

DORMER PRAMET



S561 高硬材料加工 整硬铣刀

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



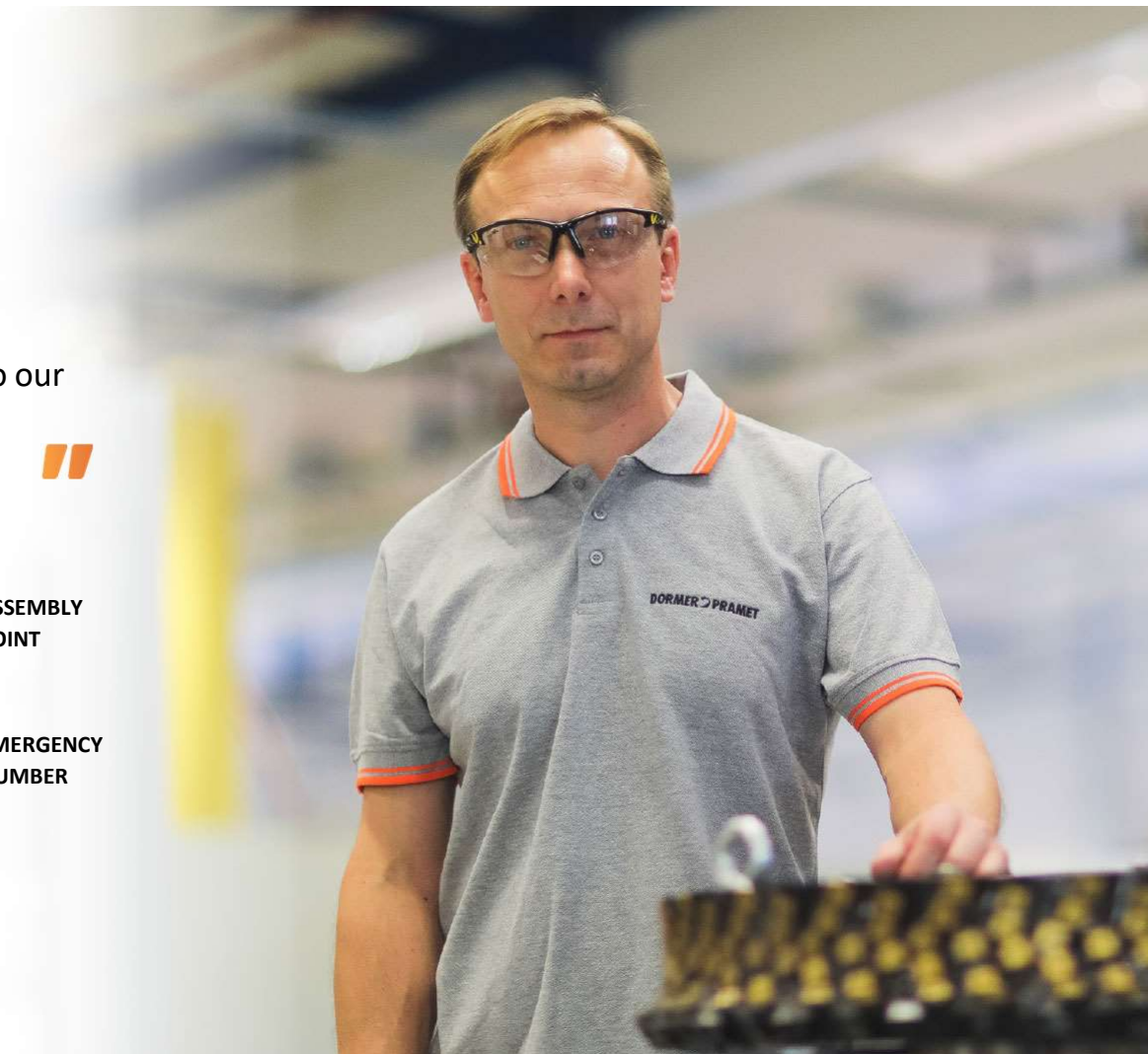
PROTECTIVE
EQUIPMENT



EMERGENCY
NUMBER



PSYCHOLOGICAL
SAFETY



产品预览

S561用于H-材料组的整体硬铣刀



DORMER PRAMET

产品介绍

S561 高硬材料加工
整硬铣刀



S561用于H-材料组的整硬铣刀

介绍



为什么要开发硬材料整硬铣刀?

