

HARTNER

Precision Cutting Tools

样本

版本编号 **1601**

HARTNER

Precision Cutting Tools

版本 1601

由于新的开发和标准的更改，
我们将保留修改此设计的权利。

总体的销售情况。

对任何由于印刷错误，包括技术规格的索赔，
不予承认。

该样本中的部分或者全部不允许被他人转载。

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描述

类型	类型	螺旋角	顶尖角	磨削方式	
N	适合加工标准的普通材料 (e.g., steel, GS, GG)	20°-30°	118°	后锥角式标准钻尖设计	高速钢 钻头
H	适合加工硬材料且短屑的材料 (e.g., MS, bronze, Elektron)	12°-16°	118°	后锥角式标准钻尖设计	
W	适合加工软的长屑材料 (z.B. Al-Legierungen, Kupfer)	35°-40°	130°	后锥角式标准钻尖设计	
FN	适合加工标准的普通材料，深孔加工时使用	35°	130°	后锥角式标准钻尖设计	
FN 500	适合加工长屑且韧性好的材料 (如合金钢，热处理钢，硬化钢)	20°-30°	130°	后锥角式标准钻尖设计	
FU 500 **FU 500 DZ**	适合于通用加工 (如合金钢，非合金钢，最大到 800 N/mm²) DZ=圆柱柄	35°	118°	双面磨削，特殊设计	
FW	适合加工软且长屑的材料， 在深孔加工时使用	35°-40°	130°	后锥角式标准钻尖设计	
S	适合加工难加工材料 (如 不锈钢，热处理钢)	35°	130°	后锥角式标准钻尖设计	
IS	适合加工韧性好的不锈钢，热处理钢	40°	130°	后锥角式标准钻尖设计	
V	适合加工硬且难加工的材料 (如弹簧钢)	20°-30°	130°	后锥角式标准钻尖设计	
TS 3 G	当对位置精度，尺寸精度要求比较高时使用	28°	150°	非标刀尖	硬质合金 钻头
TS 80 U	适合于通用型加工 (如 GG,GGG，钢 最大到1000 N/mm²)	20°-30°	140°	圆弧后刀面 特殊芯厚 type U	
TS 100 U	适合于加工钢 最大到1000 N/mm²	25°-35°	140°	双后刀面	
TS 150 GG	适合于加工短屑的铸件 铝和高硅铝合金	0° (直槽)	120°	双后刀面 特殊芯厚 type GG	
TS 100 R	适合于加工新型逐渐 GGV 和ADI 铸铁，球墨铸铁，锻造铸铁	30°	–	圆型磨削	
TS 100 T	适合于钢和铸铁的深孔加工	30°	135°	圆弧后刀面	
TS 100 INOX	适合于不锈钢加工用	30°	140°	双后刀面	
TS 100 H	适合加工高强度钢，硬化钢，特殊合金材料。	30°	140°	圆弧后刀面	
TS 100 EG	叉形去毛刺刀				去毛刺刀
TS 100 VR	前/后去毛刺 90°				
TLB E80	焊刃式单刃型枪钻				枪钻
TLB E100	整体硬质合金单刃型枪钻				
TLB E800	可换刀片式单刃型枪钻				
TLB Z80	焊刃式双刃型枪钻				

ISO 材料代码

P	钢和高合金钢
M	不锈钢
K	灰铸铁，可锻铸铁和球墨铸铁
N	铝合金及其它有色金属
S	特殊合金，镍基合金以及钛合金
H	硬化钢及硬化铸铁

刀具的适用性，折扣组以及价格查询

● 最佳选择
○ 可以用

图标说明

刀具材料	HSS	HSS-E	M42	HSS-E-PM		VHM		HM	
	高速钢					整体硬质合金		镶嵌硬质合金	
表面处理					A	a	A	C	F
	光亮处理	蒸汽回火处理	刃带氮化处理	棕色处理	TiAlN	AlTiN nano	AlTiN	TiCN	火焰涂层
	T	M	Y	Ni	B				
	TiN	MolyGlide	TiAlSiN	镀镍	发蓝处理				
类型	FN	FN 500	FU 500	FU 500 DZ	FW	H	IS	N	V	W
	P2000	S	TLB E 80	TLB E 100	TLB E 800	TLB Z 80	具体类型解释，请看折页			
	TS 80 U	TS 100 H	TS 100 INOX	TS 100 R	TS 100 T	TS 100 U	TS 150 GG	TS 3 G	TS 100 EG	TS 100 VR
型式	R	A	B	C						
钻深	3xD	5xD	....	~3xD	~5xD	....	45,00	80,00	....	
							mm	mm		
标准	DIN 333	DIN 338	DIN 339	DIN 340	DIN 343	DIN 344	DIN 345	DIN 1869	DIN 1897	....
	DIN 8374	DIN 8375	DIN 8376	DIN 8377	DIN 8378	DIN 8379	DIN 6537 K	DIN 6537 L	DIN 6527	DIN 标准
	WN	Hartner 标准								
顶尖角	90°	118°	120°	130°	135°	140°	142°	150°		
Ø-公差	m7	h5	h6	h7	h8	0/-0,004				
切削方向	R	L								
	顺时针	逆时针								
柄部形式	HA	HB	HE		Cyl		MK		SK	
	DIN 6536 标准				直柄		莫式柄		SK柄	
横刃修磨										
	带横刃修磨									
内冷										
	带内冷	不带内冷								

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订购方式

当订货时，请注明订货号和直径
如订购81010，直径0.200mm
= 81010 0.200

产品型号

工具钻

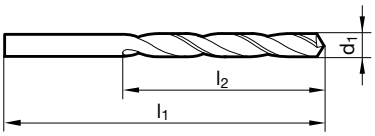
产品型号： 81010



P	M	K	N	S	H
●		●	○		

HSS | >Ø 2,36 | N | ~5xD | DIN 338 | 118° | h8 | R | Cyl

芯厚 ≥ 1,000 · 圆弧后刀面
适于加工：合金/非合金钢和铸钢 · 灰铸铁,可锻铸铁和球墨铸铁 · 粉末冶金铁和石墨



d1 mm	l1 mm	l2 mm	d1 mm	l1 mm	l2 mm
0,200	19,000	2,500	0,640	26,000	8,000
0,220	19,000	2,500	0,650	26,000	8,000
0,230	19,000	2,500	0,660	26,000	8,000
0,240	19,000	2,500	0,670	26,000	8,000
0,250	19,000	3,000	0,680	28,000	9,000
0,260	19,000	3,000	0,690	28,000	9,000
0,270	19,000	3,000	0,700	28,000	9,000

直径 Φ

刀具的适用性，折扣组
价格查询

● 最佳选择
○ 可以用

HARTNER

重要提示

销售情况
交货受制于询价的订单情况。

当订购非标刀具时，按照原来的订单数量的10%上下偏差，分两项。
付款按实际交货数量。

小批量的销售情况
对于小批量的订单，可能还需付额外的费用。

刀具组别	标准	每盒包装情况
直柄HSS 麻花钻	DIN 338 DIN 1897 及类似厂标	≤Ø 7.50mm一盒10支包装 >Ø 7.50...Ø10.60mm一盒5支包装 >Ø 10.60mm1一盒1支包装
	DIN 339 DIN 340 及类似厂标	≤Ø 6.70mm一盒10支包装 >Ø 6.70...Ø10.60mm一盒5支包装 >Ø 10.60mm1一盒1支包装
	DIN 1869	≤Ø 7.50mm一盒10支包装 >Ø 7.50...Ø10.60mm一盒5支包装 >Ø 10.60mm1一盒1支包装
锥柄HSS 麻花钻	所有DIN标准 及厂标	所有尺寸的都是独立包装
硬质合金和镶硬质合金 麻花钻	所有DIN标准 及厂标	所有尺寸的都是独立包装
微钻	DIN 1899	所有尺寸都是10支包装
中心钻	DIN 333 A型，R型	≤Ø 4.00mm一盒10支包装 >Ø 4.00mm一盒一支包装
	DIN 333 B型	≤Ø 2.50mm一盒10支包装 >Ø 2.50mm一盒1支包装

银行信息详情
Deutsche Bank AG
IBAN DE74 6537 0075 0014 6415 00
BIC DEUTDESS653

BW Bank
IBAN DE45 6005 0101 0002 5924 44
BIC SOLADEST600



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抛光处理和涂层

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HSS-E，HSS-E-PM及硬质合金涂层可换式刀片

技术参数

尺寸、定义和推荐



HARTNER

产品代号	页	钻深	标准	表面处理	描述	刀具材料	型号
80495	245		哈特纳标准	AlTiN nano	前/后去毛刺 90°	整硬	TS 100 VR
81010	23	~5xD	DIN 338	蒸汽回火处理	工具钻	HSS	N
81011	47	~5xD	DIN 338	蒸汽回火处理	工具钻	HSS-E	N
81012	65	~5xD	DIN 338	光亮处理	工具钻	M42	N
81013	55	~5xD	DIN 338	光亮处理	工具钻	HSS-E	IS
81015	27	~5xD	DIN 338	蒸汽回火处理	工具钻	HSS	N
81017	29	~5xD	DIN 338	蒸汽回火处理	工具钻	HSS	N
81020	32	~5xD	DIN 338	光亮处理	工具钻	HSS	H
81025	34	~5xD	DIN 338	光亮处理	工具钻	HSS	H
81030	36	~5xD	DIN 338	光亮处理	工具钻	HSS	W
81035	38	~5xD	DIN 338	光亮处理	工具钻	HSS	W
81040	39	~5xD	DIN 338	刃带氮化处理	工具钻	HSS	FN
81041	49	~5xD	DIN 338	刃带氮化处理	工具钻	HSS-E	FN
81045	41	~5xD	DIN 338	刃带氮化处理	工具钻	HSS	FN
81061	57	~5xD	DIN 338	光亮处理	工具钻	HSS-E	S
81062	59	~5xD	DIN 338	棕色处理	工具钻	HSS-E	P2000
81063	63	~5xD	DIN 338	MolyGlide	工具钻	HSS-E	P2000
81110	69	~3xD	DIN 1897	蒸汽回火处理	短钻	HSS	N
81115	71	~3xD	DIN 1897	光亮处理	短钻	HSS	N
81120	75	~3xD	DIN 1897	光亮处理	短钻	HSS	H
81130	76	~3xD	DIN 1897	光亮处理	短钻	HSS	W
81140	77	~3xD	DIN 1897	刃带氮化处理	短钻	HSS	FN
81145	78	~3xD	DIN 1897	刃带氮化处理	短钻	HSS	FN
81171	81	~3xD	DIN 1897	蒸汽回火处理	短钻	HSS-E	V
81173	80	~3xD	DIN 1897	光亮处理	短钻	HSS-E	IS
81190	106		哈特纳标准	蒸汽回火处理	直柄双头钻	HSS	N
81191	104		哈特纳标准	光亮处理	NC 点钻	HSS	N
81192	102		哈特纳标准	光亮处理	NC 点钻	HSS	N
81210	109	~10xD	DIN 339	蒸汽回火处理	采用钻套的麻花钻	HSS	N
81310	111	~10xD	DIN 340	蒸汽回火处理	长系列麻花钻	HSS	N
81311	126	~10xD	DIN 340	蒸汽回火处理	长系列麻花钻	HSS-E	N
81315	113	~10xD	DIN 340	蒸汽回火处理	长系列麻花钻	HSS	N
81317	114	~10xD	DIN 340	蒸汽回火处理	长系列麻花钻	HSS	N
81320	117	~10xD	DIN 340	光亮处理	长系列麻花钻	HSS	H
81330	118	~10xD	DIN 340	光亮处理	长系列麻花钻	HSS	W
81340	120	~10xD	DIN 340	刃带氮化处理	长系列麻花钻	HSS	FN
81341	127	~10xD	DIN 340	刃带氮化处理	长系列麻花钻	HSS-E	FN
81350	124	~10xD	DIN 340	光亮处理	长系列麻花钻	HSS	FW
81361	129	~10xD	DIN 340	光亮处理	长系列麻花钻	HSS-E	S
81362	129	~10xD	DIN 340	TiN	长系列麻花钻	HSS-E	S
81410	134	~15xD	DIN 1869	蒸汽回火处理	超长麻花钻,系列1	HSS	N
81440	135	~15xD	DIN 1869	刃带氮化处理	超长麻花钻,系列1	HSS	FN
81441	138	~15xD	DIN 1869	刃带氮化处理	超长麻花钻,系列1	HSS-E	FN
81450	137	~15xD	DIN 1869	光亮处理	超长麻花钻,系列1	HSS	FW
81510	139	~20xD	DIN 1869	蒸汽回火处理	超长麻花钻,系列2	HSS	N
81540	140	~20xD	DIN 1869	刃带氮化处理	超长麻花钻,系列2	HSS	FN
81541	142	~20xD	DIN 1869	刃带氮化处理	超长麻花钻,系列2	HSS-E	FN
81610	143	~25xD	DIN 1869	蒸汽回火处理	超长麻花钻,系列3	HSS	N
81640	144	~25xD	DIN 1869	刃带氮化处理	超长麻花钻,系列3	HSS	FN
81740	145	>25xD	哈特纳标准	刃带氮化处理	超长麻花钻	HSS	FN
81750	146	>25xD	哈特纳标准	光亮处理	超长麻花钻	HSS	FN
81760	147	>25xD	哈特纳标准	光亮处理	超长麻花钻	HSS	FN
81810	148		DIN 1898	蒸汽回火处理	锥孔钻	HSS	N
82010	158	~5xD	DIN 345	蒸汽回火处理	麻花钻	HSS	N
82011	161	~5xD	DIN 345	蒸汽回火处理	麻花钻	HSS-E	N
82012	162	~5xD	DIN 345	光亮处理	麻花钻	HSS-E	IS
82030	157	~5xD	DIN 345	光亮处理	麻花钻	HSS	W
82191	167		哈特纳标准	蒸汽回火处理	NC 点钻	HSS	N
82192	167		哈特纳标准	蒸汽回火处理	NC 点钻	HSS	N
82210	168	~10xD	DIN 341	蒸汽回火处理	长系列麻花钻	HSS	N
82211	169	~10xD	DIN 341	蒸汽回火处理	长系列麻花钻	HSS-E	N
82310	170	~15xD	DIN 1870	蒸汽回火处理	超长麻花钻,系列1	HSS	N
82340	171	~15xD	DIN 1870	刃带氮化处理	超长麻花钻,系列1	HSS	FN
82341	172	~15xD	DIN 1870	刃带氮化处理	超长麻花钻,系列1	HSS-E	FN
82410	173	~20xD	DIN 1870	蒸汽回火处理	超长麻花钻,系列2	HSS	N
82440	174	~20xD	DIN 1870	刃带氮化处理	超长麻花钻,系列2	HSS	FN

产品代号	页	钻深	标准	表面处理	描述	刀具材料	型号
82466	175	>20xD	哈特纳标准	刃带氮化处理	超长麻花钻	HSS	FN
82467	176	>20xD	哈特纳标准	刃带氮化处理	超长麻花钻	HSS	FN
82468	177	>20xD	哈特纳标准	光亮处理	超长麻花钻	HSS	FN
82469	178	>20xD	哈特纳标准	光亮处理	超长麻花钻	HSS	FN
82515	182	~15xD	哈特纳标准	蒸汽回火处理	超长油孔钻	HSS-E	FN
82521	180	~10xD	哈特纳标准	蒸汽回火处理	长系列油孔钻	HSS	N
82525	181	~10xD	哈特纳标准	蒸汽回火处理	长系列油孔钻	HSS-E	FN
82535	179	~10xD	哈特纳标准	蒸汽回火处理	长系列油孔钻	HSS	FN
82571	369		哈特纳标准	蒸汽回火处理	冷却剂供给管道		
82578	370		哈特纳标准		快速释放冷却管单元		
82710	107	~10xD	哈特纳标准	光亮处理	内冷钻	HSS	FN
82761	108	~5xD	哈特纳标准	光亮处理	内冷钻	HSS-E	FN
82810	186		DIN 1898	蒸汽回火处理	锥孔钻	HSS	N
82971	166	~3xD	哈特纳标准	蒸汽回火处理	工具钻	HSS-E	V
82972	165	~3xD	哈特纳标准	光亮处理	工具钻	HSS-E	IS
83000	330		DIN 333	光亮处理	不带侧平面中心钻	HSS	N
83005	331		DIN 333	光亮处理	不带侧平面中心钻	HSS	N
83100	328		DIN 333	光亮处理	不带侧平面中心钻	HSS	N
83101	333		DIN 333	光亮处理	不带侧平面中心钻	HSS-E	N
83105	329		DIN 333	光亮处理	不带侧平面中心钻	HSS	N
83110	334		哈特纳标准	光亮处理	不带侧平面中心钻	HSS	N
83200	335		DIN 333	光亮处理	不带侧平面中心钻	HSS	N
83300	332		DIN 333	光亮处理	不带侧平面中心钻	HSS	N
83370	336		哈特纳标准	光亮处理	不带侧平面中心钻	整硬	N
83500	337		DIN 333	光亮处理	带侧平面中心钻	HSS	N
83600	337		DIN 333	光亮处理	带侧平面中心钻	HSS	N
83700	338		DIN 333	光亮处理	带侧平面中心钻	HSS	N
84100	243		哈特纳标准	光亮处理	叉形去毛刺刀	整硬	TS 100 EG
84101	244		哈特纳标准	光亮处理	叉形去毛刺刀	整硬	TS 100 EG
84400	73	~3xD	DIN 1897	TiN	短钻	HSS	N
84405	30	~5xD	DIN 338	TiN	工具钻	HSS	N
84406	43	~5xD	DIN 338	TiN头部	工具钻	HSS	N
84415	45	~5xD	DIN 338	TiN	工具钻	HSS	FN
84418	115	~10xD	DIN 340	TiN	长系列麻花钻	HSS	N
84423	122	~10xD	DIN 340	TiN	长系列麻花钻	HSS	FN
84425	136	~15xD	DIN 1869	TiN	超长麻花钻,系列1	HSS	FN
84426	141	~20xD	DIN 1869	TiN	超长麻花钻,系列2	HSS	FN
84434	104		哈特纳标准	TiN	NC 点钻	HSS	N
84435	102		哈特纳标准	TiN	NC 点钻	HSS	N
84445	313		哈特纳标准	TiN	直柄短款阶梯钻	HSS	N
84448	330		DIN 333	TiN	不带侧平面中心钻	HSS	N
84450	328		DIN 333	TiN	不带侧平面中心钻	HSS	N
84460	160	~5xD	DIN 345	TiN	麻花钻	HSS	N
84461	108	~5xD	哈特纳标准	TiN	内冷钻	HSS-E	FN
84501	73	~3xD	DIN 1897	nanoFIRE	短钻	HSS	N
84502	45	~5xD	DIN 338	nanoFIRE	工具钻	HSS	FN
84503	83	~3xD	DIN 1897	nanoFIRE	短钻	HSS-E	V
84504	51	~5xD	DIN 338	nanoFIRE	工具钻	HSS-E	FN
84505	61	~5xD	DIN 338	nanoFIRE	工具钻	HSS-E	S
84506	122	~10xD	DIN 340	nanoFIRE	长系列麻花钻	HSS	FN
84507	96	~5xD	哈特纳标准	nanoFIRE	大柄径直柄麻花钻	HSS-E-PM	FN 500
84511	87	~3xD	DIN 1897	nanoFIRE	短钻	HSS-E-PM	FN 500
84660	163	~5xD	DIN 345	TiAlN	麻花钻	HSS-E	FN
84800	51	~5xD	DIN 338	TiN	工具钻	HSS-E	FN
84801	94	~5xD	哈特纳标准	TiN	大柄径直柄麻花钻	HSS-E	FU 500
84802	53	~5xD	DIN 338	TiN	工具钻	HSS-E	FU 500 DZ
84803	83	~3xD	DIN 1897	TiN	短钻	HSS-E	V
84804	53	~5xD	DIN 338	光亮处理	工具钻	HSS-E	FU 500 DZ
84805	92	~3xD	哈特纳标准	TiN	大柄径直柄麻花钻	HSS-E	FU 500
84806	85	~3xD	DIN 1897	TiN	短钻	HSS-E	FU 500 DZ
84807	61	~5xD	DIN 338	TiN	工具钻	HSS-E	S
84808	85	~3xD	DIN 1897	光亮处理	短钻	HSS-E	FU 500 DZ
84810	292	~5xD	DIN 1899	TiN	无内冷微钻	HSS-E-PM	N
84811	64	~5xD	DIN 338	TiN	工具钻	HSS-E-PM	FN 500 DZ
84812	131	~10xD	DIN 340	TiN	长系列麻花钻	HSS-E	FU 500 DZ
84814	131	~10xD	DIN 340	光亮处理	长系列麻花钻	HSS-E	FU 500 DZ

产品代号	页	钻深	标准	表面处理	描述	刀具材料	型号
84859	164	~5xD	DIN 345	TiN	麻花钻	HSS-E	N
85010	315		DIN 8374	蒸汽回火处理	直柄阶梯钻	HSS	N
85110	316		哈特纳标准	蒸汽回火处理	直柄阶梯钻	HSS	N
85210	319		DIN 8376	蒸汽回火处理	直柄阶梯钻	HSS	N
85216	320		哈特纳标准	蒸汽回火处理	直柄阶梯钻	HSS	N
85218	318		DIN 8374	蒸汽回火处理	直柄阶梯钻	HSS	N
85310	317		DIN 8378	蒸汽回火处理	直柄阶梯钻	HSS	N
85510	322		哈特纳标准	蒸汽回火处理	锥柄阶梯钻	HSS	N
85610	324		DIN 8377	蒸汽回火处理	锥柄阶梯钻	HSS	N
85616	325		哈特纳标准	蒸汽回火处理	锥柄阶梯钻	HSS	N
85619	326		DIN 8375	蒸汽回火处理	锥柄阶梯钻	HSS	N
85710	323		DIN 8379	蒸汽回火处理	锥柄阶梯钻	HSS	N
85910	306		哈特纳标准	蒸汽回火处理	依照DIN332标准的中心阶梯钻	HSS	N
85911	306		哈特纳标准	蒸汽回火处理	依照DIN332标准的中心阶梯钻	HSS	N
85912	307		哈特纳标准	蒸汽回火处理	依照DIN332标准的中心阶梯钻	HSS	N
85914	308		哈特纳标准	蒸汽回火处理	依照DIN332标准的中心阶梯钻	HSS	N
85916	310		哈特纳标准	光亮处理	直柄短款阶梯钻	HSS	N
85917	311		哈特纳标准	光亮处理	直柄短款阶梯钻	HSS	N
85918	312		哈特纳标准	光亮处理	直柄短款阶梯钻	HSS	N
85920	314		哈特纳标准	光亮处理	直柄短款阶梯钻	HSS	N
86010	151		DIN 344	蒸汽回火处理	直柄扩孔钻	HSS	N
86110	184		DIN 343	蒸汽回火处理	锥柄扩孔钻	HSS	N
86111	185		DIN 343	蒸汽回火处理	锥柄扩孔钻	HSS-E	N
86400	295	4xD	哈特纳标准	AlTiN	无内冷微钻	整硬	N
86401	296	7xD	哈特纳标准	AlTiN	无内冷微钻	整硬	N
86402	294		哈特纳标准	TiAlN	无内冷微钻	整硬	N
86405	297	5xD	哈特纳标准	TiAlN	带内冷微钻	整硬	N
86408	298	8xD	哈特纳标准	TiAlN	带内冷微钻	整硬	N
86412	299	15xD	哈特纳标准	TiAlN头部	带内冷微钻	整硬	N
86509	235	15xD	哈特纳标准	TiAlN	带内冷TS钻头	整硬	TS 100 T
86511	236	20xD	哈特纳标准	TiAlN头部	带内冷TS钻头	整硬	TS 100 T
86512	237	25xD	哈特纳标准	TiAlN头部	带内冷TS钻头	整硬	TS 100 T
86513	238	30xD	哈特纳标准	TiAlN头部	带内冷TS钻头	整硬	TS 100 T
86514	239	40xD	哈特纳标准	TiAlN头部	带内冷TS钻头	整硬	TS 100 T
86602	361		哈特纳标准	TiN	可换刀片	HSS-E-PM	
86608	362		哈特纳标准	FIRE	可换刀片	HSS-E-PM	
86609	363		哈特纳标准	AlTiN	可换刀片	HSS-E-PM	
86612	349	<3xD	哈特纳标准	镀镍	带直柄复合钻刀杆		
86622	350	<5xD	哈特纳标准	镀镍	带直柄复合钻刀杆		
86624	351	<7xD	哈特纳标准	镀镍	带直柄复合钻刀杆		
86628	356		哈特纳标准	镀镍	非标直柄复合钻刀杆		
86630	352		哈特纳标准	镀镍	带莫氏锥柄复合钻刀杆		
86650	354		哈特纳标准	镀镍	带莫氏锥柄复合钻刀杆		
86670	353		哈特纳标准	镀镍	带莫氏锥柄复合钻刀杆		
86678	358		哈特纳标准	镀镍	非标锥柄复合钻刀杆		
86680	355		哈特纳标准	镀镍	带莫氏锥柄复合钻刀杆		
86681	378	1xD	哈特纳标准	镀镍	复合 HPC 刀柄		HPC
86682	379	1,5xD	哈特纳标准	镀镍	复合 HPC 刀柄		HPC
86683	381	3xD	哈特纳标准	镀镍	复合 HPC 刀柄		HPC
86684	383	5xD	哈特纳标准	镀镍	复合 HPC 刀柄		HPC
86685	385	7xD	哈特纳标准	镀镍	复合 HPC 刀柄		HPC
86686	387	10xD	哈特纳标准	镀镍	复合 HPC 刀柄		HPC
86690	368		哈特纳标准		内冷接口		
86691	372		哈特纳标准	发蓝处理	多用型带内冷刀柄		
86692	373		哈特纳标准	发蓝处理	多用型带内冷刀柄		
86693	374		哈特纳标准	发蓝处理	多用型带内冷刀柄		
86694	375		哈特纳标准	发蓝处理	多用型带内冷刀柄		
86699	376		哈特纳标准	发蓝处理	用于刀柄出水的夹持直柄的变径套		
86701	367		哈特纳标准	FIRE	可换刀片	整硬	
86702	365		哈特纳标准	FIRE	可换刀片	整硬	
86708	364		哈特纳标准	TiN	可换刀片	整硬	
86709	366		哈特纳标准	TiN	可换刀片	整硬	
86721	389		哈特纳标准	AlTiN nano	复合HPC可换刀片	整硬	HPC
86722	392		哈特纳标准	nanoFIRE	复合HPC可换刀片	整硬	HPC
86723	395		哈特纳标准	FIRE	复合HPC可换刀片	整硬	HPC
86724	398		哈特纳标准	光亮处理	复合HPC可换刀片	整硬	HPC

产品代号	页	钻深	标准	表面处理	描述	刀具材料	型号
86725	401		哈特纳标准	AlTiN nano	复合HPC可换刀片	整硬	HPC
86726	404		哈特纳标准	TiAlN	复合HPC锪刀刀片	整硬	
86727	404		哈特纳标准	光亮处理	复合HPC锪刀刀片	整硬	
86728	405		哈特纳标准	TiN	复合HPC锪刀刀片	整硬	
86842	371		哈特纳标准		梅花螺丝起子		
86843	406		哈特纳标准		复合HPC刀柄压紧螺钉 1.5-10xD		
86844	407		哈特纳标准		扭力扳手		
86845	408		哈特纳标准		Torx扳手头		
86846	409		哈特纳标准		复合HPC锪刀刀柄压紧螺钉		
87011	289	~5xD	DIN 1899	光亮处理	无内冷微钻	HSS-E-PM	N
87016	291	~5xD	DIN 1899	光亮处理	无内冷微钻	HSS-E-PM	N
88013	98	~5xD	DIN 338	蒸汽回火处理	成套工具钻	HSS	N
88014	98	~5xD	DIN 338	棕色处理	成套工具钻	HSS-E	P2000
88015	99	~3xD	DIN 1897	MolyGlide	成套工具钻	HSS-E	P2000
88016	99	~5xD	DIN 338	TiN头部	成套工具钻	HSS	N
88026	100	~5xD	DIN 338	蒸汽回火处理	成套工具钻	HSS-E	N
88200	327		DIN 335	光亮处理	90° 锪钻	HSS	
88303	101		哈特纳标准		成套工具钻		
89235	89	~3xD	DIN 6539	光亮处理	短钻	整硬	N
89237	200	3xD	DIN 6539	TiN	不带内冷TS钻头	整硬	TS 100 U
89239	241	5xD	DIN 6539	光亮处理	3刃TS钻	整硬	TS 3 G
89242	105		哈特纳标准	光亮处理	NC 点钻	整硬	N
89243	103		哈特纳标准	光亮处理	NC 点钻	整硬	N
89244	67	~5xD	哈特纳标准	光亮处理	工具钻	整硬	N
89246	91	~3xD	哈特纳标准	光亮处理	短钻	整硬	N
89247	240	5xD	DIN 6537L	光亮处理	3刃TS钻	整硬	TS 3 G
89249	105		哈特纳标准	光亮处理	NC 点钻	整硬	N
89252	321			光亮处理	直柄阶梯钻	整硬	N
89254	309		哈特纳标准	光亮处理	直柄短款阶梯钻	整硬	N
89264	196	3xD	DIN 6537K	TiN	不带内冷TS钻头	整硬	TS 100 U
89266	207	3xD	DIN 6537K	TiN	带内冷TS钻头	整硬	TS 100 U
89272	214	5xD	DIN 6537L	TiN	带内冷TS钻头	整硬	TS 100 U
89275	204	5xD	哈特纳标准	TiN	不带内冷TS钻头	整硬	TS 100 U
89281	293	~5xD	哈特纳标准	光亮处理	无内冷微钻	整硬	N
89286	133	~10xD	哈特纳标准	光亮处理	长系列麻花钻	整硬	N
89292	213	4xD	哈特纳标准	光亮处理	带内冷TS钻头	整硬	TS 150 GG
89293	231	10xD	哈特纳标准	光亮处理	带内冷TS钻头	整硬	TS 150 GG
89294	230	7xD	哈特纳标准	光亮处理	带内冷TS钻头	整硬	TS 150 GG
89295	231	10xD	哈特纳标准	光亮处理	带内冷TS钻头	整硬	TS 150 GG
89301	150		DIN 8037	光亮处理	硬质合金刀片螺旋槽钻	硬质合金	N
89302	183		DIN 8041	光亮处理	硬质合金刀片螺旋槽钻	硬质合金	N
89303	149		DIN 8038	光亮处理	硬质合金刀片螺旋槽钻	硬质合金	N
89306	208	3xD	DIN 6538K	TiN	带内冷TS钻头	硬质合金	TS 80 U
89307	217	5xD	DIN 6538M	TiN	带内冷TS钻头	硬质合金	TS 80 U
89308	226	7xD	DIN 6538L	TiN	带内冷TS钻头	硬质合金	TS 80 U
89401	200	3xD	DIN 6539	nanoFIRE	不带内冷TS钻头	整硬	TS 100 U
89402	194	3xD	DIN 6537K	nanoFIRE	不带内冷TS钻头	整硬	TS 100 U
89408	215	5xD	DIN 6537L	nanoFIRE	带内冷TS钻头	整硬	TS 100 U
89410	205	3xD	DIN 6537K	nanoFIRE	带内冷TS钻头	整硬	TS 100 U
89411	215	5xD	DIN 6537L	nanoFIRE	带内冷TS钻头	整硬	TS 100 U
89412	224	7xD	哈特纳标准	nanoFIRE	带内冷TS钻头	整硬	TS 100 U
89413	194	3xD	DIN 6537K	nanoFIRE	不带内冷TS钻头	整硬	TS 100 U
89414	202	5xD	DIN 6537L	nanoFIRE	不带内冷TS钻头	整硬	TS 100 U
89415	205	3xD	DIN 6537K	nanoFIRE	带内冷TS钻头	整硬	TS 100 U
89416	224	7xD	哈特纳标准	nanoFIRE	带内冷TS钻头	整硬	TS 100 U
89417	202	5xD	DIN 6537L	nanoFIRE	不带内冷TS钻头	整硬	TS 100 U
89418	233	12xD	哈特纳标准	nanoFIRE涂层	带内冷TS钻头	整硬	TS 100 U
89420	222	5xD	DIN 6537L	FIRE	带内冷TS钻头	整硬	TS 100 R
89421	228	7xD	哈特纳标准	FIRE	带内冷TS钻头	整硬	TS 100 R
89422	198	3xD	DIN 6537K	TiAlSiN	不带内冷TS钻头	整硬	TS 100 H
89423	211	3xD	DIN 6537K	TiAlSiN	带内冷TS钻头	整硬	TS 100 H
89424	211	3xD	DIN 6537K	TiAlSiN	带内冷TS钻头	整硬	TS 100 H
89425	220	5xD	DIN 6537L	TiAlSiN	带内冷TS钻头	整硬	TS 100 H
89426	220	5xD	DIN 6537L	TiAlSiN	带内冷TS钻头	整硬	TS 100 H
89427	227	7xD	哈特纳标准	TiAlSiN	带内冷TS钻头	整硬	TS 100 H
89450	209	3xD	DIN 6537K	AlTiN nano	带内冷TS钻头	整硬	TS 100 INOX

产品代号	页	钻深	标准	表面处理	描述	刀具材料	型号
89451	218	5xD	DIN 6537L	AlTiN nano	带内冷TS钻头	整硬	TS 100 INOX
89501	257	80.000	哈特纳标准	光亮处理	E 100单刃枪钻	整硬	TLB E 100
89502	259	160.000	哈特纳标准	光亮处理	E 100单刃枪钻	整硬	TLB E 100
89503	256	45.000	哈特纳标准	光亮处理	E 100单刃枪钻	整硬	TLB E 100
89504	258	120.000	哈特纳标准	光亮处理	E 100单刃枪钻	整硬	TLB E 100
89505	260	20xD	哈特纳标准	TiN	E 80单刃枪钻	硬质合金	TLB E 80
89506	262	40xD	哈特纳标准	TiN	E 80单刃枪钻	硬质合金	TLB E 80
89507	263	80xD	哈特纳标准	TiN	E 80单刃枪钻	硬质合金	TLB E 80
89508	267	30xD	哈特纳标准	光亮处理	Z 80双刃枪钻	硬质合金	TLB Z 80
89509	261	30xD	哈特纳标准	TiN	E 80单刃枪钻	硬质合金	TLB E 80
89510	256	45.000	哈特纳标准	AlTiN	E 100单刃枪钻	整硬	TLB E 100
89511	257	80.000	哈特纳标准	AlTiN	E 100单刃枪钻	整硬	TLB E 100
89512	258	120.000	哈特纳标准	AlTiN	E 100单刃枪钻	整硬	TLB E 100
89513	259	160.000	哈特纳标准	AlTiN	E 100单刃枪钻	整硬	TLB E 100
89514	260	20xD	哈特纳标准	TiCN	E 80单刃枪钻	硬质合金	TLB E 80
89515	261	30xD	哈特纳标准	TiCN	E 80单刃枪钻	硬质合金	TLB E 80
89516	262	40xD	哈特纳标准	TiCN	E 80单刃枪钻	硬质合金	TLB E 80
89517	263	80xD	哈特纳标准	TiCN	E 80单刃枪钻	硬质合金	TLB E 80
89518	267	30xD	哈特纳标准	光亮处理	Z 80双刃枪钻	硬质合金	TLB Z 80
89520	253	25xD	哈特纳标准	AlTiN nano	E 100单刃枪钻	整硬	TLB E 100
89521	254	50xD	哈特纳标准	AlTiN nano	E 100单刃枪钻	整硬	TLB E 100
89522	255	75xD	哈特纳标准	AlTiN nano	E 100单刃枪钻	整硬	TLB E 100
89530	264	30xD	哈特纳标准	TiN	带可换刀片的E 800单刃枪钻	硬质合金	TLB E 800
89535	265		哈特纳标准	TiN	单刃枪钻E800的刀片	整硬	
89536	266		哈特纳标准	TiN	单刃枪钻E800的支撑条	整硬	
89550	209	3xD	DIN 6537K	AlTiN nano	带内冷TS钻头	整硬	TS 100 INOX
89551	218	5xD	DIN 6537L	AlTiN nano	带内冷TS钻头	整硬	TS 100 INOX

