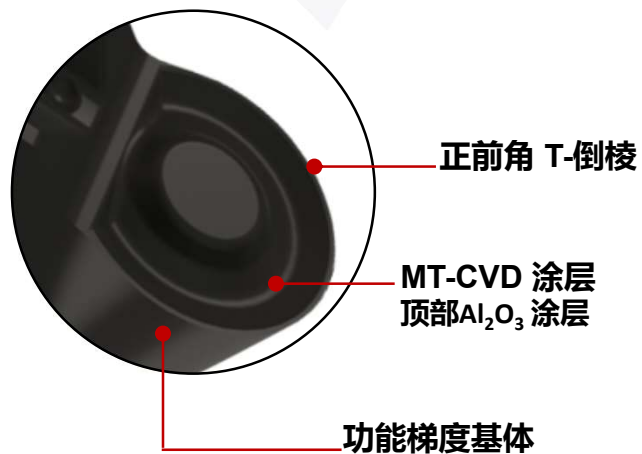
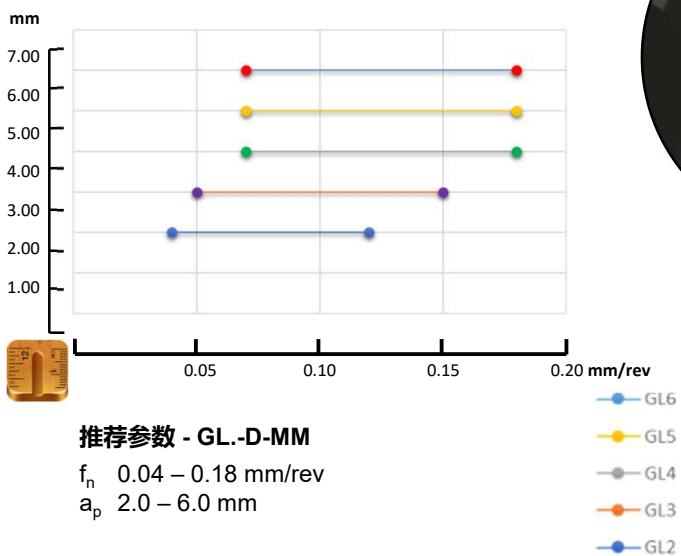
特点和优势 – 仿形车槽



FGM – 功能梯度基体：特殊的烧结工艺，获取基体表面和芯部的Co含量不同

GL.-D-MM

特点和优势 – 仿形切槽



FGM – 功能梯度基体：特殊的烧结工艺，获取基体表面和芯部的Co含量不同

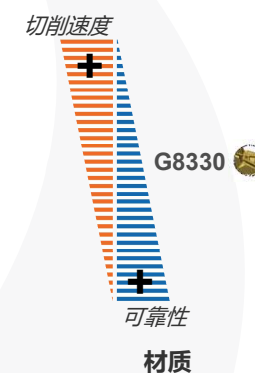
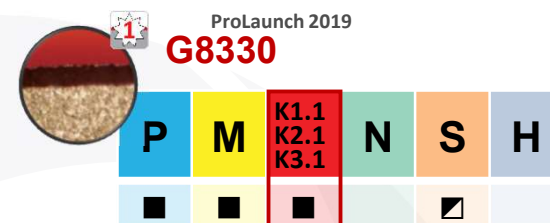
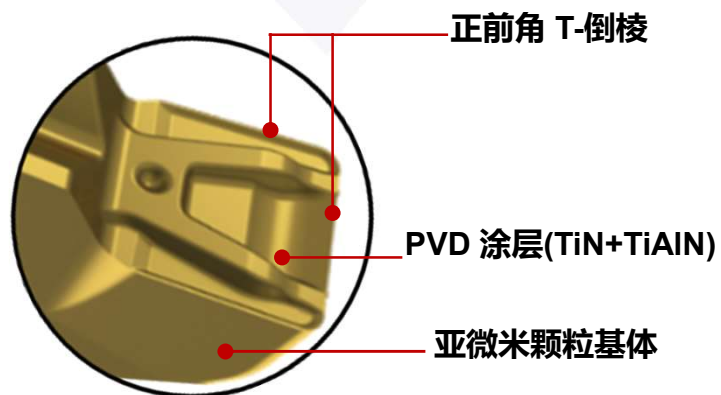
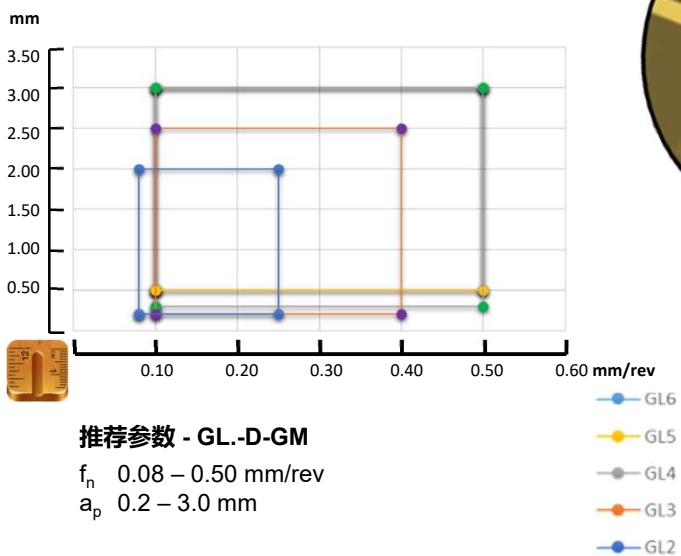
铸铁 (K材料组)

ISO group		WMG (Work Material Group)		Hardness (HB or HRC)	Ultimate Tensile Strength (MPa)	Examples of material (ASTM, EN, DIN, SS, STN, B.S, UNE, CN, AFNOR, GOST, UNI)	
K	K1	■ K1.1	Gray iron or Automotive Gray iron (iron-carbon castings with a lamellar graphite microstructure)	ferritic or ferritic-pearlitic	< 180 HB	≤ 190	ASTM A48 Grade 20, EN-JL-100, DIN GG-10 (0.6010), STN 422410
		▣ K1.2		ferritic-pearlitic or pearlitic	180 - 240 HB	> 190 ≤ 310	ASTM A48 Grade 30, EN-JL-1030, DIN GG-20 (0.6020), SS 0120, STN 422420
		▣ K1.3		pearlitic	240 - 280 HB	> 310 ≤ 390	ASTM A48 Grade 50, EN-JL-1060, DIN GG-35 (0.6035), SS 0135, STN 422435
	K2	■ K2.1	Malleable iron (iron-carbon castings with a graphite-free microstructure)	ferritic	< 160 HB	≤ 400	ASTM A602 Grade M3210, EN-JM-1130, DIN GTS-35 (0.8135), SS 0815
		▣ K2.2		ferritic or pearlitic	160 - 200 HB	> 400 ≤ 550	ASTM A602 Grade M4504 (F20001), EN-JM-1040, DIN GTS-50-05 (0.8045)
		▣ K2.3		pearlitic	200 - 240 HB	> 550 ≤ 660	ASTM A602 Grade M7002, EN-JM-1140, DIN GTS-45 (0.8145), STN 422540
	K3	■ K3.1	Ductile iron (iron-carbon castings with a nodular graphite microstructure)	ferritic	< 180 HB	≤ 560	ASTM A536 Grade 60-40-18, EN-JS-1030, DIN GGG-40 (0.7040), STN 422304
		▣ K3.2		ferritic or pearlitic	180 - 220 HB	> 560 ≤ 680	ASTM A536 Grade 80-55-06, EN-JS-1050, DIN GGG-50 (0.7050), STN 422305
		▣ K3.3		pearlitic	220 - 260 HB	> 680 ≤ 800	ASTM A536 Grade 100-70-03, EN-JS-1060, DIN GGG-60 (0.7060), STN 422306
	K4	▣ K4.1	Austenitic gray iron (iron-carbon alloy castings with an austenitic lamellar graphite microstructure)		< 180 HB	≤ 190	ASTM A436 Type 1 (L-NiCuCr 15 6 2), DIN GGL-NiMn 13 7 (0.6652)
		▣ K4.2	Austenitic ductile iron (iron-carbon alloy castings with an austenitic nodular graphite microstructure)		< 240 HB	≤ 740	ASTM A439 Type D-2B (S-NiCr 20 3), DIN GGG-NiMn 23 4, GOST ЧН19Х3Ш
		▣ K4.3	Austempered ductile iron (iron-carbon alloy castings with an ausferrite microstructure)		< 280 HB	> 840 ≤ 980	ASTM A897 Grade 110-70-11
		▣ K4.4			280 - 320 HB	> 980 ≤ 1130	ASTM A897 Grade 125-80-10, EN-JS-1100, DIN GGG-90 (5.3400)
		▣ K4.5			320 - 360 HB	> 1130 ≤ 1280	ASTM A897 Grade 2 (150-110-07), EN-JS-1110, DIN GGG-100 (5.3403)
	K5	▣ K5.1	Compacted graphite iron (iron-carbon castings with a vermicular graphite structure)	ferritic	< 180 HB	≤ 400	ASTM A842 Grade 300, EN-GJV-300, DIN GGV 30, GOST ЧВГ30,
		▣ K5.2		ferritic-pearlitic	180 - 220 HB	> 400 ≤ 450	ASTM A842 Grade 350, EN-GJV-350, DIN GGV 35 (5.2200), GOST ЧВГ30,
		▣ K5.3		pearlitic	220 - 260 HB	> 450 ≤ 500	ASTM A842 Grade 450, EN-GJV-450, DIN GGV 45, GOST ЧВГ45,