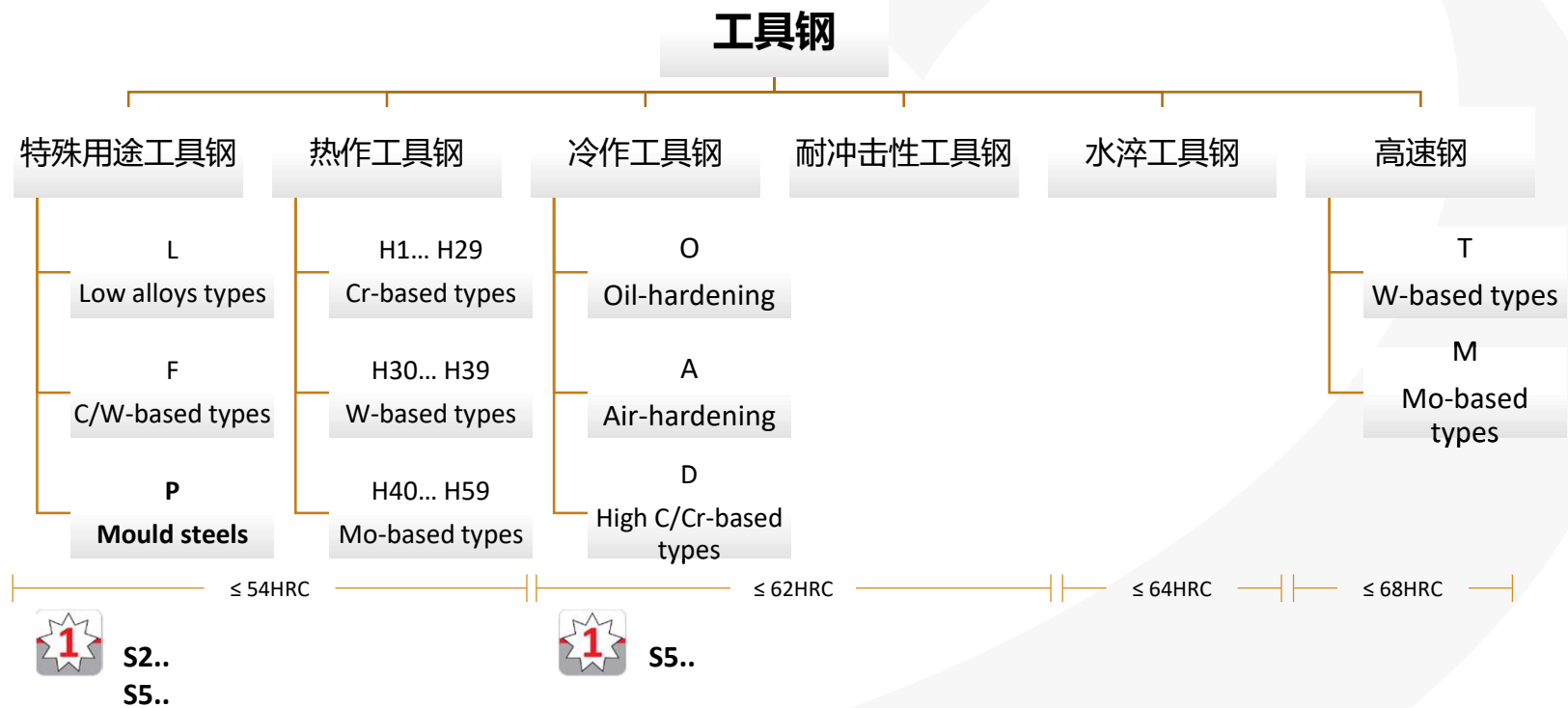
- 需要具有锋利刃口的硬材料铣刀

产品优势

- **高效率** – 4刃口设计提升排屑性能
- **有效性** – 提升模具加工的表面精度
- **安全性** – 负前角可提升刃口强度
- **竞争性** – 切割刃口设计可提升强度和抗崩刃性能

工具钢

材料介绍?



产品预览

介绍

型号	DC Range	NOF	APMX	螺旋角 λ	前角 γ	缩颈	RE	齿距	涂层	柄部标准	P	M	K	S	N	H
End mill design																
S561	1.0 – 20.0	4	3 ~ 2xDC	40°	-6°	No	No RE	unequal	TiSiN	DIN 6535 HA						■
S523	1.5 – 16.0	4	3 ~ 2xDC	40°	-6°	No	0.20 - 3.00	unequal	TiSiN	DIN 6535 HA						■

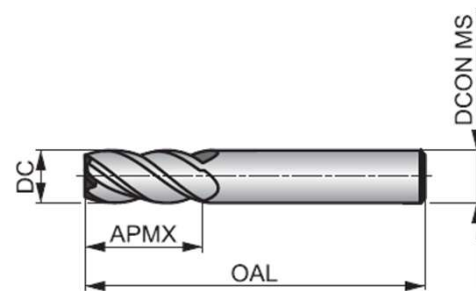
S561

产品介绍



订货号	DC [mm]	DCON MS [mm]	APMX [mm]	OAL [mm]	NOF
S5611.0	1.00	6.00	3.00	50.0	4
S5611.5	1.50	6.00	4.50	50.0	4
S5612.0	2.00	6.00	6.50	50.0	4
S5612.5	2.50	6.00	6.50	50.0	4
S5613.0	3.00	6.00	9.00	50.0	4
S5614.0	4.00	6.00	12.00	50.0	4
S5615.0	5.00	6.00	15.00	50.0	4
S5616.0	6.00	6.00	20.00	60.0	4
S5618.0	8.00	8.00	20.00	64.0	4
S56110.0	10.00	10.00	22.00	70.0	4
S56112.0	12.00	12.00	25.00	75.0	4