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TM 326

模块化的工具分配系统

TM 426

螺旋系统 可以储存大量的紧凑型工具

TM 526

抽屉系统 100%的分配控制

HARTNER

Precision Cutting Tools

现代化的工具分发系统

全自动的采购过程

报告

数据控制

数据交换



HARTNER

Precision Cutting Tools

性能提高

优化管理流程

哈特纳工具系统提高经济效益
和贵公司的工作效率。



我们的客户可获得：

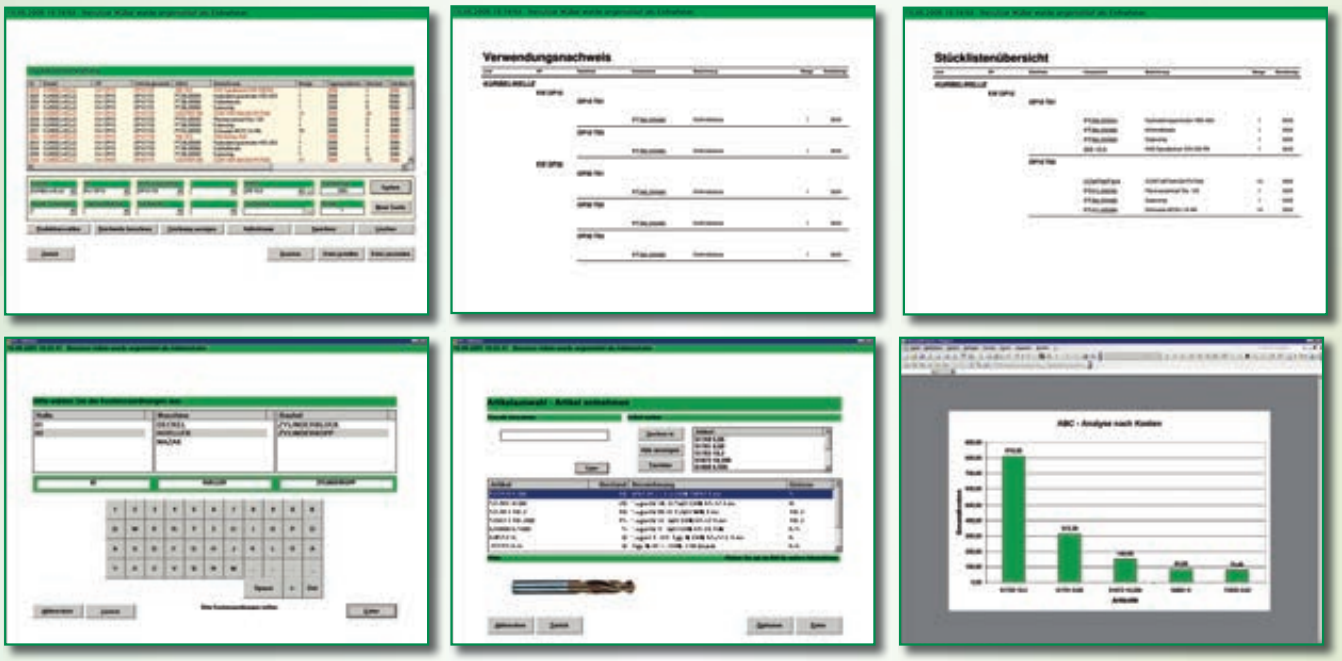
10% 工具费用的降低

1小时，每天减少的管理成本

14% 减少机床的意外停机时间

24小时 控制刀具供应

内置智能刀具管理软件



进货模块
供应商管理控制

订单记录模块
A-Z的规划

带修磨管理的存储模块
全面的数据控制

数据库
核心的数据管理软件

刀具损耗记录模块
刀具性能一目了然

零件清单模块
清楚了解各部分的链接

机床意外停机模块
防止机床意外停机

模块测试 设备管理
实时了解机床情况









HARTNER

Precision Cutting Tools

直柄麻花钻

HSS,HSS-E,HSS-E-PM,硬质合金
抛光处理和涂层



P	M	K	N	S	H	标准	型号	刀具材料	表面处理	切削方向	柄部形式	钻深	d1/mm	产品代号	页码

工具钻



●		●	○			DIN 338	N	HSS	≥Ø 2,36	右手	圆柱形	~5xD	0,200 - 20,000	81010	23



●		●	○			DIN 338	N	HSS	≥Ø 6,00	左手	圆柱形	~5xD	0,250 - 17,000	81015	27



●		●	○			DIN 338	N	HSS		右手	圆柱形	~5xD	3,000 - 13,000	81017	29



			●			DIN 338	H	HSS		右手	圆柱形	~5xD	0,300 - 19,000	81020	32



			●			DIN 338	H	HSS		左手	圆柱形	~5xD	0,500 - 16,000	81025	34



			●			DIN 338	W	HSS		右手	圆柱形	~5xD	0,250 - 16,500	81030	36



			●			DIN 338	W	HSS		左手	圆柱形	~5xD	0,500 - 15,000	81035	38



●		●	●			DIN 338	FN	HSS	≥Ø 2,36	右手	圆柱形	~5xD	0,800 - 16,000	81040	39



●		●	●			DIN 338	FN	HSS	≥Ø 2,36	左手	圆柱形	~5xD	1,400 - 16,000	81045	41



●		●	○			DIN 338	N	HSS	T	右手	圆柱形	~5xD	0,400 - 19,500	84405	30



●		●	○			DIN 338	N	HSS	T	右手	圆柱形	~5xD	1,000 - 16,000	84406	43



●		●	●			DIN 338	FN	HSS	T	右手	圆柱形	~5xD	1,000 - 16,000	84415	45



●		●	●			DIN 338	FN	HSS	F	右手	圆柱形	~5xD	1,000 - 16,000	84502	45



●	○	○	●	●	○	DIN 338	N	M42		右手	圆柱形	~5xD	1,000 - 14,000	81012	65

P	M	K	N	S	H	标准	型号	刀具材料	表面处理	切削方向	柄部形式	钻深	d1/mm	产品代号	页码

工具钻



						DIN 338	N	HSS-E	≥Ø 2,36	右手	圆柱形	~5xD	0,200 - 20,000	81011	47



						DIN 338	IS	HSS-E		右手	圆柱形	~5xD	1,000 - 13,000	81013	55



						DIN 338	FN	HSS-E	≥Ø 2,36	右手	圆柱形	~5xD	1,000 - 12,700	81041	49



						DIN 338	S	HSS-E		右手	圆柱形	~5xD	0,200 - 17,500	81061	57



						DIN 338	P2000	HSS-E		右手	圆柱形	~5xD	1,000 - 13,000	81062	59



						DIN 338	P2000	HSS-E	M	右手	圆柱形	~5xD	3,300 - 12,000	81063	63



						DIN 338	FN	HSS-E	F	右手	圆柱形	~5xD	1,000 - 13,000	84504	51



						DIN 338	S	HSS-E	F	右手	圆柱形	~5xD	0,500 - 13,000	84505	61



						DIN 338	FN	HSS-E	T	右手	圆柱形	~5xD	1,000 - 13,000	84800	51



						DIN 338	FU 500 DZ	HSS-E	T	右手	圆柱形	~5xD	1,000 - 14,000	84802	53



						DIN 338	FU 500 DZ	HSS-E		右手	圆柱形	~5xD	1,000 - 14,000	84804	53



						DIN 338	S	HSS-E	T	右手	圆柱形	~5xD	0,500 - 13,000	84807	61



						DIN 338	FN 500 DZ	HSS-E-PM	T	右手	圆柱形	~5xD	1,000 - 14,000	84811	64



						哈特纳标准	N	整硬		右手	圆柱形	~5xD	1,000 - 12,000	89244	67

短钻

P	M	K	N	S	H	标准	型号	刀具材料	表面处理	切削方向	柄部形式	钻深	d1/mm	产品代号	页码
															
●		●	○			DIN 1897	N	HSS	>Ø 2,36	右手	圆柱形	~3xD	0,500 - 39,500	81110	69
															
●		●	○			DIN 1897	N	HSS	>Ø 5,00	左手	圆柱形	~3xD	0,500 - 36,500	81115	71
															
●			●			DIN 1897	H	HSS	○	右手	圆柱形	~3xD	1,200 - 15,000	81120	75
															
●			●			DIN 1897	W	HSS	○	右手	圆柱形	~3xD	1,500 - 16,000	81130	76
															
●	○	○	●			DIN 1897	FN	HSS	<Ø 2,36 >Ø 16,0	右手	圆柱形	~3xD	1,500 - 15,500	81140	77
															
●	○	○	●			DIN 1897	FN	HSS	<Ø 2,36 >Ø 16,0	左手	圆柱形	~3xD	1,000 - 16,000	81145	78
															
●		●	○			DIN 1897	N	HSS	T	右手	圆柱形	~3xD	1,000 - 25,000	84400	73
															
●		●	●			DIN 1897	N	HSS	F	右手	圆柱形	~3xD	1,000 - 25,000	84501	73
															
●	●	●	○	●	○	DIN 1897	V	HSS-E	>Ø 2,36	右手	圆柱形	~3xD	0,400 - 25,000	81171	81
															
○	●		○	○		DIN 1897	IS	HSS-E	○	右手	圆柱形	~3xD	1,000 - 12,000	81173	80
															
●	●	●	○	●	○	DIN 1897	V	HSS-E	F	右手	圆柱形	~3xD	0,500 - 15,000	84503	83
															
●	●	●	○	●	○	DIN 1897	V	HSS-E	T	右手	圆柱形	~3xD	0,500 - 15,000	84803	83
															
●	●	●	●			DIN 1897	FU 500 DZ	HSS-E	T	右手	圆柱形	~3xD	1,000 - 14,000	84806	85
															
●	●	●	○			DIN 1897	FU 500 DZ	HSS-E	○	右手	圆柱形	~3xD	1,000 - 14,000	84808	85

P	M	K	N	S	H	标准	型号	刀具材料	表面处理	切削方向	柄部形式	钻深	d1/mm	产品代号	页码
短钻															
															
●	○	●	○	○	○	DIN 1897	FN 500	HSS-E-PM	F	右手	圆柱形	~3xD	1,000 - 13,500	84511	87
															
○	○	○	●	○		DIN 6539	N	整硬	◯	右手	圆柱形	~3xD	0,800 - 16,000	89235	89
															
○	○	○	○	○	○	哈特纳标准	N	整硬	◯	右手	圆柱形	~3xD	0,500 - 6,500	89246	91
大柄径直柄麻花钻															
															
●	●	●	●			哈特纳标准	FU 500	HSS-E	T	右手	HA	~3xD	2,000 - 20,000	84805	92
															
●	●	●	●			哈特纳标准	FU 500	HSS-E	T	右手	HA	~5xD	2,000 - 20,000	84801	94
															
●	○	●	○	○	○	哈特纳标准	FN 500	HSS-E-PM	F	右手	HA	~5xD	2,000 - 13,000	84507	96
成套工具钻															
															
						哈特纳标准								88303	101
															
●	○	○	○			DIN 1897	P2000	HSS-E	M	右手	圆柱形	~3xD		88015	99

成套工具钻



P	M	K	N	S	H	标准	型号	刀具材料	表面处理	切削方向	柄部形式	钻深	d1/mm	产品代号	页码
●		●	○			DIN 338	N	HSS	>Ø 2,36	右手	圆柱形	~5xD		88013	98



P	M	K	N	S	H	标准	型号	刀具材料	表面处理	切削方向	柄部形式	钻深	d1/mm	产品代号	页码
●		●	○			DIN 338	N	HSS	T	右手	圆柱形	~5xD		88016	99



P	M	K	N	S	H	标准	型号	刀具材料	表面处理	切削方向	柄部形式	钻深	d1/mm	产品代号	页码
●	○	○	○			DIN 338	P2000	HSS-E		右手	圆柱形	~5xD		88014	98



P	M	K	N	S	H	标准	型号	刀具材料	表面处理	切削方向	柄部形式	钻深	d1/mm	产品代号	页码
●		●	○			DIN 338	N	HSS-E		右手	圆柱形	~5xD		88026	100

NC 点钻



P	M	K	N	S	H	标准	型号	刀具材料	表面处理	切削方向	柄部形式	钻深	d1/mm	产品代号	页码
●	○	●	●	○		哈特纳标准	N	HSS		右手	圆柱形		3,000 - 25,000	81191	104



P	M	K	N	S	H	标准	型号	刀具材料	表面处理	切削方向	柄部形式	钻深	d1/mm	产品代号	页码
●	○	●	●	○		哈特纳标准	N	HSS		右手	圆柱形		3,000 - 25,000	81192	102

P	M	K	N	S	H	标准	型号	刀具材料	表面处理	切削方向	柄部形式	钻深	d1/mm	产品代号	页码
NC 点钻															
															
●	○	●	●	○		哈特纳标准	N	HSS	T	右手	圆柱形		3,000 - 25,000	84434	104
															
●	○	●	●	○		哈特纳标准	N	HSS	T	右手	圆柱形		3,000 - 25,000	84435	102
															
○	○	○	○	○	○	哈特纳标准	N	整硬	◯	右手	圆柱形		4,000 - 20,000	89242	105
															
○	○	○	○	○	○	哈特纳标准	N	整硬	◯	右手	圆柱形		4,000 - 20,000	89243	103
															
○	○	○	○	○	○	哈特纳标准	N	整硬	◯	右手	HB		4,000 - 20,000	89249	105
直柄双头钻															
															
●	○	●	●	○		哈特纳标准	N	HSS	≥Ø2,36	右手			2,000 - 10,000	81190	106
内冷钻															
															
●	●	●	●	●		哈特纳标准	FN	HSS-E	◯	右手	HE	~5xD	5,000 - 20,000	82761	108
															
●	●	●	●	●	○	哈特纳标准	FN	HSS-E	T	右手	HE	~5xD	5,000 - 20,000	84461	108
															
●	○	●	●	○		哈特纳标准	FN	HSS	◯	右手	圆柱形	~10xD	3,000 - 13,000	82710	107
采用钻套的麻花钻															
															
●		●	○			DIN 339	N	HSS	≥Ø2,36	右手	圆柱形	~10xD	0,800 - 19,000	81210	109

长系列麻花钻

P	M	K	N	S	H	标准	型号	刀具材料	表面处理	切削方向	柄部形式	钻深	d1/mm	产品代号	页码
															
●		●	○			DIN 340	N	HSS	>Ø2,36	右手	圆柱形	~10xD	0,400 - 23,500	81310	111
															
●		●	○			DIN 340	N	HSS	>Ø6,00	左手	圆柱形	~10xD	0,900 - 15,000	81315	113
															
●		●	○			DIN 340	N	HSS		右手	圆柱形	~10xD	3,100 - 10,000	81317	114
															
●			●			DIN 340	H	HSS		右手	圆柱形	~10xD	0,600 - 15,000	81320	117
															
●			●			DIN 340	W	HSS		右手	圆柱形	~10xD	0,500 - 20,000	81330	118
															
●		●	●			DIN 340	FN	HSS	>Ø2,36	右手	圆柱形	~10xD	0,900 - 14,000	81340	120
															
○			●			DIN 340	FW	HSS		右手	圆柱形	~10xD	1,000 - 14,000	81350	124
															
●		●	○			DIN 340	N	HSS	T	右手	圆柱形	~10xD	0,500 - 16,000	84418	115
															
●		●	●			DIN 340	FN	HSS	T	右手	圆柱形	~10xD	1,000 - 14,000	84423	122
															
●		●	●			DIN 340	FN	HSS	F	右手	圆柱形	~10xD	1,000 - 14,000	84506	122
															
●	○	●	●	○		DIN 340	N	HSS-E	>Ø2,36	右手	圆柱形	~10xD	0,500 - 12,500	81311	126
															
●	●	●	●			DIN 340	FN	HSS-E	>Ø2,36	右手	圆柱形	~10xD	1,000 - 16,000	81341	127
															
○	●			●		DIN 340	S	HSS-E		右手	圆柱形	~10xD	1,000 - 13,000	81361	129
															
○	●			●		DIN 340	S	HSS-E	T	右手	圆柱形	~10xD	1,000 - 13,000	81362	129

P	M	K	N	S	H	标准	型号	刀具材料	表面处理	切削方向	柄部形式	钻深	d1/mm	产品代号	页码

长系列麻花钻



●	●	●	●			DIN 340	FU 500 DZ	HSS-E	T	右手	圆柱形	~10xD	1,000 - 14,000	84812	131



●	●	●	●			DIN 340	FU 500 DZ	HSS-E		右手	圆柱形	~10xD	1,000 - 14,000	84814	131



○		○			○	哈特纳标准	N	整硬		右手	圆柱形	~10xD	0,500 - 1,500	89286	133

超长麻花钻,系列1



●		●	○			DIN 1869	N	HSS	≥Ø 2,36	右手	圆柱形	~15xD	1,600 - 13,000	81410	134



●		●	●			DIN 1869	FN	HSS	≥Ø 2,36	右手	圆柱形	~15xD	2,000 - 13,000	81440	135



○			●			DIN 1869	FW	HSS		右手	圆柱形	~15xD	2,000 - 9,500	81450	137



●		●	●			DIN 1869	FN	HSS	T	右手	圆柱形	~15xD	2,000 - 12,000	84425	136



●	●	●	●		○	DIN 1869	FN	HSS-E		右手	圆柱形	~15xD	3,000 - 10,000	81441	138

超长麻花钻,系列2



●		●	○			DIN 1869	N	HSS		右手	圆柱形	~20xD	3,000 - 12,000	81510	139



●		●	●			DIN 1869	FN	HSS	≥Ø 2,36	右手	圆柱形	~20xD	2,000 - 13,000	81540	140



●		●	●	○		DIN 1869	FN	HSS	T	右手	圆柱形	~20xD	3,000 - 8,500	84426	141



●	●	●	●		○	DIN 1869	FN	HSS-E		右手	圆柱形	~20xD	3,000 - 10,000	81541	142

P	M	K	N	S	H	标准	型号	刀具材料	表面处理	切削方向	柄部形式	钻深	d1/mm	产品代号	页码
超长麻花钻,系列3															
															
●		●	○			DIN 1869	N	HSS	●	右手	圆柱形	~25xD	4,000 - 12,000	81610	143
															
●		●	●			DIN 1869	FN	HSS	◓	右手	圆柱形	~25xD	3,000 - 13,000	81640	144
超长麻花钻															
															
●		●	●			哈特纳标准	FN	HSS	◓	右手	圆柱形	>25xD	6,000 - 12,000	81740	145
															
●		●	●			哈特纳标准	FN	HSS	○	右手	圆柱形	>25xD	8,000 - 12,000	81750	146
															
●		●	●			哈特纳标准	FN	HSS	○	右手	圆柱形	>25xD	10,000 - 12,000	81760	147
锥孔钻															
															
●	○	●	○			DIN 1898	N	HSS	>Ø 2,36	右手	圆柱形		2,000 - 12,000	81810	148
硬质合金刀片螺旋槽钻															
															
○		○			○	DIN 8037	N	硬质合金	○	右手	圆柱形		2,600 - 20,000	89301	150
															
○		○			○	DIN 8038	N	硬质合金	○	右手	圆柱形		3,100 - 8,000	89303	149
直柄扩孔钻															
															
●	○	●	○			DIN 344	N	HSS	●	右手	圆柱形		3,800 - 15,000	86010	151

工具钻

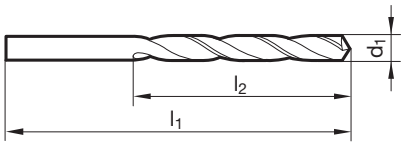
产品代号 81010



P	M	K	N	S	H
●		●	○		

HSS | >Ø 2,36 | N | ~5xD | DIN 338 | 118° | h8 | R | Cyl

芯厚 ≥ Ø 1,000 • 圆弧后刀面
适于加工：合金/非合金钢和铸钢 • 灰铸铁,可锻铸铁和球墨铸铁 • 粉末冶金铁和石墨



d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
0,200		19,000	2,500	0,640		26,000	8,000
0,220		19,000	2,500	0,650		26,000	8,000
0,230		19,000	2,500	0,660		26,000	8,000
0,240		19,000	2,500	0,670		26,000	8,000
0,250		19,000	3,000	0,680		28,000	9,000
0,260		19,000	3,000	0,690		28,000	9,000
0,270		19,000	3,000	0,700		28,000	9,000
0,280		19,000	3,000	0,710		28,000	9,000
0,290		19,000	3,000	0,720		28,000	9,000
0,300		19,000	3,000	0,730		28,000	9,000
0,310		19,000	4,000	0,740		28,000	9,000
0,320		19,000	4,000	0,750		28,000	9,000
0,330		19,000	4,000	0,760		30,000	10,000
0,350		19,000	4,000	0,770		30,000	10,000
0,360		19,000	4,000	0,780		30,000	10,000
0,370		19,000	4,000	0,790	1/32	30,000	10,000
0,380		19,000	4,000	0,800		30,000	10,000
0,390		20,000	5,000	0,810		30,000	10,000
0,400		20,000	5,000	0,820		30,000	10,000
0,410		20,000	5,000	0,830		30,000	10,000
0,420		20,000	5,000	0,840		30,000	10,000
0,430		20,000	5,000	0,850		30,000	10,000
0,440		20,000	5,000	0,860		32,000	11,000
0,450		20,000	5,000	0,870		32,000	11,000
0,460		20,000	5,000	0,880		32,000	11,000
0,470		20,000	5,000	0,890		32,000	11,000
0,480		20,000	5,000	0,900		32,000	11,000
0,490		22,000	6,000	0,910		32,000	11,000
0,500		22,000	6,000	0,920		32,000	11,000
0,510		22,000	6,000	0,930		32,000	11,000
0,520		22,000	6,000	0,950		32,000	11,000
0,530		22,000	6,000	0,960		34,000	12,000
0,540		24,000	7,000	0,970		34,000	12,000
0,550		24,000	7,000	0,980		34,000	12,000
0,560		24,000	7,000	0,990		34,000	12,000
0,570		24,000	7,000	1,000		34,000	12,000
0,580		24,000	7,000	1,010		34,000	12,000
0,590		24,000	7,000	1,020		34,000	12,000
0,600		24,000	7,000	1,030		34,000	12,000
0,610		26,000	8,000	1,040		34,000	12,000
0,620		26,000	8,000	1,050		34,000	12,000
0,630		26,000	8,000	1,070		36,000	14,000

工具钻

d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
1,100		36,000	14,000	2,050		49,000	24,000
1,110		36,000	14,000	2,100		49,000	24,000
1,120		36,000	14,000	2,110		49,000	24,000
1,130		36,000	14,000	2,120		49,000	24,000
1,140		36,000	14,000	2,140		53,000	27,000
1,150		36,000	14,000	2,150		53,000	27,000
1,160		36,000	14,000	2,170		53,000	27,000
1,170		36,000	14,000	2,200		53,000	27,000
1,180		36,000	14,000	2,210		53,000	27,000
1,190	3/64	38,000	16,000	2,220		53,000	27,000
1,200		38,000	16,000	2,250		53,000	27,000
1,210		38,000	16,000	2,270		53,000	27,000
1,220		38,000	16,000	2,300		53,000	27,000
1,230		38,000	16,000	2,330		53,000	27,000
1,240		38,000	16,000	2,350		53,000	27,000
1,250		38,000	16,000	2,360		53,000	27,000
1,260		38,000	16,000	2,370		57,000	30,000
1,270		38,000	16,000	2,380	3/32	57,000	30,000
1,280		38,000	16,000	2,400		57,000	30,000
1,300		38,000	16,000	2,420		57,000	30,000
1,310		38,000	16,000	2,440		57,000	30,000
1,350		40,000	18,000	2,450		57,000	30,000
1,360		40,000	18,000	2,460		57,000	30,000
1,390		40,000	18,000	2,500		57,000	30,000
1,400		40,000	18,000	2,510		57,000	30,000
1,410		40,000	18,000	2,520		57,000	30,000
1,420		40,000	18,000	2,530		57,000	30,000
1,430		40,000	18,000	2,550		57,000	30,000
1,440		40,000	18,000	2,570		57,000	30,000
1,450		40,000	18,000	2,600		57,000	30,000
1,460		40,000	18,000	2,640		57,000	30,000
1,480		40,000	18,000	2,650		57,000	30,000
1,490		40,000	18,000	2,700		61,000	33,000
1,500		40,000	18,000	2,710		61,000	33,000
1,510		43,000	20,000	2,750		61,000	33,000
1,520		43,000	20,000	2,780	7/64	61,000	33,000
1,550		43,000	20,000	2,800		61,000	33,000
1,560		43,000	20,000	2,820		61,000	33,000
1,570		43,000	20,000	2,850		61,000	33,000
1,580		43,000	20,000	2,880		61,000	33,000
1,590	1/16	43,000	20,000	2,900		61,000	33,000
1,600		43,000	20,000	2,940		61,000	33,000
1,620		43,000	20,000	2,950		61,000	33,000
1,630		43,000	20,000	2,970		61,000	33,000
1,650		43,000	20,000	3,000		61,000	33,000
1,700		43,000	20,000	3,010		65,000	36,000
1,720		46,000	22,000	3,020		65,000	36,000
1,730		46,000	22,000	3,050		65,000	36,000
1,740		46,000	22,000	3,060		65,000	36,000
1,750		46,000	22,000	3,070		65,000	36,000
1,760		46,000	22,000	3,100		65,000	36,000
1,790		46,000	22,000	3,150		65,000	36,000
1,800		46,000	22,000	3,160		65,000	36,000
1,810		46,000	22,000	3,170	1/8	65,000	36,000
1,820		46,000	22,000	3,180		65,000	36,000
1,830		46,000	22,000	3,200		65,000	36,000
1,840		46,000	22,000	3,250		65,000	36,000
1,850		46,000	22,000	3,260		65,000	36,000
1,890		46,000	22,000	3,300		65,000	36,000
1,900		46,000	22,000	3,320		65,000	36,000
1,910		49,000	24,000	3,350		65,000	36,000
1,920		49,000	24,000	3,400		70,000	39,000
1,930		49,000	24,000	3,450		70,000	39,000
1,940		49,000	24,000	3,500		70,000	39,000
1,950		49,000	24,000	3,550		70,000	39,000
1,980	5/64	49,000	24,000	3,600		70,000	39,000
1,990		49,000	24,000	3,620		70,000	39,000
2,000		49,000	24,000	3,650		70,000	39,000
2,010		49,000	24,000	3,670		70,000	39,000
2,020		49,000	24,000	3,680		70,000	39,000
2,030		49,000	24,000	3,700		70,000	39,000
2,040		49,000	24,000	3,740		70,000	39,000

工具钻

d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
3,750		70,000	39,000	5,900		93,000	57,000
3,800		75,000	43,000	5,950	15/64	93,000	57,000
3,850		75,000	43,000	6,000		93,000	57,000
3,900		75,000	43,000	6,030		101,000	63,000
3,930		75,000	43,000	6,040		101,000	63,000
3,950		75,000	43,000	6,050		101,000	63,000
3,970	5/32	75,000	43,000	6,100		101,000	63,000
3,990		75,000	43,000	6,150		101,000	63,000
4,000		75,000	43,000	6,200		101,000	63,000
4,030		75,000	43,000	6,250		101,000	63,000
4,040		75,000	43,000	6,260		101,000	63,000
4,050		75,000	43,000	6,300		101,000	63,000
4,060		75,000	43,000	6,350	1/4	101,000	63,000
4,100		75,000	43,000	6,400		101,000	63,000
4,150		75,000	43,000	6,450		101,000	63,000
4,200		75,000	43,000	6,500		101,000	63,000
4,220		75,000	43,000	6,550		101,000	63,000
4,250		75,000	43,000	6,600		101,000	63,000
4,300		80,000	47,000	6,650		101,000	63,000
4,320		80,000	47,000	6,700		101,000	63,000
4,350		80,000	47,000	6,750	17/64	109,000	69,000
4,370	11/64	80,000	47,000	6,800		109,000	69,000
4,390		80,000	47,000	6,850		109,000	69,000
4,400		80,000	47,000	6,900		109,000	69,000
4,450		80,000	47,000	6,950		109,000	69,000
4,500		80,000	47,000	7,000		109,000	69,000
4,520		80,000	47,000	7,050		109,000	69,000
4,530		80,000	47,000	7,100		109,000	69,000
4,550		80,000	47,000	7,140	9/32	109,000	69,000
4,570		80,000	47,000	7,200		109,000	69,000
4,600		80,000	47,000	7,250		109,000	69,000
4,650		80,000	47,000	7,300		109,000	69,000
4,700		80,000	47,000	7,350		109,000	69,000
4,750		80,000	47,000	7,400		109,000	69,000
4,760	3/16	86,000	52,000	7,450		109,000	69,000
4,780		86,000	52,000	7,500		109,000	69,000
4,800		86,000	52,000	7,540	19/64	117,000	75,000
4,830		86,000	52,000	7,600		117,000	75,000
4,850		86,000	52,000	7,700		117,000	75,000
4,900		86,000	52,000	7,750		117,000	75,000
4,920		86,000	52,000	7,800		117,000	75,000
4,950		86,000	52,000	7,850		117,000	75,000
5,000		86,000	52,000	7,900		117,000	75,000
5,050		86,000	52,000	7,940	5/16	117,000	75,000
5,060		86,000	52,000	7,950		117,000	75,000
5,100		86,000	52,000	8,000		117,000	75,000
5,110		86,000	52,000	8,050		117,000	75,000
5,150		86,000	52,000	8,100		117,000	75,000
5,160	13/64	86,000	52,000	8,200		117,000	75,000
5,200		86,000	52,000	8,250		117,000	75,000
5,220		86,000	52,000	8,300		117,000	75,000
5,250		86,000	52,000	8,330	21/64	117,000	75,000
5,300		86,000	52,000	8,400		117,000	75,000
5,310		93,000	57,000	8,450		117,000	75,000
5,350		93,000	57,000	8,500		117,000	75,000
5,400		93,000	57,000	8,550		125,000	81,000
5,410		93,000	57,000	8,600		125,000	81,000
5,420		93,000	57,000	8,700		125,000	81,000
5,450		93,000	57,000	8,730	11/32	125,000	81,000
5,500		93,000	57,000	8,750		125,000	81,000
5,530		93,000	57,000	8,800		125,000	81,000
5,550		93,000	57,000	8,850		125,000	81,000
5,560	7/32	93,000	57,000	8,900		125,000	81,000
5,600		93,000	57,000	9,000		125,000	81,000
5,610		93,000	57,000	9,050		125,000	81,000
5,620		93,000	57,000	9,100		125,000	81,000
5,650		93,000	57,000	9,130	23/64	125,000	81,000
5,700		93,000	57,000	9,150		125,000	81,000
5,750		93,000	57,000	9,200		125,000	81,000
5,790		93,000	57,000	9,250		125,000	81,000
5,800		93,000	57,000	9,300		125,000	81,000
5,850		93,000	57,000	9,350		125,000	81,000

工具钻

d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
9,400		125,000	81,000	13,100	33/64	151,000	101,000
9,500		125,000	81,000	13,200		151,000	101,000
9,520	3/8	133,000	87,000	13,250		160,000	108,000
9,550		133,000	87,000	13,300		160,000	108,000
9,600		133,000	87,000	13,400		160,000	108,000
9,650		133,000	87,000	13,490	17/32	160,000	108,000
9,700		133,000	87,000	13,500		160,000	108,000
9,750		133,000	87,000	13,600		160,000	108,000
9,800		133,000	87,000	13,700		160,000	108,000
9,900		133,000	87,000	13,750		160,000	108,000
9,920	25/64	133,000	87,000	13,800		160,000	108,000
9,950		133,000	87,000	13,900		160,000	108,000
10,000		133,000	87,000	14,000		160,000	108,000
10,050		133,000	87,000	14,100		169,000	114,000
10,080		133,000	87,000	14,200		169,000	114,000
10,100		133,000	87,000	14,250		169,000	114,000
10,200		133,000	87,000	14,300		169,000	114,000
10,250		133,000	87,000	14,400		169,000	114,000
10,300		133,000	87,000	14,500		169,000	114,000
10,320	13/32	133,000	87,000	14,600		169,000	114,000
10,400		133,000	87,000	14,680	37/64	169,000	114,000
10,500		133,000	87,000	14,700		169,000	114,000
10,600		133,000	87,000	14,750		169,000	114,000
10,700		142,000	94,000	14,800		169,000	114,000
10,720	27/64	142,000	94,000	14,900		169,000	114,000
10,750		142,000	94,000	15,000		169,000	114,000
10,800		142,000	94,000	15,080	19/32	178,000	120,000
10,900		142,000	94,000	15,100		178,000	120,000
11,000		142,000	94,000	15,200		178,000	120,000
11,100		142,000	94,000	15,250		178,000	120,000
11,110	7/16	142,000	94,000	15,400		178,000	120,000
11,150		142,000	94,000	15,500		178,000	120,000
11,200		142,000	94,000	15,600		178,000	120,000
11,250		142,000	94,000	15,700		178,000	120,000
11,300		142,000	94,000	15,750		178,000	120,000
11,400		142,000	94,000	15,800		178,000	120,000
11,500		142,000	94,000	15,870	5/8	178,000	120,000
11,510	29/64	142,000	94,000	16,000		178,000	120,000
11,600		142,000	94,000	16,100		184,000	125,000
11,700		142,000	94,000	16,200		184,000	125,000
11,750		142,000	94,000	16,250		184,000	125,000
11,800		142,000	94,000	16,270	41/64	184,000	125,000
11,900		151,000	101,000	16,500		184,000	125,000
11,910	15/32	151,000	101,000	16,700		184,000	125,000
12,000		151,000	101,000	16,900		184,000	125,000
12,050		151,000	101,000	17,000		184,000	125,000
12,100		151,000	101,000	17,250		191,000	130,000
12,200		151,000	101,000	17,500		191,000	130,000
12,250		151,000	101,000	17,750		191,000	130,000
12,300	31/64	151,000	101,000	17,800		191,000	130,000
12,400		151,000	101,000	18,000		191,000	130,000
12,500		151,000	101,000	18,500		198,000	135,000
12,600		151,000	101,000	18,750		198,000	135,000
12,650		151,000	101,000	19,000		198,000	135,000
12,700	1/2	151,000	101,000	19,250		205,000	140,000
12,750		151,000	101,000	19,500		205,000	140,000
12,800		151,000	101,000	20,000		205,000	140,000
12,850		151,000	101,000				
12,900		151,000	101,000				
13,000		151,000	101,000				

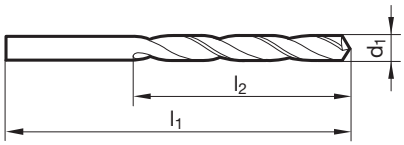
产品代号 81015



P	M	K	N	S	H
●		●	○		

HSS | >Ø 6,00 | N | ~5xD | DIN 338 | 118° | h8 | L | Cyl

芯厚 ≥ Ø 15,000 • 圆弧后刀面
适于加工：合金/非合金钢和铸钢 • 灰铸铁,可锻铸铁和球墨铸铁 • 粉末冶金铁和石墨



d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
0,250		19,000	3,000	2,600		57,000	30,000
0,300		19,000	3,000	2,700		61,000	33,000
0,370		19,000	4,000	2,750		61,000	33,000
0,400		20,000	5,000	2,800		61,000	33,000
0,500		22,000	6,000	2,900		61,000	33,000
0,550		24,000	7,000	3,000		61,000	33,000
0,600		24,000	7,000	3,050		65,000	36,000
0,650		26,000	8,000	3,100		65,000	36,000
0,700		28,000	9,000	3,150		65,000	36,000
0,800		30,000	10,000	3,200		65,000	36,000
0,900		32,000	11,000	3,250		65,000	36,000
0,950		32,000	11,000	3,300		65,000	36,000
1,000		34,000	12,000	3,350		65,000	36,000
1,050		34,000	12,000	3,400		70,000	39,000
1,100		36,000	14,000	3,450		70,000	39,000
1,150		36,000	14,000	3,500		70,000	39,000
1,170		36,000	14,000	3,550		70,000	39,000
1,190	3/64	38,000	16,000	3,600		70,000	39,000
1,200		38,000	16,000	3,650		70,000	39,000
1,250		38,000	16,000	3,700		70,000	39,000
1,300		38,000	16,000	3,750		70,000	39,000
1,350		40,000	18,000	3,800		75,000	43,000
1,400		40,000	18,000	3,850		75,000	43,000
1,450		40,000	18,000	3,900		75,000	43,000
1,500		40,000	18,000	3,950		75,000	43,000
1,550		43,000	20,000	4,000		75,000	43,000
1,560		43,000	20,000	4,100		75,000	43,000
1,600		43,000	20,000	4,150		75,000	43,000
1,700		43,000	20,000	4,200		75,000	43,000
1,800		46,000	22,000	4,250		75,000	43,000
1,850		46,000	22,000	4,300		80,000	47,000
1,900		46,000	22,000	4,350		80,000	47,000
2,000		49,000	24,000	4,400		80,000	47,000
2,050		49,000	24,000	4,450		80,000	47,000
2,100		49,000	24,000	4,500		80,000	47,000
2,150		53,000	27,000	4,550		80,000	47,000
2,200		53,000	27,000	4,600		80,000	47,000
2,250		53,000	27,000	4,650		80,000	47,000
2,300		53,000	27,000	4,700		80,000	47,000
2,400		57,000	30,000	4,750		80,000	47,000
2,500		57,000	30,000	4,800		86,000	52,000
2,550		57,000	30,000	4,850		86,000	52,000

工具钻

d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
4,900		86,000	52,000	8,700		125,000	81,000
4,950		86,000	52,000	8,800		125,000	81,000
5,000		86,000	52,000	8,900		125,000	81,000
5,100		86,000	52,000	9,000		125,000	81,000
5,200		86,000	52,000	9,100		125,000	81,000
5,250		86,000	52,000	9,200		125,000	81,000
5,300		86,000	52,000	9,300		125,000	81,000
5,400		93,000	57,000	9,400		125,000	81,000
5,450		93,000	57,000	9,500		125,000	81,000
5,500		93,000	57,000	9,600		133,000	87,000
5,600		93,000	57,000	9,700		133,000	87,000
5,650		93,000	57,000	9,750		133,000	87,000
5,700		93,000	57,000	9,800		133,000	87,000
5,750		93,000	57,000	9,900		133,000	87,000
5,800		93,000	57,000	10,000		133,000	87,000
5,850		93,000	57,000	10,100		133,000	87,000
5,900		93,000	57,000	10,200		133,000	87,000
5,950	15/64	93,000	57,000	10,300		133,000	87,000
6,000		93,000	57,000	10,500		133,000	87,000
6,100		101,000	63,000	10,750		142,000	94,000
6,200		101,000	63,000	10,900		142,000	94,000
6,250		101,000	63,000	11,000		142,000	94,000
6,300		101,000	63,000	11,100		142,000	94,000
6,400		101,000	63,000	11,250		142,000	94,000
6,500		101,000	63,000	11,500		142,000	94,000
6,600		101,000	63,000	11,750		142,000	94,000
6,650		101,000	63,000	11,800		142,000	94,000
6,700		101,000	63,000	12,000		151,000	101,000
6,750	17/64	109,000	69,000	12,250		151,000	101,000
6,800		109,000	69,000	12,500		151,000	101,000
6,900		109,000	69,000	12,700	1/2	151,000	101,000
7,000		109,000	69,000	12,750		151,000	101,000
7,100		109,000	69,000	12,800		151,000	101,000
7,200		109,000	69,000	13,000		151,000	101,000
7,250		109,000	69,000	13,800		160,000	108,000
7,300		109,000	69,000	14,000		160,000	108,000
7,400		109,000	69,000	15,000		169,000	114,000
7,500		109,000	69,000	15,500		178,000	120,000
7,600		117,000	75,000	16,000		178,000	120,000
7,700		117,000	75,000	17,000		184,000	125,000
7,800		117,000	75,000				
7,900		117,000	75,000				
8,000		117,000	75,000				
8,100		117,000	75,000				
8,200		117,000	75,000				
8,400		117,000	75,000				
8,500		117,000	75,000				
8,600		125,000	81,000				

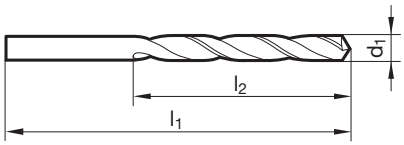
产品代号 81017



P	M	K	N	S	H
●		●	○		

HSS | N | ~5xD | DIN 338 | 118° | h8 | R | Cyl

芯厚 ≥ Ø 3,000 • 圆弧后刀面 • 柄凿，DIN 1809标准
适于加工：合金/非合金钢和铸钢 • 灰铸铁,可锻铸铁和球墨铸铁 • 粉末冶金铁和石墨



d1 mm	inch	l1 mm	l2 mm
3,000		61,000	33,000
3,100		65,000	36,000
3,200		65,000	36,000
3,300		65,000	36,000
3,400		70,000	39,000
3,500		70,000	39,000
3,600		70,000	39,000
3,700		70,000	39,000
3,800		75,000	43,000
4,000		75,000	43,000
4,100		75,000	43,000
4,200		75,000	43,000
4,300		80,000	47,000
4,400		80,000	47,000
4,500		80,000	47,000
4,600		80,000	47,000
4,700		80,000	47,000
4,800		86,000	52,000
4,900		86,000	52,000
5,000		86,000	52,000
5,100		86,000	52,000
5,200		86,000	52,000
5,400		93,000	57,000
5,500		93,000	57,000
5,600		93,000	57,000
5,700		93,000	57,000
5,750		93,000	57,000
5,800		93,000	57,000
5,900		93,000	57,000
6,000		93,000	57,000
6,100		101,000	63,000
6,200		101,000	63,000
6,300		101,000	63,000
6,400		101,000	63,000
6,500		101,000	63,000
6,700		101,000	63,000

d1 mm	inch	l1 mm	l2 mm
6,750	17/64	109,000	69,000
6,800		109,000	69,000
7,000		109,000	69,000
7,200		109,000	69,000
7,500		109,000	69,000
7,700		117,000	75,000
7,750		117,000	75,000
7,800		117,000	75,000
7,900		117,000	75,000
8,000		117,000	75,000
8,100		117,000	75,000
8,250		117,000	75,000
8,400		117,000	75,000
8,500		117,000	75,000
8,600		125,000	81,000
8,700		125,000	81,000
8,800		125,000	81,000
8,900		125,000	81,000
9,000		125,000	81,000
9,100		125,000	81,000
9,500		125,000	81,000
9,800		133,000	87,000
9,900		133,000	87,000
10,000		133,000	87,000
10,200		133,000	87,000
10,500		133,000	87,000
12,000		151,000	101,000
13,000		151,000	101,000