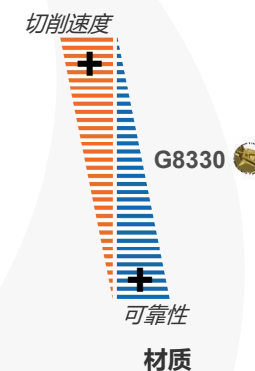
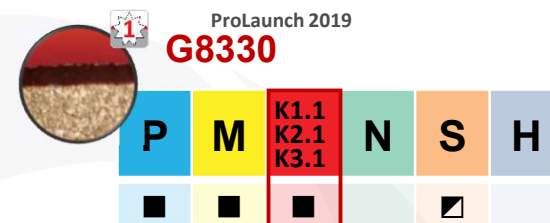
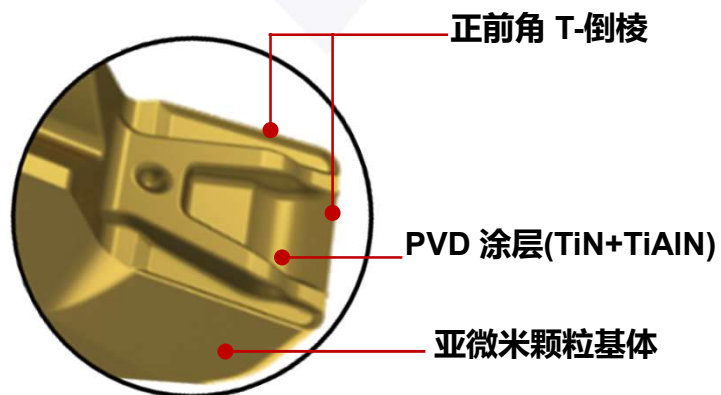
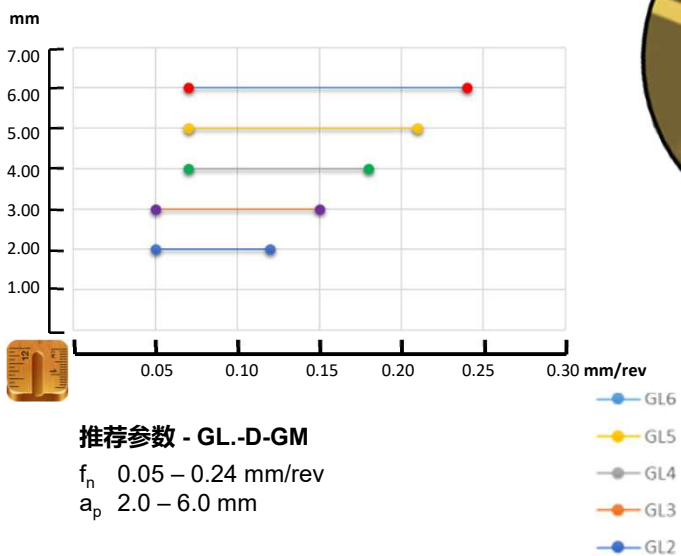
GL.-D-GM

特点和优势 – 车槽



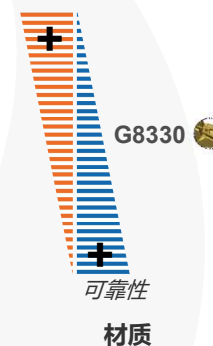
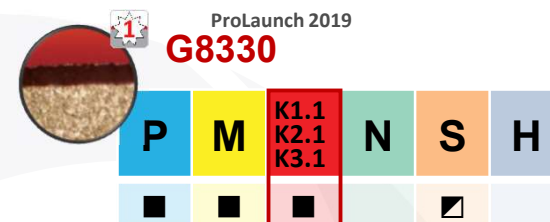
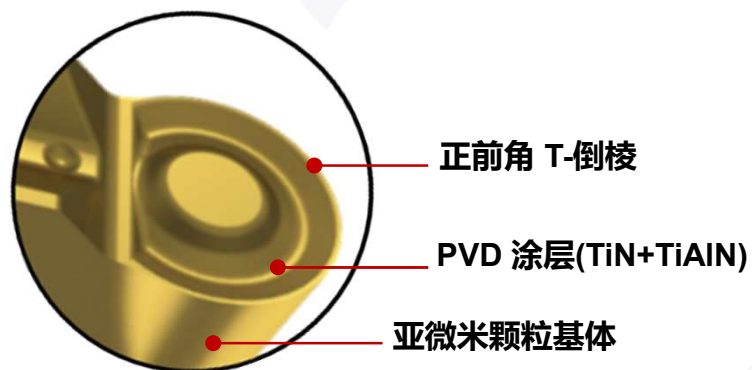
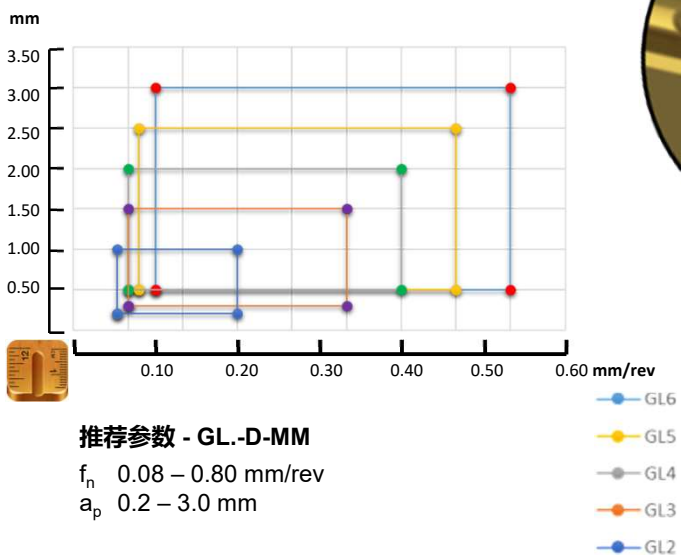
GL.-D-GM

特点和优势 – 切槽



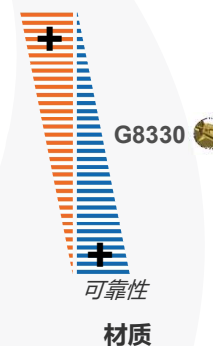
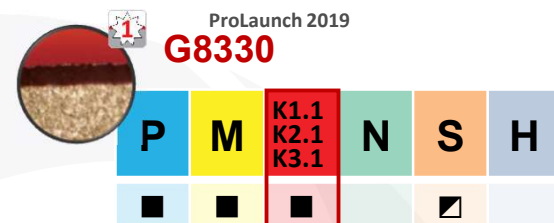
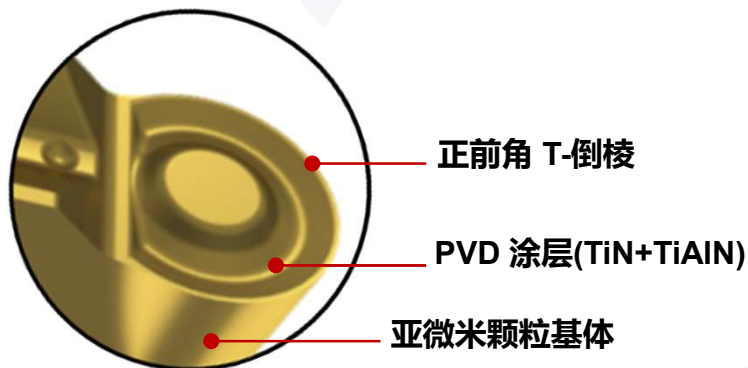
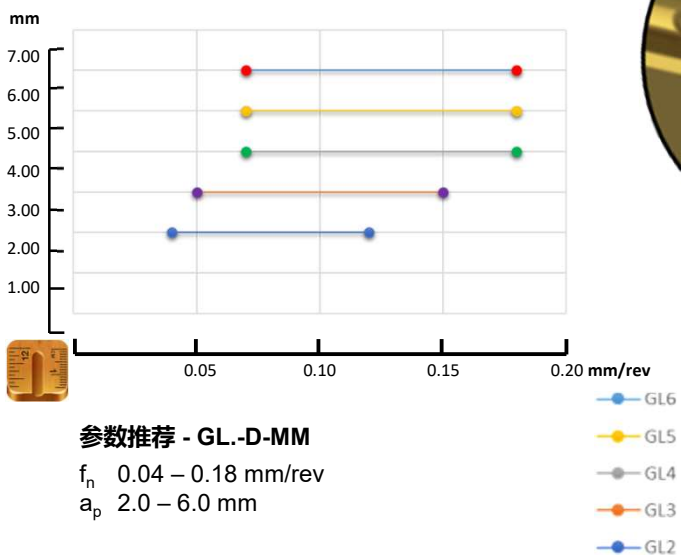
GL.-D-MM