订货号	DC [mm]	DCON MS [mm]	APMX [mm]	OAL [mm]	NOF
S56114.0	14.00	14.00	32.00	90.0	4
S56116.0	16.00	16.00	32.00	90.0	4
S56118.0	18.00	18.00	38.00	100.0	4
S56120.0	20.00	20.00	38.00	100.00	4



参数
DC
DCON MS
APMX
OAL
NOF

描述
切削直径
柄部直径
最大切深
全长
齿数



SC
热胀刀柄



HC
液压刀柄



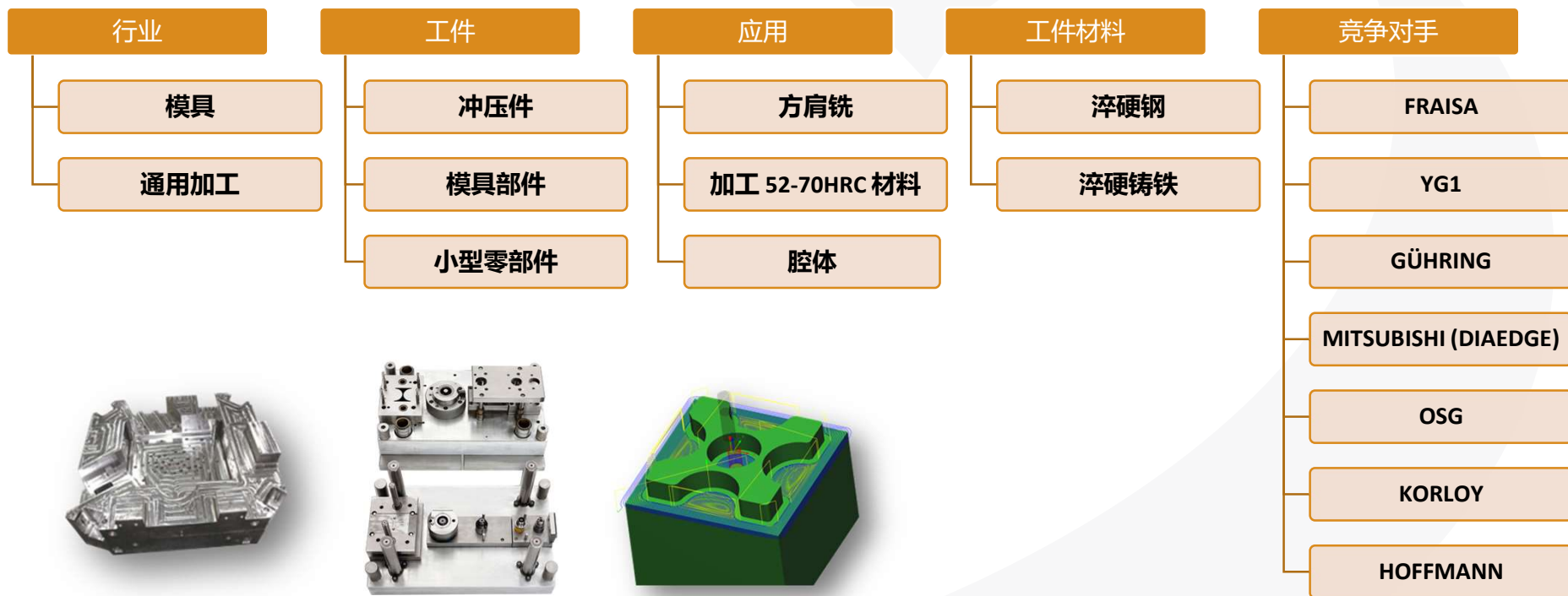
CC-HKS
强力刀柄



CC-ER
带精密夹头的ER刀柄

应用市场

介绍



DORMER PRAMET

特点&优势

S561 加工淬硬材料的整硬铣刀



淬硬钢(H-材料组)