工具钻

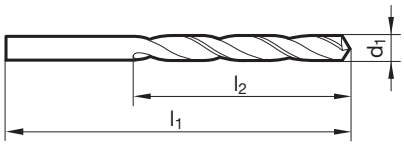
产品代号 84405



P	M	K	N	S	H
●		●	○		

HSS | T | N | ~5xD | DIN 338 | 118° | h8 | R | Cyl

芯厚 ≥ Ø 1,000 • 圆弧后刀面
适于加工：合金/非合金钢和铸钢 • 灰铸铁,可锻铸铁和球墨铸铁 • 粉末冶金铁和石墨



d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
0,400		20,000	5,000	2,700		61,000	33,000
0,500		22,000	6,000	2,750		61,000	33,000
0,600		24,000	7,000	2,800		61,000	33,000
0,610		26,000	8,000	2,850		61,000	33,000
0,700		28,000	9,000	2,900		61,000	33,000
0,800		30,000	10,000	2,950		61,000	33,000
0,820		30,000	10,000	3,000		61,000	33,000
0,900		32,000	11,000	3,050		65,000	36,000
1,000		34,000	12,000	3,100		65,000	36,000
1,020		34,000	12,000	3,150		65,000	36,000
1,100		36,000	14,000	3,200		65,000	36,000
1,150		36,000	14,000	3,250		65,000	36,000
1,200		38,000	16,000	3,300		65,000	36,000
1,250		38,000	16,000	3,400		70,000	39,000
1,300		38,000	16,000	3,450		70,000	39,000
1,350		40,000	18,000	3,500		70,000	39,000
1,400		40,000	18,000	3,550		70,000	39,000
1,450		40,000	18,000	3,600		70,000	39,000
1,500		40,000	18,000	3,650		70,000	39,000
1,550		43,000	20,000	3,700		70,000	39,000
1,600		43,000	20,000	3,750		70,000	39,000
1,650		43,000	20,000	3,800		75,000	43,000
1,700		43,000	20,000	3,900		75,000	43,000
1,750		46,000	22,000	3,950		75,000	43,000
1,800		46,000	22,000	4,000		75,000	43,000
1,820		46,000	22,000	4,100		75,000	43,000
1,900		46,000	22,000	4,150		75,000	43,000
2,000		49,000	24,000	4,200		75,000	43,000
2,050		49,000	24,000	4,250		75,000	43,000
2,100		49,000	24,000	4,300		80,000	47,000
2,150		53,000	27,000	4,400		80,000	47,000
2,200		53,000	27,000	4,500		80,000	47,000
2,250		53,000	27,000	4,600		80,000	47,000
2,300		53,000	27,000	4,700		80,000	47,000
2,400		57,000	30,000	4,800		86,000	52,000
2,450		57,000	30,000	4,900		86,000	52,000
2,500		57,000	30,000	5,000		86,000	52,000
2,520		57,000	30,000	5,100		86,000	52,000
2,530		57,000	30,000	5,200		86,000	52,000
2,550		57,000	30,000	5,250		86,000	52,000
2,600		57,000	30,000	5,300		86,000	52,000
2,650		57,000	30,000	5,400		93,000	57,000

工具钻

d1 mm	inch	l1 mm	l2 mm
5,500		93,000	57,000
5,600		93,000	57,000
5,700		93,000	57,000
5,800		93,000	57,000
5,900		93,000	57,000
6,000		93,000	57,000
6,040		101,000	63,000
6,100		101,000	63,000
6,200		101,000	63,000
6,300		101,000	63,000
6,350	1/4	101,000	63,000
6,400		101,000	63,000
6,500		101,000	63,000
6,550		101,000	63,000
6,600		101,000	63,000
6,700		101,000	63,000
6,750	17/64	109,000	69,000
6,800		109,000	69,000
6,900		109,000	69,000
7,000		109,000	69,000
7,100		109,000	69,000
7,200		109,000	69,000
7,300		109,000	69,000
7,400		109,000	69,000
7,500		109,000	69,000
7,600		117,000	75,000
7,700		117,000	75,000
7,750		117,000	75,000
7,800		117,000	75,000
7,900		117,000	75,000
8,000		117,000	75,000
8,100		117,000	75,000
8,200		117,000	75,000
8,300		117,000	75,000
8,400		117,000	75,000
8,500		117,000	75,000
8,600		125,000	81,000
8,700		125,000	81,000
8,750		125,000	81,000
8,800		125,000	81,000
8,900		125,000	81,000
9,000		125,000	81,000
9,100		125,000	81,000
9,200		125,000	81,000
9,300		125,000	81,000
9,400		125,000	81,000
9,500		125,000	81,000
9,600		133,000	87,000
9,700		133,000	87,000
9,750		133,000	87,000
9,800		133,000	87,000
9,900		133,000	87,000
10,000		133,000	87,000
10,100		133,000	87,000
10,200		133,000	87,000
10,300		133,000	87,000
10,500		133,000	87,000
10,600		133,000	87,000
10,700		142,000	94,000
10,750		142,000	94,000
10,800		142,000	94,000
11,000		142,000	94,000
11,100		142,000	94,000
11,200		142,000	94,000
11,250		142,000	94,000
11,300		142,000	94,000
11,400		142,000	94,000
11,500		142,000	94,000
11,600		142,000	94,000
11,700		142,000	94,000
11,750		142,000	94,000
11,800		142,000	94,000
11,900		151,000	101,000
12,000		151,000	101,000
12,100		151,000	101,000
12,200		151,000	101,000
12,300	31/64	151,000	101,000
12,500		151,000	101,000
12,700	1/2	151,000	101,000
12,800		151,000	101,000
12,900		151,000	101,000
13,000		151,000	101,000
13,100	33/64	151,000	101,000
13,250		160,000	108,000
13,500		160,000	108,000
13,750		160,000	108,000
14,000		160,000	108,000
14,200		169,000	114,000
14,250		169,000	114,000
14,500		169,000	114,000
14,750		169,000	114,000
15,000		169,000	114,000
15,250		178,000	120,000
15,500		178,000	120,000
15,750		178,000	120,000
15,800		178,000	120,000
16,000		178,000	120,000
16,500		184,000	125,000
17,000		184,000	125,000
17,500		191,000	130,000
18,000		191,000	130,000
18,500		198,000	135,000
19,000		198,000	135,000
19,500		205,000	140,000

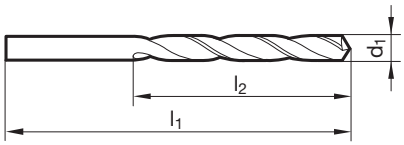
产品代号 81020



P	M	K	N	S	H
			•		

HSS | ○ | H | ~5xD | DIN 338 | 118° | h8 | R | Cyl

芯厚 ≥ Ø 14,500 • 圆弧后刀面
脆硬的材料 • 黄铜，镁合金 • 青铜,磷青铜 • 石板，电木，酚醛树脂



d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
0,300		19,000	3,000	2,120		49,000	24,000
0,320		19,000	4,000	2,200		53,000	27,000
0,400		20,000	5,000	2,250		53,000	27,000
0,440		20,000	5,000	2,300		53,000	27,000
0,450		20,000	5,000	2,400		57,000	30,000
0,480		20,000	5,000	2,450		57,000	30,000
0,500		22,000	6,000	2,500		57,000	30,000
0,560		24,000	7,000	2,550		57,000	30,000
0,600		24,000	7,000	2,600		57,000	30,000
0,650		26,000	8,000	2,700		61,000	33,000
0,700		28,000	9,000	2,780	7/64	61,000	33,000
0,750		28,000	9,000	2,800		61,000	33,000
0,800		30,000	10,000	2,900		61,000	33,000
0,810		30,000	10,000	2,950		61,000	33,000
0,840		30,000	10,000	3,000		61,000	33,000
0,900		32,000	11,000	3,020		65,000	36,000
0,910		32,000	11,000	3,050		65,000	36,000
0,950		32,000	11,000	3,070		65,000	36,000
1,000		34,000	12,000	3,100		65,000	36,000
1,050		34,000	12,000	3,150		65,000	36,000
1,100		36,000	14,000	3,200		65,000	36,000
1,150		36,000	14,000	3,250		65,000	36,000
1,200		38,000	16,000	3,300		65,000	36,000
1,250		38,000	16,000	3,350		65,000	36,000
1,280		38,000	16,000	3,400		70,000	39,000
1,300		38,000	16,000	3,500		70,000	39,000
1,310		38,000	16,000	3,550		70,000	39,000
1,400		40,000	18,000	3,600		70,000	39,000
1,420		40,000	18,000	3,700		70,000	39,000
1,450		40,000	18,000	3,750		70,000	39,000
1,500		40,000	18,000	3,800		75,000	43,000
1,510		43,000	20,000	3,850		75,000	43,000
1,550		43,000	20,000	3,900		75,000	43,000
1,600		43,000	20,000	4,000		75,000	43,000
1,700		43,000	20,000	4,050		75,000	43,000
1,800		46,000	22,000	4,100		75,000	43,000
1,850		46,000	22,000	4,200		75,000	43,000
1,900		46,000	22,000	4,250		75,000	43,000
1,950		49,000	24,000	4,300		80,000	47,000
2,000		49,000	24,000	4,400		80,000	47,000
2,050		49,000	24,000	4,500		80,000	47,000
2,100		49,000	24,000	4,600		80,000	47,000

工具钻

d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
4,700		80,000	47,000	8,900		125,000	81,000
4,750		80,000	47,000	9,000		125,000	81,000
4,800		86,000	52,000	9,100		125,000	81,000
4,900		86,000	52,000	9,200		125,000	81,000
5,000		86,000	52,000	9,250		125,000	81,000
5,100		86,000	52,000	9,300		125,000	81,000
5,200		86,000	52,000	9,400		125,000	81,000
5,250		86,000	52,000	9,500		125,000	81,000
5,300		86,000	52,000	9,600		133,000	87,000
5,400		93,000	57,000	9,700		133,000	87,000
5,500		93,000	57,000	9,750		133,000	87,000
5,600		93,000	57,000	9,800		133,000	87,000
5,700		93,000	57,000	9,900		133,000	87,000
5,750		93,000	57,000	10,000		133,000	87,000
5,800		93,000	57,000	10,050		133,000	87,000
5,900		93,000	57,000	10,100		133,000	87,000
6,000		93,000	57,000	10,200		133,000	87,000
6,100		101,000	63,000	10,500		133,000	87,000
6,200		101,000	63,000	10,600		133,000	87,000
6,250		101,000	63,000	10,800		142,000	94,000
6,300		101,000	63,000	11,000		142,000	94,000
6,400		101,000	63,000	11,200		142,000	94,000
6,500		101,000	63,000	11,500		142,000	94,000
6,600		101,000	63,000	12,000		151,000	101,000
6,700		101,000	63,000	12,100		151,000	101,000
6,800		109,000	69,000	12,500		151,000	101,000
6,900		109,000	69,000	12,700	1/2	151,000	101,000
7,000		109,000	69,000	13,000		151,000	101,000
7,050		109,000	69,000	14,000		160,000	108,000
7,100		109,000	69,000	14,500		169,000	114,000
7,200		109,000	69,000	15,000		169,000	114,000
7,250		109,000	69,000	15,100		178,000	120,000
7,300		109,000	69,000	15,250		178,000	120,000
7,400		109,000	69,000	15,500		178,000	120,000
7,500		109,000	69,000	16,000		178,000	120,000
7,600		117,000	75,000	18,000		191,000	130,000
7,700		117,000	75,000	19,000		198,000	135,000
7,800		117,000	75,000				
7,900		117,000	75,000				
8,000		117,000	75,000				
8,050		117,000	75,000				
8,100		117,000	75,000				
8,200		117,000	75,000				
8,400		117,000	75,000				
8,500		117,000	75,000				
8,600		125,000	81,000				
8,700		125,000	81,000				
8,800		125,000	81,000				

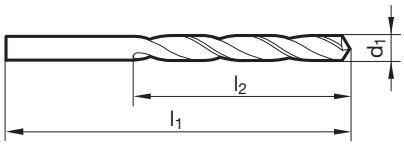
产品代号 81025



P	M	K	N	S	H
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HSS | H | ~5xD | DIN 338 | 118° | h8 | L | Cyl

芯厚 ≥ Ø 14,500 • 圆弧后刀面
脆硬的材料 • 黄铜，镁合金 • 青铜,磷青铜 • 石板，电木，酚醛树脂



d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
0,500		22,000	6,000	2,250		53,000	27,000
0,580		24,000	7,000	2,300		53,000	27,000
0,670		26,000	8,000	2,350		53,000	27,000
0,690		28,000	9,000	2,400		57,000	30,000
0,700		28,000	9,000	2,430		57,000	30,000
0,750		28,000	9,000	2,500		57,000	30,000
0,800		30,000	10,000	2,600		57,000	30,000
0,900		32,000	11,000	2,700		61,000	33,000
0,950		32,000	11,000	2,750		61,000	33,000
1,000		34,000	12,000	2,800		61,000	33,000
1,040		34,000	12,000	2,900		61,000	33,000
1,050		34,000	12,000	3,000		61,000	33,000
1,100		36,000	14,000	3,100		65,000	36,000
1,150		36,000	14,000	3,150		65,000	36,000
1,180		36,000	14,000	3,200		65,000	36,000
1,200		38,000	16,000	3,250		65,000	36,000
1,240		38,000	16,000	3,300		65,000	36,000
1,290		38,000	16,000	3,400		70,000	39,000
1,300		38,000	16,000	3,500		70,000	39,000
1,310		38,000	16,000	3,700		70,000	39,000
1,330		40,000	18,000	3,750		70,000	39,000
1,350		40,000	18,000	3,800		75,000	43,000
1,400		40,000	18,000	3,850		75,000	43,000
1,460		40,000	18,000	3,900		75,000	43,000
1,470		40,000	18,000	4,000		75,000	43,000
1,480		40,000	18,000	4,100		75,000	43,000
1,500		40,000	18,000	4,200		75,000	43,000
1,600		43,000	20,000	4,250		75,000	43,000
1,700		43,000	20,000	4,300		80,000	47,000
1,710		46,000	22,000	4,350		80,000	47,000
1,730		46,000	22,000	4,400		80,000	47,000
1,800		46,000	22,000	4,500		80,000	47,000
1,900		46,000	22,000	4,600		80,000	47,000
1,920		49,000	24,000	4,700		80,000	47,000
1,950		49,000	24,000	4,750		80,000	47,000
2,000		49,000	24,000	4,800		86,000	52,000
2,030		49,000	24,000	4,850		86,000	52,000
2,050		49,000	24,000	4,950		86,000	52,000
2,060		49,000	24,000	5,000		86,000	52,000
2,100		49,000	24,000	5,100		86,000	52,000
2,150		53,000	27,000	5,200		86,000	52,000
2,200		53,000	27,000	5,300		86,000	52,000

工具钻

d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
5,400		93,000	57,000	8,200		117,000	75,000
5,500		93,000	57,000	8,300		117,000	75,000
5,750		93,000	57,000	8,500		117,000	75,000
5,800		93,000	57,000	8,600		125,000	81,000
5,900		93,000	57,000	8,700		125,000	81,000
6,000		93,000	57,000	9,000		125,000	81,000
6,100		101,000	63,000	9,200		125,000	81,000
6,200		101,000	63,000	9,400		125,000	81,000
6,250		101,000	63,000	9,500		125,000	81,000
6,350	1/4	101,000	63,000	9,800		133,000	87,000
6,400		101,000	63,000	10,000		133,000	87,000
6,500		101,000	63,000	10,200		133,000	87,000
6,600		101,000	63,000	11,500		142,000	94,000
6,900		109,000	69,000	12,000		151,000	101,000
7,000		109,000	69,000	13,500		160,000	108,000
7,100		109,000	69,000	14,500		169,000	114,000
7,200		109,000	69,000	15,500		178,000	120,000
7,300		109,000	69,000	16,000		178,000	120,000
7,700		117,000	75,000				
7,750		117,000	75,000				
7,800		117,000	75,000				
7,900		117,000	75,000				
8,000		117,000	75,000				
8,100		117,000	75,000				

产品代号 81030

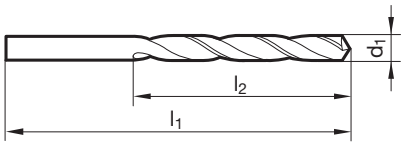


P	M	K	N	S	H
			•		

HSS | ○ | W | ~5xD | DIN 338 | 130° | h8 | R | Cyl

芯厚 ≥ Ø 14,500 • 圆弧后刀面

适于加工：软/长屑材料 • 铝及铝合金 • 锌,精炼铜,硅,电子材料 • 软塑料 • 木材



d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
0,250		19,000	3,000	2,300		53,000	27,000
0,400		20,000	5,000	2,350		53,000	27,000
0,500		22,000	6,000	2,400		57,000	30,000
0,550		24,000	7,000	2,450		57,000	30,000
0,600		24,000	7,000	2,500		57,000	30,000
0,650		26,000	8,000	2,550		57,000	30,000
0,700		28,000	9,000	2,600		57,000	30,000
0,800		30,000	10,000	2,700		61,000	33,000
0,850		30,000	10,000	2,750		61,000	33,000
0,900		32,000	11,000	2,800		61,000	33,000
0,950		32,000	11,000	2,850		61,000	33,000
0,970		34,000	12,000	2,900		61,000	33,000
1,000		34,000	12,000	2,950		61,000	33,000
1,050		34,000	12,000	3,000		61,000	33,000
1,060		34,000	12,000	3,050		65,000	36,000
1,070		36,000	14,000	3,100		65,000	36,000
1,100		36,000	14,000	3,150		65,000	36,000
1,150		36,000	14,000	3,200		65,000	36,000
1,200		38,000	16,000	3,250		65,000	36,000
1,210		38,000	16,000	3,300		65,000	36,000
1,240		38,000	16,000	3,400		70,000	39,000
1,250		38,000	16,000	3,450		70,000	39,000
1,280		38,000	16,000	3,500		70,000	39,000
1,300		38,000	16,000	3,600		70,000	39,000
1,400		40,000	18,000	3,650		70,000	39,000
1,450		40,000	18,000	3,700		70,000	39,000
1,500		40,000	18,000	3,750		70,000	39,000
1,530		43,000	20,000	3,800		75,000	43,000
1,550		43,000	20,000	3,850		75,000	43,000
1,600		43,000	20,000	3,900		75,000	43,000
1,650		43,000	20,000	3,950		75,000	43,000
1,700		43,000	20,000	4,000		75,000	43,000
1,750		46,000	22,000	4,040		75,000	43,000
1,800		46,000	22,000	4,100		75,000	43,000
1,900		46,000	22,000	4,150		75,000	43,000
1,950		49,000	24,000	4,200		75,000	43,000
2,000		49,000	24,000	4,250		75,000	43,000
2,050		49,000	24,000	4,300		80,000	47,000
2,100		49,000	24,000	4,400		80,000	47,000
2,150		53,000	27,000	4,500		80,000	47,000
2,200		53,000	27,000	4,600		80,000	47,000
2,250		53,000	27,000	4,700		80,000	47,000

工具钻

d1 mm	inch	l1 mm	l2 mm
4,750		80,000	47,000
4,800		86,000	52,000
4,850		86,000	52,000
4,900		86,000	52,000
4,950		86,000	52,000
5,000		86,000	52,000
5,050		86,000	52,000
5,100		86,000	52,000
5,200		86,000	52,000
5,250		86,000	52,000
5,300		86,000	52,000
5,400		93,000	57,000
5,500		93,000	57,000
5,550		93,000	57,000
5,600		93,000	57,000
5,700		93,000	57,000
5,750		93,000	57,000
5,800		93,000	57,000
5,900		93,000	57,000
5,950	15/64	93,000	57,000
6,000		93,000	57,000
6,100		101,000	63,000
6,150		101,000	63,000
6,200		101,000	63,000
6,250		101,000	63,000
6,300		101,000	63,000
6,350	1/4	101,000	63,000
6,400		101,000	63,000
6,500		101,000	63,000
6,600		101,000	63,000
6,700		101,000	63,000
6,750	17/64	109,000	69,000
6,800		109,000	69,000
6,900		109,000	69,000
7,000		109,000	69,000
7,100		109,000	69,000
7,200		109,000	69,000
7,250		109,000	69,000
7,300		109,000	69,000
7,400		109,000	69,000
7,500		109,000	69,000
7,600		117,000	75,000
7,700		117,000	75,000
7,750		117,000	75,000
7,800		117,000	75,000
7,900		117,000	75,000
8,000		117,000	75,000
8,100		117,000	75,000
8,200		117,000	75,000
8,300		117,000	75,000
8,400		117,000	75,000
8,500		117,000	75,000
8,600		125,000	81,000
8,700		125,000	81,000
8,730	11/32	125,000	81,000
8,750		125,000	81,000
8,800		125,000	81,000
8,900		125,000	81,000
9,000		125,000	81,000
9,100		125,000	81,000
9,200		125,000	81,000
9,250		125,000	81,000
9,300		125,000	81,000
9,400		125,000	81,000
9,500		125,000	81,000
9,600		133,000	87,000
9,700		133,000	87,000
9,800		133,000	87,000
9,900		133,000	87,000
10,000		133,000	87,000
10,100		133,000	87,000
10,200		133,000	87,000
10,250		133,000	87,000
10,400		133,000	87,000
10,500		133,000	87,000
10,800		142,000	94,000
10,900		142,000	94,000
10,950		142,000	94,000
11,000		142,000	94,000
11,200		142,000	94,000
11,500		142,000	94,000
11,600		142,000	94,000
11,700		142,000	94,000
11,800		142,000	94,000
12,000		151,000	101,000
12,100		151,000	101,000
12,200		151,000	101,000
12,300	31/64	151,000	101,000
12,500		151,000	101,000
12,600		151,000	101,000
12,700	1/2	151,000	101,000
12,800		151,000	101,000
13,000		151,000	101,000
13,200		151,000	101,000
13,500		160,000	108,000
14,000		160,000	108,000
14,500		169,000	114,000
15,000		169,000	114,000
16,000		178,000	120,000
16,500		184,000	125,000

产品代号 81035

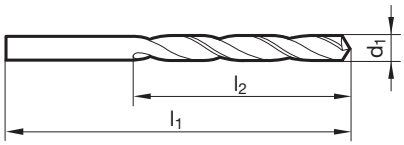


P	M	K	N	S	H
			•		

HSS | W | ~5xD | DIN 338 | 130° | h8 | L | Cyl

芯厚 ≥ Ø 15,000 • 圆弧后刀面

适于加工：软/长屑材料 • 铝及铝合金 • 锌,精炼铜,硅,电子材料 • 软塑料 • 木材



d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
0,500		22,000	6,000	5,100		86,000	52,000
0,600		24,000	7,000	5,200		86,000	52,000
0,750		28,000	9,000	5,250		86,000	52,000
1,000		34,000	12,000	5,300		86,000	52,000
1,050		34,000	12,000	5,400		93,000	57,000
1,100		36,000	14,000	5,500		93,000	57,000
1,200		38,000	16,000	5,600		93,000	57,000
1,550		43,000	20,000	5,800		93,000	57,000
1,750		46,000	22,000	5,950	15/64	93,000	57,000
1,800		46,000	22,000	6,000		93,000	57,000
1,850		46,000	22,000	6,200		101,000	63,000
1,900		46,000	22,000	6,300		101,000	63,000
2,000		49,000	24,000	6,400		101,000	63,000
2,300		53,000	27,000	6,700		101,000	63,000
2,350		53,000	27,000	6,800		109,000	69,000
2,400		57,000	30,000	6,900		109,000	69,000
2,500		57,000	30,000	7,000		109,000	69,000
2,600		57,000	30,000	7,100		109,000	69,000
2,650		57,000	30,000	7,400		109,000	69,000
2,700		61,000	33,000	7,500		109,000	69,000
2,800		61,000	33,000	7,600		117,000	75,000
2,900		61,000	33,000	7,700		117,000	75,000
3,000		61,000	33,000	7,900		117,000	75,000
3,100		65,000	36,000	8,000		117,000	75,000
3,200		65,000	36,000	8,600		125,000	81,000
3,500		70,000	39,000	8,700		125,000	81,000
3,600		70,000	39,000	9,100		125,000	81,000
3,700		70,000	39,000	9,200		125,000	81,000
3,800		75,000	43,000	9,300		125,000	81,000
3,850		75,000	43,000	9,400		125,000	81,000
3,900		75,000	43,000	9,500		125,000	81,000
3,950		75,000	43,000	9,800		133,000	87,000
4,000		75,000	43,000	10,000		133,000	87,000
4,200		75,000	43,000	10,500		133,000	87,000
4,300		80,000	47,000	11,500		142,000	94,000
4,400		80,000	47,000	12,000		151,000	101,000
4,500		80,000	47,000	12,500		151,000	101,000
4,600		80,000	47,000	13,000		151,000	101,000
4,700		80,000	47,000	13,500		160,000	108,000
4,800		86,000	52,000	14,000		160,000	108,000
4,900		86,000	52,000	15,000		169,000	114,000
5,000		86,000	52,000				

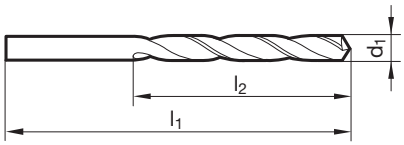
产品代号 81040



P	M	K	N	S	H
•		•	•		

HSS | >Ø 2,36 | FN | ~5xD | DIN 338 | 130° | h8 | R | Cyl

芯厚 ≥ Ø 1,000 • 圆弧后刀面 • 宽槽 • 尤其适合孔深超过3xD
适合加工：灰铸铁 • 强度小于1000N/mm²的钢 • 灰铸铁,可锻铸铁和球墨铸铁 - 粉末冶金铁和石墨



d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
0,800		30,000	10,000	3,300		65,000	36,000
1,000		34,000	12,000	3,350		65,000	36,000
1,100		36,000	14,000	3,400		70,000	39,000
1,200		38,000	16,000	3,450		70,000	39,000
1,300		38,000	16,000	3,500		70,000	39,000
1,350		40,000	18,000	3,550		70,000	39,000
1,400		40,000	18,000	3,600		70,000	39,000
1,450		40,000	18,000	3,700		70,000	39,000
1,500		40,000	18,000	3,800		75,000	43,000
1,550		43,000	20,000	3,900		75,000	43,000
1,570		43,000	20,000	3,950		75,000	43,000
1,600		43,000	20,000	4,000		75,000	43,000
1,650		43,000	20,000	4,050		75,000	43,000
1,700		43,000	20,000	4,090		75,000	43,000
1,800		46,000	22,000	4,100		75,000	43,000
1,850		46,000	22,000	4,200		75,000	43,000
1,900		46,000	22,000	4,250		75,000	43,000
1,950		49,000	24,000	4,300		80,000	47,000
2,000		49,000	24,000	4,400		80,000	47,000
2,050		49,000	24,000	4,500		80,000	47,000
2,100		49,000	24,000	4,550		80,000	47,000
2,150		53,000	27,000	4,600		80,000	47,000
2,200		53,000	27,000	4,650		80,000	47,000
2,300		53,000	27,000	4,700		80,000	47,000
2,350		53,000	27,000	4,800		86,000	52,000
2,400		57,000	30,000	4,900		86,000	52,000
2,490		57,000	30,000	4,920		86,000	52,000
2,500		57,000	30,000	5,000		86,000	52,000
2,550		57,000	30,000	5,030		86,000	52,000
2,600		57,000	30,000	5,100		86,000	52,000
2,700		61,000	33,000	5,200		86,000	52,000
2,750		61,000	33,000	5,250		86,000	52,000
2,800		61,000	33,000	5,300		86,000	52,000
2,850		61,000	33,000	5,400		93,000	57,000
2,900		61,000	33,000	5,500		93,000	57,000
3,000		61,000	33,000	5,600		93,000	57,000
3,050		65,000	36,000	5,700		93,000	57,000
3,100		65,000	36,000	5,800		93,000	57,000
3,150		65,000	36,000	5,850		93,000	57,000
3,200		65,000	36,000	5,900		93,000	57,000
3,250		65,000	36,000	5,950	15/64	93,000	57,000
3,260		65,000	36,000	6,000		93,000	57,000

工具钻

d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
6,050		101,000	63,000	9,800		133,000	87,000
6,100		101,000	63,000	9,900		133,000	87,000
6,200		101,000	63,000	10,000		133,000	87,000
6,300		101,000	63,000	10,200		133,000	87,000
6,400		101,000	63,000	10,300		133,000	87,000
6,450		101,000	63,000	10,400		133,000	87,000
6,500		101,000	63,000	10,500		133,000	87,000
6,600		101,000	63,000	10,600		133,000	87,000
6,700		101,000	63,000	10,700		142,000	94,000
6,750	17/64	109,000	69,000	10,800		142,000	94,000
6,800		109,000	69,000	10,900		142,000	94,000
6,900		109,000	69,000	11,000		142,000	94,000
7,000		109,000	69,000	11,100		142,000	94,000
7,100		109,000	69,000	11,200		142,000	94,000
7,200		109,000	69,000	11,300		142,000	94,000
7,300		109,000	69,000	11,400		142,000	94,000
7,400		109,000	69,000	11,500		142,000	94,000
7,500		109,000	69,000	11,600		142,000	94,000
7,600		117,000	75,000	11,700		142,000	94,000
7,700		117,000	75,000	11,800		142,000	94,000
7,750		117,000	75,000	12,000		151,000	101,000
7,800		117,000	75,000	12,200		151,000	101,000
7,900		117,000	75,000	12,300	31/64	151,000	101,000
8,000		117,000	75,000	12,400		151,000	101,000
8,100		117,000	75,000	12,500		151,000	101,000
8,200		117,000	75,000	12,800		151,000	101,000
8,250		117,000	75,000	13,000		151,000	101,000
8,300		117,000	75,000	13,500		160,000	108,000
8,400		117,000	75,000	14,000		160,000	108,000
8,500		117,000	75,000	14,500		169,000	114,000
8,600		125,000	81,000	15,000		169,000	114,000
8,700		125,000	81,000	15,400		178,000	120,000
8,800		125,000	81,000	15,500		178,000	120,000
8,900		125,000	81,000	16,000		178,000	120,000
9,000		125,000	81,000				
9,100		125,000	81,000				
9,200		125,000	81,000				
9,300		125,000	81,000				
9,400		125,000	81,000				
9,500		125,000	81,000				
9,600		133,000	87,000				
9,700		133,000	87,000				

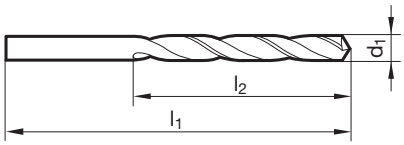
产品代号 81045



P	M	K	N	S	H
•		•	•		

HSS | >Ø 2,36 | FN | ~5xD | DIN 338 | 130° | h8 | L | Cyl

芯厚 ≥ Ø 1,400 • 圆弧后刀面 • 宽槽 • 尤其适合孔深超过3xD
适合加工：灰铸铁 • 强度小于1000N/mm²的钢 • 灰铸铁,可锻铸铁和球墨铸铁 - 粉末冶金铁和石墨



d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
1,400		40,000	18,000	5,000		86,000	52,000
1,500		40,000	18,000	5,100		86,000	52,000
1,600		43,000	20,000	5,200		86,000	52,000
1,700		43,000	20,000	5,300		86,000	52,000
1,800		46,000	22,000	5,400		93,000	57,000
1,900		46,000	22,000	5,500		93,000	57,000
2,000		49,000	24,000	5,600		93,000	57,000
2,100		49,000	24,000	5,700		93,000	57,000
2,200		53,000	27,000	5,800		93,000	57,000
2,300		53,000	27,000	5,900		93,000	57,000
2,400		57,000	30,000	6,000		93,000	57,000
2,500		57,000	30,000	6,100		101,000	63,000
2,550		57,000	30,000	6,200		101,000	63,000
2,600		57,000	30,000	6,500		101,000	63,000
2,700		61,000	33,000	6,600		101,000	63,000
2,750		61,000	33,000	6,700		101,000	63,000
2,780	7/64	61,000	33,000	6,800		109,000	69,000
2,800		61,000	33,000	6,900		109,000	69,000
2,900		61,000	33,000	7,000		109,000	69,000
3,000		61,000	33,000	7,100		109,000	69,000
3,100		65,000	36,000	7,200		109,000	69,000
3,150		65,000	36,000	7,300		109,000	69,000
3,170	1/8	65,000	36,000	7,400		109,000	69,000
3,200		65,000	36,000	7,500		109,000	69,000
3,250		65,000	36,000	7,700		117,000	75,000
3,300		65,000	36,000	7,800		117,000	75,000
3,400		70,000	39,000	7,900		117,000	75,000
3,500		70,000	39,000	8,000		117,000	75,000
3,600		70,000	39,000	8,400		117,000	75,000
3,650		70,000	39,000	8,500		117,000	75,000
3,700		70,000	39,000	8,600		125,000	81,000
3,800		75,000	43,000	8,700		125,000	81,000
3,900		75,000	43,000	8,800		125,000	81,000
4,000		75,000	43,000	8,900		125,000	81,000
4,100		75,000	43,000	9,000		125,000	81,000
4,200		75,000	43,000	9,200		125,000	81,000
4,300		80,000	47,000	9,300		125,000	81,000
4,500		80,000	47,000	9,500		125,000	81,000
4,600		80,000	47,000	9,600		133,000	87,000
4,700		80,000	47,000	9,700		133,000	87,000
4,800		86,000	52,000	9,900		133,000	87,000
4,900		86,000	52,000	10,000		133,000	87,000

工具钻

d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
10,100		133,000	87,000	11,900		151,000	101,000
10,300		133,000	87,000	13,500		160,000	108,000
10,400		133,000	87,000	14,500		169,000	114,000
10,500		133,000	87,000	15,000		169,000	114,000
10,600		133,000	87,000	15,500		178,000	120,000
10,700		142,000	94,000	16,000		178,000	120,000
10,800		142,000	94,000				
11,000		142,000	94,000				
11,100		142,000	94,000				
11,300		142,000	94,000				
11,500		142,000	94,000				
11,700		142,000	94,000				

工具钻

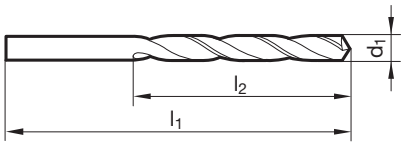
产品代号 84406



P	M	K	N	S	H
●		●	○		

HSS | T | N | ~5xD | DIN 338 | 118° | h8 | R | Cyl

芯厚 ≥ Ø 1,000 • 圆弧后刀面 • 刀尖涂层
适于加工：合金/非合金钢和铸钢 • 灰铸铁,可锻铸铁和球墨铸铁 • 粉末冶金铁和石墨



d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
1,000		34,000	12,000	4,300		80,000	47,000
1,100		36,000	14,000	4,370	11/64	80,000	47,000
1,190	3/64	38,000	16,000	4,400		80,000	47,000
1,200		38,000	16,000	4,500		80,000	47,000
1,300		38,000	16,000	4,600		80,000	47,000
1,400		40,000	18,000	4,700		80,000	47,000
1,500		40,000	18,000	4,760	3/16	86,000	52,000
1,590	1/16	43,000	20,000	4,800		86,000	52,000
1,600		43,000	20,000	4,900		86,000	52,000
1,700		43,000	20,000	5,000		86,000	52,000
1,800		46,000	22,000	5,100		86,000	52,000
1,900		46,000	22,000	5,160	13/64	86,000	52,000
1,980	5/64	49,000	24,000	5,200		86,000	52,000
2,000		49,000	24,000	5,300		86,000	52,000
2,100		49,000	24,000	5,400		93,000	57,000
2,200		53,000	27,000	5,500		93,000	57,000
2,300		53,000	27,000	5,560	7/32	93,000	57,000
2,380	3/32	57,000	30,000	5,600		93,000	57,000
2,400		57,000	30,000	5,700		93,000	57,000
2,440		57,000	30,000	5,800		93,000	57,000
2,500		57,000	30,000	5,900		93,000	57,000
2,600		57,000	30,000	5,950	15/64	93,000	57,000
2,700		61,000	33,000	6,000		93,000	57,000
2,780	7/64	61,000	33,000	6,100		101,000	63,000
2,800		61,000	33,000	6,200		101,000	63,000
2,900		61,000	33,000	6,300		101,000	63,000
3,000		61,000	33,000	6,350	1/4	101,000	63,000
3,100		65,000	36,000	6,400		101,000	63,000
3,170	1/8	65,000	36,000	6,500		101,000	63,000
3,200		65,000	36,000	6,600		101,000	63,000
3,300		65,000	36,000	6,700		101,000	63,000
3,400		70,000	39,000	6,750	17/64	109,000	69,000
3,500		70,000	39,000	6,800		109,000	69,000
3,570	9/64	70,000	39,000	6,900		109,000	69,000
3,600		70,000	39,000	7,000		109,000	69,000
3,700		70,000	39,000	7,100		109,000	69,000
3,800		75,000	43,000	7,140	9/32	109,000	69,000
3,900		75,000	43,000	7,200		109,000	69,000
3,970	5/32	75,000	43,000	7,300		109,000	69,000
4,000		75,000	43,000	7,400		109,000	69,000
4,100		75,000	43,000	7,500		109,000	69,000
4,200		75,000	43,000	7,540	19/64	117,000	75,000

工具钻

d1 mm	inch	l1 mm	l2 mm
7,600		117,000	75,000
7,700		117,000	75,000
7,800		117,000	75,000
7,900		117,000	75,000
7,940	5/16	117,000	75,000
8,000		117,000	75,000
8,100		117,000	75,000
8,200		117,000	75,000
8,300		117,000	75,000
8,330	21/64	117,000	75,000
8,400		117,000	75,000
8,500		117,000	75,000
8,600		125,000	81,000
8,700		125,000	81,000
8,730	11/32	125,000	81,000
8,800		125,000	81,000
8,900		125,000	81,000
9,000		125,000	81,000
9,100		125,000	81,000
9,130	23/64	125,000	81,000
9,200		125,000	81,000
9,300		125,000	81,000
9,400		125,000	81,000
9,500		125,000	81,000
9,520	3/8	133,000	87,000
9,600		133,000	87,000
9,700		133,000	87,000
9,800		133,000	87,000
9,900		133,000	87,000
9,920	25/64	133,000	87,000
10,000		133,000	87,000
10,100		133,000	87,000
10,200		133,000	87,000
10,300		133,000	87,000
10,320	13/32	133,000	87,000
10,400		133,000	87,000
10,500		133,000	87,000
10,600		133,000	87,000
10,700		142,000	94,000
10,720	27/64	142,000	94,000
10,800		142,000	94,000
10,900		142,000	94,000
11,000		142,000	94,000
11,100		142,000	94,000
11,110	7/16	142,000	94,000
11,200		142,000	94,000
11,300		142,000	94,000
11,400		142,000	94,000
11,500		142,000	94,000
11,510	29/64	142,000	94,000
11,600		142,000	94,000
11,700		142,000	94,000
11,800		142,000	94,000
11,900		151,000	101,000
11,910	15/32	151,000	101,000
12,000		151,000	101,000
12,100		151,000	101,000
12,200		151,000	101,000
12,300	31/64	151,000	101,000
12,400		151,000	101,000
12,500		151,000	101,000
12,600		151,000	101,000
12,700	1/2	151,000	101,000
12,800		151,000	101,000
12,900		151,000	101,000
13,000		151,000	101,000
13,100	33/64	151,000	101,000
13,200		151,000	101,000
13,250		160,000	108,000
13,300		160,000	108,000
13,400		160,000	108,000
13,490	17/32	160,000	108,000
13,500		160,000	108,000
13,600		160,000	108,000
13,700		160,000	108,000
13,750		160,000	108,000
13,800		160,000	108,000
13,890	35/64	160,000	108,000
13,900		160,000	108,000
14,000		160,000	108,000
14,250		169,000	114,000
14,290	9/16	169,000	114,000
14,500		169,000	114,000
14,680	37/64	169,000	114,000
14,750		169,000	114,000
15,000		169,000	114,000
15,080	19/32	178,000	120,000
15,250		178,000	120,000
15,480	39/64	178,000	120,000
15,500		178,000	120,000
15,750		178,000	120,000
16,000		178,000	120,000

产品代号 84415



P	M	K	N	S	H
•		•	•		

HSS | T | FN | ~5xD | DIN 338 | 130° | h8 | R | Cyl

芯厚 ≥ Ø 1,000 • 圆弧后刀面 • 宽槽 • 尤其适合孔深超过3xD
适合加工：灰铸铁 • 强度小于1000N/mm²的钢 • 灰铸铁,可锻铸铁和球墨铸铁 - 粉末冶金铁和石墨