特点和优势 – 仿形车槽



GL.-D-MM

特点和优势 – 仿形切槽

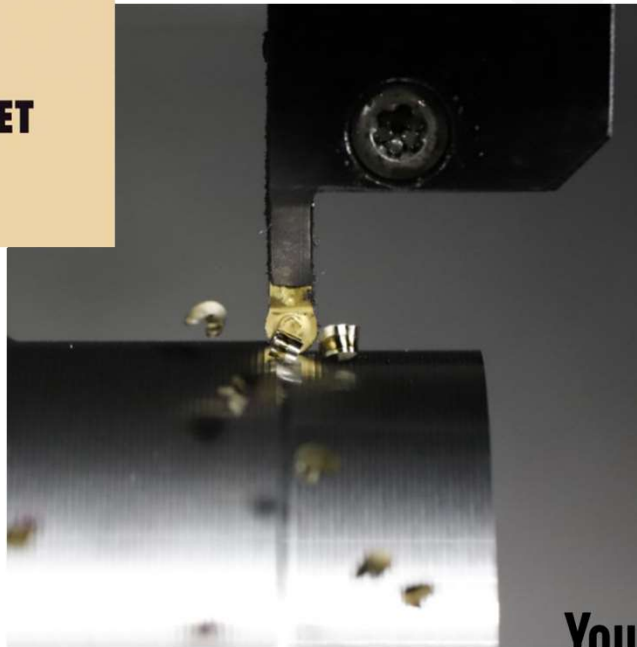


GM & MM 槽型 – GL系列

DORMER PRAMET

www.dormerpramet.com

Full YouTube clip

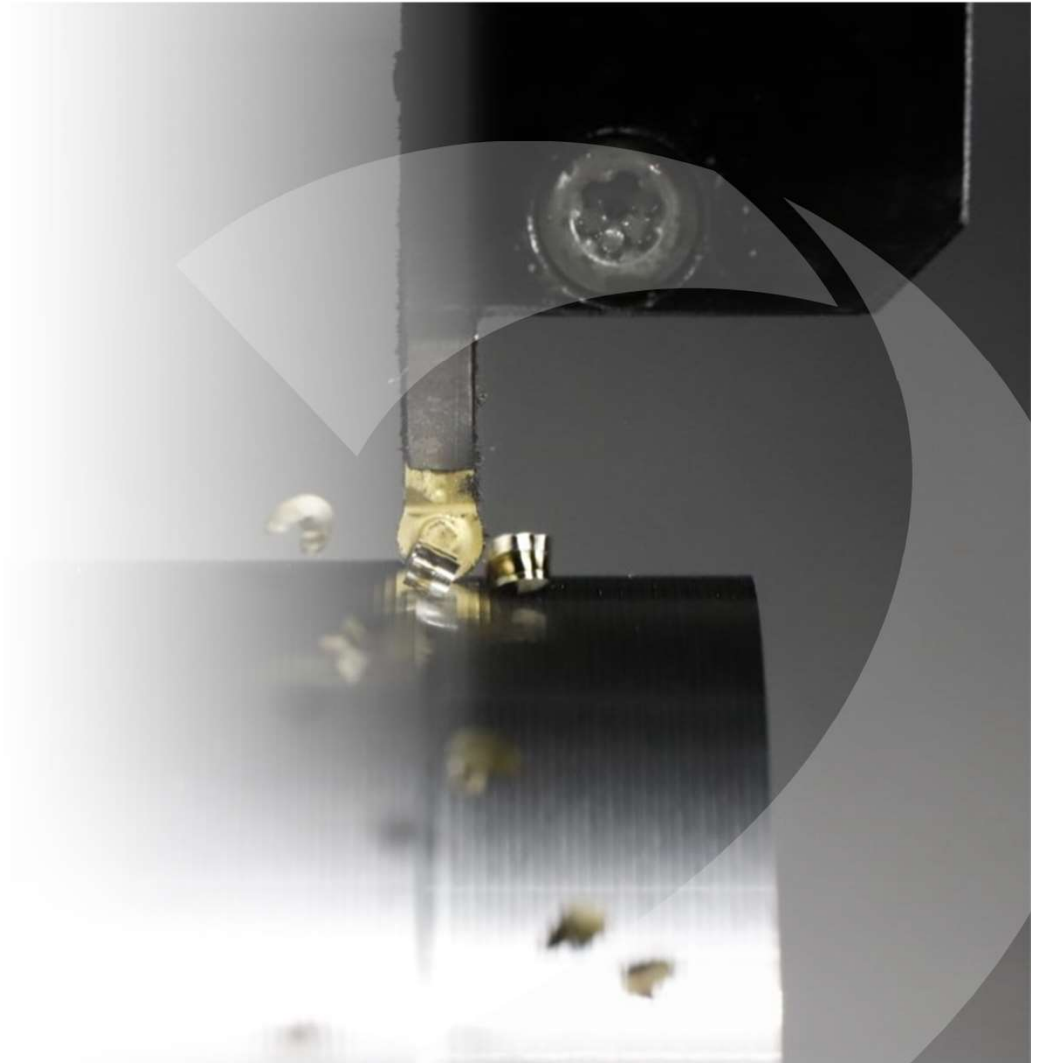


You Tube

DORMER PRAMET

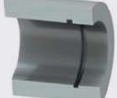
应用推荐

切槽&切断扩展



槽刀系列 - 导航

EXTERNAL		Type of operation	Insert family choice	
			1	2
		grooving	GL D GM 	LCMF16, LCMF30 F 
			 XXXX	 XXXX
		parting off	GL D PM 	LFMX M2 
			 XXXX	 XXXX
		face grooving	LCMF13 F 	LCMF16, LCMF30 F 
			 XXXX	 XXXX
		copy profiling	GL D MM 	LCMF16, LCMF30 MP 
			 XXXX	 XXXX
		circlips grooving	X61 	TN ZZ EXT 
			 XXXX	 XXXX

INTERNAL		Type of operation	Insert family choice	
			1	2
		grooving	LCMF13 F 	
			 XXXX	
		copy profiling	LCMF13 MP 	
			 XXXX	
		circlips grooving	X61 	TN ZZ INT 
			 XXXX	 XXXX

新样本中会增加导航栏用于快速选型

如何选择刀片

加工推荐 – 样本和小册子

Suitability and starting values for cutting speed (vc), feed (f) and depth of cut (ap). 更多参数信息可使用参数计算器

Product	RE [mm]	P			M			K			N			S			H		
		vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap	vc	f	ap
		[m/min]	[mm/rev]	[mm]	[m/min]	[mm/rev]	[mm]	[m/min]	[mm/rev]	[mm]	[m/min]	[mm/rev]	[mm]	[m/min]	[mm/rev]	[mm]	[m/min]	[mm/rev]	[mm]



GM槽型可用于切槽和车槽，连续和断续工序

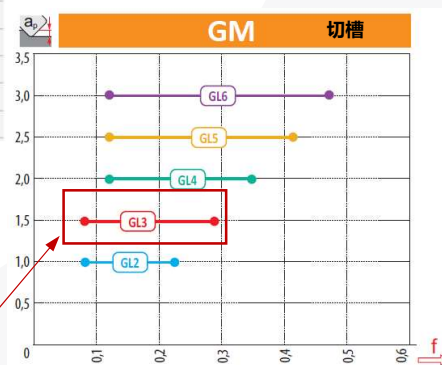
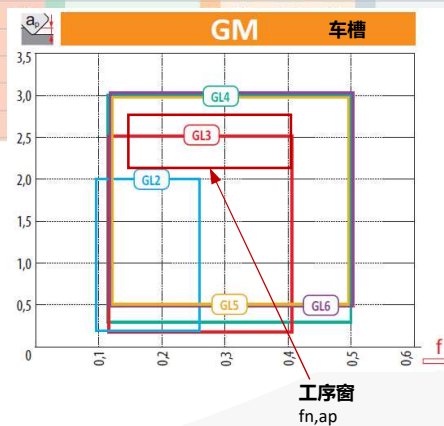
GL2-D200M02-GM	G8330	0.20	190	0.10	0.8	110	0.09	0.8	180	0.10	0.8	—	—	—	45	0.08	0.6	—	—	—
	T7325	0.20	220	0.10	0.8	170	0.09	0.8	—	—	—	—	—	—	70	0.08	0.6	—	—	—
GL3-D300M02-GM	G8330	0.20	150	0.20	1.0	90	0.18	1.0	140	0.20	—	—	—	—	—	—	—	—	—	—
	T7325	0.20	175	0.20	1.0	135	0.18	1.0	—	—	—	—	—	—	—	—	—	—	—	—
GL3-D300M04-GM	G8330	0.40	160	0.20	1.0	95	0.18	1.0	150	0.20	—	—	—	—	—	—	—	—	—	—
	T7325	0.40	185	0.20	1.0	140	0.18	1.0	—	—	—	—	—	—	—	—	—	—	—	—
GL4-D400M04-GM	G8330	0.40	150	0.25	1.2	90	0.23	1.2	140	0.25	—	—	—	—	—	—	—	—	—	—