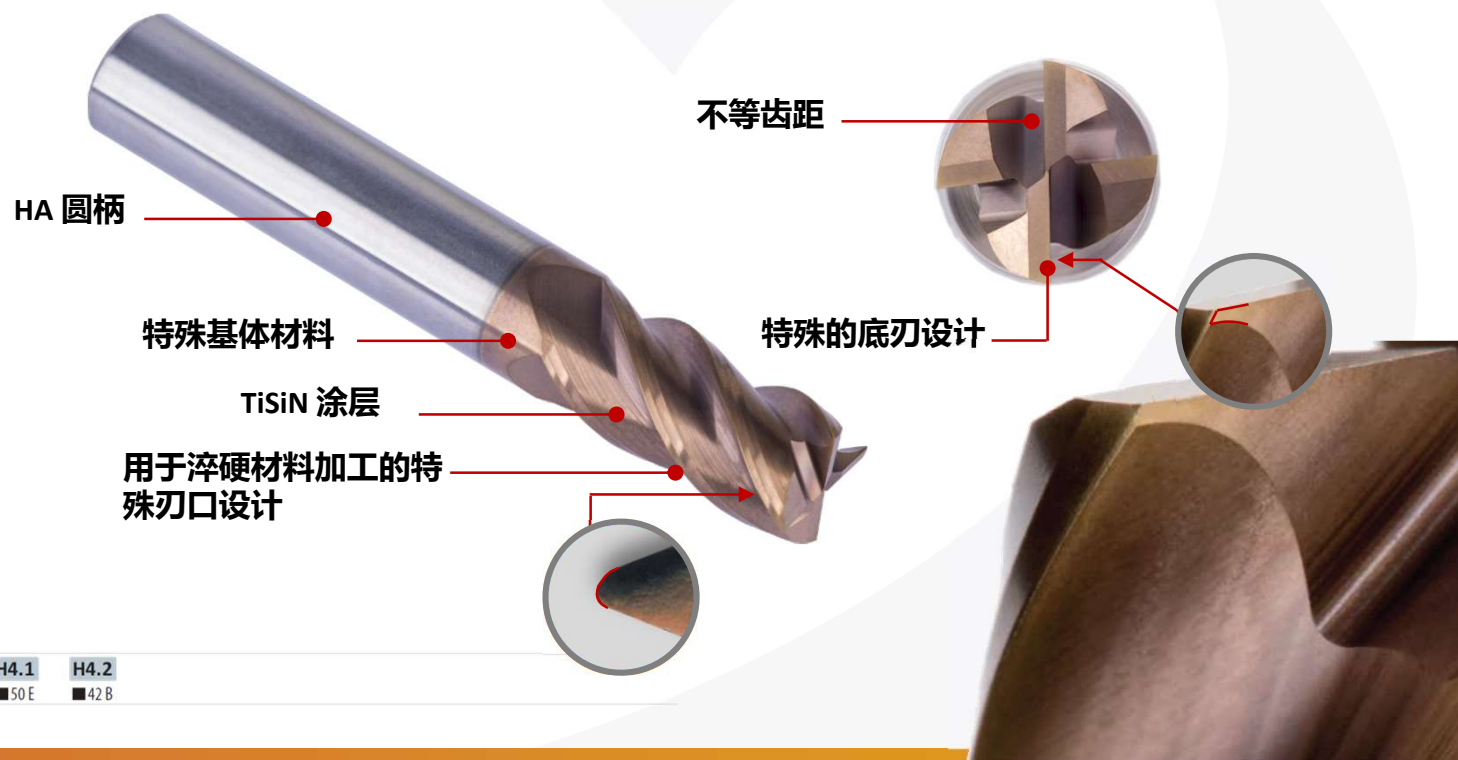
ISO group			WMG (Work Material Group)	Hardness (HB or HRC)	Ultimate Tensile Strength (MPa)	Examples of material (UNS, EN, DIN, SS, STN, B.S, UNE, CN, AFNOR, GOST, UNI)
H	H1	H1.1	Chilled cast iron	< 440 HB		UNS F45001, EN-GJS-1050-6, DIN 5.3406, SS 0512, BS Grade 2A
	H2	■ H2.1	Hardened cast iron	< 55 HRC		UNS F45003, EN-GJS-1400-1, DIN 5.3405, SS 0457, BS Grade 3D
		■ H2.2		> 55 HRC		UNS F45003, EN G-X260NiCr4-2, DIN 0.9620, SS 0466, BS Grade S
	H3	H3.1	Hardened steel <55HRC	< 51 HRC		AISI 4135, EN 34CrMo4, DIN 1.7220, SS 2234, STN 415131, BS 198, UNE F.1250, GB 35CrMo, AFNOR 35CD4, GOST AC38XFM, UNI 35CrMo4KB
		■ H3.2		51 - 55 HRC		AISI 4135, EN 34CrMo4, DIN 1.7220, SS 2234, STN 415131, BS 198, UNE F.1250, GB 35CrMo, AFNOR 35CD4, GOST AC38XFM, UNI 35CrMo4KB
	H4	■ H4.1	Hardened steel >55HRC	55 - 59 HRC		UNS T31501, EN 100MnCrW4, DIN 1.2510, SS 2140, STN 419413, BS B01, UNE F.5220, GB 9CrWMn, AFNOR 90MnCrV5, GOST 9XBГ, UNI 95MnWCr5KU
		■ H4.2		> 59 HRC		UNS T31501, EN 100MnCrW4, DIN 1.2510, SS 2140, STN 419413, BS B01, UNE F.5220, GB 9CrWMn, AFNOR 90MnCrV5, GOST 9XBГ, UNI 95MnWCr5KU