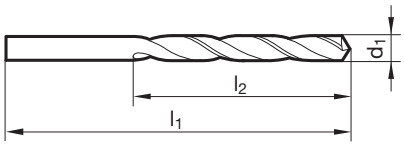
产品代号 84502



P	M	K	N	S	H
•		•	•		

HSS | F | FN | ~5xD | DIN 338 | 130° | h8 | R | Cyl

芯厚 ≥ Ø 1,000 • 圆弧后刀面 • 宽槽 • 尤其适合孔深超过3xD
适合加工：灰铸铁 • 强度小于1000N/mm²的钢 • 灰铸铁,可锻铸铁和球墨铸铁 - 粉末冶金铁和石墨



d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
1,000		34,000	12,000	3,900		75,000	43,000
1,100		36,000	14,000	4,000		75,000	43,000
1,200		38,000	16,000	4,100		75,000	43,000
1,300		38,000	16,000	4,200		75,000	43,000
1,400		40,000	18,000	4,300		80,000	47,000
1,500		40,000	18,000	4,400		80,000	47,000
1,600		43,000	20,000	4,500		80,000	47,000
1,700		43,000	20,000	4,600		80,000	47,000
1,800		46,000	22,000	4,700		80,000	47,000
1,900		46,000	22,000	4,800		86,000	52,000
2,000		49,000	24,000	4,900		86,000	52,000
2,100		49,000	24,000	5,000		86,000	52,000
2,200		53,000	27,000	5,100		86,000	52,000
2,300		53,000	27,000	5,200		86,000	52,000
2,400		57,000	30,000	5,300		86,000	52,000
2,500		57,000	30,000	5,400		93,000	57,000
2,600		57,000	30,000	5,500		93,000	57,000
2,700		61,000	33,000	5,600		93,000	57,000
2,800		61,000	33,000	5,700		93,000	57,000
2,900		61,000	33,000	5,800		93,000	57,000
3,000		61,000	33,000	5,900		93,000	57,000
3,100		65,000	36,000	6,000		93,000	57,000
3,170	1/8	65,000	36,000	6,100		101,000	63,000
3,200		65,000	36,000	6,200		101,000	63,000
3,300		65,000	36,000	6,300		101,000	63,000
3,400		70,000	39,000	6,400		101,000	63,000
3,500		70,000	39,000	6,500		101,000	63,000
3,600		70,000	39,000	6,600		101,000	63,000
3,700		70,000	39,000	6,700		101,000	63,000
3,800		75,000	43,000	6,800		109,000	69,000

工具钻

d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
6,900		109,000	69,000	9,900		133,000	87,000
7,000		109,000	69,000	10,000		133,000	87,000
7,100		109,000	69,000	10,100		133,000	87,000
7,200		109,000	69,000	10,200		133,000	87,000
7,300		109,000	69,000	10,300		133,000	87,000
7,400		109,000	69,000	10,400		133,000	87,000
7,500		109,000	69,000	10,500		133,000	87,000
7,600		117,000	75,000	10,700		142,000	94,000
7,700		117,000	75,000	10,800		142,000	94,000
7,800		117,000	75,000	11,000		142,000	94,000
7,900		117,000	75,000	11,400		142,000	94,000
8,000		117,000	75,000	11,500		142,000	94,000
8,100		117,000	75,000	11,600		142,000	94,000
8,200		117,000	75,000	11,700		142,000	94,000
8,300		117,000	75,000	11,800		142,000	94,000
8,400		117,000	75,000	12,000		151,000	101,000
8,500		117,000	75,000	12,100		151,000	101,000
8,600		125,000	81,000	12,200		151,000	101,000
8,700		125,000	81,000	12,300	31/64	151,000	101,000
8,800		125,000	81,000	12,500		151,000	101,000
8,900		125,000	81,000	12,700	1/2	151,000	101,000
9,000		125,000	81,000	12,800		151,000	101,000
9,100		125,000	81,000	13,000		151,000	101,000
9,200		125,000	81,000	13,500		160,000	108,000
9,300		125,000	81,000	14,000		160,000	108,000
9,400		125,000	81,000	15,000		169,000	114,000
9,500		125,000	81,000	16,000		178,000	120,000
9,600		133,000	87,000				
9,700		133,000	87,000				
9,800		133,000	87,000				

产品代号 81011

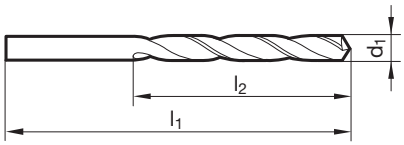


P	M	K	N	S	H
●	○	●	○		

HSS-E | >Ø 2,36 | N | ~5xD | DIN 338 | 118° | h8 | R | Cyl

芯厚 ≥ Ø 1,000 • 圆弧后刀面 • 高耐磨强度 • 耐磨损 高强度

适于加工：合金/非合金钢和铸钢 • 强度大于800 N/mm²的铸件 • 热轧和冷轧钢 • 耐磨轴承钢 • 适于加工：高合金钢 • 热处理钢和淬硬钢



d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
0,200		19,000	2,500	1,850		46,000	22,000
0,250		19,000	3,000	1,860		46,000	22,000
0,300		19,000	3,000	1,900		46,000	22,000
0,350		19,000	4,000	1,950		49,000	24,000
0,400		20,000	5,000	2,000		49,000	24,000
0,430		20,000	5,000	2,030		49,000	24,000
0,450		20,000	5,000	2,050		49,000	24,000
0,500		22,000	6,000	2,100		49,000	24,000
0,550		24,000	7,000	2,150		53,000	27,000
0,600		24,000	7,000	2,200		53,000	27,000
0,650		26,000	8,000	2,250		53,000	27,000
0,680		28,000	9,000	2,300		53,000	27,000
0,700		28,000	9,000	2,400		57,000	30,000
0,750		28,000	9,000	2,450		57,000	30,000
0,800		30,000	10,000	2,500		57,000	30,000
0,850		30,000	10,000	2,550		57,000	30,000
0,860		32,000	11,000	2,600		57,000	30,000
0,870		32,000	11,000	2,650		57,000	30,000
0,900		32,000	11,000	2,700		61,000	33,000
0,950		32,000	11,000	2,750		61,000	33,000
0,980		34,000	12,000	2,800		61,000	33,000
1,000		34,000	12,000	2,850		61,000	33,000
1,050		34,000	12,000	2,900		61,000	33,000
1,100		36,000	14,000	2,950		61,000	33,000
1,150		36,000	14,000	3,000		61,000	33,000
1,170		36,000	14,000	3,050		65,000	36,000
1,200		38,000	16,000	3,100		65,000	36,000
1,230		38,000	16,000	3,150		65,000	36,000
1,250		38,000	16,000	3,200		65,000	36,000
1,300		38,000	16,000	3,250		65,000	36,000
1,350		40,000	18,000	3,300		65,000	36,000
1,370		40,000	18,000	3,400		70,000	39,000
1,400		40,000	18,000	3,500		70,000	39,000
1,450		40,000	18,000	3,600		70,000	39,000
1,500		40,000	18,000	3,700		70,000	39,000
1,550		43,000	20,000	3,750		70,000	39,000
1,600		43,000	20,000	3,800		75,000	43,000
1,650		43,000	20,000	3,900		75,000	43,000
1,700		43,000	20,000	4,000		75,000	43,000
1,750		46,000	22,000	4,050		75,000	43,000
1,800		46,000	22,000	4,100		75,000	43,000
1,820		46,000	22,000	4,200		75,000	43,000

工具钻

d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
4,250		75,000	43,000	9,400		125,000	81,000
4,300		80,000	47,000	9,500		125,000	81,000
4,400		80,000	47,000	9,520	3/8	133,000	87,000
4,500		80,000	47,000	9,600		133,000	87,000
4,550		80,000	47,000	9,700		133,000	87,000
4,600		80,000	47,000	9,800		133,000	87,000
4,700		80,000	47,000	9,900		133,000	87,000
4,800		86,000	52,000	10,000		133,000	87,000
4,850		86,000	52,000	10,050		133,000	87,000
4,900		86,000	52,000	10,100		133,000	87,000
5,000		86,000	52,000	10,200		133,000	87,000
5,020		86,000	52,000	10,250		133,000	87,000
5,050		86,000	52,000	10,300		133,000	87,000
5,100		86,000	52,000	10,400		133,000	87,000
5,150		86,000	52,000	10,500		133,000	87,000
5,200		86,000	52,000	10,600		133,000	87,000
5,250		86,000	52,000	10,720	27/64	142,000	94,000
5,300		86,000	52,000	10,800		142,000	94,000
5,400		93,000	57,000	10,900		142,000	94,000
5,500		93,000	57,000	11,000		142,000	94,000
5,600		93,000	57,000	11,100		142,000	94,000
5,700		93,000	57,000	11,200		142,000	94,000
5,800		93,000	57,000	11,250		142,000	94,000
5,900		93,000	57,000	11,300		142,000	94,000
6,000		93,000	57,000	11,500		142,000	94,000
6,050		101,000	63,000	11,700		142,000	94,000
6,100		101,000	63,000	11,750		142,000	94,000
6,150		101,000	63,000	11,800		142,000	94,000
6,200		101,000	63,000	12,000		151,000	101,000
6,300		101,000	63,000	12,200		151,000	101,000
6,350	1/4	101,000	63,000	12,400		151,000	101,000
6,400		101,000	63,000	12,500		151,000	101,000
6,500		101,000	63,000	12,600		151,000	101,000
6,600		101,000	63,000	12,700	1/2	151,000	101,000
6,700		101,000	63,000	12,800		151,000	101,000
6,750	17/64	109,000	69,000	12,900		151,000	101,000
6,800		109,000	69,000	13,000		151,000	101,000
6,900		109,000	69,000	13,200		151,000	101,000
7,000		109,000	69,000	13,300		160,000	108,000
7,100		109,000	69,000	13,400		160,000	108,000
7,140	9/32	109,000	69,000	13,500		160,000	108,000
7,200		109,000	69,000	13,600		160,000	108,000
7,300		109,000	69,000	13,700		160,000	108,000
7,400		109,000	69,000	13,800		160,000	108,000
7,500		109,000	69,000	14,000		160,000	108,000
7,600		117,000	75,000	14,200		169,000	114,000
7,700		117,000	75,000	14,500		169,000	114,000
7,800		117,000	75,000	15,000		169,000	114,000
7,900		117,000	75,000	15,250		178,000	120,000
8,000		117,000	75,000	15,500		178,000	120,000
8,100		117,000	75,000	15,870	5/8	178,000	120,000
8,200		117,000	75,000	16,000		178,000	120,000
8,300		117,000	75,000	16,500		184,000	125,000
8,400		117,000	75,000	17,000		184,000	125,000
8,500		117,000	75,000	17,500		191,000	130,000
8,600		125,000	81,000	19,000		198,000	135,000
8,700		125,000	81,000	20,000		205,000	140,000
8,730	11/32	125,000	81,000				
8,750		125,000	81,000				
8,800		125,000	81,000				
8,900		125,000	81,000				
9,000		125,000	81,000				
9,100		125,000	81,000				
9,200		125,000	81,000				
9,250		125,000	81,000				
9,300		125,000	81,000				

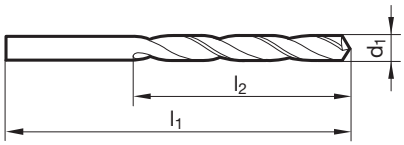
产品代号 81041



P	M	K	N	S	H
●	○	●	●		

HSS-E | >Ø 2,36 | FN | ~5xD | DIN 338 | 130° | h8 | R | Cyl

芯厚 ≥ Ø 1,000 • 圆弧后刀面 • 高耐磨强度 • 耐磨损 高强度 • 宽槽 • 尤其适合孔深超过3xD
大于800N/mm²的灰铸铁和钢 • 热轧和冷轧钢 • 耐磨轴承钢 • 适于加工：高合金钢 • 热处理钢和淬硬钢



d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
1,000		34,000	12,000	3,650		70,000	39,000
1,100		36,000	14,000	3,700		70,000	39,000
1,200		38,000	16,000	3,800		75,000	43,000
1,250		38,000	16,000	3,900		75,000	43,000
1,300		38,000	16,000	4,000		75,000	43,000
1,400		40,000	18,000	4,050		75,000	43,000
1,500		40,000	18,000	4,100		75,000	43,000
1,550		43,000	20,000	4,200		75,000	43,000
1,600		43,000	20,000	4,300		80,000	47,000
1,650		43,000	20,000	4,400		80,000	47,000
1,700		43,000	20,000	4,500		80,000	47,000
1,800		46,000	22,000	4,600		80,000	47,000
1,850		46,000	22,000	4,700		80,000	47,000
1,900		46,000	22,000	4,800		86,000	52,000
1,950		49,000	24,000	4,900		86,000	52,000
2,000		49,000	24,000	5,000		86,000	52,000
2,050		49,000	24,000	5,100		86,000	52,000
2,100		49,000	24,000	5,200		86,000	52,000
2,200		53,000	27,000	5,300		86,000	52,000
2,300		53,000	27,000	5,400		93,000	57,000
2,350		53,000	27,000	5,500		93,000	57,000
2,400		57,000	30,000	5,600		93,000	57,000
2,500		57,000	30,000	5,700		93,000	57,000
2,550		57,000	30,000	5,800		93,000	57,000
2,600		57,000	30,000	5,900		93,000	57,000
2,650		57,000	30,000	6,000		93,000	57,000
2,700		61,000	33,000	6,100		101,000	63,000
2,750		61,000	33,000	6,200		101,000	63,000
2,780	7/64	61,000	33,000	6,300		101,000	63,000
2,800		61,000	33,000	6,400		101,000	63,000
2,900		61,000	33,000	6,500		101,000	63,000
3,000		61,000	33,000	6,600		101,000	63,000
3,050		65,000	36,000	6,700		101,000	63,000
3,100		65,000	36,000	6,750	17/64	109,000	69,000
3,150		65,000	36,000	6,800		109,000	69,000
3,200		65,000	36,000	6,900		109,000	69,000
3,250		65,000	36,000	7,000		109,000	69,000
3,300		65,000	36,000	7,100		109,000	69,000
3,400		70,000	39,000	7,200		109,000	69,000
3,450		70,000	39,000	7,300		109,000	69,000
3,500		70,000	39,000	7,400		109,000	69,000
3,600		70,000	39,000	7,500		109,000	69,000

工具钻

d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
7,600		117,000	75,000	10,200		133,000	87,000
7,700		117,000	75,000	10,300		133,000	87,000
7,800		117,000	75,000	10,700		142,000	94,000
7,900		117,000	75,000	10,800		142,000	94,000
8,000		117,000	75,000	10,900		142,000	94,000
8,100		117,000	75,000	11,000		142,000	94,000
8,200		117,000	75,000	11,100		142,000	94,000
8,300		117,000	75,000	11,200		142,000	94,000
8,400		117,000	75,000	11,400		142,000	94,000
8,500		117,000	75,000	11,600		142,000	94,000
8,600		125,000	81,000	11,700		142,000	94,000
8,700		125,000	81,000	11,800		142,000	94,000
8,800		125,000	81,000	12,000		151,000	101,000
8,900		125,000	81,000	12,500		151,000	101,000
9,000		125,000	81,000	12,700	1/2	151,000	101,000
9,100		125,000	81,000				
9,200		125,000	81,000				
9,300		125,000	81,000				
9,400		125,000	81,000				
9,500		125,000	81,000				
9,700		133,000	87,000				
9,800		133,000	87,000				
9,900		133,000	87,000				
10,000		133,000	87,000				

工具钻

产品代号 84800



P	M	K	N	S	H
●	○	●	○		

HSS-E | T | FN | ~5xD | DIN 338 | 130° | h8 | R | Cyl

芯厚 ≥ Ø 1,000 • 圆弧后刀面 • 高耐磨强度 • 耐磨损 高强度 • 宽槽 • 尤其适合孔深超过3xD
大于800N/mm²的灰铸铁和钢 • 热轧和冷轧钢 • 耐磨轴承钢 • 适于加工：高合金钢 • 热处理钢和淬硬钢

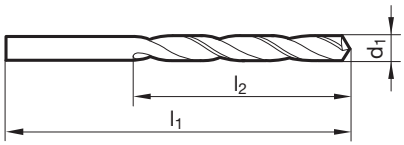
产品代号 84504



P	M	K	N	S	H
●	○	●	○		

HSS-E | F | FN | ~5xD | DIN 338 | 130° | h8 | R | Cyl

芯厚 ≥ Ø 1,000 • 圆弧后刀面 • 高耐磨强度 • 宽槽 • 耐磨损 高强度 • 尤其适合孔深超过3xD
大于800N/mm²的灰铸铁和钢 • 热轧和冷轧钢 • 耐磨轴承钢 • 适于加工：高合金钢 • 热处理钢和淬硬钢



d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
1,000		34,000	12,000	3,500		70,000	39,000
1,100		36,000	14,000	3,600		70,000	39,000
1,200		38,000	16,000	3,700		70,000	39,000
1,300		38,000	16,000	3,800		75,000	43,000
1,400		40,000	18,000	3,900		75,000	43,000
1,500		40,000	18,000	4,000		75,000	43,000
1,600		43,000	20,000	4,100		75,000	43,000
1,700		43,000	20,000	4,200		75,000	43,000
1,800		46,000	22,000	4,300		80,000	47,000
1,900		46,000	22,000	4,400		80,000	47,000
1,930		49,000	24,000	4,500		80,000	47,000
2,000		49,000	24,000	4,600		80,000	47,000
2,100		49,000	24,000	4,700		80,000	47,000
2,200		53,000	27,000	4,800		86,000	52,000
2,250		53,000	27,000	4,900		86,000	52,000
2,300		53,000	27,000	5,000		86,000	52,000
2,400		57,000	30,000	5,100		86,000	52,000
2,450		57,000	30,000	5,200		86,000	52,000
2,500		57,000	30,000	5,300		86,000	52,000
2,600		57,000	30,000	5,400		93,000	57,000
2,700		61,000	33,000	5,500		93,000	57,000
2,800		61,000	33,000	5,560	7/32	93,000	57,000
2,900		61,000	33,000	5,600		93,000	57,000
2,950		61,000	33,000	5,700		93,000	57,000
3,000		61,000	33,000	5,800		93,000	57,000
3,100		65,000	36,000	5,900		93,000	57,000
3,200		65,000	36,000	6,000		93,000	57,000
3,250		65,000	36,000	6,100		101,000	63,000
3,300		65,000	36,000	6,200		101,000	63,000
3,400		70,000	39,000	6,300		101,000	63,000

工具钻

d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
6,400		101,000	63,000	9,400		125,000	81,000
6,500		101,000	63,000	9,500		125,000	81,000
6,600		101,000	63,000	9,600		133,000	87,000
6,700		101,000	63,000	9,700		133,000	87,000
6,800		109,000	69,000	9,800		133,000	87,000
6,900		109,000	69,000	9,900		133,000	87,000
7,000		109,000	69,000	10,000		133,000	87,000
7,100		109,000	69,000	10,100		133,000	87,000
7,200		109,000	69,000	10,200		133,000	87,000
7,300		109,000	69,000	10,300		133,000	87,000
7,400		109,000	69,000	10,400		133,000	87,000
7,500		109,000	69,000	10,500		133,000	87,000
7,600		117,000	75,000	10,700		142,000	94,000
7,700		117,000	75,000	10,800		142,000	94,000
7,800		117,000	75,000	11,000		142,000	94,000
7,900		117,000	75,000	11,200		142,000	94,000
8,000		117,000	75,000	11,500		142,000	94,000
8,100		117,000	75,000	11,700		142,000	94,000
8,200		117,000	75,000	11,800		142,000	94,000
8,300		117,000	75,000	12,000		151,000	101,000
8,400		117,000	75,000	12,500		151,000	101,000
8,500		117,000	75,000	13,000		151,000	101,000
8,600		125,000	81,000				
8,700		125,000	81,000				
8,800		125,000	81,000				
8,900		125,000	81,000				
9,000		125,000	81,000				
9,100		125,000	81,000				
9,200		125,000	81,000				
9,300		125,000	81,000				

工具钻

产品代号 84804



P	M	K	N	S	H
•	•	•	•		

HSS-E | FU 500 DZ | ~5xD | DIN 338 | 118° | h8 | R | Cyl

芯厚 ≥ Ø 1,000 • 双后刀面 • 高耐磨强度 • 要求适合低进给率 • 要求低扭矩 • 普遍适用
强度小于800N/mm²的合金/非合金钢 • 热/冷锻钢 • 耐磨轴承钢 • 有色金属 • 铸件材料 • 不锈钢 • 塑料

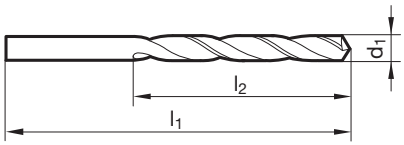
产品代号 84802



P	M	K	N	S	H
•	•	•	•		

HSS-E | T | FU 500 DZ | ~5xD | DIN 338 | 118° | h8 | R | Cyl

芯厚 ≥ Ø 1,000 • 双后刀面 • 高耐磨强度 • 要求适合低进给率 • 要求低扭矩 • 耐磨损 高强度 • 普遍适用
强度小于800N/mm²的合金/非合金钢 • 热/冷锻钢 • 耐磨轴承钢 • 有色金属 • 铸件材料 • 不锈钢 • 塑料



d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
1,000		34,000	12,000	3,600		70,000	39,000
1,100		36,000	14,000	3,700		70,000	39,000
1,200		38,000	16,000	3,800		75,000	43,000
1,300		38,000	16,000	3,900		75,000	43,000
1,400		40,000	18,000	3,970	5/32	75,000	43,000
1,500		40,000	18,000	4,000		75,000	43,000
1,600		43,000	20,000	4,100		75,000	43,000
1,700		43,000	20,000	4,200		75,000	43,000
1,800		46,000	22,000	4,300		80,000	47,000
1,900		46,000	22,000	4,370	11/64	80,000	47,000
2,000		49,000	24,000	4,400		80,000	47,000
2,100		49,000	24,000	4,500		80,000	47,000
2,200		53,000	27,000	4,600		80,000	47,000
2,300		53,000	27,000	4,650		80,000	47,000
2,380	3/32	57,000	30,000	4,700		80,000	47,000
2,400		57,000	30,000	4,760	3/16	86,000	52,000
2,500		57,000	30,000	4,800		86,000	52,000
2,600		57,000	30,000	4,900		86,000	52,000
2,700		61,000	33,000	5,000		86,000	52,000
2,780	7/64	61,000	33,000	5,100		86,000	52,000
2,800		61,000	33,000	5,160	13/64	86,000	52,000
2,900		61,000	33,000	5,200		86,000	52,000
3,000		61,000	33,000	5,300		86,000	52,000
3,100		65,000	36,000	5,400		93,000	57,000
3,170	1/8	65,000	36,000	5,500		93,000	57,000
3,200		65,000	36,000	5,550		93,000	57,000
3,300		65,000	36,000	5,560	7/32	93,000	57,000
3,400		70,000	39,000	5,600		93,000	57,000
3,500		70,000	39,000	5,700		93,000	57,000
3,570	9/64	70,000	39,000	5,800		93,000	57,000

工具钻

d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
5,900		93,000	57,000	9,000		125,000	81,000
5,950	15/64	93,000	57,000	9,100		125,000	81,000
6,000		93,000	57,000	9,200		125,000	81,000
6,100		101,000	63,000	9,250		125,000	81,000
6,200		101,000	63,000	9,300		125,000	81,000
6,300		101,000	63,000	9,400		125,000	81,000
6,350	1/4	101,000	63,000	9,500		125,000	81,000
6,400		101,000	63,000	9,600		133,000	87,000
6,500		101,000	63,000	9,700		133,000	87,000
6,600		101,000	63,000	9,800		133,000	87,000
6,700		101,000	63,000	9,900		133,000	87,000
6,800		109,000	69,000	10,000		133,000	87,000
6,900		109,000	69,000	10,100		133,000	87,000
7,000		109,000	69,000	10,200		133,000	87,000
7,100		109,000	69,000	10,300		133,000	87,000
7,140	9/32	109,000	69,000	10,500		133,000	87,000
7,200		109,000	69,000	11,000		142,000	94,000
7,300		109,000	69,000	11,110	7/16	142,000	94,000
7,400		109,000	69,000	11,200		142,000	94,000
7,500		109,000	69,000	11,500		142,000	94,000
7,600		117,000	75,000	12,000		151,000	101,000
7,700		117,000	75,000	12,500		151,000	101,000
7,800		117,000	75,000	13,000		151,000	101,000
7,900		117,000	75,000	13,500		160,000	108,000
7,940	5/16	117,000	75,000	14,000		160,000	108,000
8,000		117,000	75,000				
8,100		117,000	75,000				
8,200		117,000	75,000				
8,300		117,000	75,000				
8,400		117,000	75,000				
8,500		117,000	75,000				
8,600		125,000	81,000				
8,700		125,000	81,000				
8,730	11/32	125,000	81,000				
8,800		125,000	81,000				
8,900		125,000	81,000				

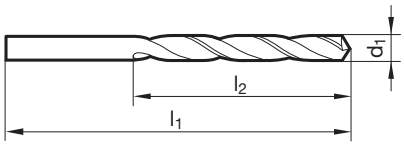
产品代号 81013



P	M	K	N	S	H
○	●		○	○	

HSS-E | IS | ~5xD | DIN 338 | 130° | h8 | R | Cyl

INOX-钻头 • 圆弧后刀面 • 高耐磨强度 • 耐磨损 高强度
适于加工：不锈钢/耐酸-/耐热奥氏体钢



d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
1,000		34,000	12,000	5,100		86,000	52,000
1,100		36,000	14,000	5,200		86,000	52,000
1,200		38,000	16,000	5,300		86,000	52,000
1,300		38,000	16,000	5,400		93,000	57,000
1,400		40,000	18,000	5,500		93,000	57,000
1,500		40,000	18,000	5,600		93,000	57,000
1,600		43,000	20,000	5,700		93,000	57,000
1,700		43,000	20,000	5,800		93,000	57,000
1,800		46,000	22,000	5,900		93,000	57,000
1,900		46,000	22,000	6,000		93,000	57,000
2,000		49,000	24,000	6,100		101,000	63,000
2,100		49,000	24,000	6,200		101,000	63,000
2,200		53,000	27,000	6,300		101,000	63,000
2,300		53,000	27,000	6,400		101,000	63,000
2,400		57,000	30,000	6,500		101,000	63,000
2,500		57,000	30,000	6,600		101,000	63,000
2,600		57,000	30,000	6,700		101,000	63,000
2,700		61,000	33,000	6,800		109,000	69,000
2,800		61,000	33,000	6,900		109,000	69,000
2,900		61,000	33,000	7,000		109,000	69,000
3,000		61,000	33,000	7,100		109,000	69,000
3,100		65,000	36,000	7,200		109,000	69,000
3,200		65,000	36,000	7,300		109,000	69,000
3,300		65,000	36,000	7,400		109,000	69,000
3,400		70,000	39,000	7,500		109,000	69,000
3,500		70,000	39,000	7,600		117,000	75,000
3,570	9/64	70,000	39,000	7,700		117,000	75,000
3,600		70,000	39,000	7,800		117,000	75,000
3,700		70,000	39,000	7,900		117,000	75,000
3,800		75,000	43,000	8,000		117,000	75,000
3,900		75,000	43,000	8,100		117,000	75,000
4,000		75,000	43,000	8,200		117,000	75,000
4,100		75,000	43,000	8,300		117,000	75,000
4,200		75,000	43,000	8,400		117,000	75,000
4,300		80,000	47,000	8,500		117,000	75,000
4,400		80,000	47,000	8,600		125,000	81,000
4,500		80,000	47,000	8,700		125,000	81,000
4,600		80,000	47,000	8,800		125,000	81,000
4,700		80,000	47,000	8,900		125,000	81,000
4,800		86,000	52,000	9,000		125,000	81,000
4,900		86,000	52,000	9,100		125,000	81,000
5,000		86,000	52,000	9,200		125,000	81,000

工具钻

d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
9,300		125,000	81,000	10,500		133,000	87,000
9,400		125,000	81,000	10,600		133,000	87,000
9,500		125,000	81,000	11,000		142,000	94,000
9,600		133,000	87,000	11,100		142,000	94,000
9,700		133,000	87,000	11,200		142,000	94,000
9,800		133,000	87,000	11,500		142,000	94,000
9,900		133,000	87,000	11,600		142,000	94,000
10,000		133,000	87,000	11,800		142,000	94,000
10,100		133,000	87,000	12,000		151,000	101,000
10,200		133,000	87,000	12,500		151,000	101,000
10,300		133,000	87,000	13,000		151,000	101,000
10,400		133,000	87,000				

HARTNER

工具钻

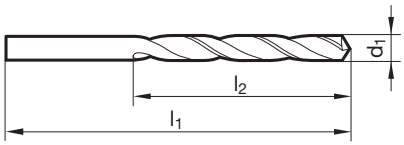
产品代号 81061



P	M	K	N	S	H
○	●			●	

HSS-E | S | ~5xD | DIN 338 | 130° | h8 | R | Cyl

芯厚 ≥ Ø 1,000 • 圆弧后刀面 • 高耐磨强度 • 耐磨损 高强度
钛及钛合金 • 不锈钢/耐酸-/耐热奥氏体钢 • 强度超过900 N/mm²的高强度/短屑钢 • 哈氏合金，镍合金，锰合金



d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
0,200		19,000	2,500	1,850		46,000	22,000
0,300		19,000	3,000	1,900		46,000	22,000
0,400		20,000	5,000	1,950		49,000	24,000
0,500		22,000	6,000	1,990		49,000	24,000
0,550		24,000	7,000	2,000		49,000	24,000
0,580		24,000	7,000	2,030		49,000	24,000
0,600		24,000	7,000	2,050		49,000	24,000
0,650		26,000	8,000	2,080		49,000	24,000
0,700		28,000	9,000	2,100		49,000	24,000
0,750		28,000	9,000	2,200		53,000	27,000
0,800		30,000	10,000	2,250		53,000	27,000
0,820		30,000	10,000	2,300		53,000	27,000
0,840		30,000	10,000	2,350		53,000	27,000
0,850		30,000	10,000	2,380	3/32	57,000	30,000
0,900		32,000	11,000	2,400		57,000	30,000
0,950		32,000	11,000	2,450		57,000	30,000
1,000		34,000	12,000	2,500		57,000	30,000
1,050		34,000	12,000	2,550		57,000	30,000
1,100		36,000	14,000	2,600		57,000	30,000
1,150		36,000	14,000	2,700		61,000	33,000
1,180		36,000	14,000	2,750		61,000	33,000
1,190	3/64	38,000	16,000	2,800		61,000	33,000
1,200		38,000	16,000	2,850		61,000	33,000
1,210		38,000	16,000	2,900		61,000	33,000
1,250		38,000	16,000	2,950		61,000	33,000
1,300		38,000	16,000	3,000		61,000	33,000
1,350		40,000	18,000	3,050		65,000	36,000
1,400		40,000	18,000	3,100		65,000	36,000
1,450		40,000	18,000	3,200		65,000	36,000
1,500		40,000	18,000	3,250		65,000	36,000
1,510		43,000	20,000	3,300		65,000	36,000
1,520		43,000	20,000	3,350		65,000	36,000
1,530		43,000	20,000	3,400		70,000	39,000
1,550		43,000	20,000	3,450		70,000	39,000
1,600		43,000	20,000	3,500		70,000	39,000
1,630		43,000	20,000	3,600		70,000	39,000
1,650		43,000	20,000	3,700		70,000	39,000
1,700		43,000	20,000	3,800		75,000	43,000
1,730		46,000	22,000	3,900		75,000	43,000
1,750		46,000	22,000	4,000		75,000	43,000
1,800		46,000	22,000	4,050		75,000	43,000
1,820		46,000	22,000	4,100		75,000	43,000

工具钻

d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
4,200		75,000	43,000	8,600		125,000	81,000
4,250		75,000	43,000	8,700		125,000	81,000
4,300		80,000	47,000	8,800		125,000	81,000
4,400		80,000	47,000	8,900		125,000	81,000
4,500		80,000	47,000	9,000		125,000	81,000
4,600		80,000	47,000	9,100		125,000	81,000
4,700		80,000	47,000	9,200		125,000	81,000
4,750		80,000	47,000	9,300		125,000	81,000
4,800		86,000	52,000	9,400		125,000	81,000
4,850		86,000	52,000	9,500		125,000	81,000
4,900		86,000	52,000	9,600		133,000	87,000
5,000		86,000	52,000	9,700		133,000	87,000
5,100		86,000	52,000	9,800		133,000	87,000
5,200		86,000	52,000	9,900		133,000	87,000
5,300		86,000	52,000	10,000		133,000	87,000
5,400		93,000	57,000	10,100		133,000	87,000
5,500		93,000	57,000	10,200		133,000	87,000
5,600		93,000	57,000	10,300		133,000	87,000
5,700		93,000	57,000	10,400		133,000	87,000
5,800		93,000	57,000	10,500		133,000	87,000
5,900		93,000	57,000	10,600		133,000	87,000
6,000		93,000	57,000	10,700		142,000	94,000
6,100		101,000	63,000	10,800		142,000	94,000
6,200		101,000	63,000	11,000		142,000	94,000
6,300		101,000	63,000	11,100		142,000	94,000
6,400		101,000	63,000	11,200		142,000	94,000
6,500		101,000	63,000	11,300		142,000	94,000
6,600		101,000	63,000	11,500		142,000	94,000
6,700		101,000	63,000	11,700		142,000	94,000
6,750	17/64	109,000	69,000	11,800		142,000	94,000
6,800		109,000	69,000	12,000		151,000	101,000
6,900		109,000	69,000	12,100		151,000	101,000
7,000		109,000	69,000	12,200		151,000	101,000
7,100		109,000	69,000	12,300	31/64	151,000	101,000
7,200		109,000	69,000	12,500		151,000	101,000
7,300		109,000	69,000	12,700	1/2	151,000	101,000
7,400		109,000	69,000	13,000		151,000	101,000
7,500		109,000	69,000	13,500		160,000	108,000
7,600		117,000	75,000	14,000		160,000	108,000
7,700		117,000	75,000	14,500		169,000	114,000
7,800		117,000	75,000	15,000		169,000	114,000
7,900		117,000	75,000	15,500		178,000	120,000
8,000		117,000	75,000	16,000		178,000	120,000
8,100		117,000	75,000	16,500		184,000	125,000
8,200		117,000	75,000	17,000		184,000	125,000
8,300		117,000	75,000	17,500		191,000	130,000
8,400		117,000	75,000				
8,500		117,000	75,000				

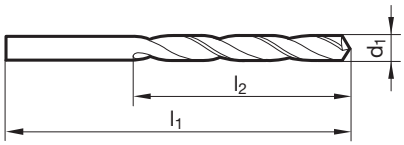
产品代号 81062



P	M	K	N	S	H
●	○	○	○		

HSS-E | P2000 | ~5xD | DIN 338 | 118° | h8 | R | Cyl

圆弧后刀面 • 普遍通用的波形磨削 • 高耐磨强度 • 耐磨损 高强度
强度小于1000N/mm²的钢 • 硅铝合金



d1 mm	l1 mm	l2 mm	d1 mm	l1 mm	l2 mm
1,000	34,000	12,000	5,200	86,000	52,000
1,100	36,000	14,000	5,300	86,000	52,000
1,200	38,000	16,000	5,400	93,000	57,000
1,300	38,000	16,000	5,500	93,000	57,000
1,400	40,000	18,000	5,600	93,000	57,000
1,500	40,000	18,000	5,700	93,000	57,000
1,600	43,000	20,000	5,800	93,000	57,000
1,700	43,000	20,000	5,900	93,000	57,000
1,800	46,000	22,000	6,000	93,000	57,000
1,900	46,000	22,000	6,100	101,000	63,000
2,000	49,000	24,000	6,200	101,000	63,000
2,100	49,000	24,000	6,300	101,000	63,000
2,200	53,000	27,000	6,400	101,000	63,000
2,300	53,000	27,000	6,500	101,000	63,000
2,400	57,000	30,000	6,600	101,000	63,000
2,500	57,000	30,000	6,700	101,000	63,000
2,600	57,000	30,000	6,800	109,000	69,000
2,700	61,000	33,000	6,900	109,000	69,000
2,800	61,000	33,000	7,000	109,000	69,000
2,900	61,000	33,000	7,100	109,000	69,000
3,000	61,000	33,000	7,200	109,000	69,000
3,100	65,000	36,000	7,300	109,000	69,000
3,200	65,000	36,000	7,400	109,000	69,000
3,300	65,000	36,000	7,500	109,000	69,000
3,400	70,000	39,000	7,600	117,000	75,000
3,500	70,000	39,000	7,700	117,000	75,000
3,600	70,000	39,000	7,800	117,000	75,000
3,700	70,000	39,000	7,900	117,000	75,000
3,800	75,000	43,000	8,000	117,000	75,000
3,900	75,000	43,000	8,100	117,000	75,000
4,000	75,000	43,000	8,200	117,000	75,000
4,100	75,000	43,000	8,300	117,000	75,000
4,200	75,000	43,000	8,400	117,000	75,000
4,300	80,000	47,000	8,500	117,000	75,000
4,400	80,000	47,000	8,600	125,000	81,000
4,500	80,000	47,000	8,700	125,000	81,000
4,600	80,000	47,000	8,800	125,000	81,000
4,700	80,000	47,000	8,900	125,000	81,000
4,800	86,000	52,000	9,000	125,000	81,000
4,900	86,000	52,000	9,100	125,000	81,000
5,000	86,000	52,000	9,200	125,000	81,000
5,100	86,000	52,000	9,300	125,000	81,000

工具钻

d1 mm	l1 mm	l2 mm	d1 mm	l1 mm	l2 mm
9,400	125,000	81,000	12,500	151,000	101,000
9,500	125,000	81,000	13,000	151,000	101,000
9,600	133,000	87,000			
9,700	133,000	87,000			
9,800	133,000	87,000			
9,900	133,000	87,000			
10,000	133,000	87,000			
10,200	133,000	87,000			
10,500	133,000	87,000			
11,000	142,000	94,000			
11,500	142,000	94,000			
12,000	151,000	101,000			

产品代号 84807



P	M	K	N	S	H
○	●			●	

HSS-E | T | S | ~5xD | DIN 338 | 130° | h8 | R | Cyl

芯厚 ≥ Ø 1,000 • 圆弧后刀面 • 高耐磨强度 • 耐磨损 高强度
钛及钛合金 • 不锈钢/耐酸-/耐热奥氏体钢 • 强度超过900 N/mm²的高强度/短屑钢 • 哈氏合金，镍合金，锰合金

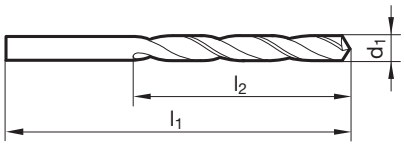
产品代号 84505



P	M	K	N	S	H
○	●			●	

HSS-E | F | S | ~5xD | DIN 338 | 130° | h8 | R | Cyl

芯厚 ≥ Ø 1,000 • 圆弧后刀面 • 高耐磨强度 • 耐磨损 高强度
钛及钛合金 • 不锈钢/耐酸-/耐热奥氏体钢 • 强度超过900 N/mm²的高强度/短屑钢 • 哈氏合金，镍合金，锰合金



d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
0,500		22,000	6,000	2,600		57,000	30,000
0,650		26,000	8,000	2,700		61,000	33,000
0,700		28,000	9,000	2,800		61,000	33,000
0,750		28,000	9,000	2,900		61,000	33,000
0,800		30,000	10,000	3,000		61,000	33,000
0,850		30,000	10,000	3,100		65,000	36,000
0,900		32,000	11,000	3,200		65,000	36,000
0,950		32,000	11,000	3,300		65,000	36,000
1,000		34,000	12,000	3,350		65,000	36,000
1,050		34,000	12,000	3,400		70,000	39,000
1,100		36,000	14,000	3,500		70,000	39,000
1,200		38,000	16,000	3,600		70,000	39,000
1,250		38,000	16,000	3,700		70,000	39,000
1,300		38,000	16,000	3,800		75,000	43,000
1,350		40,000	18,000	3,900		75,000	43,000
1,400		40,000	18,000	4,000		75,000	43,000
1,500		40,000	18,000	4,100		75,000	43,000
1,550		43,000	20,000	4,200		75,000	43,000
1,600		43,000	20,000	4,300		80,000	47,000
1,700		43,000	20,000	4,400		80,000	47,000
1,800		46,000	22,000	4,500		80,000	47,000
1,850		46,000	22,000	4,600		80,000	47,000
1,900		46,000	22,000	4,700		80,000	47,000
2,000		49,000	24,000	4,800		86,000	52,000
2,050		49,000	24,000	4,900		86,000	52,000
2,100		49,000	24,000	5,000		86,000	52,000
2,200		53,000	27,000	5,050		86,000	52,000
2,300		53,000	27,000	5,100		86,000	52,000
2,400		57,000	30,000	5,200		86,000	52,000
2,500		57,000	30,000	5,300		86,000	52,000