刀片的形状，尺寸，圆角和槽型

材质

刀尖圆角

初始推荐参数



如何选择刀片

加工推荐 – 包装盒

GL3-D300M02-GM G8330 0.20 150 0.20 1.0 90 0.18 1.0 140 0.20 1.0 - - - 35 0.14 0.8 - - -

GL3-D300M02-GM:G8330

P25 - P40	[metric]		[inch]	
	V _c	f _n	a _p	
	205 - 115	0,08 - 0,4	0,2 - 2,5	675 - 375 .003 - .016 .008 - .098

M20 - M35	[metric]		[inch]	
	V _c	f _n	a _p	
	120 - 65	0,09 - 0,36	0,2 - 2,5	395 - 215 .004 - .014 .008 - .098

K20 - K40	[metric]		[inch]	
	V _c	f _n	a _p	
	190 - 105	0,08 - 0,4	0,2 - 2,5	625 - 345 .003 - .016 .008 - .098

S15 - S25	[metric]		[inch]	
	V _c	f _n	a _p	
	60 - 20	0,09 - 0,28	0,2 - 2	195 - 65 .004 - .011 .008 - .079

S10 - S25	[metric]		[inch]	
	V _c	f _n	a _p	
	130 - 50	0,08 - 0,24	0,2 - 0,8	425 - 165 .003 - .009 .008 - .031

S10 - S25	[metric]		[inch]	
	V _c	f _n	a _p	
	105 - 45	0,17 - 0,35	0,5 - 2,4	345 - 150 0,007 - 0,014 0,02 - 0,094

初始值是标签上打印的工序窗参数的平均值

GL2-D200MMO-MM:T7325

P15 - P35	[metric]		[inch]	
	V _c	f _n	a _p	
	345 - 205	0,08 - 0,3	0,2 - 1	1130 - 675 .003 - .012 .008 - .039

M10 - M25	[metric]		[inch]	
	V _c	f _n	a _p	
	265 - 155	0,09 - 0,27	0,2 - 1	870 - 510 .004 - .011 .008 - .039

S10 - S25	[metric]		[inch]	
	V _c	f _n	a _p	
	130 - 50	0,08 - 0,24	0,2 - 0,8	425 - 165 .003 - .009 .008 - .031

S10 - S25	[metric]		[inch]	
	V _c	f _n	a _p	
	105 - 45	0,17 - 0,35	0,5 - 2,4	345 - 150 0,007 - 0,014 0,02 - 0,094

GL6-D600MMO-MM:T7325

P15 - P35	[metric]		[inch]	
	V _c	f _n	a _p	
	280 - 175	0,15 - 0,5	0,5 - 3	920 - 575 0,006 - 0,020 0,02 - 0,118

M10 - M25	[metric]		[inch]	
	V _c	f _n	a _p	
	215 - 135	0,17 - 0,45	0,5 - 3	705 - 445 0,007 - 0,018 0,02 - 0,118

S10 - S25	[metric]		[inch]	
	V _c	f _n	a _p	
	105 - 45	0,17 - 0,35	0,5 - 2,4	345 - 150 0,007 - 0,014 0,02 - 0,094

S10 - S25	[metric]		[inch]	
	V _c	f _n	a _p	
	105 - 45	0,17 - 0,35	0,5 - 2,4	345 - 150 0,007 - 0,014 0,02 - 0,094

S10 - S25	[metric]		[inch]	
	V _c	f _n	a _p	
	105 - 45	0,17 - 0,35	0,5 - 2,4	345 - 150 0,007 - 0,014 0,02 - 0,094

S10 - S25	[metric]		[inch]	
	V _c	f _n	a _p	
	105 - 45	0,17 - 0,35	0,5 - 2,4	345 - 150 0,007 - 0,014 0,02 - 0,094

Edit

刀片型号

工序窗

V_c 切削速度

f_n 每转进给

a_p 切削深度

WMG材料组校正因子

加工推荐

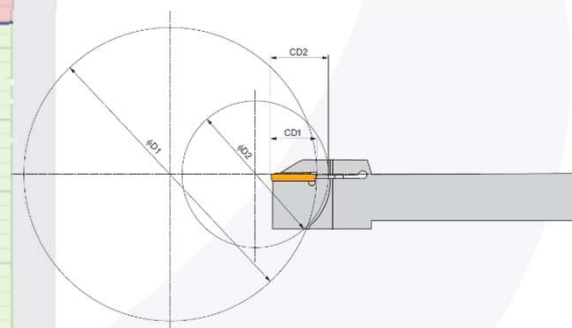
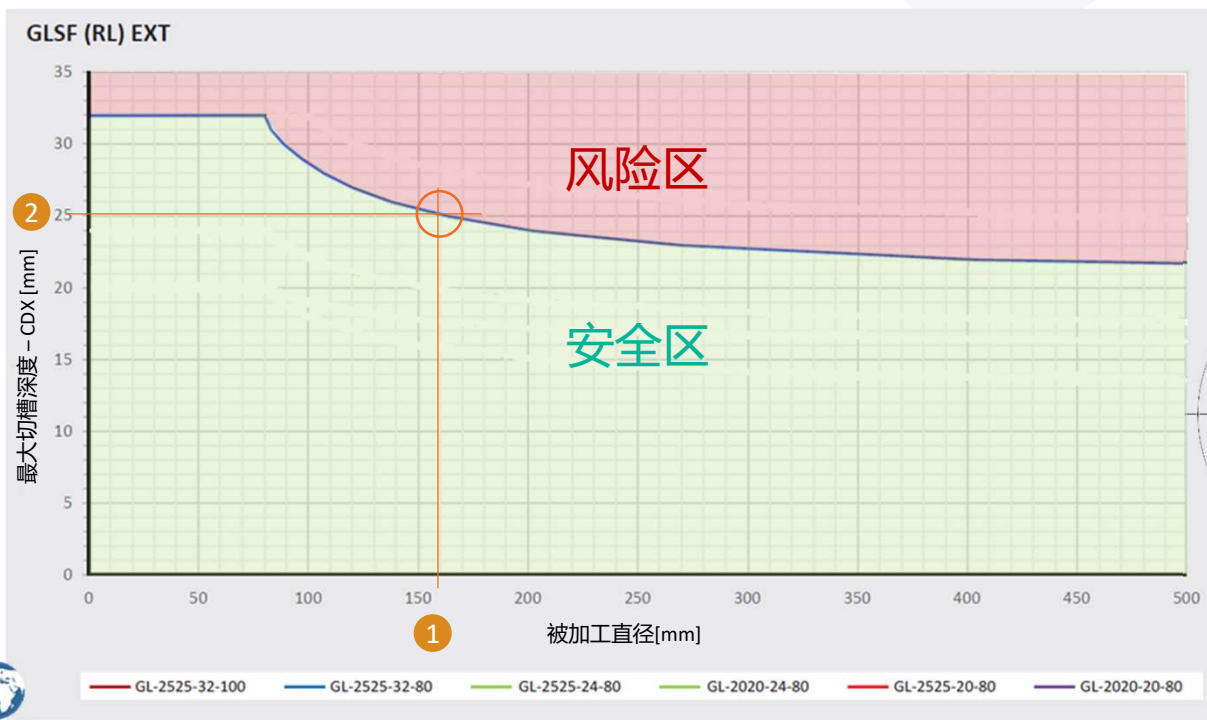
ISO group	Subgroup	WMG (Work Material Group)	k_{vc}	Examples of material (AISI, EN, DIN, SS, ČSN, BS, STN, UNE, AFNOR, GOST, UNI, ASTM, ...)
P Steel and cast steel (steels with alloy content ≤ 10 % and a hardness of < 45HRC)	P1 Free machining steel (carbon steels with increased machinability)	P1.1 Free machining sulfurized carbon steel with a hardness of < 220 HB	1.33	AISI 1108, EN 15S22, DIN 1.0723, SS 1922, ČSN 11120, BS 210A15, UNE F.210F, GB Y15, AFNOR 10F1, GOST A30, UNI CF10S20
		P1.2 Free machining sulfurized and phosphorized carbon steel with a hardness of < 180 HB	1.49	AISI 1211, EN 115Mn30, DIN 1.0715, SS 1912, ČSN 11109, BS 230M7, UNE F.2111, GB Y15, AFNOR S250, GOST A40G, UNI CF95Mn28
		P1.3 Free machining sulfurized/phosphorized and leaded carbon steel with a hardness of < 160 HB	1.53	AISI 12L13, EN 115MnPb30, DIN 1.0718, SS 1914, ČSN 12110, BS 210M16, UNE F.2114, GB Y15Pb, AFNOR S250Pb, GOST AS35G2, UNI CF10SPb20
	P2 Plain carbon steel (steels comprised of mainly iron and carbon)	P2.1 Plain low carbon steel containing < 0.25 % C with a hardness of < 180 HB	1.14	AISI 1015, EN C15, DIN 1.0401, SS 1350, ČSN 11301, BS 080A15, UNE F.111, GB 15, AFNOR C18RR, GOST St2ps, UNI Fe360
		P2.2 Plain medium carbon steel containing < 0.55 %C with a hardness of < 240 HB	1.00	AISI 1030, EN C30, DIN 1.0528, SS 1550, ČSN 12031, BS 080M32, UNE F.1130, GB 30, AFNOR AF50C30, GOST 30G, UNI Fe590
		P2.3 Plain high carbon steel containing > 0.55 % C with a hardness of < 300 HB	0.89	AISI 1060, EN C60, DIN 1.0601, SS 1655, ČSN 12061, BS 080A62, UNE F513, GB 60, AFNOR 1C60, GOST 60G, UNI C60
	P3 Alloy steel (carbon steels with an alloying content ≤ 10 %)	P3.1 Alloy steel with a hardness of < 180 HB	0.92	AISI 5015, EN 16Mo3, DIN 1.5415, SS 2912, ČSN 15020, BS 1501-240, U AFNOR 15D3, GOST 15M, UNI 16Mo3KW
		P3.2 Alloy steel with a hardness of 180 – 260 HB	0.74	AISI 4140, EN 42CrMo4, DIN 1.7225, SS 2244, ČSN 15142, BS 708M40, AFNOR 42CD4, GOST 40ChFA, UNI 42CrMo4