S561

产品特点

HM	N	NOF 4 $\pm$
	λ 40°	γ -6°
DIN 6355HA	TiSiN	DC h9
	DORMER	



H1.1	H2.1	H2.2	H3.1	H3.2	H4.1	H4.2
■ 119 I	■ 70 G	■ 60 E	■ 78 G	■ 64 G	■ 50 E	■ 42 B

DCON MS tolerance h6;

DORMER PRAMET

加工推荐

S561 加工淬硬材料的整硬铣刀



新图标

如何识别

基体材料

HM	HM	硬质合金
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刀具类型

W	W	软材料槽型
NRA	NRA	HRA粗加工刃型
FS	FS	FS断屑槽
	W NRA	W-槽型 + HRA粗加工刃型

齿

Z 2	NOF 2	齿数
Z 4	NOF 4	齿数 + 不等齿距设计

刀具长度

		切削长度
--	--	------

切削角度

$\lambda 12^\circ$ $\gamma 10^\circ$	$\lambda 25^\circ$	螺旋角
	$\gamma 20^\circ$	前角
$\lambda \neq 10^\circ$	$\lambda \neq$	不等螺旋角

刀柄

DIN 6535HA	DIN 6535HA	标准柄
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表面处理

		表面光亮处理
Hi	Hi	表面抛光处理

涂层

TiSiN	TiSiN	TiSiN 涂层
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冷却

		内冷
--	--	----

刀具公差

h9	DC h9	切削直径公差
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切削方向

		切削方向
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刀具标准

DIN 6527K	DIN 6527K	长度标准
DORMER	DORMER	长度标准

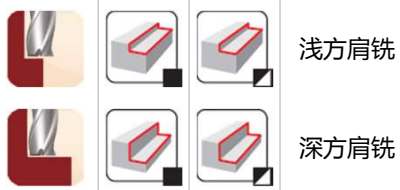
新图标

加工推荐

开槽工序



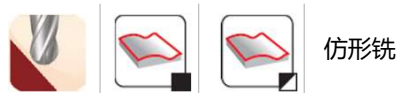
方肩铣



面铣



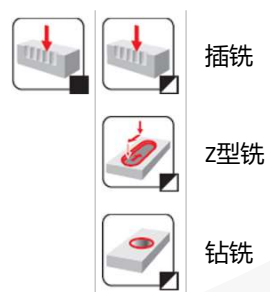
仿形铣



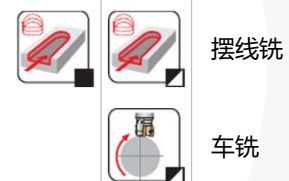
坡走铣



插铣



其他工序



切削数据

怎样识别数据?

新WMG 材料组

■ 首选

▣ 次选

切削数据仅在产品页

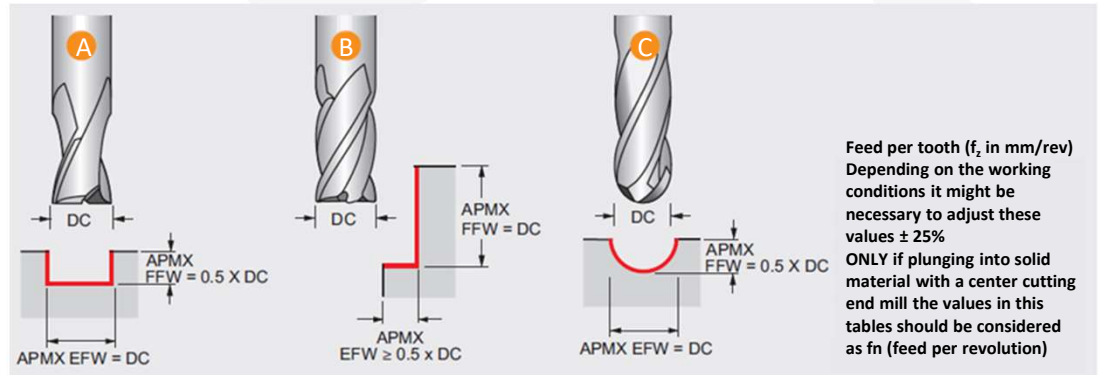
P1.1 ■ 199 J	P1.2 ■ 223 J	P1.3 ■ 230 J	P2.1 ■ 170 J	P2.2 ■ 150 J	P2.3 ■ 133 I	P3.1 ■ 138 J
M2.2 ■ 84 I	M3.1 ■ 94 I	M3.2 ■ 81 I	K1.1 ■ 196 J	K1.2 ■ 145 J	K1.3 ■ 109 J	K2.1 ■ 202 J
K4.3 ■ 91 I	K4.4 ■ 78 I	K4.5 ■ 65 I	K5.1 ■ 187 I	K5.2 ■ 141 I	K5.3 ■ 109 I	S1.2 ■ 69 I