工具钻

d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
5,400		93,000	57,000	9,000		125,000	81,000
5,500		93,000	57,000	9,100		125,000	81,000
5,600		93,000	57,000	9,200		125,000	81,000
5,700		93,000	57,000	9,300		125,000	81,000
5,800		93,000	57,000	9,400		125,000	81,000
5,900		93,000	57,000	9,500		125,000	81,000
6,000		93,000	57,000	9,600		133,000	87,000
6,100		101,000	63,000	9,700		133,000	87,000
6,200		101,000	63,000	9,800		133,000	87,000
6,300		101,000	63,000	9,900		133,000	87,000
6,400		101,000	63,000	10,000		133,000	87,000
6,500		101,000	63,000	10,100		133,000	87,000
6,600		101,000	63,000	10,200		133,000	87,000
6,700		101,000	63,000	10,300		133,000	87,000
6,800		109,000	69,000	10,400		133,000	87,000
6,900		109,000	69,000	10,500		133,000	87,000
7,000		109,000	69,000	10,800		142,000	94,000
7,100		109,000	69,000	11,000		142,000	94,000
7,200		109,000	69,000	11,200		142,000	94,000
7,300		109,000	69,000	11,500		142,000	94,000
7,400		109,000	69,000	12,000		151,000	101,000
7,500		109,000	69,000	12,300	31/64	151,000	101,000
7,600		117,000	75,000	12,500		151,000	101,000
7,700		117,000	75,000	12,700	1/2	151,000	101,000
7,800		117,000	75,000	13,000		151,000	101,000
7,900		117,000	75,000				
8,000		117,000	75,000				
8,100		117,000	75,000				
8,200		117,000	75,000				
8,300		117,000	75,000				
8,400		117,000	75,000				
8,500		117,000	75,000				
8,600		125,000	81,000				
8,700		125,000	81,000				
8,800		125,000	81,000				
8,900		125,000	81,000				

工具钻

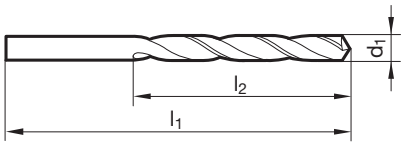
产品代号 81063



P	M	K	N	S	H
●	○	○	○		

HSS-E | M | P2000 | ~5xD | DIN 338 | 130° | h8 | R | Cyl

圆弧后刃面 • 普遍通用的波形磨削 • 耐磨损 高强度 • 高耐磨强度
强度小于1000N/mm²的钢 • 硅铝合金



d1 mm	l1 mm	l2 mm
3,300	65,000	36,000
3,500	70,000	39,000
4,200	75,000	43,000
4,500	80,000	47,000
5,000	86,000	52,000
6,000	93,000	57,000
6,500	101,000	63,000
6,800	109,000	69,000
7,500	109,000	69,000
8,000	117,000	75,000
8,500	117,000	75,000
9,000	125,000	81,000

d1 mm	l1 mm	l2 mm
9,500	125,000	81,000
10,000	133,000	87,000
10,500	133,000	87,000
11,000	142,000	94,000
12,000	151,000	101,000

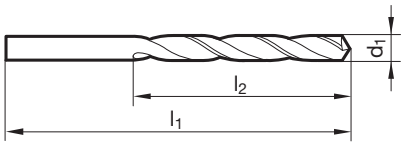
产品代号 84811



P	M	K	N	S	H
●	○	●	○	○	○

HSS-E-PM | T | FN 500 DZ | ~5xD | DIN 338 | 130° | h8 | R | Cyl

芯厚 ≥ Ø 1,000 • 圆弧后刀面 • PM-粉末冶金钻合金高速钢 • 刚性好 • 出色的耐磨性
适于加工：高合金钢 • 热处理钢和淬硬钢 • 铸铁,黄铜,青铜



d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
1,000		34,000	12,000	5,560	7/32	93,000	57,000
1,200		38,000	16,000	5,950	15/64	93,000	57,000
1,300		38,000	16,000	6,000		93,000	57,000
1,400		40,000	18,000	6,300		101,000	63,000
1,500		40,000	18,000	6,350	1/4	101,000	63,000
1,600		43,000	20,000	6,700		101,000	63,000
1,700		43,000	20,000	6,800		109,000	69,000
1,900		46,000	22,000	7,000		109,000	69,000
2,000		49,000	24,000	7,140	9/32	109,000	69,000
2,100		49,000	24,000	7,400		109,000	69,000
2,200		53,000	27,000	7,900		117,000	75,000
2,300		53,000	27,000	7,940	5/16	117,000	75,000
2,380	3/32	57,000	30,000	8,000		117,000	75,000
2,500		57,000	30,000	8,500		117,000	75,000
2,600		57,000	30,000	8,730	11/32	125,000	81,000
2,780	7/64	61,000	33,000	9,000		125,000	81,000
2,800		61,000	33,000	9,300		125,000	81,000
2,900		61,000	33,000	9,500		125,000	81,000
3,000		61,000	33,000	9,800		133,000	87,000
3,100		65,000	36,000	10,000		133,000	87,000
3,170	1/8	65,000	36,000	10,200		133,000	87,000
3,300		65,000	36,000	10,500		133,000	87,000
3,500		70,000	39,000	11,000		142,000	94,000
3,570	9/64	70,000	39,000	11,110	7/16	142,000	94,000
3,600		70,000	39,000	11,500		142,000	94,000
3,700		70,000	39,000	12,000		151,000	101,000
3,900		75,000	43,000	12,500		151,000	101,000
4,000		75,000	43,000	13,000		151,000	101,000
4,100		75,000	43,000	13,500		160,000	108,000
4,200		75,000	43,000	14,000		160,000	108,000
4,760	3/16	86,000	52,000				
4,800		86,000	52,000				
5,000		86,000	52,000				
5,160	13/64	86,000	52,000				
5,400		93,000	57,000				
5,500		93,000	57,000				

工具钻

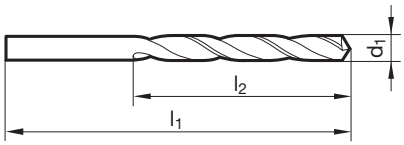
产品代号 81012



P	M	K	N	S	H
●	○	○	●	●	○

M42 | ◯ | N | ~5xD | DIN 338 | 135° | h8 | R | Cyl

芯厚 ≥ Ø 1,000 • 圆弧后刀面 • 出色的耐磨性 • 钴钼合金钢
中/高拉伸强度铬镍基合金 • 不锈钢/耐酸/耐热钢 • 耐磨板材 • 钢和青铜的刚度达到1400 N/mm² • 哈氏合金，镍合金，锰合金



d1 mm	l1 mm	l2 mm	d1 mm	l1 mm	l2 mm
1,000	34,000	12,000	5,200	86,000	52,000
1,100	36,000	14,000	5,300	86,000	52,000
1,200	38,000	16,000	5,400	93,000	57,000
1,300	38,000	16,000	5,500	93,000	57,000
1,400	40,000	18,000	5,600	93,000	57,000
1,500	40,000	18,000	5,700	93,000	57,000
1,600	43,000	20,000	5,800	93,000	57,000
1,700	43,000	20,000	5,900	93,000	57,000
1,800	46,000	22,000	6,000	93,000	57,000
1,900	46,000	22,000	6,100	101,000	63,000
2,000	49,000	24,000	6,200	101,000	63,000
2,100	49,000	24,000	6,300	101,000	63,000
2,200	53,000	27,000	6,400	101,000	63,000
2,300	53,000	27,000	6,500	101,000	63,000
2,400	57,000	30,000	6,600	101,000	63,000
2,500	57,000	30,000	6,700	101,000	63,000
2,600	57,000	30,000	6,800	109,000	69,000
2,700	61,000	33,000	6,900	109,000	69,000
2,800	61,000	33,000	7,000	109,000	69,000
2,900	61,000	33,000	7,100	109,000	69,000
3,000	61,000	33,000	7,200	109,000	69,000
3,100	65,000	36,000	7,300	109,000	69,000
3,200	65,000	36,000	7,400	109,000	69,000
3,300	65,000	36,000	7,500	109,000	69,000
3,400	70,000	39,000	7,600	117,000	75,000
3,500	70,000	39,000	7,700	117,000	75,000
3,600	70,000	39,000	7,800	117,000	75,000
3,700	70,000	39,000	7,900	117,000	75,000
3,800	75,000	43,000	8,000	117,000	75,000
3,900	75,000	43,000	8,100	117,000	75,000
4,000	75,000	43,000	8,200	117,000	75,000
4,100	75,000	43,000	8,300	117,000	75,000
4,200	75,000	43,000	8,400	117,000	75,000
4,300	80,000	47,000	8,500	117,000	75,000
4,400	80,000	47,000	8,600	125,000	81,000
4,500	80,000	47,000	8,700	125,000	81,000
4,600	80,000	47,000	8,800	125,000	81,000
4,700	80,000	47,000	8,900	125,000	81,000
4,800	86,000	52,000	9,000	125,000	81,000
4,900	86,000	52,000	9,100	125,000	81,000
5,000	86,000	52,000	9,200	125,000	81,000
5,100	86,000	52,000	9,300	125,000	81,000

工具钻

d1 mm	l1 mm	l2 mm	d1 mm	l1 mm	l2 mm
9,400	125,000	81,000	12,500	151,000	101,000
9,500	125,000	81,000	13,000	151,000	101,000
9,600	133,000	87,000	14,000	160,000	108,000
9,700	133,000	87,000			
9,800	133,000	87,000			
9,900	133,000	87,000			
10,000	133,000	87,000			
10,200	133,000	87,000			
10,500	133,000	87,000			
11,000	142,000	94,000			
11,500	142,000	94,000			
12,000	151,000	101,000			

工具钻

产品代号 89244

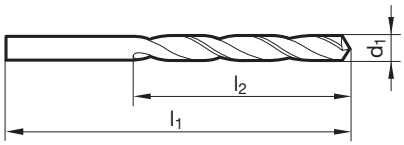


P	M	K	N	S	H
○	○	○	●	○	

VHM | N | ~5xD | WN | 118° | h7 | R | Cyl

芯厚 ≥ Ø 3,000 • 双后刀面 • 精密磨削过的主切削刃

适合加工：结构钢和淬硬钢 • 易切削钢和热处理钢 • 适合加工：灰铸铁 • 青铜、黄铜 • 铝和的铝合金 • 镁和镁合金 • 塑料及纤维增强塑料



d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
1,000		34,000	12,000	4,600		80,000	47,000
1,100		36,000	14,000	4,700		80,000	47,000
1,200		38,000	16,000	4,760	3/16	86,000	52,000
1,300		38,000	16,000	4,800		86,000	52,000
1,400		40,000	18,000	4,900		86,000	52,000
1,500		40,000	18,000	5,000		86,000	52,000
1,600		43,000	20,000	5,100		86,000	52,000
1,700		43,000	20,000	5,160	13/64	86,000	52,000
1,800		46,000	22,000	5,200		86,000	52,000
1,900		46,000	22,000	5,300		86,000	52,000
2,000		49,000	24,000	5,400		93,000	57,000
2,100		49,000	24,000	5,500		93,000	57,000
2,200		53,000	27,000	5,560	7/32	93,000	57,000
2,300		53,000	27,000	5,600		93,000	57,000
2,380	3/32	57,000	30,000	5,700		93,000	57,000
2,400		57,000	30,000	5,800		93,000	57,000
2,500		57,000	30,000	5,900		93,000	57,000
2,600		57,000	30,000	5,950	15/64	93,000	57,000
2,700		61,000	33,000	6,000		93,000	57,000
2,780	7/64	61,000	33,000	6,100		101,000	63,000
2,800		61,000	33,000	6,200		101,000	63,000
2,900		61,000	33,000	6,300		101,000	63,000
3,000		61,000	33,000	6,350	1/4	101,000	63,000
3,100		65,000	36,000	6,400		101,000	63,000
3,170	1/8	65,000	36,000	6,500		101,000	63,000
3,200		65,000	36,000	6,600		101,000	63,000
3,300		65,000	36,000	6,700		101,000	63,000
3,400		70,000	39,000	6,800		109,000	69,000
3,500		70,000	39,000	6,900		109,000	69,000
3,570	9/64	70,000	39,000	7,000		109,000	69,000
3,600		70,000	39,000	7,100		109,000	69,000
3,700		70,000	39,000	7,140	9/32	109,000	69,000
3,800		75,000	43,000	7,200		109,000	69,000
3,900		75,000	43,000	7,300		109,000	69,000
3,970	5/32	75,000	43,000	7,400		109,000	69,000
4,000		75,000	43,000	7,500		109,000	69,000
4,100		75,000	43,000	7,600		117,000	75,000
4,200		75,000	43,000	7,700		117,000	75,000
4,300		80,000	47,000	7,800		117,000	75,000
4,370	11/64	80,000	47,000	7,900		117,000	75,000
4,400		80,000	47,000	7,940	5/16	117,000	75,000
4,500		80,000	47,000	8,000		117,000	75,000

工具钻

d1 mm	inch	l1 mm	l2 mm
8,200		117,000	75,000
8,300		117,000	75,000
8,400		117,000	75,000
8,500		117,000	75,000
8,600		125,000	81,000
8,700		125,000	81,000
8,730	11/32	125,000	81,000
8,800		125,000	81,000
8,900		125,000	81,000
9,000		125,000	81,000
9,100		125,000	81,000
9,200		125,000	81,000
9,300		125,000	81,000
9,400		125,000	81,000
9,500		125,000	81,000
9,600		133,000	87,000
9,700		133,000	87,000
9,800		133,000	87,000
9,900		133,000	87,000
10,000		133,000	87,000
10,200		133,000	87,000
10,300		133,000	87,000
10,500		133,000	87,000
10,720	27/64	142,000	94,000
11,000		142,000	94,000
11,110	7/16	142,000	94,000
11,500		142,000	94,000
11,910	15/32	151,000	101,000
12,000		151,000	101,000

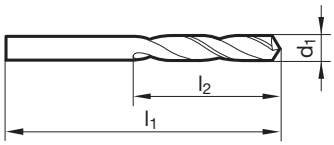
产品代号 81110



P	M	K	N	S	H
●		●	○		

HSS | >Ø 2,36 | N | ~3xD | DIN 1897 | 118° | h8 | R | Cyl

芯厚 ≥ Ø 1,000 • 圆弧后刀面 • 适用于自动/专用车床 • 适用于手动机床
薄壁材料 • 适于加工：合金/非合金钢和铸钢 • 灰铸铁,可锻铸铁和球墨铸铁 • 粉末冶金铁，铜镍锌合金,石墨



d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
0,500		20,000	3,000	3,100		49,000	18,000
0,600		21,000	3,500	3,200		49,000	18,000
0,700		23,000	4,500	3,250		49,000	18,000
0,800		24,000	5,000	3,300		49,000	18,000
0,850		24,000	5,000	3,350		49,000	18,000
0,900		25,000	5,500	3,400		52,000	20,000
1,000		26,000	6,000	3,500		52,000	20,000
1,050		26,000	6,000	3,600		52,000	20,000
1,100		28,000	7,000	3,650		52,000	20,000
1,200		30,000	8,000	3,700		52,000	20,000
1,250		30,000	8,000	3,750		52,000	20,000
1,300		30,000	8,000	3,800		55,000	22,000
1,350		32,000	9,000	3,850		55,000	22,000
1,400		32,000	9,000	3,900		55,000	22,000
1,500		32,000	9,000	4,000		55,000	22,000
1,550		34,000	10,000	4,100		55,000	22,000
1,600		34,000	10,000	4,200		55,000	22,000
1,650		34,000	10,000	4,250		55,000	22,000
1,700		34,000	10,000	4,300		58,000	24,000
1,750		36,000	11,000	4,400		58,000	24,000
1,800		36,000	11,000	4,500		58,000	24,000
1,900		36,000	11,000	4,600		58,000	24,000
1,950		38,000	12,000	4,650		58,000	24,000
2,000		38,000	12,000	4,700		58,000	24,000
2,050		38,000	12,000	4,750		58,000	24,000
2,100		38,000	12,000	4,800		62,000	26,000
2,200		40,000	13,000	4,850		62,000	26,000
2,250		40,000	13,000	4,900		62,000	26,000
2,300		40,000	13,000	4,950		62,000	26,000
2,400		43,000	14,000	5,000		62,000	26,000
2,450		43,000	14,000	5,050		62,000	26,000
2,500		43,000	14,000	5,100		62,000	26,000
2,550		43,000	14,000	5,200		62,000	26,000
2,600		43,000	14,000	5,250		62,000	26,000
2,650		43,000	14,000	5,300		62,000	26,000
2,700		46,000	16,000	5,400		66,000	28,000
2,750		46,000	16,000	5,500		66,000	28,000
2,800		46,000	16,000	5,600		66,000	28,000
2,900		46,000	16,000	5,700		66,000	28,000
2,950		46,000	16,000	5,750		66,000	28,000
3,000		46,000	16,000	5,800		66,000	28,000
3,050		49,000	18,000	5,850		66,000	28,000

HARTNER

短钻

d1 mm	inch	l1 mm	l2 mm
5,900		66,000	28,000
6,000		66,000	28,000
6,100		70,000	31,000
6,150		70,000	31,000
6,200		70,000	31,000
6,250		70,000	31,000
6,300		70,000	31,000
6,350	1/4	70,000	31,000
6,400		70,000	31,000
6,500		70,000	31,000
6,600		70,000	31,000
6,700		70,000	31,000
6,750	17/64	74,000	34,000
6,800		74,000	34,000
6,900		74,000	34,000
7,000		74,000	34,000
7,100		74,000	34,000
7,200		74,000	34,000
7,300		74,000	34,000
7,400		74,000	34,000
7,500		74,000	34,000
7,600		79,000	37,000
7,700		79,000	37,000
7,750		79,000	37,000
7,800		79,000	37,000
7,900		79,000	37,000
8,000		79,000	37,000
8,100		79,000	37,000
8,200		79,000	37,000
8,250		79,000	37,000
8,300		79,000	37,000
8,400		79,000	37,000
8,500		79,000	37,000
8,600		84,000	40,000
8,700		84,000	40,000
8,750		84,000	40,000
8,800		84,000	40,000
8,900		84,000	40,000
9,000		84,000	40,000
9,100		84,000	40,000
9,200		84,000	40,000
9,250		84,000	40,000
9,300		84,000	40,000
9,400		84,000	40,000
9,500		84,000	40,000
9,600		89,000	43,000
9,700		89,000	43,000
9,750		89,000	43,000
9,800		89,000	43,000
9,900		89,000	43,000
10,000		89,000	43,000
10,050		89,000	43,000
10,100		89,000	43,000
10,200		89,000	43,000
10,250		89,000	43,000
10,300		89,000	43,000
10,400		89,000	43,000
10,500		89,000	43,000
10,700		95,000	47,000
10,750		95,000	47,000
10,800		95,000	47,000
10,900		95,000	47,000
11,000		95,000	47,000
11,100		95,000	47,000
11,200		95,000	47,000
11,400		95,000	47,000

d1 mm	inch	l1 mm	l2 mm
11,500		95,000	47,000
11,700		95,000	47,000
11,800		95,000	47,000
12,000		102,000	51,000
12,050		102,000	51,000
12,200		102,000	51,000
12,300	31/64	102,000	51,000
12,500		102,000	51,000
12,600		102,000	51,000
12,700		102,000	51,000
12,750		102,000	51,000
12,900		102,000	51,000
13,000		102,000	51,000
13,100	33/64	102,000	51,000
13,200		102,000	51,000
13,500		107,000	54,000
13,600		107,000	54,000
13,750		107,000	54,000
14,000		107,000	54,000
14,200		111,000	56,000
14,250		111,000	56,000
14,300		111,000	56,000
14,500		111,000	56,000
14,750		111,000	56,000
15,000		111,000	56,000
15,250		115,000	58,000
15,500		115,000	58,000
15,750		115,000	58,000
16,000		115,000	58,000
16,250		119,000	60,000
16,270	41/64	119,000	60,000
16,500		119,000	60,000
17,000		119,000	60,000
17,500		123,000	62,000
18,000		123,000	62,000
18,200		127,000	64,000
18,500		127,000	64,000
18,750		127,000	64,000
19,000		127,000	64,000
19,100		131,000	66,000
19,500		131,000	66,000
20,000		131,000	66,000
20,500		136,000	68,000
21,000		136,000	68,000
21,500		141,000	70,000
22,000		141,000	70,000
22,500		146,000	72,000
23,000		146,000	72,000
23,500		146,000	72,000
24,000		151,000	75,000
24,500		151,000	75,000
25,000	63/64	151,000	75,000
26,000		156,000	78,000
26,500		156,000	78,000
27,000		162,000	81,000
27,500		162,000	81,000
28,000		162,000	81,000
28,750		168,000	84,000
29,000		168,000	84,000
30,000		168,000	84,000
31,000		174,000	87,000
32,000		180,000	90,000
39,500		200,000	100,000

短钻

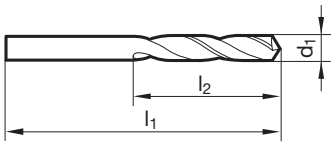
产品代号 81115



P	M	K	N	S	H
●		●	○		

HSS | >Ø 5,00 | N | ~3xD | DIN 1897 | 118° | h8 | L | Cyl

芯厚 ≥ Ø 14,200 • 圆弧后刀面 • 适用于自动/专用车床
薄壁材料 • 适于加工：合金/非合金钢和铸钢 • 灰铸铁,可锻铸铁和球墨铸铁 • 粉末冶金铁，铜镍锌合金,石墨



d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
0,500		20,000	3,000	3,350		49,000	18,000
0,550		21,000	3,500	3,400		52,000	20,000
0,700		23,000	4,500	3,450		52,000	20,000
0,750		23,000	4,500	3,500		52,000	20,000
0,800		24,000	5,000	3,600		52,000	20,000
0,850		24,000	5,000	3,700		52,000	20,000
0,950		25,000	5,500	3,750		52,000	20,000
1,000		26,000	6,000	3,800		55,000	22,000
1,150		28,000	7,000	3,850		55,000	22,000
1,180		28,000	7,000	4,000		55,000	22,000
1,250		30,000	8,000	4,100		55,000	22,000
1,330		32,000	9,000	4,150		55,000	22,000
1,350		32,000	9,000	4,200		55,000	22,000
1,500		32,000	9,000	4,250		55,000	22,000
1,550		34,000	10,000	4,300		58,000	24,000
1,600		34,000	10,000	4,400		58,000	24,000
1,700		34,000	10,000	4,450		58,000	24,000
1,710		36,000	11,000	4,500		58,000	24,000
1,800		36,000	11,000	4,600		58,000	24,000
1,830		36,000	11,000	4,700		58,000	24,000
1,900		36,000	11,000	4,750		58,000	24,000
1,980	5/64	38,000	12,000	4,800		62,000	26,000
2,000		38,000	12,000	4,850		62,000	26,000
2,100		38,000	12,000	4,900		62,000	26,000
2,200		40,000	13,000	5,000		62,000	26,000
2,400		43,000	14,000	5,100		62,000	26,000
2,420		43,000	14,000	5,200		62,000	26,000
2,500		43,000	14,000	5,250		62,000	26,000
2,550		43,000	14,000	5,300		62,000	26,000
2,600		43,000	14,000	5,400		66,000	28,000
2,720		46,000	16,000	5,500		66,000	28,000
2,800		46,000	16,000	5,600		66,000	28,000
2,820		46,000	16,000	5,700		66,000	28,000
2,850		46,000	16,000	5,750		66,000	28,000
2,900		46,000	16,000	5,800		66,000	28,000
3,000		46,000	16,000	5,900		66,000	28,000
3,010		49,000	18,000	5,950	15/64	66,000	28,000
3,050		49,000	18,000	6,000		66,000	28,000
3,100		49,000	18,000	6,100		70,000	31,000
3,200		49,000	18,000	6,150		70,000	31,000
3,250		49,000	18,000	6,200		70,000	31,000
3,300		49,000	18,000	6,400		70,000	31,000

短钻

d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
6,500		70,000	31,000	11,250		95,000	47,000
6,600		70,000	31,000	11,300		95,000	47,000
6,700		70,000	31,000	11,500		95,000	47,000
6,750	17/64	74,000	34,000	11,750		95,000	47,000
6,800		74,000	34,000	11,800		95,000	47,000
6,900		74,000	34,000	11,900		102,000	51,000
7,000		74,000	34,000	12,000		102,000	51,000
7,100		74,000	34,000	12,100		102,000	51,000
7,200		74,000	34,000	12,200		102,000	51,000
7,300		74,000	34,000	12,500		102,000	51,000
7,400		74,000	34,000	12,750		102,000	51,000
7,500		74,000	34,000	12,900		102,000	51,000
7,600		79,000	37,000	13,000		102,000	51,000
7,700		79,000	37,000	13,200		102,000	51,000
7,750		79,000	37,000	13,250		107,000	54,000
7,800		79,000	37,000	13,400		107,000	54,000
7,900		79,000	37,000	13,500		107,000	54,000
8,000		79,000	37,000	13,600		107,000	54,000
8,100		79,000	37,000	13,750		107,000	54,000
8,200		79,000	37,000	13,800		107,000	54,000
8,300		79,000	37,000	14,000		107,000	54,000
8,400		79,000	37,000	14,200		111,000	56,000
8,500		79,000	37,000	14,250		111,000	56,000
8,600		84,000	40,000	14,300		111,000	56,000
8,700		84,000	40,000	14,500		111,000	56,000
8,750		84,000	40,000	14,700		111,000	56,000
8,800		84,000	40,000	14,750		111,000	56,000
8,900		84,000	40,000	15,000		111,000	56,000
9,000		84,000	40,000	15,200		115,000	58,000
9,100		84,000	40,000	15,600		115,000	58,000
9,200		84,000	40,000	15,700		115,000	58,000
9,250		84,000	40,000	16,000		115,000	58,000
9,300		84,000	40,000	16,500		119,000	60,000
9,400		84,000	40,000	17,000		119,000	60,000
9,500		84,000	40,000	18,000		123,000	62,000
9,600		89,000	43,000	19,000		127,000	64,000
9,700		89,000	43,000	20,000		131,000	66,000
9,750		89,000	43,000	29,750		168,000	84,000
10,000		89,000	43,000	30,000		168,000	84,000
10,100		89,000	43,000	31,500		174,000	87,000
10,200		89,000	43,000	36,000		193,000	96,000
10,300		89,000	43,000	36,500		193,000	96,000
10,500		89,000	43,000				
10,600		89,000	43,000				
10,700		95,000	47,000				
10,800		95,000	47,000				
11,000		95,000	47,000				
11,200		95,000	47,000				

短钻

产品代号 84400



P	M	K	N	S	H
●		●	○		

HSS | T | N | ~3xD | DIN 1897 | 118° | h8 | R | Cyl

芯厚 ≥ Ø 1,000 • 圆弧后刀面 • 适用于自动/专用车床 • 适用于手动机床
薄壁材料 • 适于加工：合金/非合金钢和铸钢 • 灰铸铁,可锻铸铁和球墨铸铁 • 粉末冶金铁，铜镍锌合金,石墨

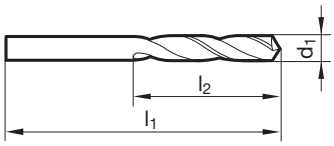
产品代号 84501



P	M	K	N	S	H
●		●	●		

HSS | F | N | ~3xD | DIN 1897 | 118° | h8 | R | Cyl

芯厚 ≥ Ø 1,000 • 圆弧后刀面 • 适用于自动/专用车床 • 适用于手动机床
薄壁材料 • 适于加工：合金/非合金钢和铸钢 • 灰铸铁,可锻铸铁和球墨铸铁 • 粉末冶金铁，铜镍锌合金,石墨



d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
1,000		26,000	6,000	3,650		52,000	20,000
1,100		28,000	7,000	3,700		52,000	20,000
1,200		30,000	8,000	3,800		55,000	22,000
1,300		30,000	8,000	3,900		55,000	22,000
1,350		32,000	9,000	4,000		55,000	22,000
1,400		32,000	9,000	4,100		55,000	22,000
1,450		32,000	9,000	4,200		55,000	22,000
1,500		32,000	9,000	4,300		58,000	24,000
1,600		34,000	10,000	4,400		58,000	24,000
1,700		34,000	10,000	4,500		58,000	24,000
1,800		36,000	11,000	4,600		58,000	24,000
1,900		36,000	11,000	4,700		58,000	24,000
2,000		38,000	12,000	4,800		62,000	26,000
2,100		38,000	12,000	4,900		62,000	26,000
2,200		40,000	13,000	5,000		62,000	26,000
2,300		40,000	13,000	5,100		62,000	26,000
2,400		43,000	14,000	5,200		62,000	26,000
2,500		43,000	14,000	5,300		62,000	26,000
2,600		43,000	14,000	5,400		66,000	28,000
2,700		46,000	16,000	5,500		66,000	28,000
2,800		46,000	16,000	5,600		66,000	28,000
2,900		46,000	16,000	5,700		66,000	28,000
3,000		46,000	16,000	5,800		66,000	28,000
3,100		49,000	18,000	5,900		66,000	28,000
3,200		49,000	18,000	6,000		66,000	28,000
3,300		49,000	18,000	6,100		70,000	31,000
3,400		52,000	20,000	6,200		70,000	31,000
3,450		52,000	20,000	6,300		70,000	31,000
3,500		52,000	20,000	6,400		70,000	31,000
3,600		52,000	20,000	6,500		70,000	31,000

短钻

d1 mm	inch	l1 mm	l2 mm
6,600		70,000	31,000
6,700		70,000	31,000
6,800		74,000	34,000
6,900		74,000	34,000
7,000		74,000	34,000
7,100		74,000	34,000
7,200		74,000	34,000
7,300		74,000	34,000
7,400		74,000	34,000
7,500		74,000	34,000
7,600		79,000	37,000
7,700		79,000	37,000
7,800		79,000	37,000
7,900		79,000	37,000
8,000		79,000	37,000
8,100		79,000	37,000
8,200		79,000	37,000
8,300		79,000	37,000
8,400		79,000	37,000
8,500		79,000	37,000
8,600		84,000	40,000
8,700		84,000	40,000
8,800		84,000	40,000
8,900		84,000	40,000
9,000		84,000	40,000
9,100		84,000	40,000
9,200		84,000	40,000
9,300		84,000	40,000
9,400		84,000	40,000
9,500		84,000	40,000
9,600		89,000	43,000
9,700		89,000	43,000
9,800		89,000	43,000
9,900		89,000	43,000
10,000		89,000	43,000
10,100		89,000	43,000
10,200		89,000	43,000
10,300		89,000	43,000
10,400		89,000	43,000
10,500		89,000	43,000
10,600		89,000	43,000
10,720	27/64	95,000	47,000
10,800		95,000	47,000
11,000		95,000	47,000
11,200		95,000	47,000
11,300		95,000	47,000
11,400		95,000	47,000
11,500		95,000	47,000
11,700		95,000	47,000
11,800		95,000	47,000
11,900		102,000	51,000
12,000		102,000	51,000
12,100		102,000	51,000
12,200		102,000	51,000
12,300	31/64	102,000	51,000
12,500		102,000	51,000
12,700	1/2	102,000	51,000
12,800		102,000	51,000
13,000		102,000	51,000
13,200		102,000	51,000
13,500		107,000	54,000
13,800		107,000	54,000
14,000		107,000	54,000
14,200		111,000	56,000
14,500		111,000	56,000
14,800		111,000	56,000
15,000		111,000	56,000
15,300		115,000	58,000
15,500		115,000	58,000
16,000		115,000	58,000
16,500		119,000	60,000
17,000		119,000	60,000
17,500		123,000	62,000
18,000		123,000	62,000
19,000		127,000	64,000
19,500		131,000	66,000
20,000		131,000	66,000
20,500		136,000	68,000
21,000		136,000	68,000
21,500		141,000	70,000
22,000		141,000	70,000
22,500		146,000	72,000
23,000		146,000	72,000
24,000		151,000	75,000
24,500		151,000	75,000
25,000		151,000	75,000

短钻

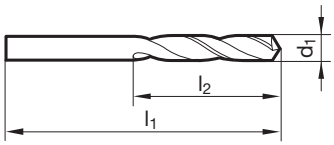
产品代号 81120



P	M	K	N	S	H
			•		

HSS | ○ | H | ~3xD | DIN 1897 | 118° | h8 | R | Cyl

芯厚 ≥ Ø 15,000 • 圆弧后刀面
脆硬的材料 • 黄铜，镁合金 • 青铜,磷青铜 • 石板，电木，酚醛树脂



d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
1,200		30,000	8,000	5,000		62,000	26,000
1,400		32,000	9,000	5,200		62,000	26,000
1,500		32,000	9,000	5,300		62,000	26,000
1,600		34,000	10,000	5,400		66,000	28,000
1,700		34,000	10,000	5,500		66,000	28,000
1,900		36,000	11,000	5,600		66,000	28,000
2,000		38,000	12,000	5,700		66,000	28,000
2,350		40,000	13,000	5,800		66,000	28,000
2,380	3/32	43,000	14,000	6,000		66,000	28,000
2,400		43,000	14,000	6,100		70,000	31,000
2,500		43,000	14,000	6,200		70,000	31,000
2,600		43,000	14,000	6,500		70,000	31,000
2,650		43,000	14,000	7,000		74,000	34,000
2,700		46,000	16,000	7,500		74,000	34,000
2,800		46,000	16,000	8,000		79,000	37,000
2,950		46,000	16,000	8,500		79,000	37,000
3,000		46,000	16,000	8,600		84,000	40,000
3,100		49,000	18,000	9,000		84,000	40,000
3,200		49,000	18,000	9,500		84,000	40,000
3,250		49,000	18,000	10,000		89,000	43,000
3,300		49,000	18,000	10,200		89,000	43,000
3,400		52,000	20,000	10,500		89,000	43,000
3,500		52,000	20,000	11,000		95,000	47,000
3,700		52,000	20,000	12,000		102,000	51,000
3,800		55,000	22,000	13,000		102,000	51,000
3,900		55,000	22,000	14,000		107,000	54,000
4,000		55,000	22,000	15,000		111,000	56,000
4,100		55,000	22,000				
4,200		55,000	22,000				
4,300		58,000	24,000				
4,400		58,000	24,000				
4,500		58,000	24,000				
4,600		58,000	24,000				
4,700		58,000	24,000				
4,800		62,000	26,000				
4,900		62,000	26,000				

短钻

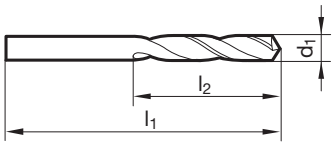
产品代号 81130



P	M	K	N	S	H
			•		

HSS | W | ~3xD | DIN 1897 | 130° | h8 | R | Cyl

芯厚 ≥ Ø 2,500 • 圆弧后刀面
适于加工：软/长屑材料 • 铝及铝合金 • 锌,精炼铜,硅,电子材料 • 软复合材料、木头



d1 mm	l1 mm	l2 mm	d1 mm	l1 mm	l2 mm
1,500	32,000	9,000	5,700	66,000	28,000
2,000	38,000	12,000	5,800	66,000	28,000
2,200	40,000	13,000	6,000	66,000	28,000
2,500	43,000	14,000	6,400	70,000	31,000
2,600	43,000	14,000	6,500	70,000	31,000
2,700	46,000	16,000	6,800	74,000	34,000
2,800	46,000	16,000	7,000	74,000	34,000
3,000	46,000	16,000	7,500	74,000	34,000
3,100	49,000	18,000	7,800	79,000	37,000
3,200	49,000	18,000	8,000	79,000	37,000
3,300	49,000	18,000	8,500	79,000	37,000
3,400	52,000	20,000	9,000	84,000	40,000
3,500	52,000	20,000	9,500	84,000	40,000
3,800	55,000	22,000	10,000	89,000	43,000
3,900	55,000	22,000	10,500	89,000	43,000
4,000	55,000	22,000	11,000	95,000	47,000
4,100	55,000	22,000	12,000	102,000	51,000
4,200	55,000	22,000	12,500	102,000	51,000
4,300	58,000	24,000	13,000	102,000	51,000
4,500	58,000	24,000	14,000	107,000	54,000
4,900	62,000	26,000	15,000	111,000	56,000
5,000	62,000	26,000	16,000	115,000	58,000
5,100	62,000	26,000			
5,300	62,000	26,000			

短钻

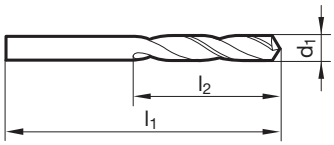
产品代号 81140



P	M	K	N	S	H
●	○	○	●		

HSS | <Ø 2,36 >Ø 16,0 | FN | ~3xD | DIN 1897 | 130° | h8 | R | Cyl

芯厚 ≥ Ø 1,500 • 圆弧后刀面 • 适合加工高强度钢
易切削钢 • 不锈钢/耐酸钢 • ≤800 N/mm²的热处理钢和淬硬钢 • 非长屑铝/铜合金



d1 mm	inch	l1 mm	l2 mm
1,500		32,000	9,000
1,600		34,000	10,000
1,800		36,000	11,000
2,000		38,000	12,000
2,100		38,000	12,000
2,200		40,000	13,000
2,300		40,000	13,000
2,350		40,000	13,000
2,400		43,000	14,000
2,500		43,000	14,000
2,600		43,000	14,000
2,700		46,000	16,000
2,800		46,000	16,000
2,900		46,000	16,000
3,000		46,000	16,000
3,100		49,000	18,000
3,150		49,000	18,000
3,200		49,000	18,000
3,300		49,000	18,000
3,400		52,000	20,000
3,500		52,000	20,000
3,700		52,000	20,000
4,000		55,000	22,000
4,100		55,000	22,000
4,200		55,000	22,000
4,300		58,000	24,000
4,500		58,000	24,000
4,600		58,000	24,000
4,700		58,000	24,000
4,800		62,000	26,000
4,900		62,000	26,000
5,000		62,000	26,000
5,100		62,000	26,000
5,200		62,000	26,000
5,300		62,000	26,000
5,400		66,000	28,000
5,500		66,000	28,000
5,600		66,000	28,000
5,700		66,000	28,000
5,800		66,000	28,000
5,900		66,000	28,000
6,000		66,000	28,000

d1 mm	inch	l1 mm	l2 mm
6,100		70,000	31,000
6,300		70,000	31,000
6,400		70,000	31,000
6,500		70,000	31,000
6,600		70,000	31,000
6,700		70,000	31,000
6,800		74,000	34,000
7,000		74,000	34,000
7,100		74,000	34,000
7,400		74,000	34,000
7,800		79,000	37,000
8,000		79,000	37,000
8,100		79,000	37,000
8,300		79,000	37,000
8,400		79,000	37,000
8,500		79,000	37,000
8,600		84,000	40,000
8,900		84,000	40,000
9,000		84,000	40,000
9,100		84,000	40,000
9,200		84,000	40,000
9,300		84,000	40,000
9,400		84,000	40,000
9,500		84,000	40,000
9,600		89,000	43,000
9,700		89,000	43,000
10,000		89,000	43,000
10,500		89,000	43,000
11,000		95,000	47,000
11,500		95,000	47,000
12,300	31/64	102,000	51,000
12,500		102,000	51,000
13,000		102,000	51,000
15,000		111,000	56,000
15,500		115,000	58,000