Important note:

Look into the technical section of the catalogue for
the correction factors for the different work material
harnesses!

加工推荐

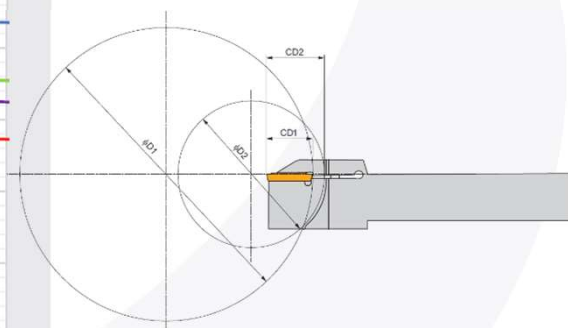
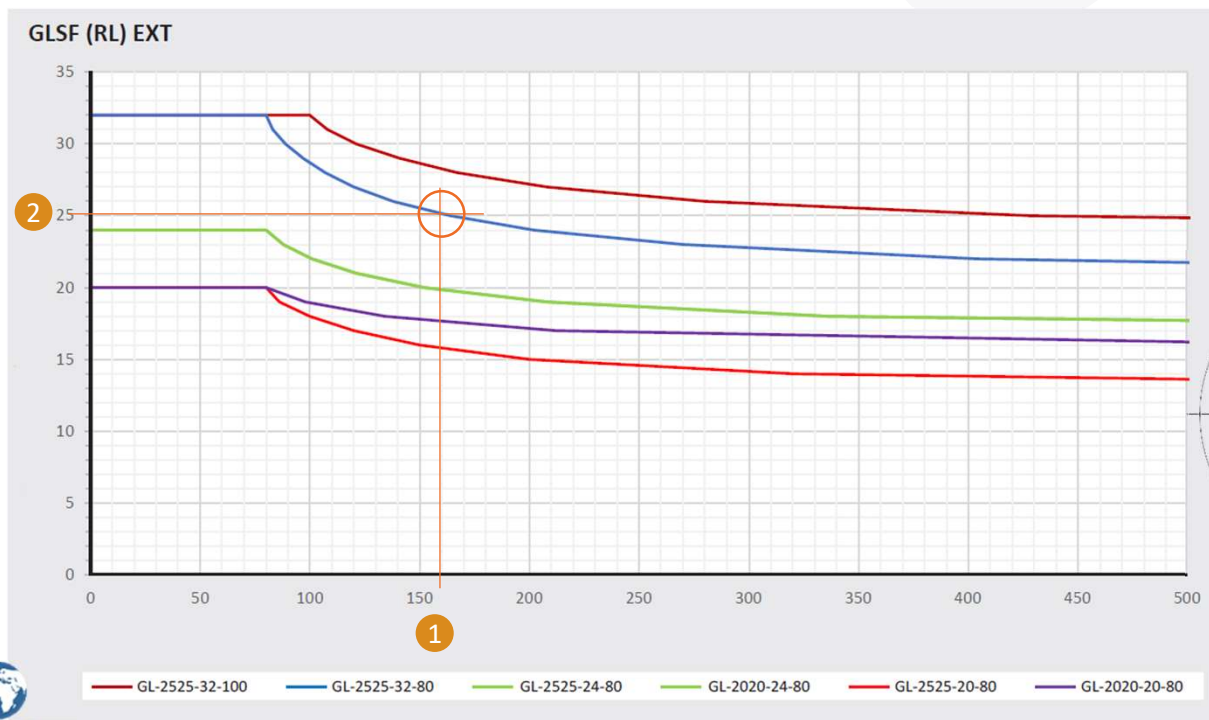
不同工件直径对应的切削深度



- 加工更大的直径，对应的切削深度CDX也会减少

加工推荐

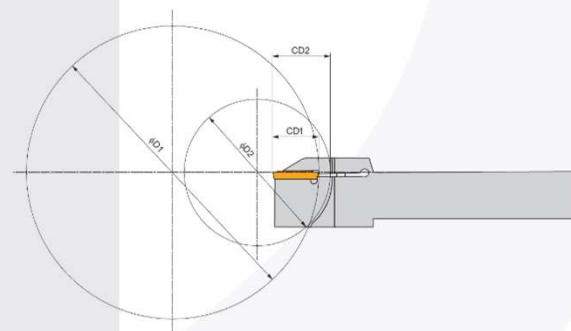
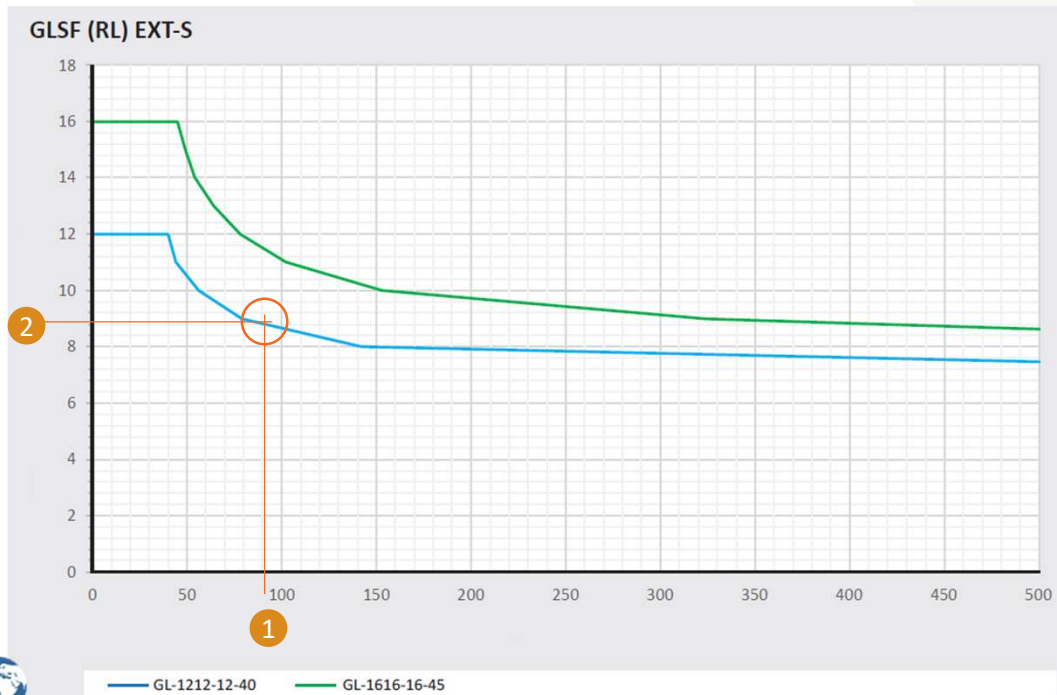
不同工件直径对应的切削深度



- 加工更大的直径，对应的切削深度CDx也会减少

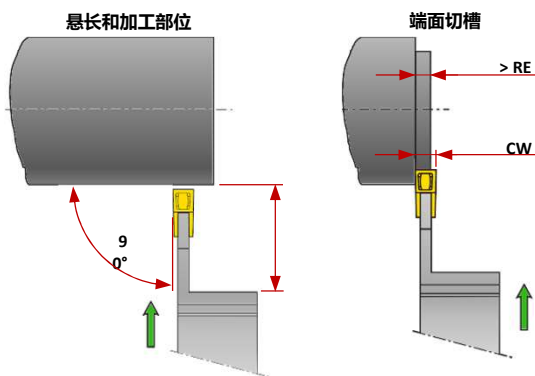
加工推荐

不同工件直径对应的切削深度



加工推荐 (1)