Product Family Code														
		S722HB	S765HB	S768	S770HB	S771HB	S772HB	S773HB	S791	S561	S610	S611	S614	S629
		3.00 - 20.00	6.00 - 20.00	4.00 - 20.00	10.00 - 20.00	10.00 - 20.00	10.00 - 20.00	10.00 - 20.00	6.00 - 16.00	1.00 - 20.00	2.00 - 20.00	3.00 - 20.00	3.00 - 16.00	1.00 - 20.00
														
P	P1	■	■	■	■	■	■	■						
	P2	■	■	■	■	■	■	■						
	P3	■	■	■	■	■	■	■						
	P4	■	■	■	■	■	■	■						
M	M1	■	■	■	■	■	■	■	■					
	M2	■	■	■	■	■	■	■	■					
	M3	■	■	■	■	■	■	■	■					
	M4								▣					
K	K1	■	■	■	■	■	■	■	■					
	K2	■	■	■	■	■	■	■	■					
	K3	■	■	■	■	■	■	■	■					
	K4	■	■	■	■	■	■	■	■					
	K5	■	■	■	■	■	■	■	■					
N	N1								▣		■	■	■	■
	N2								▣		■	■	■	■
	N3										■	■	■	■
	N4								▣		■	■	■	■
	N5													
S	S1	■	■	■	■	■	■	■	▣					
	S2	■	■	■	■	■	■	■	▣					
	S3	■	■	■	■	■	■	■	▣					
	S4	■	■	■	■	■	■	■	▣					
H	H1									■				
	H2									■				
	H3									■				
	H4									■				

新的预览页仅展示适用性，不包括具体参数

切削数据

如何计算速度和进给等参数?



How to use this table to find the feed per tooth (f_z):

1. Find your Alpha Code on the product page (example: 170J, „J“ is the Alpha Code).
2. Find the closest diameter for your cutting application in the top row of the table.
3. Find your Alpha Code in the left column of the table.
4. The intersection (cell) of the Diameter and Alpha Code is the feed per tooth (f_z).

FOR SOLID
CARBIDE
MILLING
CUTTERS ONLY

P1.1	P1.2	P1.3	P2.1	P2.2
■ 199 J	■ 223 J	■ 230 J	■ 170 J	■ 150 J
M2.2	M3.1	M3.2	K1.1	K1.2
■ 84 I	■ 94 I	■ 81 I	■ 196 J	■ 145 J
K4.3	K4.4	K4.5	K5.1	K5.2
■ 91 I	■ 78 I	■ 65 I	■ 187 I	■ 141 I

	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00	12.00	14.00	16.00	18.00	20.00	22.00	25.00
I	0.003	0.006	0.011	0.019	0.024	0.030	0.032	0.036	0.039	0.042	0.049	0.054	0.061	0.066	0.073	0.079	0.088
J	0.004	0.009	0.014	0.026	0.033	0.041	0.044	0.048	0.053	0.057	0.066	0.074	0.083	0.090	0.099	0.107	0.120
K	0.006	0.012	0.019	0.035	0.044	0.054	0.059	0.064	0.070	0.076	0.088	0.098	0.110	0.120	0.132	0.142	0.160

校正因子

如何校正速度和进给?

1 Slot Milling

Correction factors for cutting speed V_c and feed per tooth for slot milling operations at different depths of cut

APMX FFW / DC	25%	50%	100%	150%				
	1.25	1.00	0.75	0.50				
	1.25	1.00	0.75	0.50				

2 Shoulder Milling

Correction factors for cutting speed V_c and feed per tooth for square shoulder milling with <50% radial immersion

APMX EFW / DC	5%	10%	15%	20%	25%	30%	40%	≥ 50%
	1.48	1.35	1.27	1.22	1.19	1.16	1.11	1.00
	2.29	1.67	1.40	1.25	1.15	1.09	1.02	1.00