HARTNER

短钻

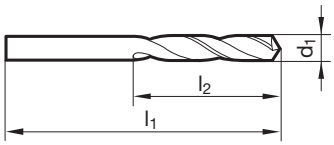
产品代号 81145



P	M	K	N	S	H
●	○	○	●		

HSS | <Ø 2,36 >Ø 16,0 | FN | ~3xD | DIN 1897 | 130° | h8 | L | Cyl

芯厚 ≥ Ø 1,000 • 圆弧后刀面 • 适合加工高强度钢
易切削钢 • 不锈钢/耐酸钢 • ≤800 N/mm²的热处理钢和淬硬钢 • 非长屑铝/铜合金



d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
1,000		26,000	6,000	3,700		52,000	20,000
1,100		28,000	7,000	3,800		55,000	22,000
1,250		30,000	8,000	3,900		55,000	22,000
1,300		30,000	8,000	4,000		55,000	22,000
1,400		32,000	9,000	4,100		55,000	22,000
1,500		32,000	9,000	4,200		55,000	22,000
1,600		34,000	10,000	4,300		58,000	24,000
1,650		34,000	10,000	4,400		58,000	24,000
1,700		34,000	10,000	4,500		58,000	24,000
1,800		36,000	11,000	4,600		58,000	24,000
1,850		36,000	11,000	4,650		58,000	24,000
1,900		36,000	11,000	4,700		58,000	24,000
2,000		38,000	12,000	4,800		62,000	26,000
2,100		38,000	12,000	4,900		62,000	26,000
2,200		40,000	13,000	5,000		62,000	26,000
2,250		40,000	13,000	5,100		62,000	26,000
2,300		40,000	13,000	5,200		62,000	26,000
2,350		40,000	13,000	5,300		62,000	26,000
2,400		43,000	14,000	5,400		66,000	28,000
2,500		43,000	14,000	5,500		66,000	28,000
2,550		43,000	14,000	5,600		66,000	28,000
2,600		43,000	14,000	5,700		66,000	28,000
2,650		43,000	14,000	5,800		66,000	28,000
2,700		46,000	16,000	5,900		66,000	28,000
2,750		46,000	16,000	6,000		66,000	28,000
2,780	7/64	46,000	16,000	6,100		70,000	31,000
2,800		46,000	16,000	6,200		70,000	31,000
2,850		46,000	16,000	6,300		70,000	31,000
2,870		46,000	16,000	6,500		70,000	31,000
2,900		46,000	16,000	6,600		70,000	31,000
2,950		46,000	16,000	6,700		70,000	31,000
3,000		46,000	16,000	6,800		74,000	34,000
3,100		49,000	18,000	6,900		74,000	34,000
3,150		49,000	18,000	7,000		74,000	34,000
3,170	1/8	49,000	18,000	7,500		74,000	34,000
3,200		49,000	18,000	7,600		79,000	37,000
3,250		49,000	18,000	7,800		79,000	37,000
3,300		49,000	18,000	7,900		79,000	37,000
3,400		52,000	20,000	8,000		79,000	37,000
3,500		52,000	20,000	8,200		79,000	37,000
3,650		52,000	20,000	8,300		79,000	37,000
3,680		52,000	20,000	8,400		79,000	37,000

短钻

d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
8,500		79,000	37,000	12,500		102,000	51,000
8,600		84,000	40,000	16,000		115,000	58,000
8,700		84,000	40,000				
8,800		84,000	40,000				
9,000		84,000	40,000				
9,200		84,000	40,000				
9,500		84,000	40,000				
9,700		89,000	43,000				
10,000		89,000	43,000				
10,500		89,000	43,000				
11,000		95,000	47,000				
11,500		95,000	47,000				

短钻

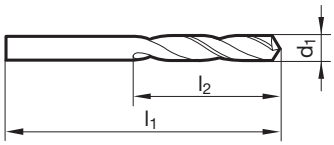
产品代号 81173



P	M	K	N	S	H
○	●		○	○	

HSS-E | IS | ~3xD | DIN 1897 | 130° | h8 | R | Cyl

INOX-钻头 • 圆弧后刀面 • 高耐磨强度 • 耐磨损 高强度
适于加工：不锈钢/耐酸-/耐热奥氏体钢



d1 mm	l1 mm	l2 mm	d1 mm	l1 mm	l2 mm
1,000	26,000	6,000	5,600	66,000	28,000
1,100	28,000	7,000	5,800	66,000	28,000
1,200	30,000	8,000	5,900	66,000	28,000
1,300	30,000	8,000	6,000	66,000	28,000
1,400	32,000	9,000	6,100	70,000	31,000
1,500	32,000	9,000	6,300	70,000	31,000
1,600	34,000	10,000	6,500	70,000	31,000
1,700	34,000	10,000	6,600	70,000	31,000
1,800	36,000	11,000	6,700	70,000	31,000
2,000	38,000	12,000	6,800	74,000	34,000
2,100	38,000	12,000	6,900	74,000	34,000
2,200	40,000	13,000	7,000	74,000	34,000
2,300	40,000	13,000	7,100	74,000	34,000
2,400	43,000	14,000	7,400	74,000	34,000
2,500	43,000	14,000	7,500	74,000	34,000
2,600	43,000	14,000	7,600	79,000	37,000
2,700	46,000	16,000	7,800	79,000	37,000
2,800	46,000	16,000	7,900	79,000	37,000
2,900	46,000	16,000	8,000	79,000	37,000
3,000	46,000	16,000	8,100	79,000	37,000
3,100	49,000	18,000	8,200	79,000	37,000
3,200	49,000	18,000	8,500	79,000	37,000
3,300	49,000	18,000	8,700	84,000	40,000
3,400	52,000	20,000	9,000	84,000	40,000
3,500	52,000	20,000	9,200	84,000	40,000
3,600	52,000	20,000	9,500	84,000	40,000
3,800	55,000	22,000	10,000	89,000	43,000
3,900	55,000	22,000	10,200	89,000	43,000
4,000	55,000	22,000	10,500	89,000	43,000
4,100	55,000	22,000	11,000	95,000	47,000
4,200	55,000	22,000	11,500	95,000	47,000
4,300	58,000	24,000	12,000	102,000	51,000
4,500	58,000	24,000			
4,600	58,000	24,000			
4,700	58,000	24,000			
4,800	62,000	26,000			
4,900	62,000	26,000			
5,000	62,000	26,000			
5,100	62,000	26,000			
5,200	62,000	26,000			
5,300	62,000	26,000			
5,500	66,000	28,000			

短钻

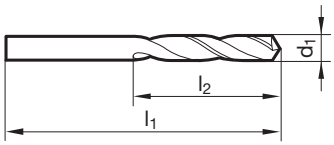
产品代号 81171



P	M	K	N	S	H
●	●	●	○	●	○

HSS-E | >Ø 2,36 | V | ~3xD | DIN 1897 | 118° | h8 | R | Cyl

芯厚 ≥ Ø 1,000 • 圆弧后刀面 • 高耐磨强度 • 耐磨损 高强度
不锈钢/耐酸钢 • 弹簧钢 • 奥氏体不锈钢 • 哈氏合金，镍合金，锰合金



d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
0,400		19,000	2,500	2,450		43,000	14,000
0,500		20,000	3,000	2,470		43,000	14,000
0,600		21,000	3,500	2,500		43,000	14,000
0,650		22,000	4,000	2,550		43,000	14,000
0,700		23,000	4,500	2,600		43,000	14,000
0,750		23,000	4,500	2,650		43,000	14,000
0,800		24,000	5,000	2,700		46,000	16,000
0,860		25,000	5,500	2,750		46,000	16,000
0,870		25,000	5,500	2,800		46,000	16,000
0,900		25,000	5,500	2,900		46,000	16,000
0,950		25,000	5,500	3,000		46,000	16,000
1,000		26,000	6,000	3,050		49,000	18,000
1,030		26,000	6,000	3,100		49,000	18,000
1,100		28,000	7,000	3,200		49,000	18,000
1,150		28,000	7,000	3,250		49,000	18,000
1,200		30,000	8,000	3,300		49,000	18,000
1,250		30,000	8,000	3,400		52,000	20,000
1,280		30,000	8,000	3,500		52,000	20,000
1,300		30,000	8,000	3,550		52,000	20,000
1,350		32,000	9,000	3,600		52,000	20,000
1,400		32,000	9,000	3,700		52,000	20,000
1,450		32,000	9,000	3,750		52,000	20,000
1,500		32,000	9,000	3,800		55,000	22,000
1,550		34,000	10,000	3,900		55,000	22,000
1,600		34,000	10,000	4,000		55,000	22,000
1,650		34,000	10,000	4,100		55,000	22,000
1,700		34,000	10,000	4,200		55,000	22,000
1,750		36,000	11,000	4,250		55,000	22,000
1,800		36,000	11,000	4,300		58,000	24,000
1,850		36,000	11,000	4,400		58,000	24,000
1,900		36,000	11,000	4,500		58,000	24,000
1,950		38,000	12,000	4,600		58,000	24,000
1,970		38,000	12,000	4,650		58,000	24,000
1,980	5/64	38,000	12,000	4,800		62,000	26,000
2,000		38,000	12,000	4,900		62,000	26,000
2,030		38,000	12,000	5,000		62,000	26,000
2,050		38,000	12,000	5,050		62,000	26,000
2,100		38,000	12,000	5,100		62,000	26,000
2,200		40,000	13,000	5,200		62,000	26,000
2,250		40,000	13,000	5,300		62,000	26,000
2,300		40,000	13,000	5,400		66,000	28,000
2,400		43,000	14,000	5,500		66,000	28,000

短钻

d1 mm	inch	l1 mm	l2 mm
5,550		66,000	28,000
5,600		66,000	28,000
5,700		66,000	28,000
5,800		66,000	28,000
5,900		66,000	28,000
5,950	15/64	66,000	28,000
6,000		66,000	28,000
6,100		70,000	31,000
6,200		70,000	31,000
6,250		70,000	31,000
6,300		70,000	31,000
6,400		70,000	31,000
6,500		70,000	31,000
6,600		70,000	31,000
6,700		70,000	31,000
6,750	17/64	74,000	34,000
6,800		74,000	34,000
6,900		74,000	34,000
7,000		74,000	34,000
7,100		74,000	34,000
7,200		74,000	34,000
7,300		74,000	34,000
7,400		74,000	34,000
7,500		74,000	34,000
7,600		79,000	37,000
7,700		79,000	37,000
7,800		79,000	37,000
7,900		79,000	37,000
8,000		79,000	37,000
8,100		79,000	37,000
8,200		79,000	37,000
8,250		79,000	37,000
8,300		79,000	37,000
8,400		79,000	37,000
8,500		79,000	37,000
8,600		84,000	40,000
8,700		84,000	40,000
8,800		84,000	40,000
8,900		84,000	40,000
9,000		84,000	40,000
9,100		84,000	40,000
9,200		84,000	40,000
9,300		84,000	40,000
9,400		84,000	40,000
9,500		84,000	40,000
9,600		89,000	43,000
9,700		89,000	43,000
9,750		89,000	43,000
9,800		89,000	43,000
9,900		89,000	43,000
10,000		89,000	43,000
10,050		89,000	43,000
10,100		89,000	43,000
10,200		89,000	43,000
10,300		89,000	43,000
10,400		89,000	43,000
10,500		89,000	43,000
10,600		89,000	43,000
10,700		95,000	47,000
10,800		95,000	47,000
10,900		95,000	47,000
11,000		95,000	47,000
11,100		95,000	47,000
11,200		95,000	47,000
11,500		95,000	47,000
11,800		95,000	47,000
12,000		102,000	51,000
12,200		102,000	51,000
12,300	31/64	102,000	51,000
12,400		102,000	51,000
12,500		102,000	51,000
12,600		102,000	51,000
12,800		102,000	51,000
12,900		102,000	51,000
13,000		102,000	51,000
13,500		107,000	54,000
13,750		107,000	54,000
13,800		107,000	54,000
14,000		107,000	54,000
14,500		111,000	56,000
15,000		111,000	56,000
15,500		115,000	58,000
15,750		115,000	58,000
16,000		115,000	58,000
16,500		119,000	60,000
17,000		119,000	60,000
17,500		123,000	62,000
18,000		123,000	62,000
18,500		127,000	64,000
19,000		127,000	64,000
19,500		131,000	66,000
20,000		131,000	66,000
20,500		136,000	68,000
21,000		136,000	68,000
22,000		141,000	70,000
22,200		141,000	70,000
23,000		146,000	72,000
24,000		151,000	75,000
25,000	63/64	151,000	75,000

短钻

产品代号 84803



P	M	K	N	S	H
●	●	●	○	●	○

HSS-E | T | V | ~3xD | DIN 1897 | 130° | h8 | R | Cyl

芯厚 ≥ Ø 1,000 • 圆弧后刀面 • 高耐磨强度 • 耐磨损 高强度
不锈钢/耐酸钢 • 弹簧钢 • 奥氏体不锈钢 • 哈氏合金，镍合金，锰合金

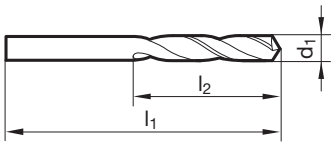
产品代号 84503



P	M	K	N	S	H
●	●	●	○	●	○

HSS-E | F | V | ~3xD | DIN 1897 | 130° | h8 | R | Cyl

芯厚 ≥ Ø 1,000 • 圆弧后刀面 • 高耐磨强度 • 耐磨损 高强度
不锈钢/耐酸钢 • 弹簧钢 • 奥氏体不锈钢 • 哈氏合金，镍合金，锰合金



d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
0,500		20,000	3,000	3,100		49,000	18,000
0,700		23,000	4,500	3,200		49,000	18,000
1,000		26,000	6,000	3,250		49,000	18,000
1,100		28,000	7,000	3,300		49,000	18,000
1,200		30,000	8,000	3,350		49,000	18,000
1,300		30,000	8,000	3,400		52,000	20,000
1,400		32,000	9,000	3,450		52,000	20,000
1,500		32,000	9,000	3,500		52,000	20,000
1,600		34,000	10,000	3,600		52,000	20,000
1,700		34,000	10,000	3,700		52,000	20,000
1,800		36,000	11,000	3,800		55,000	22,000
1,850		36,000	11,000	3,900		55,000	22,000
1,900		36,000	11,000	4,000		55,000	22,000
2,000		38,000	12,000	4,100		55,000	22,000
2,050		38,000	12,000	4,200		55,000	22,000
2,100		38,000	12,000	4,300		58,000	24,000
2,200		40,000	13,000	4,400		58,000	24,000
2,300		40,000	13,000	4,500		58,000	24,000
2,350		40,000	13,000	4,600		58,000	24,000
2,400		43,000	14,000	4,700		58,000	24,000
2,450		43,000	14,000	4,800		62,000	26,000
2,500		43,000	14,000	4,900		62,000	26,000
2,550		43,000	14,000	5,000		62,000	26,000
2,600		43,000	14,000	5,100		62,000	26,000
2,700		46,000	16,000	5,200		62,000	26,000
2,800		46,000	16,000	5,300		62,000	26,000
2,900		46,000	16,000	5,400		66,000	28,000
2,950		46,000	16,000	5,500		66,000	28,000
3,000		46,000	16,000	5,600		66,000	28,000
3,050		49,000	18,000	5,700		66,000	28,000

短钻

d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
5,800		66,000	28,000	8,600		84,000	40,000
5,900		66,000	28,000	8,700		84,000	40,000
6,000		66,000	28,000	8,800		84,000	40,000
6,050		70,000	31,000	9,000		84,000	40,000
6,100		70,000	31,000	9,100		84,000	40,000
6,200		70,000	31,000	9,200		84,000	40,000
6,300		70,000	31,000	9,300		84,000	40,000
6,350	1/4	70,000	31,000	9,500		84,000	40,000
6,400		70,000	31,000	9,600		89,000	43,000
6,500		70,000	31,000	9,700		89,000	43,000
6,600		70,000	31,000	9,800		89,000	43,000
6,700		70,000	31,000	9,900		89,000	43,000
6,800		74,000	34,000	10,000		89,000	43,000
6,900		74,000	34,000	10,200		89,000	43,000
7,000		74,000	34,000	10,500		89,000	43,000
7,100		74,000	34,000	11,000		95,000	47,000
7,200		74,000	34,000	11,500		95,000	47,000
7,300		74,000	34,000	12,000		102,000	51,000
7,400		74,000	34,000	12,500		102,000	51,000
7,500		74,000	34,000	13,000		102,000	51,000
7,600		79,000	37,000	14,000		107,000	54,000
7,700		79,000	37,000	14,500		111,000	56,000
7,800		79,000	37,000	15,000		111,000	56,000
7,900		79,000	37,000				
8,000		79,000	37,000				
8,100		79,000	37,000				
8,200		79,000	37,000				
8,300		79,000	37,000				
8,400		79,000	37,000				
8,500		79,000	37,000				

短钻

产品代号 84806



P	M	K	N	S	H
•	•	•	•		

HSS-E | T | FU 500 DZ | ~3xD | DIN 1897 | 118° | h8 | R | Cyl

芯厚 ≥ Ø 1,000 • 双后刀面 • 高耐磨强度 • 要求适合低进给率 • 要求低扭矩 • 普遍适用
强度小于800N/mm²的合金/非合金钢 • 热/冷锻钢 • 耐磨轴承钢 • 有色金属 • 铸件材料 • 不锈钢 • 塑料

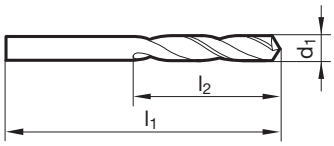
产品代号 84808



P	M	K	N	S	H
•	•	•	○		

HSS-E | ○ | FU 500 DZ | ~3xD | DIN 1897 | 118° | h8 | R | Cyl

芯厚 ≥ Ø 1,000 • 双后刀面 • 高耐磨强度 • 要求适合低进给率 • 要求低扭矩 • 普遍适用
强度小于800N/mm²的合金/非合金钢 • 热/冷锻钢 • 耐磨轴承钢 • 有色金属 • 铸件材料 • 不锈钢 • 塑料



d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
1,000		26,000	6,000	3,600		52,000	20,000
1,100		28,000	7,000	3,700		52,000	20,000
1,200		30,000	8,000	3,800		55,000	22,000
1,300		30,000	8,000	3,900		55,000	22,000
1,400		32,000	9,000	3,970	5/32	55,000	22,000
1,500		32,000	9,000	4,000		55,000	22,000
1,600		34,000	10,000	4,100		55,000	22,000
1,700		34,000	10,000	4,200		55,000	22,000
1,800		36,000	11,000	4,300		58,000	24,000
1,900		36,000	11,000	4,370	11/64	58,000	24,000
2,000		38,000	12,000	4,400		58,000	24,000
2,100		38,000	12,000	4,500		58,000	24,000
2,200		40,000	13,000	4,600		58,000	24,000
2,300		40,000	13,000	4,700		58,000	24,000
2,380	3/32	43,000	14,000	4,760	3/16	62,000	26,000
2,400		43,000	14,000	4,800		62,000	26,000
2,500		43,000	14,000	4,900		62,000	26,000
2,600		43,000	14,000	5,000		62,000	26,000
2,700		46,000	16,000	5,100		62,000	26,000
2,780	7/64	46,000	16,000	5,160	13/64	62,000	26,000
2,800		46,000	16,000	5,200		62,000	26,000
2,900		46,000	16,000	5,300		62,000	26,000
3,000		46,000	16,000	5,400		66,000	28,000
3,100		49,000	18,000	5,500		66,000	28,000
3,170	1/8	49,000	18,000	5,560	7/32	66,000	28,000
3,200		49,000	18,000	5,600		66,000	28,000
3,300		49,000	18,000	5,700		66,000	28,000
3,400		52,000	20,000	5,800		66,000	28,000
3,500		52,000	20,000	5,900		66,000	28,000
3,570	9/64	52,000	20,000	5,950	15/64	66,000	28,000

短钻

d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
6,000		66,000	28,000	8,700		84,000	40,000
6,100		70,000	31,000	8,730	11/32	84,000	40,000
6,200		70,000	31,000	8,800		84,000	40,000
6,300		70,000	31,000	8,900		84,000	40,000
6,350	1/4	70,000	31,000	9,000		84,000	40,000
6,400		70,000	31,000	9,100		84,000	40,000
6,500		70,000	31,000	9,200		84,000	40,000
6,600		70,000	31,000	9,300		84,000	40,000
6,700		70,000	31,000	9,400		84,000	40,000
6,800		74,000	34,000	9,500		84,000	40,000
6,900		74,000	34,000	9,600		89,000	43,000
7,000		74,000	34,000	9,700		89,000	43,000
7,100		74,000	34,000	9,800		89,000	43,000
7,140	9/32	74,000	34,000	9,900		89,000	43,000
7,200		74,000	34,000	10,000		89,000	43,000
7,300		74,000	34,000	10,100		89,000	43,000
7,400		74,000	34,000	10,200		89,000	43,000
7,500		74,000	34,000	10,300		89,000	43,000
7,600		79,000	37,000	10,400		89,000	43,000
7,700		79,000	37,000	10,500		89,000	43,000
7,800		79,000	37,000	11,000		95,000	47,000
7,900		79,000	37,000	11,110	7/16	95,000	47,000
7,940	5/16	79,000	37,000	11,500		95,000	47,000
8,000		79,000	37,000	12,000		102,000	51,000
8,100		79,000	37,000	12,500		102,000	51,000
8,200		79,000	37,000	13,000		102,000	51,000
8,300		79,000	37,000	13,500		107,000	54,000
8,400		79,000	37,000	14,000		107,000	54,000
8,500		79,000	37,000				
8,600		84,000	40,000				

短钻

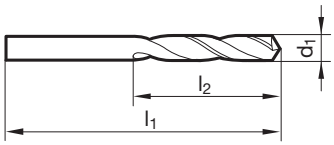
产品代号 84511



P	M	K	N	S	H
●	○	●	○	○	○

HSS-E-PM | F | FN 500 | ~3xD | DIN 1897 | 130° | h8 | R | Cyl

芯厚 ≥ Ø 1,000 • 圆弧后刀面 • PM-粉末冶金钻合金高速钢 • 刚性好 • 出色的耐磨性
高强度材料、高合金钢 • 热处理钢和淬硬钢 • 铸铁,黄铜,青铜



d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
1,000		26,000	6,000	4,900		62,000	26,000
1,200		30,000	8,000	4,980		62,000	26,000
1,500		32,000	9,000	5,000		62,000	26,000
2,000		38,000	12,000	5,100		62,000	26,000
2,100		38,000	12,000	5,160	13/64	62,000	26,000
2,200		40,000	13,000	5,200		62,000	26,000
2,300		40,000	13,000	5,300		62,000	26,000
2,380	3/32	43,000	14,000	5,400		66,000	28,000
2,400		43,000	14,000	5,410		66,000	28,000
2,500		43,000	14,000	5,500		66,000	28,000
2,600		43,000	14,000	5,550		66,000	28,000
2,700		46,000	16,000	5,560	7/32	66,000	28,000
2,780	7/64	46,000	16,000	5,600		66,000	28,000
2,800		46,000	16,000	5,700		66,000	28,000
2,900		46,000	16,000	5,800		66,000	28,000
3,000		46,000	16,000	5,900		66,000	28,000
3,100		49,000	18,000	5,950	15/64	66,000	28,000
3,170	1/8	49,000	18,000	6,000		66,000	28,000
3,200		49,000	18,000	6,100		70,000	31,000
3,260		49,000	18,000	6,200		70,000	31,000
3,300		49,000	18,000	6,300		70,000	31,000
3,400		52,000	20,000	6,350	1/4	70,000	31,000
3,500		52,000	20,000	6,400		70,000	31,000
3,570	9/64	52,000	20,000	6,500		70,000	31,000
3,600		52,000	20,000	6,600		70,000	31,000
3,700		52,000	20,000	6,700		70,000	31,000
3,800		55,000	22,000	6,750	17/64	74,000	34,000
3,900		55,000	22,000	6,800		74,000	34,000
3,970	5/32	55,000	22,000	6,900		74,000	34,000
4,000		55,000	22,000	7,000		74,000	34,000
4,090		55,000	22,000	7,100		74,000	34,000
4,100		55,000	22,000	7,140	9/32	74,000	34,000
4,200		55,000	22,000	7,200		74,000	34,000
4,300		58,000	24,000	7,300		74,000	34,000
4,370	11/64	58,000	24,000	7,370		74,000	34,000
4,400		58,000	24,000	7,400		74,000	34,000
4,500		58,000	24,000	7,450		74,000	34,000
4,600		58,000	24,000	7,500		74,000	34,000
4,650		58,000	24,000	7,540	19/64	79,000	37,000
4,700		58,000	24,000	7,600		79,000	37,000
4,760	3/16	62,000	26,000	7,700		79,000	37,000
4,800		62,000	26,000	7,800		79,000	37,000

短钻

d1 mm	inch	l1 mm	l2 mm
7,900		79,000	37,000
7,940	5/16	79,000	37,000
8,000		79,000	37,000
8,100		79,000	37,000
8,200		79,000	37,000
8,300		79,000	37,000
8,330	21/64	79,000	37,000
8,400		79,000	37,000
8,500		79,000	37,000
8,600		84,000	40,000
8,700		84,000	40,000
8,730	11/32	84,000	40,000
8,800		84,000	40,000
8,900		84,000	40,000
9,000		84,000	40,000
9,100		84,000	40,000
9,130	23/64	84,000	40,000
9,200		84,000	40,000
9,300		84,000	40,000
9,350		84,000	40,000
9,400		84,000	40,000
9,500		84,000	40,000
9,520	3/8	89,000	43,000
9,600		89,000	43,000

d1 mm	inch	l1 mm	l2 mm
9,700		89,000	43,000
9,800		89,000	43,000
9,900		89,000	43,000
9,920	25/64	89,000	43,000
10,000		89,000	43,000
10,200		89,000	43,000
10,320	13/32	89,000	43,000
10,500		89,000	43,000
10,720	27/64	95,000	47,000
11,000		95,000	47,000
11,110	7/16	95,000	47,000
11,500		95,000	47,000
11,510	29/64	95,000	47,000
11,800		95,000	47,000
11,910	15/32	102,000	51,000
12,000		102,000	51,000
12,300	31/64	102,000	51,000
12,500		102,000	51,000
12,700	1/2	102,000	51,000
13,000		102,000	51,000
13,500		107,000	54,000

HARTNER

短钻

产品代号 89235

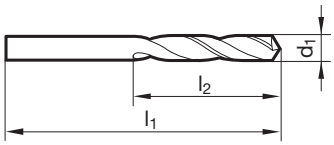


P	M	K	N	S	H
○	○	○	●	○	

VHM | N | ~3xD | DIN 6539 | 118° | h7 | R | Cyl

芯厚 ≥ Ø 3,000 • 双后刀面 • 精密磨削过的主切削刃

适合加工：结构钢和淬硬钢 • 易切削钢和热处理钢 • 适合加工：灰铸铁 • 青铜、黄铜 • 铝和的铝合金 • 镁和镁合金 • 塑料及纤维增强塑料



d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
0,800		24,000	5,000	4,200		55,000	22,000
0,900		25,000	5,500	4,300		58,000	24,000
1,000		26,000	6,000	4,370	11/64	58,000	24,000
1,100		28,000	7,000	4,400		58,000	24,000
1,200		30,000	8,000	4,500		58,000	24,000
1,300		30,000	8,000	4,600		58,000	24,000
1,400		32,000	9,000	4,700		58,000	24,000
1,500		32,000	9,000	4,760	3/16	62,000	26,000
1,600		34,000	10,000	4,800		62,000	26,000
1,700		34,000	10,000	4,850		62,000	26,000
1,800		36,000	11,000	4,900		62,000	26,000
1,900		36,000	11,000	5,000		62,000	26,000
1,980	5/64	38,000	12,000	5,100		62,000	26,000
2,000		38,000	12,000	5,200		62,000	26,000
2,100		38,000	12,000	5,300		62,000	26,000
2,200		40,000	13,000	5,400		66,000	28,000
2,300		40,000	13,000	5,500		66,000	28,000
2,380	3/32	43,000	14,000	5,560	7/32	66,000	28,000
2,400		43,000	14,000	5,600		66,000	28,000
2,500		43,000	14,000	5,700		66,000	28,000
2,600		43,000	14,000	5,800		66,000	28,000
2,700		46,000	16,000	5,900		66,000	28,000
2,780	7/64	46,000	16,000	6,000		66,000	28,000
2,800		46,000	16,000	6,100		70,000	31,000
2,900		46,000	16,000	6,200		70,000	31,000
3,000		46,000	16,000	6,300		70,000	31,000
3,050		49,000	18,000	6,350	1/4	70,000	31,000
3,100		49,000	18,000	6,400		70,000	31,000
3,170	1/8	49,000	18,000	6,500		70,000	31,000
3,200		49,000	18,000	6,600		70,000	31,000
3,300		49,000	18,000	6,700		70,000	31,000
3,400		52,000	20,000	6,800		74,000	34,000
3,500		52,000	20,000	6,900		74,000	34,000
3,570	9/64	52,000	20,000	7,000		74,000	34,000
3,600		52,000	20,000	7,100		74,000	34,000
3,700		52,000	20,000	7,140	9/32	74,000	34,000
3,800		55,000	22,000	7,200		74,000	34,000
3,900		55,000	22,000	7,300		74,000	34,000
3,970	5/32	55,000	22,000	7,400		74,000	34,000
4,000		55,000	22,000	7,500		74,000	34,000
4,040		55,000	22,000	7,600		79,000	37,000
4,100		55,000	22,000	7,700		79,000	37,000

短钻

d1 mm	inch	l1 mm	l2 mm
7,800		79,000	37,000
7,900		79,000	37,000
7,940	5/16	79,000	37,000
8,000		79,000	37,000
8,100		79,000	37,000
8,200		79,000	37,000
8,300		79,000	37,000
8,400		79,000	37,000
8,500		79,000	37,000
8,600		84,000	40,000
8,700		84,000	40,000
8,730	11/32	84,000	40,000
8,800		84,000	40,000
8,900		84,000	40,000
9,000		84,000	40,000
9,100		84,000	40,000
9,300		84,000	40,000
9,400		84,000	40,000
9,500		84,000	40,000
9,600		89,000	43,000
9,700		89,000	43,000
9,800		89,000	43,000
9,900		89,000	43,000
10,000		89,000	43,000

d1 mm	inch	l1 mm	l2 mm
10,200		89,000	43,000
10,300		89,000	43,000
10,500		89,000	43,000
11,000		95,000	47,000
11,110	7/16	95,000	47,000
11,500		95,000	47,000
11,910	15/32	102,000	51,000
12,000		102,000	51,000
12,300	31/64	102,000	51,000
13,000		102,000	51,000
14,000		107,000	54,000
15,000		111,000	56,000
16,000		115,000	58,000

短钻

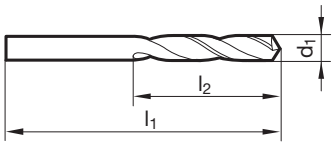
产品代号 89246



P	M	K	N	S	H
○	○	○	○	○	○

VHM | ◯ | N | ~3xD | WN | 130° | h8 | R | Cyl |

双后刀面 • 精密磨削过的主切削刃
玻璃纤维增强塑料 • 加工热固性塑料在切削刃和刃带上易磨损



d1 mm	l1 mm	l2 mm	d1 mm	l1 mm	l2 mm
0,500	30,000	6,500	4,600	50,000	25,000
0,800	30,000	8,500	4,700	50,000	25,000
0,900	30,000	9,500	5,000	50,000	25,000
1,000	30,000	11,000	5,200	50,000	25,000
1,200	30,000	13,000	5,300	50,000	25,000
1,400	30,000	13,000	5,600	50,000	25,000
1,700	40,000	17,500	5,800	50,000	25,000
2,000	40,000	17,500	5,900	50,000	25,000
2,500	40,000	17,500	6,100	65,000	30,000
3,000	45,000	20,000	6,500	65,000	30,000
3,100	50,000	22,000			
3,200	50,000	22,000			
3,400	50,000	22,000			
3,600	50,000	22,000			
4,000	50,000	22,000			
4,100	50,000	25,000			
4,200	50,000	25,000			
4,300	50,000	25,000			

HARTNER

大柄径直柄麻花钻

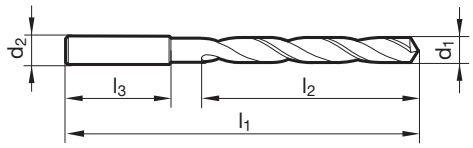
产品代号 84805



P	M	K	N	S	H
•	•	•	•		

HSS-E | T | FU 500 | ~3xD | WN | 118° | h8 | R | HA

芯厚 ≥ Ø 2,000 • 双后刀面 • 高耐磨强度 • 要求适合低进给率 • 要求低扭矩 • 耐磨损 高强度 • 普遍适用
强度小于800N/mm²的合金/非合金钢 • 热/冷锻钢 • 不锈钢 • 有色金属 • 铸件材料 • 塑料 • 耐磨轴承钢



d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
2,000		3,000	44,000	12,000	28,000
2,100		3,000	44,000	12,000	28,000
2,200		3,000	45,000	13,000	28,000
2,300		3,000	45,000	13,000	28,000
2,380	3/32	3,000	46,000	14,000	28,000
2,400		3,000	46,000	14,000	28,000
2,500		3,000	46,000	14,000	28,000
2,600		3,000	46,000	14,000	28,000
2,700		3,000	48,000	16,000	28,000
2,780	7/64	3,000	48,000	16,000	28,000
2,800		3,000	48,000	16,000	28,000
2,900		3,000	48,000	16,000	28,000
3,000		3,000	48,000	16,000	28,000
3,100		4,000	50,000	18,000	28,000
3,170	1/8	4,000	50,000	18,000	28,000
3,200		4,000	50,000	18,000	28,000
3,300		4,000	50,000	18,000	28,000
3,400		4,000	52,000	20,000	28,000
3,500		4,000	52,000	20,000	28,000
3,570	9/64	4,000	52,000	20,000	28,000
3,600		4,000	52,000	20,000	28,000
3,700		4,000	52,000	20,000	28,000
3,800		4,000	54,000	22,000	28,000
3,900		4,000	54,000	22,000	28,000
3,970	5/32	4,000	54,000	22,000	28,000
4,000		4,000	54,000	22,000	28,000
4,100		6,000	66,000	22,000	36,000
4,200		6,000	66,000	22,000	36,000
4,300		6,000	68,000	24,000	36,000
4,370	11/64	6,000	68,000	24,000	36,000
4,400		6,000	68,000	24,000	36,000
4,500		6,000	68,000	24,000	36,000
4,600		6,000	68,000	24,000	36,000
4,650		6,000	68,000	24,000	36,000
4,700		6,000	68,000	24,000	36,000
4,760	3/16	6,000	70,000	26,000	36,000
4,800		6,000	70,000	26,000	36,000
4,900		6,000	70,000	26,000	36,000
5,000		6,000	70,000	26,000	36,000
5,100		6,000	70,000	26,000	36,000
5,160	13/64	6,000	70,000	26,000	36,000
5,200		6,000	70,000	26,000	36,000

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
5,300		6,000	70,000	26,000	36,000
5,400		6,000	72,000	28,000	36,000
5,500		6,000	72,000	28,000	36,000
5,550		6,000	72,000	28,000	36,000
5,560	7/32	6,000	72,000	28,000	36,000
5,600		6,000	72,000	28,000	36,000
5,700		6,000	72,000	28,000	36,000
5,800		6,000	72,000	28,000	36,000
5,900		6,000	72,000	28,000	36,000
5,950	15/64	6,000	72,000	28,000	36,000
6,000		6,000	72,000	28,000	36,000
6,100		8,000	75,000	31,000	36,000
6,200		8,000	75,000	31,000	36,000
6,300		8,000	75,000	31,000	36,000
6,350	1/4	8,000	75,000	31,000	36,000
6,400		8,000	75,000	31,000	36,000
6,500		8,000	75,000	31,000	36,000
6,600		8,000	75,000	31,000	36,000
6,700		8,000	75,000	31,000	36,000
6,750	17/64	8,000	78,000	34,000	36,000
6,800		8,000	78,000	34,000	36,000
6,900		8,000	78,000	34,000	36,000
7,000		8,000	78,000	34,000	36,000
7,100		8,000	78,000	34,000	36,000
7,140	9/32	8,000	78,000	34,000	36,000
7,200		8,000	78,000	34,000	36,000
7,300		8,000	78,000	34,000	36,000
7,400		8,000	78,000	34,000	36,000
7,500		8,000	78,000	34,000	36,000
7,540	19/64	8,000	81,000	37,000	36,000
7,550		8,000	81,000	37,000	36,000
7,600		8,000	81,000	37,000	36,000
7,700		8,000	81,000	37,000	36,000
7,800		8,000	81,000	37,000	36,000
7,900		8,000	81,000	37,000	36,000
7,940	5/16	8,000	81,000	37,000	36,000
8,000		8,000	81,000	37,000	36,000
8,100		10,000	87,000	37,000	40,000
8,200		10,000	87,000	37,000	40,000
8,300		10,000	87,000	37,000	40,000
8,330	21/64	10,000	87,000	37,000	40,000
8,400		10,000	87,000	37,000	40,000

HARTNER

大柄径直柄麻花钻

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
8,500		10,000	87,000	37,000	40,000
8,600		10,000	91,000	40,000	40,000
8,700		10,000	91,000	40,000	40,000
8,730	11/32	10,000	91,000	40,000	40,000
8,800		10,000	91,000	40,000	40,000
8,900		10,000	91,000	40,000	40,000
9,000		10,000	91,000	40,000	40,000
9,100		10,000	91,000	40,000	40,000
9,130	23/64	10,000	91,000	40,000	40,000
9,200		10,000	91,000	40,000	40,000
9,300		10,000	91,000	40,000	40,000
9,400		10,000	91,000	40,000	40,000
9,500		10,000	91,000	40,000	40,000
9,520	3/8	10,000	93,000	43,000	40,000
9,550		10,000	93,000	43,000	40,000
9,600		10,000	93,000	43,000	40,000
9,700		10,000	93,000	43,000	40,000
9,800		10,000	93,000	43,000	40,000
9,900		10,000	93,000	43,000	40,000
9,920	25/64	10,000	93,000	43,000	40,000
10,000		10,000	93,000	43,000	40,000
10,100		12,000	100,000	43,000	45,000
10,200		12,000	100,000	43,000	45,000
10,300		12,000	100,000	43,000	45,000
10,320	13/32	12,000	100,000	43,000	45,000
10,400		12,000	100,000	43,000	45,000
10,500		12,000	100,000	43,000	45,000
10,600		12,000	100,000	43,000	45,000
10,700		12,000	104,000	47,000	45,000
10,720	27/64	12,000	104,000	47,000	45,000
10,800		12,000	104,000	47,000	45,000
10,900		12,000	104,000	47,000	45,000
11,000		12,000	104,000	47,000	45,000
11,100		12,000	104,000	47,000	45,000
11,110	7/16	12,000	104,000	47,000	45,000
11,200		12,000	104,000	47,000	45,000
11,300		12,000	104,000	47,000	45,000
11,400		12,000	104,000	47,000	45,000
11,500		12,000	104,000	47,000	45,000
11,510	29/64	12,000	104,000	47,000	45,000
11,600		12,000	104,000	47,000	45,000
11,700		12,000	104,000	47,000	45,000
11,800		12,000	104,000	47,000	45,000
11,900		12,000	108,000	51,000	45,000
11,910	15/32	12,000	108,000	51,000	45,000
12,000		12,000	108,000	51,000	45,000
12,100		16,000	111,000	51,000	48,000
12,200		16,000	111,000	51,000	48,000
12,300	31/64	16,000	111,000	51,000	48,000
12,400		16,000	111,000	51,000	48,000
12,500		16,000	111,000	51,000	48,000
12,600		16,000	111,000	51,000	48,000
12,700	1/2	16,000	111,000	51,000	48,000
12,800		16,000	111,000	51,000	48,000
12,900		16,000	111,000	51,000	48,000
13,000		16,000	111,000	51,000	48,000
13,100	33/64	16,000	111,000	51,000	48,000
13,490	17/32	16,000	114,000	54,000	48,000
13,500		16,000	114,000	54,000	48,000
13,890	35/64	16,000	114,000	54,000	48,000
14,000		16,000	114,000	54,000	48,000
14,290	9/16	16,000	116,000	56,000	48,000
14,500		16,000	116,000	56,000	48,000
15,000		16,000	116,000	56,000	48,000
15,500		16,000	118,000	58,000	48,000
15,870	5/8	16,000	118,000	58,000	48,000
16,000		16,000	118,000	58,000	48,000
16,500		20,000	126,000	60,000	50,000
16,670	21/32	20,000	126,000	60,000	50,000
17,000		20,000	126,000	60,000	50,000
17,500		20,000	128,000	62,000	50,000
18,000		20,000	128,000	62,000	50,000
18,500		20,000	130,000	64,000	50,000
19,000		20,000	130,000	64,000	50,000
19,500		20,000	132,000	66,000	50,000
20,000		20,000	132,000	66,000	50,000