通用



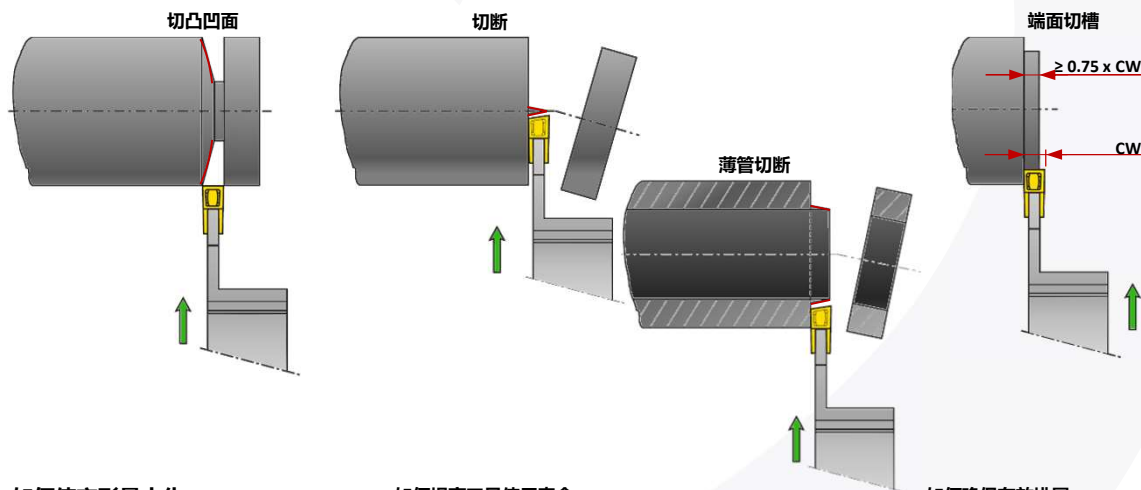
如何使变形最小化

- 使用最短悬长的刀杆
- 刀具与工件外圆垂直

如何确保有效排屑

- 端面的切削宽度应该大于 $CW - RE$

切断



如何使变形最小化

- 使用最短悬长的刀杆
- 使用更小的刀尖圆角(减少每层的切削力)
- 选用刀片具有 $CW \geq 1.33 \times$ 曲面宽度
- 降低进给

如何提高刀具使用寿命

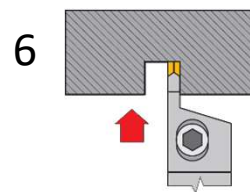
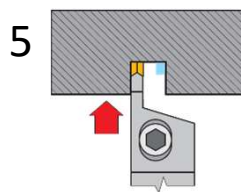
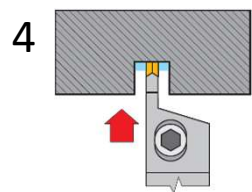
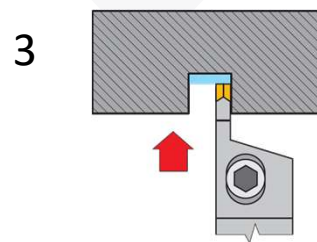
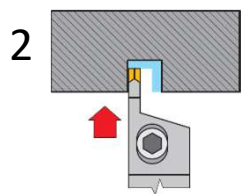
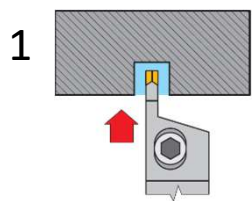
- 在分离工件前降低进给(降低 75% 的进给 $D = CW$)
- 不要超过中心线
- 为了最小化毛刺, 以一定角度插入刀具
- 对于实心棒料, 使用 12° or 15° 角度插入
- 对于管材, 使用 6° 角度插入

如何确保有效排屑

- 被切削材料的宽度一定大于 75% 刀片的宽度 CW

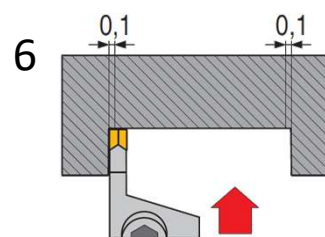
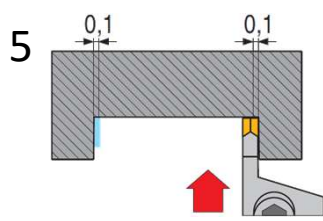
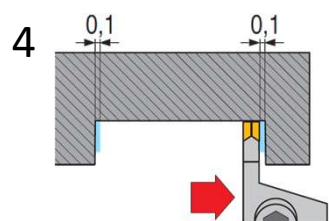
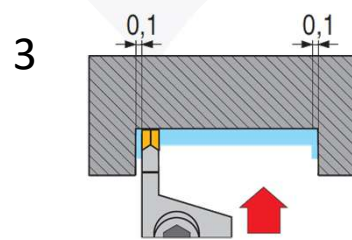
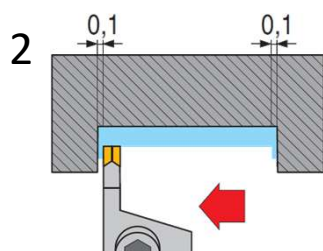
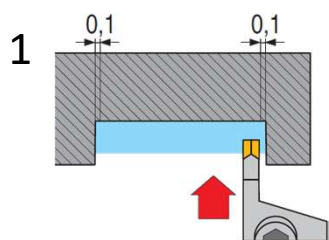
加工推荐 (2)

如何加工方形凹槽

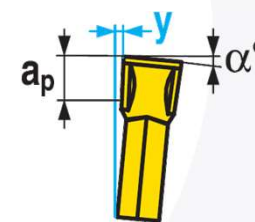


加工推荐 (3)

如何加工宽凹槽



Example from LCMF - M



刀具变形量(y)

举例: $a_p = 3\text{mm}$ 时, 不同进给的变形量

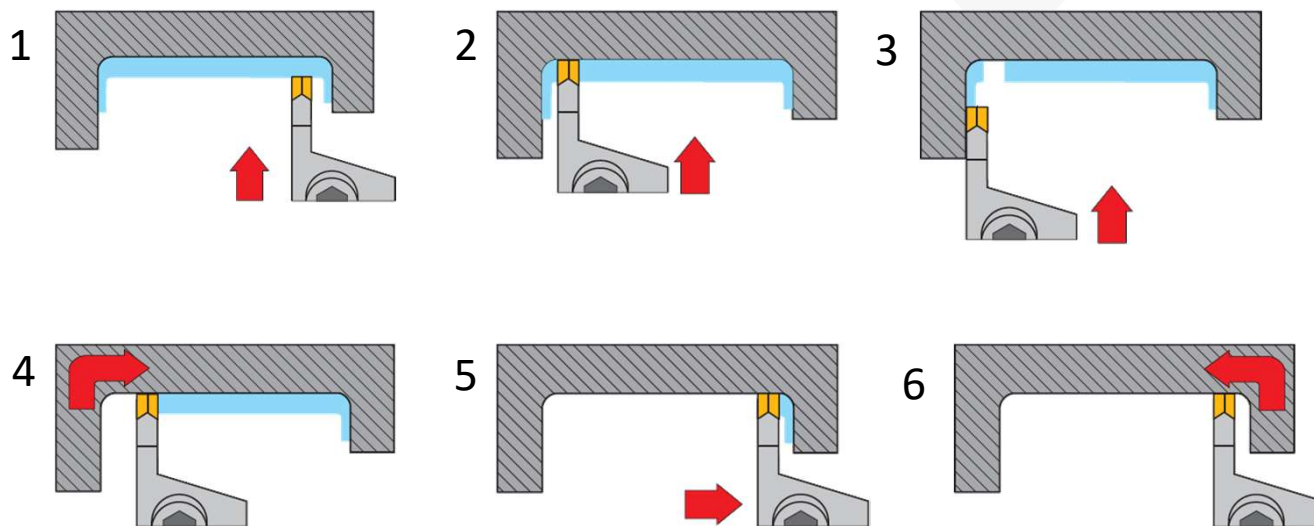
$f_n = 0.15\text{ mm/rev}$ 变形 $y = 0.07\text{ mm}$

$f_n = 0.25\text{ mm/rev}$ 变形 $y = 0.08\text{ mm}$

$f_n = 0.35\text{ mm/rev}$ 变形 $y = 0.10\text{ mm}$

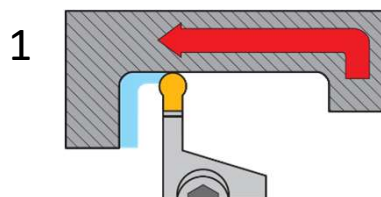
加工推荐 (4)

如何加工带圆角凹槽

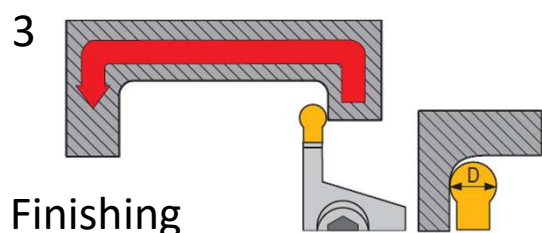
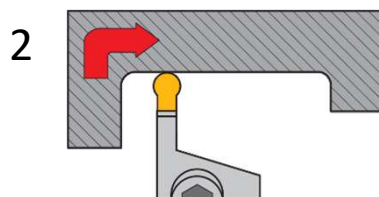