We recommend to avoid milling with 50% radial immersion



销售信息

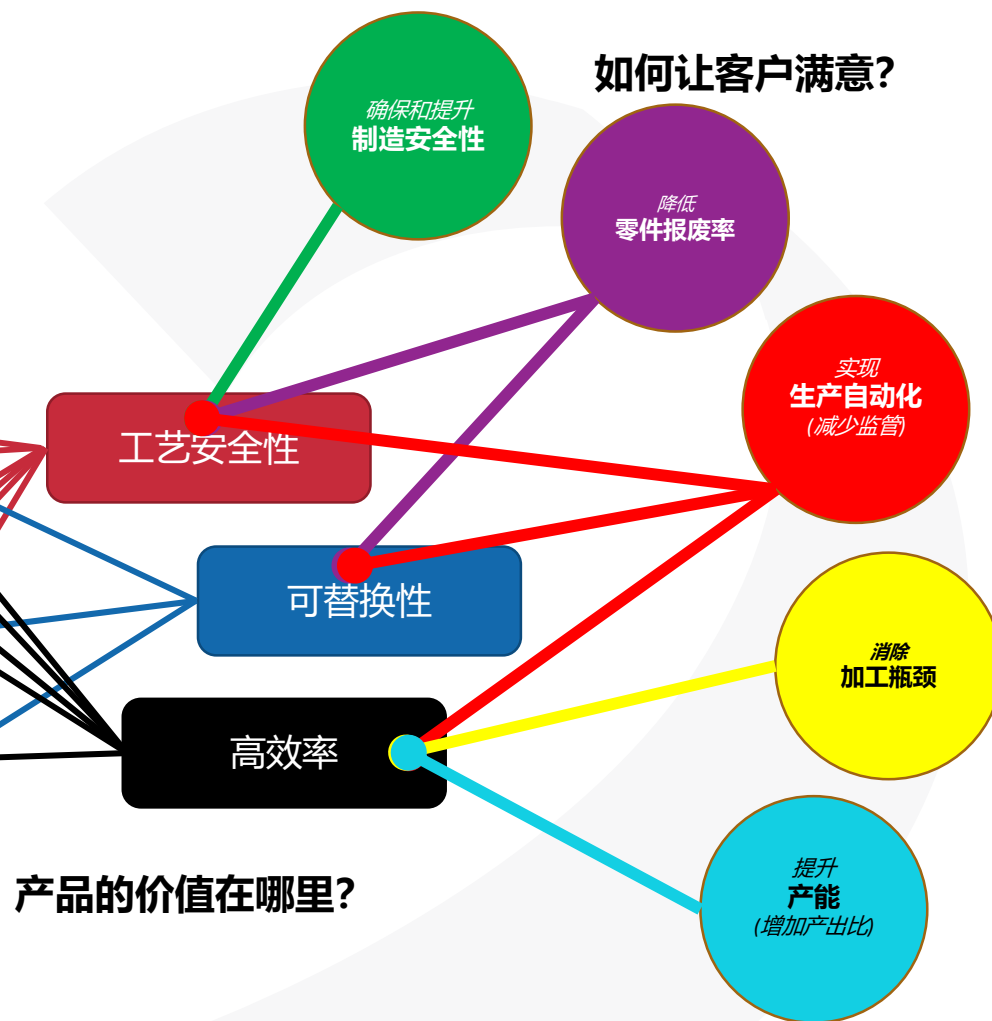
S561 加工淬硬材料的整硬铣刀



销售信息

产品的卖点在哪里？

产品特点	产品优势
特殊基体材料	可实现更高线速度
TiSiN 涂层	增强耐磨性，提升刀具寿命
	提升热冲击稳定性
	增加线速度
	提升耐高温性能，可用于干切
负前角	增加切削刃强度
不等齿距	减少加工振动，提升精加工品质
特殊底刃设计	提升刃口强度和抗崩性
特定的齿形设计	提升排屑性能，并提升效率
特殊刃带处理	提升加工淬硬模具的加工稳定性和效率 (52-70HRC)



DORMER PRAMET



SIMPLY
RELIABLE



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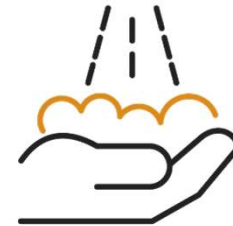
COVID-19 PRECAUTIONS



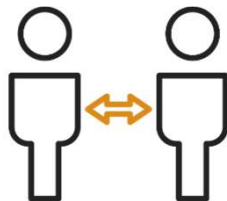
**FOLLOW LOCAL
GUIDELINES**



**STAY HOME WHEN
FEELING SICK**



**WASH YOUR HANDS
CAREFULLY**



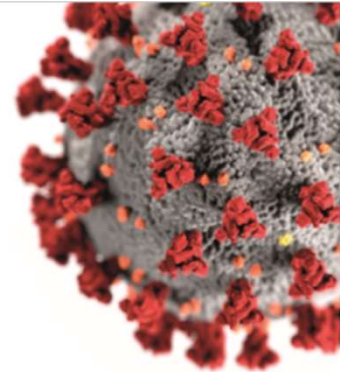
**OBSERVE PHYSICAL
DISTANCING GUIDELINES**