HARTNER

大柄径直柄麻花钻

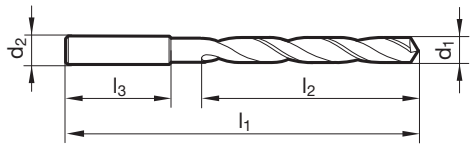
产品代号 84801



P	M	K	N	S	H
•	•	•	•		

HSS-E | T | FU 500 | ~5xD | WN | 118° | h8 | R | HA

芯厚 ≥ Ø 2,000 • 双后刀面 • 高耐磨强度 • 要求适合低进给率 • 要求低扭矩 • 耐磨损 高强度 • 普遍适用
强度小于800N/mm²的合金/非合金钢 • 热/冷锻钢 • 不锈钢 • 有色金属 • 铸件材料 • 塑料



d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
2,000		3,000	56,000	24,000	28,000
2,100		3,000	56,000	24,000	28,000
2,200		3,000	59,000	27,000	28,000
2,300		3,000	59,000	27,000	28,000
2,380	3/32	3,000	62,000	30,000	28,000
2,400		3,000	62,000	30,000	28,000
2,500		3,000	62,000	30,000	28,000
2,600		3,000	62,000	30,000	28,000
2,700		3,000	65,000	33,000	28,000
2,780	7/64	3,000	65,000	33,000	28,000
2,800		3,000	65,000	33,000	28,000
2,900		3,000	65,000	33,000	28,000
3,000		3,000	65,000	33,000	28,000
3,100		4,000	68,000	36,000	28,000
3,170	1/8	4,000	68,000	36,000	28,000
3,200		4,000	68,000	36,000	28,000
3,300		4,000	68,000	36,000	28,000
3,400		4,000	71,000	39,000	28,000
3,500		4,000	71,000	39,000	28,000
3,570	9/64	4,000	71,000	39,000	28,000
3,600		4,000	71,000	39,000	28,000
3,700		4,000	71,000	39,000	28,000
3,800		4,000	75,000	43,000	28,000
3,900		4,000	75,000	43,000	28,000
3,970	5/32	4,000	75,000	43,000	28,000
4,000		4,000	75,000	43,000	28,000
4,100		6,000	87,000	43,000	36,000
4,200		6,000	87,000	43,000	36,000
4,300		6,000	91,000	47,000	36,000
4,370	11/64	6,000	91,000	47,000	36,000
4,400		6,000	91,000	47,000	36,000
4,500		6,000	91,000	47,000	36,000
4,600		6,000	91,000	47,000	36,000
4,650		6,000	91,000	47,000	36,000
4,700		6,000	91,000	47,000	36,000
4,760	3/16	6,000	96,000	52,000	36,000
4,800		6,000	96,000	52,000	36,000
4,900		6,000	96,000	52,000	36,000
5,000		6,000	96,000	52,000	36,000
5,100		6,000	96,000	52,000	36,000
5,160	13/64	6,000	96,000	52,000	36,000
5,200		6,000	96,000	52,000	36,000

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
5,300		6,000	96,000	52,000	36,000
5,400		6,000	101,000	57,000	36,000
5,500		6,000	101,000	57,000	36,000
5,550		6,000	101,000	57,000	36,000
5,560	7/32	6,000	101,000	57,000	36,000
5,600		6,000	101,000	57,000	36,000
5,700		6,000	101,000	57,000	36,000
5,800		6,000	101,000	57,000	36,000
5,900		6,000	101,000	57,000	36,000
5,950	15/64	6,000	101,000	57,000	36,000
6,000		6,000	101,000	57,000	36,000
6,100		8,000	107,000	63,000	36,000
6,200		8,000	107,000	63,000	36,000
6,300		8,000	107,000	63,000	36,000
6,350	1/4	8,000	107,000	63,000	36,000
6,400		8,000	107,000	63,000	36,000
6,500		8,000	107,000	63,000	36,000
6,600		8,000	107,000	63,000	36,000
6,700		8,000	107,000	63,000	36,000
6,750	17/64	8,000	113,000	69,000	36,000
6,800		8,000	113,000	69,000	36,000
6,900		8,000	113,000	69,000	36,000
7,000		8,000	113,000	69,000	36,000
7,100		8,000	113,000	69,000	36,000
7,140	9/32	8,000	113,000	69,000	36,000
7,200		8,000	113,000	69,000	36,000
7,300		8,000	113,000	69,000	36,000
7,400		8,000	113,000	69,000	36,000
7,500		8,000	113,000	69,000	36,000
7,540	19/64	8,000	119,000	75,000	36,000
7,550		8,000	119,000	75,000	36,000
7,600		8,000	119,000	75,000	36,000
7,700		8,000	119,000	75,000	36,000
7,800		8,000	119,000	75,000	36,000
7,900		8,000	119,000	75,000	36,000
7,940	5/16	8,000	119,000	75,000	36,000
8,000		8,000	119,000	75,000	36,000
8,100		10,000	125,000	75,000	40,000
8,200		10,000	125,000	75,000	40,000
8,300		10,000	125,000	75,000	40,000
8,330	21/64	10,000	125,000	75,000	40,000
8,400		10,000	125,000	75,000	40,000

HARTNER

大柄径直柄麻花钻

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
8,500		10,000	125,000	75,000	40,000
8,600		10,000	131,000	81,000	40,000
8,700		10,000	131,000	81,000	40,000
8,730	11/32	10,000	131,000	81,000	40,000
8,800		10,000	131,000	81,000	40,000
8,900		10,000	131,000	81,000	40,000
9,000		10,000	131,000	81,000	40,000
9,100		10,000	131,000	81,000	40,000
9,130	23/64	10,000	131,000	81,000	40,000
9,200		10,000	131,000	81,000	40,000
9,300		10,000	131,000	81,000	40,000
9,400		10,000	131,000	81,000	40,000
9,500		10,000	131,000	81,000	40,000
9,520	3/8	10,000	137,000	87,000	40,000
9,550		10,000	137,000	87,000	40,000
9,600		10,000	137,000	87,000	40,000
9,700		10,000	137,000	87,000	40,000
9,800		10,000	137,000	87,000	40,000
9,900		10,000	137,000	87,000	40,000
9,920	25/64	10,000	137,000	87,000	40,000
10,000		10,000	137,000	87,000	40,000
10,100		12,000	144,000	87,000	45,000
10,200		12,000	144,000	87,000	45,000
10,300		12,000	144,000	87,000	45,000
10,320	13/32	12,000	144,000	87,000	45,000
10,400		12,000	144,000	87,000	45,000
10,500		12,000	144,000	87,000	45,000
10,600		12,000	144,000	87,000	45,000
10,700		12,000	151,000	94,000	45,000
10,720	27/64	12,000	151,000	94,000	45,000
10,800		12,000	151,000	94,000	45,000
10,900		12,000	151,000	94,000	45,000
11,000		12,000	151,000	94,000	45,000
11,100		12,000	151,000	94,000	45,000
11,110	7/16	12,000	151,000	94,000	45,000
11,200		12,000	151,000	94,000	45,000
11,300		12,000	151,000	94,000	45,000
11,400		12,000	151,000	94,000	45,000
11,500		12,000	151,000	94,000	45,000
11,510	29/64	12,000	151,000	94,000	45,000
11,600		12,000	151,000	94,000	45,000
11,700		12,000	151,000	94,000	45,000

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
11,800		12,000	151,000	94,000	45,000
11,900		12,000	158,000	101,000	45,000
11,910	15/32	12,000	158,000	101,000	45,000
12,000		12,000	158,000	101,000	45,000
12,100		16,000	161,000	101,000	48,000
12,200		16,000	161,000	101,000	48,000
12,300	31/64	16,000	161,000	101,000	48,000
12,400		16,000	161,000	101,000	48,000
12,500		16,000	161,000	101,000	48,000
12,600		16,000	161,000	101,000	48,000
12,700	1/2	16,000	161,000	101,000	48,000
12,800		16,000	161,000	101,000	48,000
12,900		16,000	161,000	101,000	48,000
13,000		16,000	161,000	101,000	48,000
13,100	33/64	16,000	161,000	101,000	48,000
13,490	17/32	16,000	166,000	106,000	48,000
13,500		16,000	166,000	106,000	48,000
13,890	35/64	16,000	166,000	106,000	48,000
14,000		16,000	166,000	106,000	48,000
14,290	9/16	16,000	169,000	109,000	48,000
14,500		16,000	169,000	109,000	48,000
15,000		16,000	169,000	109,000	48,000
15,500		16,000	172,000	112,000	48,000
15,870	5/8	16,000	172,000	112,000	48,000
16,000		16,000	172,000	112,000	48,000
16,500		20,000	181,000	115,000	50,000
16,670	21/32	20,000	181,000	115,000	50,000
17,000		20,000	181,000	115,000	50,000
17,460	11/16	20,000	184,000	118,000	50,000
17,500		20,000	184,000	118,000	50,000
18,000		20,000	184,000	118,000	50,000
18,500		20,000	188,000	122,000	50,000
19,000		20,000	188,000	122,000	50,000
19,500		20,000	191,000	125,000	50,000
20,000		20,000	191,000	125,000	50,000

HARTNER

大柄径直柄麻花钻

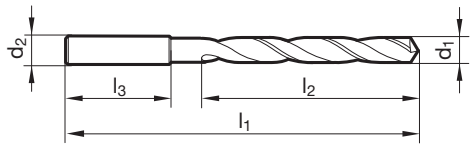
产品代号 84507



P	M	K	N	S	H
●	○	●	○	○	○

HSS-E-PM | F | FN 500 | ~5xD | WN | 130° | h8 | R | HA

芯厚 ≥ Ø 2,000 • 圆弧后刀面 • PM-粉末冶金钻合金高速钢 • 出色的耐磨性 • 刚性好
高强度材料、高合金钢 • 热处理钢和淬硬钢 • 铸铁,黄铜,青铜



d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
2,000		3,000	56,000	24,000	28,000
2,100		3,000	56,000	24,000	28,000
2,200		3,000	59,000	27,000	28,000
2,300		3,000	59,000	27,000	28,000
2,380	3/32	3,000	62,000	30,000	28,000
2,400		3,000	62,000	30,000	28,000
2,500		3,000	62,000	30,000	28,000
2,600		3,000	62,000	30,000	28,000
2,700		3,000	65,000	33,000	28,000
2,780	7/64	3,000	65,000	33,000	28,000
2,800		3,000	65,000	33,000	28,000
2,900		3,000	65,000	33,000	28,000
3,000		3,000	65,000	33,000	28,000
3,100		4,000	68,000	36,000	28,000
3,170	1/8	4,000	68,000	36,000	28,000
3,200		4,000	68,000	36,000	28,000
3,300		4,000	68,000	36,000	28,000
3,400		4,000	71,000	39,000	28,000
3,500		4,000	71,000	39,000	28,000
3,570	9/64	4,000	71,000	39,000	28,000
3,600		4,000	71,000	39,000	28,000
3,700		4,000	71,000	39,000	28,000
3,800		4,000	75,000	43,000	28,000
3,900		4,000	75,000	43,000	28,000
3,970	5/32	4,000	75,000	43,000	28,000
4,000		4,000	75,000	43,000	28,000
4,100		6,000	87,000	43,000	36,000
4,200		6,000	87,000	43,000	36,000
4,300		6,000	91,000	47,000	36,000
4,370	11/64	6,000	91,000	47,000	36,000
4,400		6,000	91,000	47,000	36,000
4,500		6,000	91,000	47,000	36,000
4,600		6,000	91,000	47,000	36,000
4,650		6,000	91,000	47,000	36,000
4,700		6,000	91,000	47,000	36,000
4,760	3/16	6,000	96,000	52,000	36,000
4,800		6,000	96,000	52,000	36,000
4,900		6,000	96,000	52,000	36,000
5,000		6,000	96,000	52,000	36,000
5,100		6,000	96,000	52,000	36,000
5,160	13/64	6,000	96,000	52,000	36,000
5,200		6,000	96,000	52,000	36,000

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
5,300		6,000	96,000	52,000	36,000
5,400		6,000	101,000	57,000	36,000
5,500		6,000	101,000	57,000	36,000
5,550		6,000	101,000	57,000	36,000
5,560	7/32	6,000	101,000	57,000	36,000
5,600		6,000	101,000	57,000	36,000
5,700		6,000	101,000	57,000	36,000
5,800		6,000	101,000	57,000	36,000
5,900		6,000	101,000	57,000	36,000
5,950	15/64	6,000	101,000	57,000	36,000
6,000		6,000	101,000	57,000	36,000
6,100		8,000	107,000	63,000	36,000
6,200		8,000	107,000	63,000	36,000
6,300		8,000	107,000	63,000	36,000
6,350	1/4	8,000	107,000	63,000	36,000
6,400		8,000	107,000	63,000	36,000
6,500		8,000	107,000	63,000	36,000
6,600		8,000	107,000	63,000	36,000
6,700		8,000	107,000	63,000	36,000
6,750	17/64	8,000	113,000	69,000	36,000
6,800		8,000	113,000	69,000	36,000
6,900		8,000	113,000	69,000	36,000
7,000		8,000	113,000	69,000	36,000
7,100		8,000	113,000	69,000	36,000
7,140	9/32	8,000	113,000	69,000	36,000
7,200		8,000	113,000	69,000	36,000
7,300		8,000	113,000	69,000	36,000
7,400		8,000	113,000	69,000	36,000
7,500		8,000	113,000	69,000	36,000
7,540	19/64	8,000	119,000	75,000	36,000
7,550		8,000	119,000	75,000	36,000
7,600		8,000	119,000	75,000	36,000
7,700		8,000	119,000	75,000	36,000
7,800		8,000	119,000	75,000	36,000
7,900		8,000	119,000	75,000	36,000
7,940	5/16	8,000	119,000	75,000	36,000
8,000		8,000	119,000	75,000	36,000
8,100		10,000	125,000	75,000	40,000
8,200		10,000	125,000	75,000	40,000
8,300		10,000	125,000	75,000	40,000
8,330	21/64	10,000	125,000	75,000	40,000
8,400		10,000	125,000	75,000	40,000

大柄径直柄麻花钻

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
8,500		10,000	125,000	75,000	40,000
8,600		10,000	131,000	81,000	40,000
8,700		10,000	131,000	81,000	40,000
8,730	11/32	10,000	131,000	81,000	40,000
8,800		10,000	131,000	81,000	40,000
8,900		10,000	131,000	81,000	40,000
9,000		10,000	131,000	81,000	40,000
9,100		10,000	131,000	81,000	40,000
9,130	23/64	10,000	131,000	81,000	40,000
9,200		10,000	131,000	81,000	40,000
9,300		10,000	131,000	81,000	40,000
9,400		10,000	131,000	81,000	40,000
9,500		10,000	131,000	81,000	40,000
9,520	3/8	10,000	137,000	87,000	40,000
9,550		10,000	137,000	87,000	40,000
9,600		10,000	137,000	87,000	40,000
9,700		10,000	137,000	87,000	40,000
9,800		10,000	137,000	87,000	40,000
9,900		10,000	137,000	87,000	40,000
9,920	25/64	10,000	137,000	87,000	40,000
10,000		10,000	137,000	87,000	40,000
10,100		12,000	144,000	87,000	45,000
10,200		12,000	144,000	87,000	45,000
10,300		12,000	144,000	87,000	45,000
10,320	13/32	12,000	144,000	87,000	45,000
10,400		12,000	144,000	87,000	45,000
10,500		12,000	144,000	87,000	45,000
10,600		12,000	144,000	87,000	45,000
10,700		12,000	151,000	94,000	45,000
10,720	27/64	12,000	151,000	94,000	45,000

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
10,800		12,000	151,000	94,000	45,000
10,900		12,000	151,000	94,000	45,000
11,000		12,000	151,000	94,000	45,000
11,100		12,000	151,000	94,000	45,000
11,110	7/16	12,000	151,000	94,000	45,000
11,200		12,000	151,000	94,000	45,000
11,300		12,000	151,000	94,000	45,000
11,400		12,000	151,000	94,000	45,000
11,500		12,000	151,000	94,000	45,000
11,510	29/64	12,000	151,000	94,000	45,000
11,600		12,000	151,000	94,000	45,000
11,700		12,000	151,000	94,000	45,000
11,800		12,000	151,000	94,000	45,000
11,900		12,000	158,000	101,000	45,000
11,910	15/32	12,000	158,000	101,000	45,000
12,000		12,000	158,000	101,000	45,000
12,100		14,000	161,000	101,000	45,000
12,200		14,000	161,000	101,000	45,000
12,300	31/64	14,000	161,000	101,000	45,000
12,400		14,000	161,000	101,000	45,000
12,500		14,000	161,000	101,000	45,000
12,600		14,000	161,000	101,000	45,000
12,700	1/2	14,000	161,000	101,000	45,000
12,800		14,000	161,000	101,000	45,000
12,900		14,000	161,000	101,000	45,000
13,000		14,000	161,000	101,000	45,000

成套工具钻

产品代号 88013



P	M	K	N	S	H
●		●	○		

HSS | >Ø 2,36 | N | ~5xD | DIN 338 | R | Cyl

用于塑料 • 圆弧后刀面
适于加工：合金/非合金钢和铸钢 • 灰铸铁,可锻铸铁和球墨铸铁 • 粉末冶金铁，铜镍锌合金,石墨

d1	递增 mm	每套钻头数量	代号
1,0-10,0	0,5	19	0,013
1,0-13,0	0,5	25	0,014
1,0-5,9	0,1	50	0,015
6,0-10,0	0,1	41	0,016
1,0-10,5	0,5	32	0,019

产品代号 88014



P	M	K	N	S	H
●	○	○	○		

HSS-E | P2000 | ~5xD | DIN 338 | R | Cyl

用于塑料 • 圆弧后刀面

d1	递增 mm	每套钻头数量	代号
1,0-5,0	0,1	41	0,011
5,1-10,0	0,1	50	0,012
1,0-10,0	0,5	19	0,013
1,0-13,0	0,5	25	0,014
1,0-10,5	0,5	24	0,018

成套工具钻

产品代号 88015



P	M	K	N	S	H
●	○	○	○		

HSS-E | M | P2000 | ~3xD | DIN 1897 | R | Cyl

用于金属 • 圆弧后刀面

d1	递增 mm	每套钻头数量	代号
1,0-5,0	0,1	41	0,011
5,1-10,0	0,1	50	0,012
1,0-10,0	0,5	19	0,013
1,0-13,0	0,5	25	0,014
1,0-10,5	0,5	24	0,018

产品代号 88016



P	M	K	N	S	H
●		●	○		

HSS | T | N | ~5xD | DIN 338 | 118° | h8 | R | Cyl

用于塑料 • 圆弧后刀面 • 刀尖涂层
适于加工：合金/非合金钢和铸钢 • 灰铸铁,可锻铸铁和球墨铸铁 • 粉末冶金铁和石墨

d1	递增 mm	每套钻头数量	代号
1,0-13,0	0,5	25	6,014
1,0-5,9	0,1	50	6,015
6,0-10,0	0,1	41	6,016
1,0-10,5	0,5	24	6,018

成套工具钻

产品代号 88026



P	M	K	N	S	H
●		●	○		

HSS-E | N | ~5xD | DIN 338 | h8 | R | Cyl

用于塑料 • 圆弧后刀面

适于加工：合金/非合金钢和铸钢 • 强度大于800 N/mm²的铸件 • 热轧和冷轧钢 • 耐磨轴承钢 • 适于加工：高合金钢 • 热处理钢和淬硬钢

d1	递增 mm	每套钻头数量	代号
1,0-10,0	0,5	19	3,013
1,0-13,0	0,5	25	3,014

成套工具钻

产品代号 88303



WN

特例

d1	递增 mm	每套钻头数量	代号
1,0-10,0	0,5	19	0,213
1,0-13,0	0,5	25	0,214
1,0-5,9	0,1	50	0,215
6,0-10,0	0,1	41	0,216

NC 点钻

产品代号 81192



P	M	K	N	S	H
●	○	●	●	○	

HSS | ○ | N | WN | 90° | h6 | R | Cyl

圆弧后刀面 • 仅适合打定位孔
通用场合

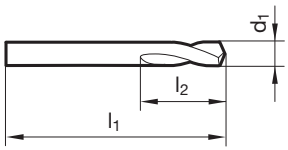
产品代号 84435



P	M	K	N	S	H
●	○	●	●	○	

HSS | T | N | WN | 90° | h6 | R | Cyl

圆弧后刀面 • 仅适合打定位孔
通用场合



d1 mm	inch	l1 mm	l2 mm
3,000		46,000	12,000
4,000		55,000	12,000
5,000		62,000	14,000
6,000		66,000	16,000
6,350		70,000	17,000
8,000		79,000	21,000

d1 mm	inch	l1 mm	l2 mm
10,000		89,000	25,000
12,000		102,000	30,000
14,000		107,000	33,500
16,000		115,000	37,500
20,000		131,000	45,000
25,000	63/64	151,000	53,000

NC 点钻

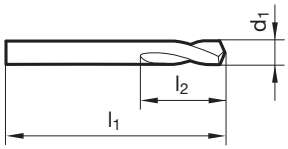
产品代号 89243



P	M	K	N	S	H
○	○	○	○	○	○

VHM | ◯ | N | WN | 90° | h6 | R | Cyl | ⊘

双后刀面 • 仅适合打定位孔
通用场合



d1 mm	l1 mm	l2 mm	d1 mm	l1 mm	l2 mm
4,000	55,000	12,000	16,000	115,000	37,500
5,000	62,000	14,000	20,000	131,000	45,000
6,000	66,000	16,000			
8,000	79,000	21,000			
10,000	89,000	25,000			
12,000	102,000	30,000			

NC 点钻

产品代号 81191



P	M	K	N	S	H
●	○	●	●	○	

HSS | ◯ | N | WN | 120° | h6 | R | Cyl

圆弧后刀面 • 仅适合打定位孔
通用场合

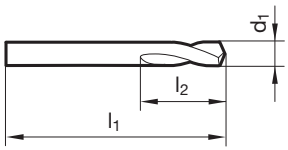
产品代号 84434



P	M	K	N	S	H
●	○	●	●	○	

HSS | T | N | WN | 120° | h6 | R | Cyl

圆弧后刀面 • 仅适合打定位孔
通用场合



d1 mm	inch	l1 mm	l2 mm
3,000		46,000	12,000
4,000		55,000	12,000
5,000		62,000	14,000
6,000		66,000	16,000
8,000		79,000	21,000
10,000		89,000	25,000
12,000		102,000	30,000
14,000		107,000	33,500
15,000		111,000	33,500
16,000		115,000	37,500
19,050		131,000	45,000
20,000		131,000	45,000

d1 mm	inch	l1 mm	l2 mm
25,000	63/64	151,000	53,000

NC 点钻

产品代号 89242



P	M	K	N	S	H
○	○	○	○	○	○



芯厚 ≥ Ø 16,000 • 双后刀面 • 仅适合打定位孔
通用场合

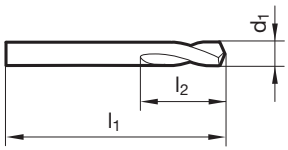
产品代号 89249



P	M	K	N	S	H
○	○	○	○	○	○



双后刀面 • 仅适合打定位孔
通用场合



d1 mm	inch	l1 mm	l2 mm
4,000		55,000	12,000
5,000		62,000	14,000
6,000		66,000	16,000
8,000		79,000	21,000
10,000		89,000	25,000
12,000		102,000	30,000

d1 mm	inch	l1 mm	l2 mm
12,700	1/2	102,000	30,000
16,000		115,000	37,500
20,000		131,000	45,000

HARTNER

直柄双头钻

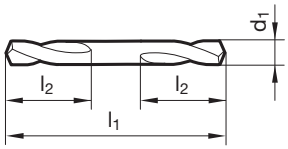
产品代号 81190



P	M	K	N	S	H
●	○	●	●	○	

HSS | >Ø 2,36 | N | WN | 118° | h8 | R

芯厚 ≥ Ø 2,000 • 圆弧后刀面 • 两头均可用 • 用于车身制造的手摇钻机床
薄壁材料



d1 mm	l1 mm	l2 mm	d1 mm	l1 mm	l2 mm
2,000	38,000	7,500	4,900	62,000	17,000
2,100	38,000	7,500	5,000	62,000	17,000
2,300	40,000	8,500	5,100	62,000	17,000
2,400	43,000	9,500	5,200	62,000	17,000
2,500	43,000	9,500	5,300	62,000	17,000
2,600	43,000	9,500	5,400	66,000	19,000
2,700	46,000	10,600	5,500	66,000	19,000
2,800	46,000	10,600	5,700	66,000	19,000
2,900	46,000	10,600	5,800	66,000	19,000
3,000	46,000	10,600	5,900	66,000	19,000
3,100	49,000	11,200	6,000	66,000	19,000
3,200	49,000	11,200	6,300	70,000	21,200
3,300	49,000	11,200	6,500	70,000	21,200
3,400	52,000	12,500	7,500	74,000	23,600
3,500	52,000	12,500	8,000	79,000	25,000
3,600	52,000	12,500	8,500	79,000	25,000
3,800	55,000	14,000	9,000	84,000	25,000
3,900	55,000	14,000	9,500	84,000	25,000
4,000	55,000	14,000	10,000	89,000	25,000
4,100	55,000	14,000			
4,200	55,000	14,000			
4,500	58,000	15,500			
4,700	58,000	15,500			
4,800	62,000	17,000			

内冷钻

产品代号 82710

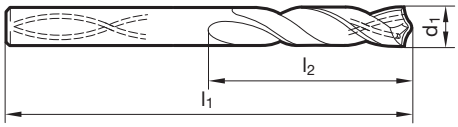


P	M	K	N	S	H
●	○	●	●	○	

HSS | FN | ~10xD | WN | 130° | h8 | R | Cyl

芯厚 ≥ Ø 3,000 • 圆弧后刀面 • 使用钻套钻削 • 尤其适合孔深超过5xD

适于加工：叠层金属薄板件 • 钢和铸钢,灰铸铁 • ≤800N/mm²的奥氏体钢



d1 mm	d2 h6 mm	l1 mm	l2 mm	l3 mm
3,000	3,000	100,000	66,000	34,000
3,300	3,300	106,000	69,000	37,000
4,000	4,000	119,000	78,000	41,000
4,500	4,500	126,000	82,000	44,000
5,000	5,000	132,000	87,000	45,000
5,500	5,500	139,000	91,000	48,000
6,000	6,000	139,000	91,000	48,000
6,500	6,500	148,000	97,000	51,000
6,800	6,800	156,000	102,000	54,000
7,000	7,000	156,000	102,000	54,000
7,500	7,500	156,000	102,000	54,000
8,000	8,000	165,000	109,000	56,000

d1 mm	d2 h6 mm	l1 mm	l2 mm	l3 mm
8,500	8,500	165,000	109,000	56,000
9,000	9,000	175,000	115,000	60,000
9,500	9,500	175,000	115,000	60,000
10,000	10,000	184,000	121,000	63,000
10,200	10,200	184,000	121,000	63,000
10,500	10,500	184,000	121,000	63,000
11,000	11,000	195,000	128,000	67,000
11,500	11,500	195,000	128,000	67,000
12,000	12,000	205,000	134,000	71,000
13,000	13,000	205,000	134,000	71,000

内冷钻

产品代号 82761



P	M	K	N	S	H
●	●	●	●	●	

HSS-E | FN | ~5xD | WN | 130° | h8 | R | HE

芯厚 ≥ Ø 5,000 • 圆弧后刀面 • 高耐磨强度

≤1000 N/mm²的长屑材料 • 不锈钢 • 铸件材料 • 有色金属

产品代号 84461



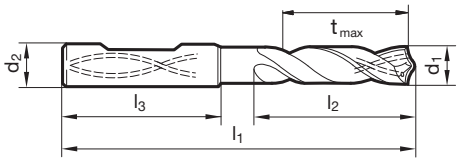
P	M	K	N	S	H
●	●	●	●	●	○

HSS-E | T | FN | ~5xD | WN | 130° | h8 | R | HE

芯厚 ≥ Ø 5,000 • 圆弧后刀面 • 高耐磨强度 • 耐磨损 高强度

≤1000 N/mm²的长屑材料 • 不锈钢 • 铸件材料 • 有色金属

$t_{max} = l_2\text{-}1{,}5 \times d_1$



d1 mm	d2 h6 mm	l1 mm	l2 mm	l3 mm
5,000	6,000	82,000	44,000	36,000
5,500	6,000	82,000	44,000	36,000
6,000	6,000	82,000	44,000	36,000
6,500	8,000	91,000	53,000	36,000
6,800	8,000	91,000	53,000	36,000
7,000	8,000	91,000	53,000	36,000
7,500	8,000	91,000	53,000	36,000
7,800	8,000	91,000	53,000	36,000
8,000	8,000	91,000	53,000	36,000
8,500	10,000	103,000	61,000	40,000
9,000	10,000	103,000	61,000	40,000
9,500	10,000	103,000	61,000	40,000
10,000	10,000	103,000	61,000	40,000
10,200	12,000	118,000	71,000	45,000
10,500	12,000	118,000	71,000	45,000
11,000	12,000	118,000	71,000	45,000
11,500	12,000	118,000	71,000	45,000
12,000	12,000	118,000	71,000	45,000

d1 mm	d2 h6 mm	l1 mm	l2 mm	l3 mm
12,500	14,000	124,000	77,000	45,000
13,000	14,000	124,000	77,000	45,000
13,500	14,000	124,000	77,000	45,000
14,000	14,000	124,000	77,000	45,000
14,500	16,000	133,000	83,000	48,000
15,000	16,000	133,000	83,000	48,000
15,500	16,000	133,000	83,000	48,000
16,000	16,000	133,000	83,000	48,000
16,500	18,000	143,000	93,000	48,000
17,000	18,000	143,000	93,000	48,000
17,500	18,000	143,000	93,000	48,000
18,000	18,000	143,000	93,000	48,000
18,500	20,000	153,000	101,000	50,000
19,000	20,000	153,000	101,000	50,000
19,500	20,000	153,000	101,000	50,000
20,000	20,000	153,000	101,000	50,000

HARTNER

采用钻套的麻花钻

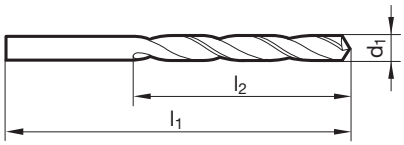
产品代号 81210



P	M	K	N	S	H
●		●	○		

HSS | >Ø 2,36 | N | ~10xD | DIN 339 | 118° | h8 | R | Cyl

芯厚 ≥ Ø 1,000 • 圆弧后刀面 • 使用钻套钻削 • 柄凿，DIN 1809标准
适于加工：合金/非合金钢和铸钢 • 灰铸铁,可锻铸铁和球墨铸铁 • 粉末冶金铁，铜镍锌合金,石墨



d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
0,800		42,000	22,000	4,600		102,000	69,000
0,900		45,000	24,000	4,700		102,000	69,000
0,950		45,000	24,000	4,800		108,000	74,000
1,000		48,000	26,000	4,900		108,000	74,000
1,200		52,000	30,000	5,000		108,000	74,000
1,250		52,000	30,000	5,100		108,000	74,000
1,350		55,000	33,000	5,200		108,000	74,000
1,400		55,000	33,000	5,300		108,000	74,000
1,450		55,000	33,000	5,350		116,000	80,000
1,500		55,000	33,000	5,400		116,000	80,000
1,620		58,000	35,000	5,500		116,000	80,000
1,700		58,000	35,000	5,550		116,000	80,000
1,800		62,000	38,000	5,600		116,000	80,000
1,900		62,000	38,000	5,700		116,000	80,000
1,990		66,000	41,000	5,750		116,000	80,000
2,000		66,000	41,000	5,800		116,000	80,000
2,100		66,000	41,000	5,900		116,000	80,000
2,350		70,000	44,000	5,950	15/64	116,000	80,000
2,400		74,000	47,000	6,000		116,000	80,000
2,450		74,000	47,000	6,100		124,000	86,000
2,500		74,000	47,000	6,200		124,000	86,000
2,600		74,000	47,000	6,400		124,000	86,000
2,900		79,000	51,000	6,500		124,000	86,000
3,000		79,000	51,000	6,600		124,000	86,000
3,050		84,000	55,000	6,700		124,000	86,000
3,100		84,000	55,000	6,750	17/64	133,000	93,000
3,200		84,000	55,000	6,900		133,000	93,000
3,250		84,000	55,000	7,000		133,000	93,000
3,300		84,000	55,000	7,100		133,000	93,000
3,400		91,000	60,000	7,200		133,000	93,000
3,500		91,000	60,000	7,300		133,000	93,000
3,600		91,000	60,000	7,400		133,000	93,000
3,700		91,000	60,000	7,500		133,000	93,000
3,750		91,000	60,000	7,600		142,000	100,000
3,800		96,000	64,000	7,700		142,000	100,000
3,900		96,000	64,000	7,800		142,000	100,000
4,000		96,000	64,000	7,900		142,000	100,000
4,050		96,000	64,000	8,000		142,000	100,000
4,200		96,000	64,000	8,200		142,000	100,000
4,300		102,000	69,000	8,250		142,000	100,000
4,400		102,000	69,000	8,300		142,000	100,000
4,500		102,000	69,000	8,400		142,000	100,000

采用钻套的麻花钻

d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
8,500		142,000	100,000	10,600		162,000	116,000
8,600		151,000	107,000	10,800		173,000	125,000
8,700		151,000	107,000	11,000		173,000	125,000
8,800		151,000	107,000	11,500		173,000	125,000
8,900		151,000	107,000	11,750		173,000	125,000
9,000		151,000	107,000	12,000		184,000	134,000
9,100		151,000	107,000	12,200		184,000	134,000
9,200		151,000	107,000	12,400		184,000	134,000
9,300		151,000	107,000	12,500		184,000	134,000
9,400		151,000	107,000	13,000		184,000	134,000
9,500		151,000	107,000	13,500		194,000	142,000
9,600		162,000	116,000	14,000		194,000	142,000
9,700		162,000	116,000	14,200		202,000	147,000
9,800		162,000	116,000	14,500		202,000	147,000
9,900		162,000	116,000	15,500		211,000	153,000
10,000		162,000	116,000	16,500		218,000	159,000
10,200		162,000	116,000	18,000		226,000	165,000
10,500		162,000	116,000	19,000		234,000	171,000

HARTNER

长系列麻花钻

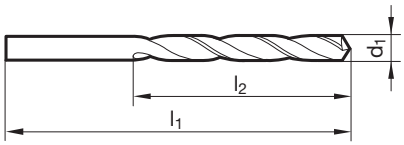
产品代号 81310



P	M	K	N	S	H
●		●	○		

HSS | >Ø 2,36 | N | ~10xD | DIN 340 | 118° | h8 | R | Cyl

芯厚 ≥ Ø 1,000 • 圆弧后刀面 • 尤其适合加工深孔
适于加工：合金/非合金钢和铸钢 • 灰铸铁,可锻铸铁和球墨铸铁 • 粉末冶金铁，铜镍锌合金,石墨



d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
0,400		30,000	10,000	2,800		100,000	66,000
0,500		32,000	12,000	2,850		100,000	66,000
0,600		35,000	15,000	2,900		100,000	66,000
0,650		38,000	18,000	2,950		100,000	66,000
0,700		42,000	21,000	3,000		100,000	66,000
0,750		42,000	21,000	3,050		106,000	69,000
0,800		46,000	25,000	3,100		106,000	69,000
0,850		46,000	25,000	3,150		106,000	69,000
0,900		51,000	29,000	3,200		106,000	69,000
0,910		51,000	29,000	3,250		106,000	69,000
0,950		51,000	29,000	3,300		106,000	69,000
1,000		56,000	33,000	3,350		106,000	69,000
1,100		60,000	37,000	3,400		112,000	73,000
1,150		60,000	37,000	3,450		112,000	73,000
1,200		65,000	41,000	3,500		112,000	73,000
1,250		65,000	41,000	3,550		112,000	73,000
1,300		65,000	41,000	3,600		112,000	73,000
1,350		70,000	45,000	3,650		112,000	73,000
1,400		70,000	45,000	3,700		112,000	73,000
1,500		70,000	45,000	3,750		112,000	73,000
1,550		76,000	50,000	3,800		119,000	78,000
1,600		76,000	50,000	3,850		119,000	78,000
1,700		76,000	50,000	3,900		119,000	78,000
1,750		80,000	53,000	3,950		119,000	78,000
1,800		80,000	53,000	4,000		119,000	78,000
1,900		80,000	53,000	4,040		119,000	78,000
1,950		85,000	56,000	4,050		119,000	78,000
2,000		85,000	56,000	4,100		119,000	78,000
2,050		85,000	56,000	4,150		119,000	78,000
2,100		85,000	56,000	4,200		119,000	78,000
2,200		90,000	59,000	4,250		119,000	78,000
2,250		90,000	59,000	4,300		126,000	82,000
2,300		90,000	59,000	4,400		126,000	82,000
2,350		90,000	59,000	4,450		126,000	82,000
2,400		95,000	62,000	4,500		126,000	82,000
2,450		95,000	62,000	4,550		126,000	82,000
2,500		95,000	62,000	4,600		126,000	82,000
2,550		95,000	62,000	4,650		126,000	82,000
2,600		95,000	62,000	4,700		126,000	82,000
2,650		95,000	62,000	4,750		126,000	82,000
2,700		100,000	66,000	4,760	3/16	132,000	87,000
2,750		100,000	66,000	4,800		132,000	87,000