加工推荐 (5)

球头槽刀片仿形



Roughing

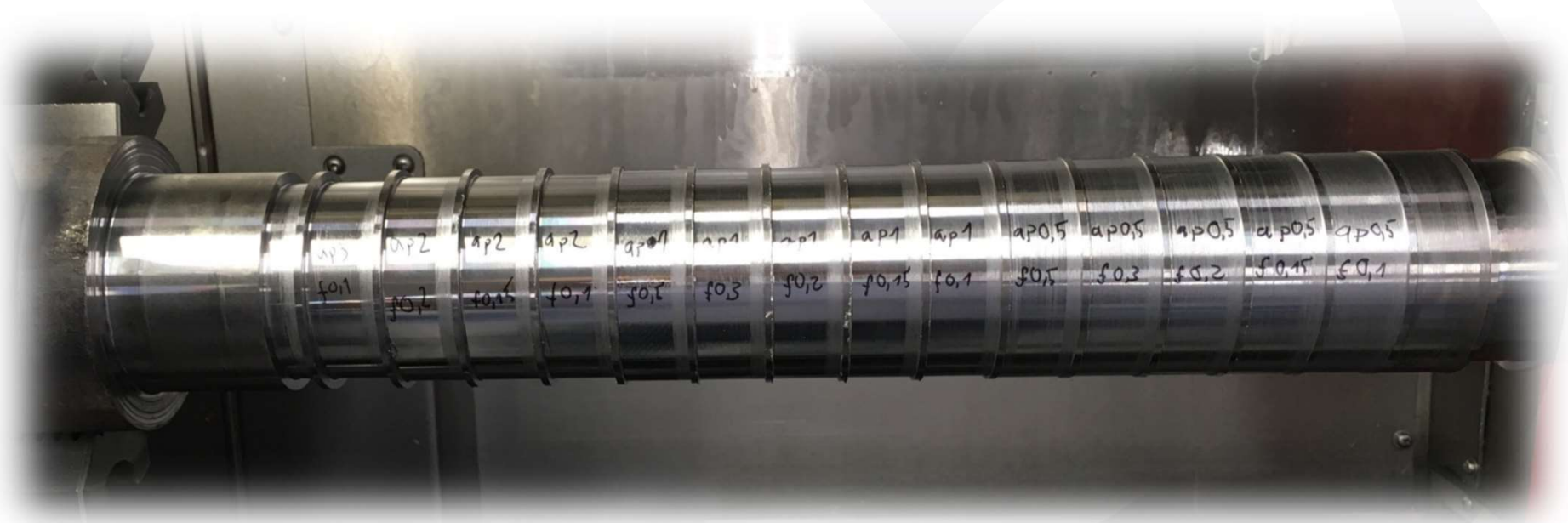


Finishing

D [mm]	a_p [mm]
3	0,15
4	0,20
5	0,22
6	0,25
8	0,40

加工推荐 (6)

切削深度和进给对槽表面的影响



加工推荐 (7)

如何使用特殊扳手拆装刀板

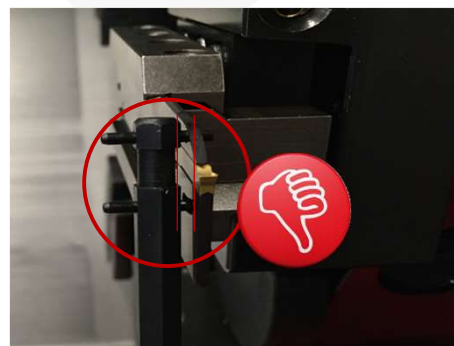
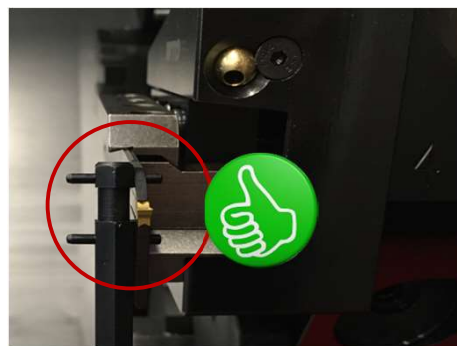
可采用两种方式



加工推荐 (8)

如何拆装刀片

重点提示:
确保扳手正确插入

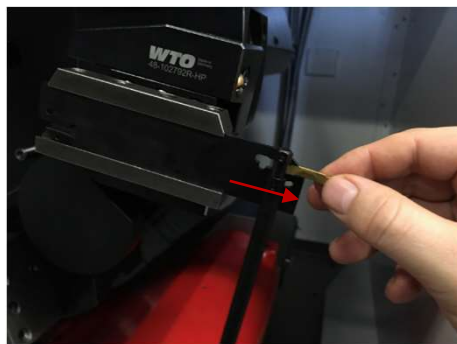


重要提示:
扳手和刀板之间不能有
肩铣

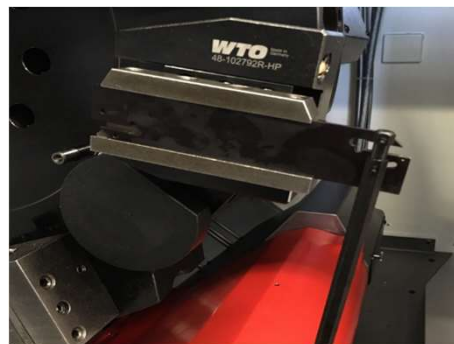
1.) 推动扳手翘起刀板定位面



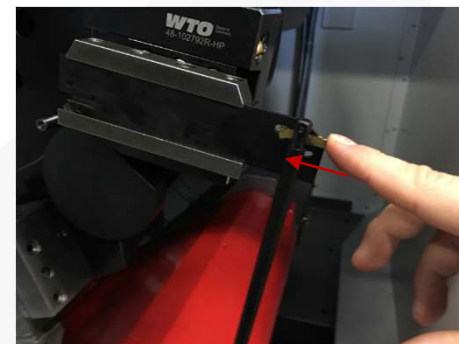
2.) 移除刀片



3.) 清洁刀片座



4.) 放入新刀片



DORMER PRAMET

测试情况

切槽&切断扩展

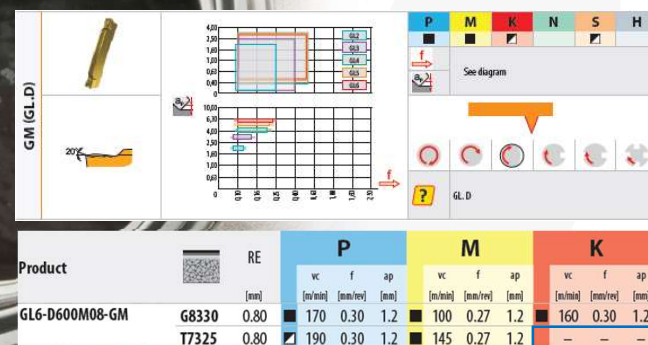


GL.D.GM

Field test

Company		China	
Work-material		QT.600 (WMG K3.2)	
Hardness			
Brand		Pramet	欧洲品牌
Tool		GL6-S2020KFL-20-80	
Insert		GL6-D600M08-GM	6008Y
Geometry		GM	
Grade		T7325	908
Coolant		Yes	Yes
Cutting speed	V_c [m/min]	180m/min	180m/min
Spindle speed RPM	n [U/min]	260 rev/min	260 rev/min
Feed	f [mm/min]	0,15 mm/min	0,15 mm/min
Width of cut	CW [mm]	6,0 mm	6,0 mm
Depth of cut	CDX [mm]	mm	mm
Time	T_{min}	min	min
Tool life	T_{pcs}	22 pcs	15 pcs

Tool life
147%



K	15	Grey cast iron (GG)	Pearlitic/ferritic	180 HB	105-185 m/min
K	16	Grey cast iron (GG)	Pearlitic/machinable	200 HB	100-145 m/min
K	17	Modular cast iron (GGG)	Pearlitic	180 HB	110-200 m/min
K	18	Modular cast iron (GGG)	Pearlitic	200 HB	60-135 m/min
K	19	Modular cast iron	Pearlitic	170 HB	130-215 m/min
K	20	Modular cast iron	Pearlitic	200 HB	110-170 m/min

GL.D-MM

Field test

Company		FG - Italy			
Work-material		INCONEL 718 (WMG S3.2)			
Hardness		32-40HRC			
Brand		SAFETY	PRAMET	PRAMET	PRAMET
Tool		TN-P00-H25L 2525	GL4-S2525MFL-20-80	GL4-S2525MFL-20-80	GL4-S2525MFL-20-80
Insert		TN400/00H2N	GL4-D400MMO	GL4-D400MMO	GL4-D400MMO
Geometry		78	MM	MM	MM
Grade		5820	G8330	T7325	G8330
Coolant		Yes	Yes	Yes	Yes
Cutting speed	V _c [m/min]	50m/min	50m/min	50m/min	55m/min
Spindle speed RPM	n [U/min]	420 rev/min	420 rev/min	420 rev/min	460 rev/min
Feed	f [mm/min]	0,20 mm/min	0,20 mm/min	0,20 mm/min	0,20 mm/min
Width of cut	CW [mm]	4,0 mm	4,0 mm	4,0 mm	4,0 mm
Depth of cut	CDX [mm]	1,5 mm	1,5 mm	1,5 mm	1,5 mm
Time in cut	T _{min}	1:30 min	1:30 min	1:30 min	1:20 min
Total Time	T _{min}	38 min	54 min	38 min	59 min
Tool life	T _{pcs}	25 pcs	36 pcs	25 pcs	45 pcs