**COUGH AND SNEEZE
CORRECTLY**



**AVOID TOUCHING
YOUR FACE**



SC SHRINK FIT HOLDERS

Tooling systems

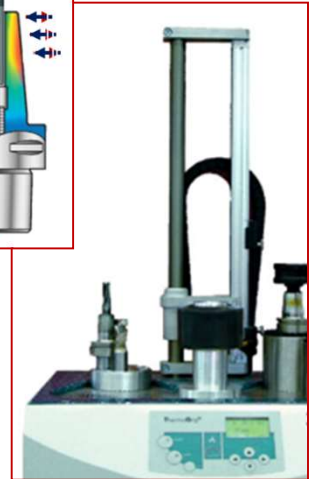
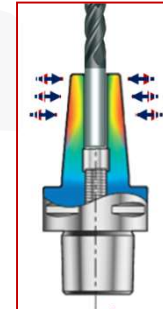
Description	Diameter range	DIN 69871				JIS B 6339			DIN 2080		DIN 69893-A	
		SK30	SK40	SK50	SK60	BT30	BT40	BT50	SK40	SK50	HSK63	HSK100
Hydraulic Chuck	3 - 20	•	•	•		•	•	•			•	•
	25 - 32		•	•			•	•			•	•

SC



Form AD/B
 $\nabla \leq 0,003$
 G6,3
 15.000 min⁻¹

- Requires a shrink-fit device
- For h6 shanks
- For finishing
- High torque transmission
- High levels of accuracy
- Extremely rigid



HC HYDRAULIC CHUCK

Tooling systems

Description	Diameter range	DIN 69871				JIS B 6339			DIN 2080		DIN 69893-A	
		SK30	SK40	SK50	SK60	BT30	BT40	BT50	SK40	SK50	HSK63	HSK100
Hydraulic Chuck	6 – 20	•	•	•		•	•	•			•	•
	25 – 32		•	•			•	•			•	•
	40			•								

HC



Form AD/B
 $\nabla \leq 0,003$
 G6.3
 15.000 min⁻¹



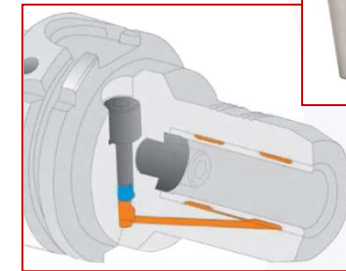
HC-C-S

Sealed for tough coolant

Torque

Clamping- $\varnothing$ mm	Moment (Nm)
6	10
8	20
10	40
12	50
14	80
16	100
18	150
20	200
25	250
32	400
40	550

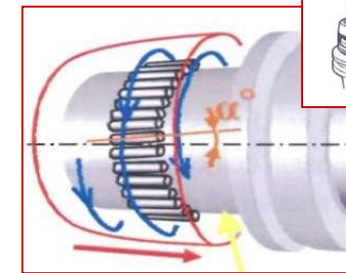
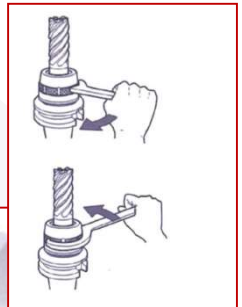
- Easy handling
- For h6 shanks
- **For finishing and super finishing**
- Medium-high torque transmission
- High run-out accuracy
- Dampen vibrations in low speed range



HKS MECHANICAL POWER CHUCK

Tooling systems

Description	Diameter range	DIN 69871				JIS B 6339			DIN 2080		DIN 69893-A	
		SK30	SK40	SK50	SK60	BT30	BT40	BT50	SK40	SK50	HSK63	HSK100
High-performance Chuck	3 – 20		•	•			•	•			•	•
	25 – 32		•	•			•	•			•	•



HKS



Form AD/B
s 0,003
G6,3
15.000 min⁻¹



HKS-C



HKS-C-S

Sealed for tough coolant

Size	20mm	25mm
Clamping torque	50-70 Nm	80-100 Nm
Clamping force	780 Nm	2000 Nm

- Easy handling
- For h6 shanks
- **For operations involving high MRR**
- High retention force
- High torque transmission
- Highest stability
- Accurate
- Flexible



ER COLLET CHUCK

Tooling systems

ER Collet chuck are not the first choice to recommend for holding indexable milling cutters. However if a customer wants to, we should recommend to use at least high precision collets (ER-C-P or ER-C-SC4)!

Description	Diameter range	DIN 69871				JIS B 6339			DIN 2080		DIN 69893-A		DIN 228-1					
		SK30	SK40	SK50	SK60	BT30	BT40	BT50	SK40	SK50	HSK63	HSK100	MT2	MT3	MT4	MT5	MT6	
ER Collet Chuck	1 – 10 (ER16)	●	●	●		●	●	●			●		●					
	2 – 16 (ER25)	●	●	●		●	●	●	●		●	●	●	●	●			
	2 – 20 (ER32)	●	●	●		●	●	●	●	●	●	●		●	●			
	3 – 26 (ER40)	●	●	●		●	●	●	●	●	●	●				●		

CC-ER



Form AD/B
 $\nabla \leq 0,003$
 G6,3
 15.000 min⁻¹



- Medium torque transmission
- Low to medium run-out accuracy
- Assembly requires some instruction (read instructions) 
- Moderate repeatability
- Dampen vibration
- Not suited for high speeds
- Flexible (broader range of collets than OZ system)
- Clean carefully
- Rotate the tool to achieve best run-out