SAFETY
TN400/00H2N -78
25 parts



Chip form

GL4-MM T7325
25 parts

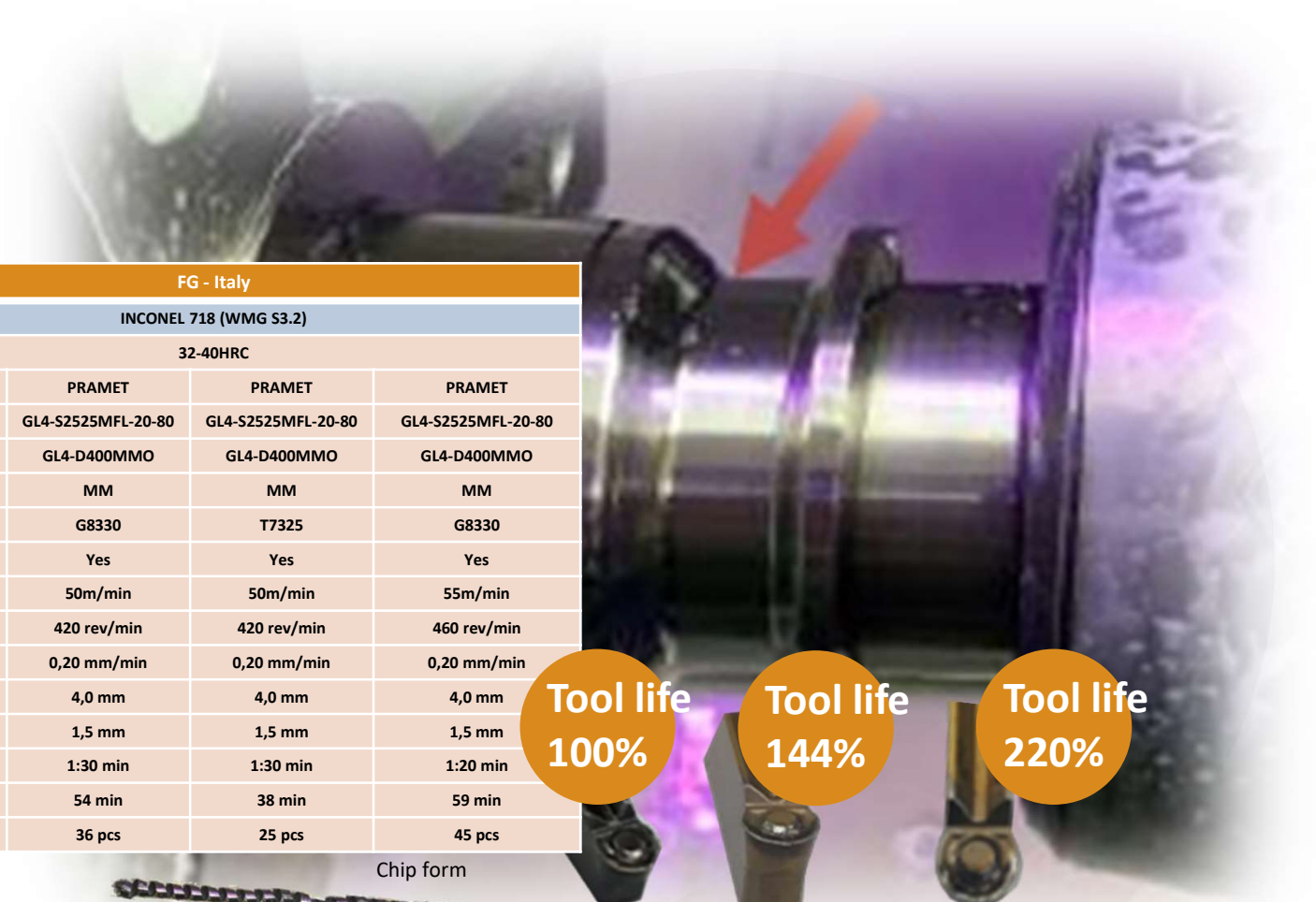
GL4-MM T8330
36 parts Vc 50m/min

GL4-MM T8330
45 parts Vc 55m/min

Tool life
100%

Tool life
144%

Tool life
220%





销售相关信息

切槽&切断产品扩展



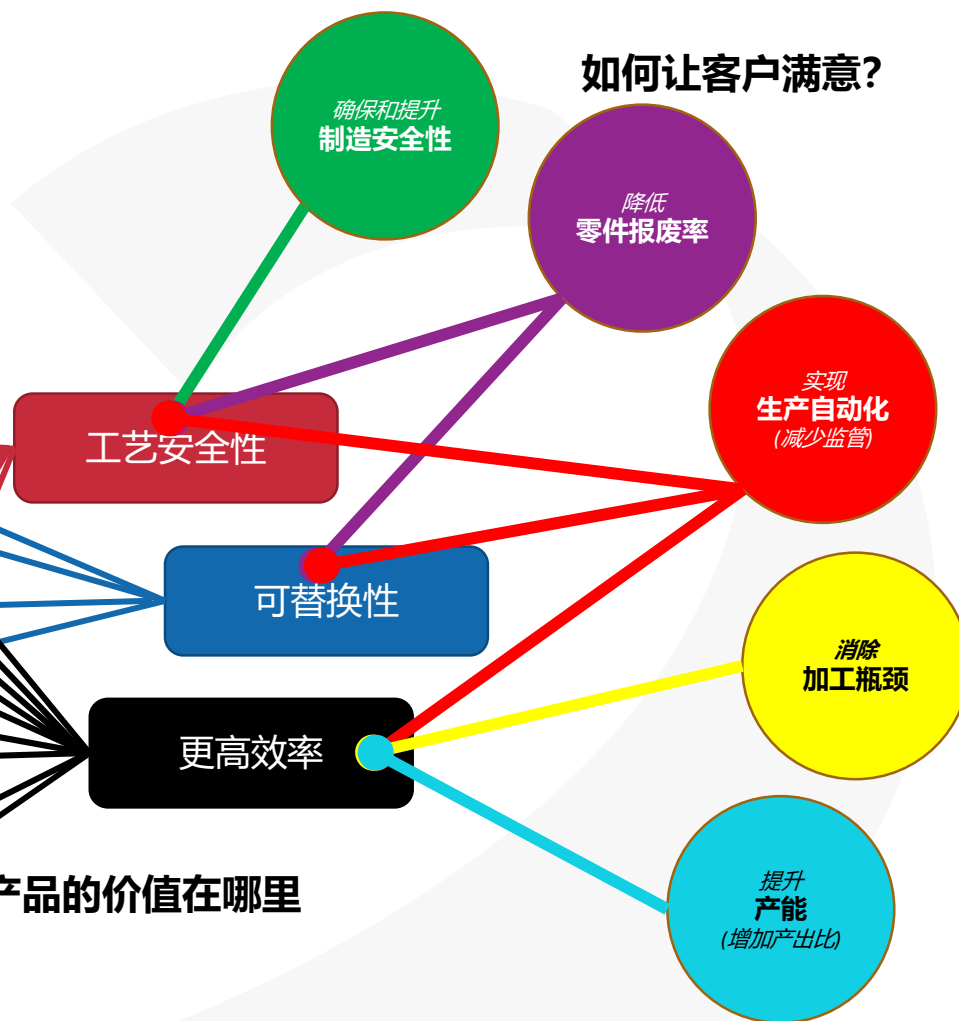
销售信息

产品的卖点在哪里？

产品特点	产品优势
25mm双头长刀片	实现 60% 更深槽的加工
GM 槽型	稳定的正前角槽型，可实现切槽和车槽加工
MM 槽型	正前角槽型，可实现仿形车和仿形切槽加工 - 圆头
更广泛的宽度选择	刀片宽度2~6mm，搭配不同的材质和槽型
PVD涂层	可用于钢，不锈钢，铸铁，耐热合金等材料的通用加工
提升工艺稳定性	结合新材质，全新的刀片和刀杆设计，加工钢和不锈钢时可实现更高的工艺稳定性
快速安装	30度的夹紧角度可实现快速拆装刀片
全新的命名方式	更容易理解和识别刀片和刀杆
刀片安装适应性更好	刀片尺寸GL.4, GL.5 和 GL.6 可安装在GL.4刀杆上 刀片尺寸GL.5 和 GL.6 可安装在 GL.5刀杆上
更广泛的刀杆尺寸	更广泛的刀杆尺寸可供选择

产品的价值在哪里

如何让客户满意？



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