HARTNER

长系列麻花钻

d1 mm	inch	l1 mm	l2 mm
4,850		132,000	87,000
4,900		132,000	87,000
4,950		132,000	87,000
5,000		132,000	87,000
5,050		132,000	87,000
5,100		132,000	87,000
5,150		132,000	87,000
5,200		132,000	87,000
5,250		132,000	87,000
5,300		132,000	87,000
5,350		139,000	91,000
5,400		139,000	91,000
5,450		139,000	91,000
5,500		139,000	91,000
5,600		139,000	91,000
5,650		139,000	91,000
5,700		139,000	91,000
5,750		139,000	91,000
5,800		139,000	91,000
5,900		139,000	91,000
5,950	15/64	139,000	91,000
6,000		139,000	91,000
6,100		148,000	97,000
6,200		148,000	97,000
6,250		148,000	97,000
6,300		148,000	97,000
6,350	1/4	148,000	97,000
6,400		148,000	97,000
6,500		148,000	97,000
6,600		148,000	97,000
6,700		148,000	97,000
6,750	17/64	156,000	102,000
6,800		156,000	102,000
6,900		156,000	102,000
7,000		156,000	102,000
7,100		156,000	102,000
7,200		156,000	102,000
7,250		156,000	102,000
7,300		156,000	102,000
7,400		156,000	102,000
7,500		156,000	102,000
7,600		165,000	109,000
7,700		165,000	109,000
7,750		165,000	109,000
7,800		165,000	109,000
7,900		165,000	109,000
7,940	5/16	165,000	109,000
8,000		165,000	109,000
8,100		165,000	109,000
8,200		165,000	109,000
8,250		165,000	109,000
8,300		165,000	109,000
8,400		165,000	109,000
8,500		165,000	109,000
8,600		175,000	115,000
8,700		175,000	115,000
8,800		175,000	115,000
8,900		175,000	115,000
9,000		175,000	115,000
9,100		175,000	115,000
9,200		175,000	115,000
9,300		175,000	115,000
9,400		175,000	115,000
9,500		175,000	115,000
9,600		184,000	121,000
9,700		184,000	121,000
9,750		184,000	121,000
9,800		184,000	121,000
9,900		184,000	121,000
9,920	25/64	184,000	121,000
10,000		184,000	121,000
10,100		184,000	121,000
10,200		184,000	121,000
10,250		184,000	121,000
10,400		184,000	121,000
10,500		184,000	121,000
10,600		184,000	121,000
10,700		195,000	128,000
10,720	27/64	195,000	128,000
10,750		195,000	128,000
10,900		195,000	128,000
11,000		195,000	128,000
11,200		195,000	128,000
11,250		195,000	128,000
11,500		195,000	128,000
11,600		195,000	128,000
11,700		195,000	128,000
11,750		195,000	128,000
11,800		195,000	128,000
12,000		205,000	134,000
12,100		205,000	134,000
12,200		205,000	134,000
12,300	31/64	205,000	134,000
12,500		205,000	134,000
12,600		205,000	134,000
12,700	1/2	205,000	134,000
12,800		205,000	134,000
13,000		205,000	134,000
13,200		205,000	134,000
13,490	17/32	214,000	140,000
13,500		214,000	140,000
14,000		214,000	140,000
14,200		220,000	144,000
14,250		220,000	144,000
14,500		220,000	144,000
14,900		220,000	144,000
15,000		220,000	144,000
15,200		227,000	149,000
15,250		227,000	149,000
15,500		227,000	149,000
15,600		227,000	149,000
16,000		227,000	149,000
17,000		235,000	154,000
17,500		241,000	158,000
18,000		241,000	158,000
18,500		247,000	162,000
19,000		247,000	162,000
20,000		254,000	166,000
20,500		261,000	171,000
21,000		261,000	171,000
21,500		268,000	176,000
22,000		268,000	176,000
23,500		275,000	180,000

HARTNER

长系列麻花钻

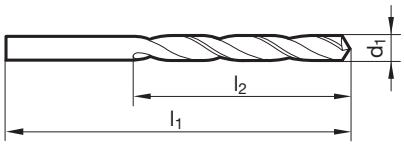
产品代号 81315



P	M	K	N	S	H
●		●	○		

HSS | >Ø 6,00 | N | ~10xD | DIN 340 | 118° | h8 | L | Cyl

芯厚 ≥ Ø 15,000 • 圆弧后刀面 • 尤其适合加工深孔 • 使用钻套钻削
适于加工：合金/非合金钢和铸钢 • 灰铸铁,可锻铸铁和球墨铸铁 • 粉末冶金铁，铜镍锌合金,石墨



d1 mm	l1 mm	l2 mm
0,900	51,000	29,000
1,200	65,000	41,000
1,250	65,000	41,000
1,500	70,000	45,000
1,550	76,000	50,000
1,800	80,000	53,000
2,800	100,000	66,000
2,900	100,000	66,000
3,000	100,000	66,000
3,200	106,000	69,000
3,500	112,000	73,000
3,800	119,000	78,000
4,000	119,000	78,000
4,200	119,000	78,000
4,500	126,000	82,000
5,000	132,000	87,000
5,200	132,000	87,000
5,700	139,000	91,000

d1 mm	l1 mm	l2 mm
5,800	139,000	91,000
6,000	139,000	91,000
6,500	148,000	97,000
7,500	156,000	102,000
7,900	165,000	109,000
8,000	165,000	109,000
8,500	165,000	109,000
9,000	175,000	115,000
10,000	184,000	121,000
11,000	195,000	128,000
12,000	205,000	134,000
15,000	220,000	144,000

HARTNER

长系列麻花钻

产品代号 81317

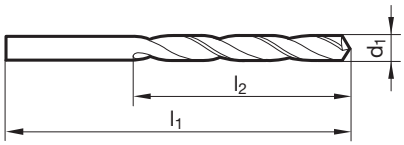


P	M	K	N	S	H
●		●	○		

HSS | N | ~10xD | DIN 340 | 118° | h8 | R | Cyl

芯厚 ≥ Ø 3,100 • 圆弧后刀面 • 柄凿

适于加工：合金/非合金钢和铸钢 • 灰铸铁,可锻铸铁和球墨铸铁 • 粉末冶金铁，铜镍锌合金,石墨



d1 mm	l1 mm	l2 mm
3,100	106,000	69,000
3,400	112,000	73,000
3,600	112,000	73,000
3,700	112,000	73,000
4,000	119,000	78,000
4,300	126,000	82,000
4,500	126,000	82,000
5,000	132,000	87,000
5,500	139,000	91,000
6,100	148,000	97,000
6,600	148,000	97,000
7,000	156,000	102,000

d1 mm	l1 mm	l2 mm
7,400	156,000	102,000
7,500	156,000	102,000
7,900	165,000	109,000
8,000	165,000	109,000
8,250	165,000	109,000
8,400	165,000	109,000
9,900	184,000	121,000
10,000	184,000	121,000

HARTNER

长系列麻花钻

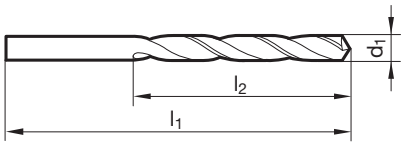
产品代号 84418



P	M	K	N	S	H
●		●	○		

HSS | T | N | ~10xD | DIN 340 | 118° | h8 | R | Cyl

芯厚 ≥ Ø 1,000 • 圆弧后刀面 • 尤其适合加工深孔 • 使用钻套钻削
适于加工：合金/非合金钢和铸钢 • 灰铸铁,可锻铸铁和球墨铸铁 • 粉末冶金铁，铜镍锌合金,石墨



d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
0,500		32,000	12,000	5,800		139,000	91,000
0,700		42,000	21,000	5,900		139,000	91,000
0,800		46,000	25,000	6,000		139,000	91,000
1,000		56,000	33,000	6,100		148,000	97,000
1,100		60,000	37,000	6,200		148,000	97,000
1,200		65,000	41,000	6,300		148,000	97,000
1,400		70,000	45,000	6,400		148,000	97,000
1,500		70,000	45,000	6,500		148,000	97,000
1,600		76,000	50,000	6,600		148,000	97,000
1,700		76,000	50,000	6,700		148,000	97,000
1,800		80,000	53,000	6,800		156,000	102,000
1,900		80,000	53,000	6,900		156,000	102,000
2,000		85,000	56,000	7,000		156,000	102,000
2,200		90,000	59,000	7,200		156,000	102,000
2,400		95,000	62,000	7,300		156,000	102,000
2,500		95,000	62,000	7,500		156,000	102,000
2,700		100,000	66,000	7,600		165,000	109,000
2,800		100,000	66,000	7,700		165,000	109,000
2,900		100,000	66,000	7,800		165,000	109,000
3,000		100,000	66,000	7,900		165,000	109,000
3,100		106,000	69,000	8,000		165,000	109,000
3,300		106,000	69,000	8,100		165,000	109,000
3,400		112,000	73,000	8,200		165,000	109,000
3,500		112,000	73,000	8,500		165,000	109,000
3,800		119,000	78,000	8,600		175,000	115,000
3,900		119,000	78,000	8,700		175,000	115,000
4,000		119,000	78,000	8,800		175,000	115,000
4,100		119,000	78,000	8,900		175,000	115,000
4,200		119,000	78,000	9,000		175,000	115,000
4,300		126,000	82,000	9,100		175,000	115,000
4,500		126,000	82,000	9,200		175,000	115,000
4,600		126,000	82,000	9,400		175,000	115,000
4,700		126,000	82,000	9,500		175,000	115,000
4,800		132,000	87,000	9,800		184,000	121,000
4,900		132,000	87,000	9,900		184,000	121,000
5,000		132,000	87,000	10,000		184,000	121,000
5,200		132,000	87,000	10,200		184,000	121,000
5,300		132,000	87,000	10,800		195,000	128,000
5,400		139,000	91,000	11,000		195,000	128,000
5,500		139,000	91,000	11,500		195,000	128,000
5,600		139,000	91,000	12,000		205,000	134,000
5,700		139,000	91,000	12,500		205,000	134,000

长系列麻花钻

d1 mm	 inch	l1 mm	l2 mm	d1 mm	 inch	l1 mm	l2 mm
12,700	1/2	205,000	134,000	15,000		220,000	144,000
13,000		205,000	134,000	15,500		227,000	149,000
13,500		214,000	140,000	16,000		227,000	149,000
14,000		214,000	140,000				
14,500		220,000	144,000				
14,800		220,000	144,000				

HARTNER

长系列麻花钻

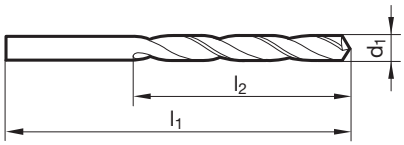
产品代号 81320



P	M	K	N	S	H
			•		

HSS | H | ~10xD | DIN 340 | 118° | h8 | R | Cyl

芯厚 ≥ Ø 14,500 • 圆弧后刀面 • 尤其适合加工深孔
脆硬的材料 • 黄铜，镁合金 • 青铜,磷青铜 • 石板，电木，酚醛树脂



d1 mm	l1 mm	l2 mm	d1 mm	l1 mm	l2 mm
0,600	35,000	15,000	4,700	126,000	82,000
0,700	42,000	21,000	4,800	132,000	87,000
0,750	42,000	21,000	4,900	132,000	87,000
0,800	46,000	25,000	5,000	132,000	87,000
0,900	51,000	29,000	5,200	132,000	87,000
1,000	56,000	33,000	5,300	132,000	87,000
1,050	56,000	33,000	5,400	139,000	91,000
1,100	60,000	37,000	5,500	139,000	91,000
1,150	60,000	37,000	5,700	139,000	91,000
1,200	65,000	41,000	5,800	139,000	91,000
1,300	65,000	41,000	5,900	139,000	91,000
1,500	70,000	45,000	6,000	139,000	91,000
1,600	76,000	50,000	6,200	148,000	97,000
1,700	76,000	50,000	6,300	148,000	97,000
1,750	80,000	53,000	6,500	148,000	97,000
1,800	80,000	53,000	6,600	148,000	97,000
1,850	80,000	53,000	6,700	148,000	97,000
2,000	85,000	56,000	6,800	156,000	102,000
2,050	85,000	56,000	6,900	156,000	102,000
2,200	90,000	59,000	7,000	156,000	102,000
2,300	90,000	59,000	7,200	156,000	102,000
2,500	95,000	62,000	7,500	156,000	102,000
2,600	95,000	62,000	8,000	165,000	109,000
2,700	100,000	66,000	8,200	165,000	109,000
2,900	100,000	66,000	8,250	165,000	109,000
3,000	100,000	66,000	8,800	175,000	115,000
3,100	106,000	69,000	9,000	175,000	115,000
3,150	106,000	69,000	9,250	175,000	115,000
3,200	106,000	69,000	9,500	175,000	115,000
3,250	106,000	69,000	10,000	184,000	121,000
3,300	106,000	69,000	11,250	195,000	128,000
3,400	112,000	73,000	14,000	214,000	140,000
3,500	112,000	73,000	14,500	220,000	144,000
3,600	112,000	73,000	15,000	220,000	144,000
3,900	119,000	78,000			
4,000	119,000	78,000			
4,100	119,000	78,000			
4,200	119,000	78,000			
4,300	126,000	82,000			
4,400	126,000	82,000			
4,500	126,000	82,000			
4,600	126,000	82,000			

HARTNER

长系列麻花钻

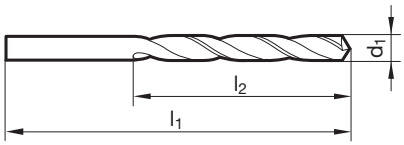
产品代号 81330



P	M	K	N	S	H
			•		

HSS | W | ~10xD | DIN 340 | 130° | h8 | R | Cyl

芯厚 ≥ Ø 14,250 • 圆弧后刀面 • 尤其适合加工深孔
适于加工：软/长屑材料 • 铝及铝合金 • 锌,精炼铜,硅,电子材料 • 软复合材料、木头



d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
0,500		32,000	12,000	3,500		112,000	73,000
0,600		35,000	15,000	3,600		112,000	73,000
0,700		42,000	21,000	3,650		112,000	73,000
0,800		46,000	25,000	3,700		112,000	73,000
0,900		51,000	29,000	3,750		112,000	73,000
0,950		51,000	29,000	3,800		119,000	78,000
1,000		56,000	33,000	3,900		119,000	78,000
1,050		56,000	33,000	4,000		119,000	78,000
1,100		60,000	37,000	4,100		119,000	78,000
1,200		65,000	41,000	4,150		119,000	78,000
1,250		65,000	41,000	4,200		119,000	78,000
1,300		65,000	41,000	4,250		119,000	78,000
1,350		70,000	45,000	4,300		126,000	82,000
1,500		70,000	45,000	4,400		126,000	82,000
1,600		76,000	50,000	4,500		126,000	82,000
1,780		80,000	53,000	4,600		126,000	82,000
1,800		80,000	53,000	4,700		126,000	82,000
1,850		80,000	53,000	4,800		132,000	87,000
1,900		80,000	53,000	4,900		132,000	87,000
1,950		85,000	56,000	5,000		132,000	87,000
2,000		85,000	56,000	5,100		132,000	87,000
2,050		85,000	56,000	5,200		132,000	87,000
2,100		85,000	56,000	5,250		132,000	87,000
2,150		90,000	59,000	5,300		132,000	87,000
2,200		90,000	59,000	5,400		139,000	91,000
2,300		90,000	59,000	5,500		139,000	91,000
2,500		95,000	62,000	5,600		139,000	91,000
2,550		95,000	62,000	5,700		139,000	91,000
2,700		100,000	66,000	5,800		139,000	91,000
2,800		100,000	66,000	6,000		139,000	91,000
2,850		100,000	66,000	6,100		148,000	97,000
2,900		100,000	66,000	6,200		148,000	97,000
2,950		100,000	66,000	6,300		148,000	97,000
3,000		100,000	66,000	6,400		148,000	97,000
3,050		106,000	69,000	6,500		148,000	97,000
3,100		106,000	69,000	6,600		148,000	97,000
3,200		106,000	69,000	6,700		148,000	97,000
3,250		106,000	69,000	6,750	17/64	156,000	102,000
3,300		106,000	69,000	6,800		156,000	102,000
3,350		106,000	69,000	6,900		156,000	102,000
3,400		112,000	73,000	7,000		156,000	102,000
3,450		112,000	73,000	7,100		156,000	102,000

长系列麻花钻

d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
7,200		156,000	102,000	9,700		184,000	121,000
7,300		156,000	102,000	9,750		184,000	121,000
7,400		156,000	102,000	9,800		184,000	121,000
7,500		156,000	102,000	10,000		184,000	121,000
7,600		165,000	109,000	10,200		184,000	121,000
7,700		165,000	109,000	10,300		184,000	121,000
7,750		165,000	109,000	11,000		195,000	128,000
7,800		165,000	109,000	11,300		195,000	128,000
7,900		165,000	109,000	11,500		195,000	128,000
8,000		165,000	109,000	12,000		205,000	134,000
8,100		165,000	109,000	13,500		214,000	140,000
8,200		165,000	109,000	14,000		214,000	140,000
8,300		165,000	109,000	14,250		220,000	144,000
8,400		165,000	109,000	14,500		220,000	144,000
8,500		165,000	109,000	15,500		227,000	149,000
8,600		175,000	115,000	17,000		235,000	154,000
8,700		175,000	115,000	20,000		254,000	166,000
8,800		175,000	115,000				
8,900		175,000	115,000				
9,000		175,000	115,000				
9,100		175,000	115,000				
9,200		175,000	115,000				
9,300		175,000	115,000				
9,500		175,000	115,000				

HARTNER

长系列麻花钻

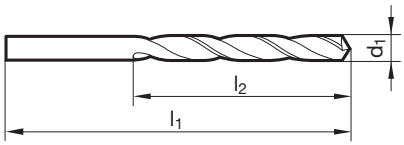
产品代号 81340



P	M	K	N	S	H
•		•	•		

HSS | >Ø 2,36 | FN | ~10xD | DIN 340 | 130° | h8 | R | Cyl

芯厚 ≥ Ø 1,000 • 圆弧后刀面 • 宽槽 • 适合排屑条件不佳的场合
适于加工：≤1000N/mm²的铸铁和钢 • 灰铸铁,可锻铸铁和球墨铸铁 - 粉末冶金铁和石墨



d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
0,900		51,000	29,000	4,300		126,000	82,000
1,000		56,000	33,000	4,400		126,000	82,000
1,100		60,000	37,000	4,500		126,000	82,000
1,200		65,000	41,000	4,600		126,000	82,000
1,300		65,000	41,000	4,700		126,000	82,000
1,400		70,000	45,000	4,750		126,000	82,000
1,500		70,000	45,000	4,800		132,000	87,000
1,600		76,000	50,000	4,900		132,000	87,000
1,700		76,000	50,000	5,000		132,000	87,000
1,800		80,000	53,000	5,100		132,000	87,000
1,900		80,000	53,000	5,200		132,000	87,000
2,000		85,000	56,000	5,400		139,000	91,000
2,100		85,000	56,000	5,500		139,000	91,000
2,200		90,000	59,000	5,600		139,000	91,000
2,300		90,000	59,000	5,700		139,000	91,000
2,400		95,000	62,000	5,800		139,000	91,000
2,500		95,000	62,000	5,900		139,000	91,000
2,600		95,000	62,000	6,000		139,000	91,000
2,650		95,000	62,000	6,100		148,000	97,000
2,700		100,000	66,000	6,200		148,000	97,000
2,750		100,000	66,000	6,300		148,000	97,000
2,800		100,000	66,000	6,500		148,000	97,000
2,850		100,000	66,000	6,600		148,000	97,000
2,900		100,000	66,000	6,700		148,000	97,000
2,950		100,000	66,000	6,800		156,000	102,000
3,000		100,000	66,000	6,900		156,000	102,000
3,100		106,000	69,000	7,000		156,000	102,000
3,170	1/8	106,000	69,000	7,100		156,000	102,000
3,200		106,000	69,000	7,200		156,000	102,000
3,250		106,000	69,000	7,300		156,000	102,000
3,300		106,000	69,000	7,400		156,000	102,000
3,400		112,000	73,000	7,500		156,000	102,000
3,500		112,000	73,000	7,600		165,000	109,000
3,600		112,000	73,000	7,700		165,000	109,000
3,700		112,000	73,000	7,800		165,000	109,000
3,750		112,000	73,000	7,900		165,000	109,000
3,800		119,000	78,000	8,000		165,000	109,000
3,900		119,000	78,000	8,100		165,000	109,000
4,000		119,000	78,000	8,200		165,000	109,000
4,100		119,000	78,000	8,300		165,000	109,000
4,200		119,000	78,000	8,400		165,000	109,000
4,250		119,000	78,000	8,500		165,000	109,000

HARTNER

长系列麻花钻

d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
8,600		175,000	115,000	11,000		195,000	128,000
8,700		175,000	115,000	11,200		195,000	128,000
8,800		175,000	115,000	11,250		195,000	128,000
8,900		175,000	115,000	11,500		195,000	128,000
9,000		175,000	115,000	11,800		195,000	128,000
9,100		175,000	115,000	12,000		205,000	134,000
9,200		175,000	115,000	12,200		205,000	134,000
9,300		175,000	115,000	12,500		205,000	134,000
9,400		175,000	115,000	12,800		205,000	134,000
9,500		175,000	115,000	13,000		205,000	134,000
9,600		184,000	121,000	14,000		214,000	140,000
9,700		184,000	121,000				
9,800		184,000	121,000				
9,900		184,000	121,000				
10,000		184,000	121,000				
10,300		184,000	121,000				
10,500		184,000	121,000				
10,800		195,000	128,000				

长系列麻花钻

产品代号 84423



P	M	K	N	S	H
•		•	•		

HSS | T | FN | ~10xD | DIN 340 | 130° | h8 | R | Cyl

芯厚 ≥ Ø 1,000 • 圆弧后刀面 • 宽槽 • 适合排屑条件不佳的场合
适于加工：≤1000N/mm²的铸铁和钢 • 灰铸铁,可锻铸铁和球墨铸铁 - 粉末冶金铁和石墨

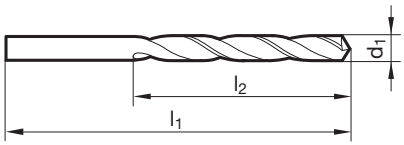
产品代号 84506



P	M	K	N	S	H
•		•	•		

HSS | F | FN | ~10xD | DIN 340 | 130° | h8 | R | Cyl

芯厚 ≥ Ø 1,000 • 圆弧后刀面 • 宽槽 • 适合排屑条件不佳的场合
适于加工：≤1000N/mm²的铸铁和钢 • 灰铸铁,可锻铸铁和球墨铸铁 - 粉末冶金铁和石墨



d1 mm	l1 mm	l2 mm	d1 mm	l1 mm	l2 mm
1,000	56,000	33,000	4,000	119,000	78,000
1,100	60,000	37,000	4,100	119,000	78,000
1,200	65,000	41,000	4,200	119,000	78,000
1,300	65,000	41,000	4,300	126,000	82,000
1,400	70,000	45,000	4,400	126,000	82,000
1,500	70,000	45,000	4,500	126,000	82,000
1,600	76,000	50,000	4,600	126,000	82,000
1,700	76,000	50,000	4,700	126,000	82,000
1,800	80,000	53,000	4,800	132,000	87,000
1,900	80,000	53,000	4,900	132,000	87,000
2,000	85,000	56,000	5,000	132,000	87,000
2,100	85,000	56,000	5,100	132,000	87,000
2,200	90,000	59,000	5,200	132,000	87,000
2,300	90,000	59,000	5,300	132,000	87,000
2,400	95,000	62,000	5,400	139,000	91,000
2,500	95,000	62,000	5,500	139,000	91,000
2,600	95,000	62,000	5,600	139,000	91,000
2,700	100,000	66,000	5,700	139,000	91,000
2,800	100,000	66,000	5,800	139,000	91,000
2,900	100,000	66,000	5,900	139,000	91,000
3,000	100,000	66,000	6,000	139,000	91,000
3,100	106,000	69,000	6,100	148,000	97,000
3,200	106,000	69,000	6,200	148,000	97,000
3,300	106,000	69,000	6,300	148,000	97,000
3,400	112,000	73,000	6,400	148,000	97,000
3,500	112,000	73,000	6,500	148,000	97,000
3,600	112,000	73,000	6,600	148,000	97,000
3,700	112,000	73,000	6,700	148,000	97,000
3,800	119,000	78,000	6,800	156,000	102,000
3,900	119,000	78,000	6,900	156,000	102,000

长系列麻花钻

d1 mm	l1 mm	l2 mm	d1 mm	l1 mm	l2 mm
7,000	156,000	102,000	8,500	165,000	109,000
7,200	156,000	102,000	8,700	175,000	115,000
7,300	156,000	102,000	9,000	175,000	115,000
7,400	156,000	102,000	9,800	184,000	121,000
7,500	156,000	102,000	10,000	184,000	121,000
7,600	165,000	109,000	11,000	195,000	128,000
7,800	165,000	109,000	11,500	195,000	128,000
7,900	165,000	109,000	12,000	205,000	134,000
8,000	165,000	109,000	12,700	205,000	134,000
8,100	165,000	109,000	14,000	214,000	140,000
8,200	165,000	109,000			
8,300	165,000	109,000			

HARTNER

长系列麻花钻

产品代号 81350

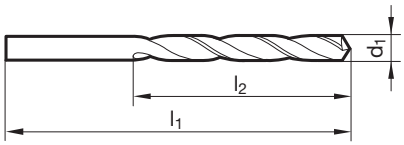


P	M	K	N	S	H
○			●		

HSS | ◯ | FW | ~10xD | DIN 340 | 130° | h8 | R | Cyl

芯厚 ≥ Ø 2,400 • 圆弧后刀面 • 特别宽的排屑槽

适于加工：软/长屑材料 • ≤500N/mm² • 低碳钢 • 铝及铝合金 • 锌,精炼铜,硅,电子材料 • 锌合金, 铝, 软塑料、木头



d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
1,000		56,000	33,000	6,000		139,000	91,000
1,400		70,000	45,000	6,100		148,000	97,000
1,500		70,000	45,000	6,200		148,000	97,000
2,000		85,000	56,000	6,300		148,000	97,000
2,100		85,000	56,000	6,400		148,000	97,000
2,200		90,000	59,000	6,500		148,000	97,000
2,300		90,000	59,000	6,600		148,000	97,000
2,400		95,000	62,000	6,700		148,000	97,000
2,500		95,000	62,000	6,800		156,000	102,000
2,700		100,000	66,000	6,900		156,000	102,000
2,800		100,000	66,000	7,000		156,000	102,000
2,900		100,000	66,000	7,100		156,000	102,000
3,000		100,000	66,000	7,200		156,000	102,000
3,100		106,000	69,000	7,300		156,000	102,000
3,200		106,000	69,000	7,500		156,000	102,000
3,250		106,000	69,000	7,600		165,000	109,000
3,300		106,000	69,000	7,700		165,000	109,000
3,400		112,000	73,000	7,800		165,000	109,000
3,500		112,000	73,000	7,900		165,000	109,000
3,600		112,000	73,000	8,000		165,000	109,000
3,700		112,000	73,000	8,100		165,000	109,000
3,800		119,000	78,000	8,200		165,000	109,000
3,900		119,000	78,000	8,400		165,000	109,000
4,000		119,000	78,000	8,500		165,000	109,000
4,100		119,000	78,000	8,600		175,000	115,000
4,200		119,000	78,000	8,700		175,000	115,000
4,300		126,000	82,000	8,800		175,000	115,000
4,400		126,000	82,000	8,900		175,000	115,000
4,500		126,000	82,000	9,000		175,000	115,000
4,600		126,000	82,000	9,100		175,000	115,000
4,700		126,000	82,000	9,200		175,000	115,000
4,800		132,000	87,000	9,300		175,000	115,000
4,900		132,000	87,000	9,400		175,000	115,000
5,000		132,000	87,000	9,500		175,000	115,000
5,100		132,000	87,000	9,600		184,000	121,000
5,200		132,000	87,000	9,700		184,000	121,000
5,400		139,000	91,000	9,800		184,000	121,000
5,500		139,000	91,000	10,000		184,000	121,000
5,600		139,000	91,000	10,100		184,000	121,000
5,700		139,000	91,000	10,500		184,000	121,000
5,800		139,000	91,000	10,700		195,000	128,000
5,900		139,000	91,000	10,800		195,000	128,000

长系列麻花钻

d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
11,200		195,000	128,000	12,400		205,000	134,000
11,500		195,000	128,000	12,500		205,000	134,000
11,800		195,000	128,000	12,800		205,000	134,000
12,000		205,000	134,000	13,000		205,000	134,000
12,200		205,000	134,000	13,500		214,000	140,000
12,300	31/64	205,000	134,000	14,000		214,000	140,000

HARTNER

长系列麻花钻

产品代号 81311

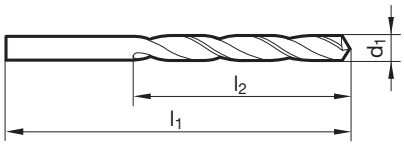


P	M	K	N	S	H
●	○	●	●	○	

HSS-E | >Ø 2,36 | N | ~10xD | DIN 340 | 118° | h8 | R | Cyl

芯厚 ≥ Ø 1,000 • 圆弧后刀面 • 高耐磨强度 • 耐磨损 高强度

适于加工：强度大于800 N/mm²的合金/非合金钢和铸件 • 热轧和冷轧钢 • 耐磨轴承钢 • 适于加工：高合金钢 • 热处理钢和淬硬钢



d1 mm	l1 mm	l2 mm	d1 mm	l1 mm	l2 mm
0,500	32,000	12,000	6,500	148,000	97,000
0,600	35,000	15,000	6,600	148,000	97,000
0,700	42,000	21,000	6,700	148,000	97,000
0,800	46,000	25,000	6,800	156,000	102,000
0,900	51,000	29,000	6,900	156,000	102,000
1,000	56,000	33,000	7,000	156,000	102,000
1,100	60,000	37,000	7,200	156,000	102,000
1,200	65,000	41,000	7,300	156,000	102,000
1,400	70,000	45,000	7,400	156,000	102,000
1,500	70,000	45,000	7,600	165,000	109,000
1,900	80,000	53,000	7,700	165,000	109,000
2,000	85,000	56,000	7,800	165,000	109,000
2,200	90,000	59,000	7,900	165,000	109,000
2,500	95,000	62,000	8,000	165,000	109,000
3,000	100,000	66,000	8,300	165,000	109,000
3,100	106,000	69,000	8,400	165,000	109,000
3,200	106,000	69,000	8,600	175,000	115,000
3,300	106,000	69,000	8,700	175,000	115,000
3,400	112,000	73,000	8,800	175,000	115,000
3,500	112,000	73,000	8,900	175,000	115,000
3,900	119,000	78,000	9,000	175,000	115,000
4,000	119,000	78,000	9,100	175,000	115,000
4,100	119,000	78,000	9,200	175,000	115,000
4,200	119,000	78,000	9,300	175,000	115,000
4,300	126,000	82,000	9,400	175,000	115,000
4,400	126,000	82,000	9,500	175,000	115,000
4,500	126,000	82,000	9,600	184,000	121,000
4,600	126,000	82,000	9,700	184,000	121,000
4,700	126,000	82,000	9,900	184,000	121,000
4,800	132,000	87,000	10,000	184,000	121,000
4,900	132,000	87,000	10,500	184,000	121,000
5,000	132,000	87,000	10,800	195,000	128,000
5,100	132,000	87,000	11,000	195,000	128,000
5,300	132,000	87,000	11,200	195,000	128,000
5,500	139,000	91,000	12,000	205,000	134,000
5,600	139,000	91,000	12,500	205,000	134,000
5,700	139,000	91,000			
5,800	139,000	91,000			
5,900	139,000	91,000			
6,000	139,000	91,000			
6,300	148,000	97,000			
6,400	148,000	97,000			

HARTNER

长系列麻花钻

产品代号 81341

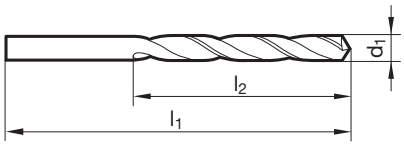


P	M	K	N	S	H
•	•	•	•		

HSS-E | >Ø 2,36 | FN | ~10xD | DIN 340 | 130° | h8 | R | Cyl

芯厚 ≥ Ø 1,100 • 圆弧后刀面 • 高耐磨强度 • 宽槽 • 耐磨损 高强度 • 适合排屑条件不佳的场合

适于加工：强度大于800 N/mm²的合金/非合金钢和铸件 • 热轧和冷轧钢 • 耐磨轴承钢 • 适于加工：高合金钢 • 热处理钢和淬硬钢



d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
1,000		56,000	33,000	4,760	3/16	132,000	87,000
1,100		60,000	37,000	4,800		132,000	87,000
1,200		65,000	41,000	4,900		132,000	87,000
1,250		65,000	41,000	5,000		132,000	87,000
1,300		65,000	41,000	5,100		132,000	87,000
1,400		70,000	45,000	5,200		132,000	87,000
1,500		70,000	45,000	5,300		132,000	87,000
1,600		76,000	50,000	5,400		139,000	91,000
1,700		76,000	50,000	5,500		139,000	91,000
1,800		80,000	53,000	5,600		139,000	91,000
1,900		80,000	53,000	5,700		139,000	91,000
2,000		85,000	56,000	5,800		139,000	91,000
2,100		85,000	56,000	5,900		139,000	91,000
2,200		90,000	59,000	6,000		139,000	91,000
2,300		90,000	59,000	6,100		148,000	97,000
2,400		95,000	62,000	6,150		148,000	97,000
2,440		95,000	62,000	6,200		148,000	97,000
2,500		95,000	62,000	6,250		148,000	97,000
2,600		95,000	62,000	6,300		148,000	97,000
2,700		100,000	66,000	6,350	1/4	148,000	97,000
2,800		100,000	66,000	6,400		148,000	97,000
2,900		100,000	66,000	6,500		148,000	97,000
3,000		100,000	66,000	6,600		148,000	97,000
3,050		106,000	69,000	6,700		148,000	97,000
3,100		106,000	69,000	6,800		156,000	102,000
3,200		106,000	69,000	6,900		156,000	102,000
3,300		106,000	69,000	7,000		156,000	102,000
3,400		112,000	73,000	7,100		156,000	102,000
3,500		112,000	73,000	7,200		156,000	102,000
3,600		112,000	73,000	7,300		156,000	102,000
3,700		112,000	73,000	7,400		156,000	102,000
3,800		119,000	78,000	7,500		156,000	102,000
3,900		119,000	78,000	7,600		165,000	109,000
4,000		119,000	78,000	7,700		165,000	109,000
4,050		119,000	78,000	7,800		165,000	109,000
4,100		119,000	78,000	7,900		165,000	109,000
4,200		119,000	78,000	8,000		165,000	109,000
4,300		126,000	82,000	8,100		165,000	109,000
4,400		126,000	82,000	8,200		165,000	109,000
4,500		126,000	82,000	8,300		165,000	109,000
4,600		126,000	82,000	8,400		165,000	109,000
4,700		126,000	82,000	8,500		165,000	109,000

长系列麻花钻

d1 mm	inch	l1 mm	l2 mm
8,600		175,000	115,000
8,700		175,000	115,000
8,800		175,000	115,000
8,900		175,000	115,000
9,000		175,000	115,000
9,100		175,000	115,000
9,200		175,000	115,000
9,300		175,000	115,000
9,400		175,000	115,000
9,500		175,000	115,000
9,600		184,000	121,000
9,700		184,000	121,000
9,800		184,000	121,000
9,900		184,000	121,000
10,000		184,000	121,000
10,200		184,000	121,000
10,500		184,000	121,000
10,700		195,000	128,000

d1 mm	inch	l1 mm	l2 mm
10,800		195,000	128,000
10,900		195,000	128,000
11,000		195,000	128,000
11,500		195,000	128,000
11,800		195,000	128,000
11,910	15/32	205,000	134,000
12,000		205,000	134,000
12,500		205,000	134,000
13,000		205,000	134,000
16,000		227,000	149,000

长系列麻花钻

产品代号 81361



P	M	K	N	S	H
○	●			●	

HSS-E | S | ~10xD | DIN 340 | 130° | h8 | R | Cyl

芯厚 ≥ Ø 1,400 • 圆弧后刀面 • 高耐磨强度 • 耐磨损 高强度
钛及钛合金 • 不锈钢/耐酸-/耐热奥氏体钢 • 强度超过900 N/mm²的高强度/短屑钢 • 耐磨轴承钢 • 哈氏合金，镍合金，锰合金

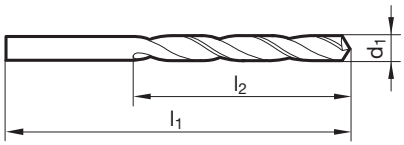
产品代号 81362



P	M	K	N	S	H
○	●			●	

HSS-E | T | S | ~10xD | DIN 340 | 130° | h8 | R | Cyl

芯厚 ≥ Ø 1,000 • 圆弧后刀面 • 高耐磨强度 • 耐磨损 高强度
钛及钛合金 • 不锈钢/耐酸-/耐热奥氏体钢 • 强度超过900 N/mm²的高强度/短屑钢 • 耐磨轴承钢 • 哈氏合金，镍合金，锰合金



d1 mm	l1 mm	l2 mm	d1 mm	l1 mm	l2 mm
1,000	56,000	33,000	4,000	119,000	78,000
1,100	60,000	37,000	4,100	119,000	78,000
1,200	65,000	41,000	4,200	119,000	78,000
1,300	65,000	41,000	4,300	126,000	82,000
1,400	70,000	45,000	4,400	126,000	82,000
1,500	70,000	45,000	4,500	126,000	82,000
1,600	76,000	50,000	4,600	126,000	82,000
1,700	76,000	50,000	4,700	126,000	82,000
1,800	80,000	53,000	4,800	132,000	87,000
1,900	80,000	53,000	4,900	132,000	87,000
2,000	85,000	56,000	5,000	132,000	87,000
2,100	85,000	56,000	5,100	132,000	87,000
2,200	90,000	59,000	5,200	132,000	87,000
2,300	90,000	59,000	5,300	132,000	87,000
2,400	95,000	62,000	5,400	139,000	91,000
2,500	95,000	62,000	5,500	139,000	91,000
2,600	95,000	62,000	5,600	139,000	91,000
2,700	100,000	66,000	5,700	139,000	91,000
2,800	100,000	66,000	5,800	139,000	91,000
2,900	100,000	66,000	5,900	139,000	91,000
3,000	100,000	66,000	6,000	139,000	91,000
3,100	106,000	69,000	6,100	148,000	97,000
3,200	106,000	69,000	6,200	148,000	97,000
3,300	106,000	69,000	6,300	148,000	97,000
3,400	112,000	73,000	6,400	148,000	97,000
3,500	112,000	73,000	6,500	148,000	97,000
3,600	112,000	73,000	6,600	148,000	97,000
3,700	112,000	73,000	6,700	148,000	97,000
3,800	119,000	78,000	6,800	156,000	102,000
3,900	119,000	78,000	6,900	156,000	102,000

长系列麻花钻

d1 mm	l1 mm	l2 mm	d1 mm	l1 mm	l2 mm
7,000	156,000	102,000	8,500	165,000	109,000
7,100	156,000	102,000	8,700	175,000	115,000
7,300	156,000	102,000	9,000	175,000	115,000
7,400	156,000	102,000	9,500	175,000	115,000
7,500	156,000	102,000	10,000	184,000	121,000
7,600	165,000	109,000	10,500	184,000	121,000
7,700	165,000	109,000	11,000	195,000	128,000
7,800	165,000	109,000	11,500	195,000	128,000
8,000	165,000	109,000	12,000	205,000	134,000
8,200	165,000	109,000	12,500	205,000	134,000
8,300	165,000	109,000	13,000	205,000	134,000
8,400	165,000	109,000			

HARTNER

长系列麻花钻

产品代号 84814



P	M	K	N	S	H
•	•	•	•		

HSS-E | FU 500 DZ | ~10xD | DIN 340 | 118° | h8 | R | Cyl

芯厚 ≥ Ø 1,000 • 双后刀面 • 高耐磨强度 • 要求适合低进给率 • 要求低扭矩 • 耐磨损 高强度 • 普遍适用
强度小于800N/mm²的合金/非合金钢 • 热/冷锻钢 • 耐磨轴承钢 • 有色金属 • 铸件材料 • 不锈钢 • 塑料

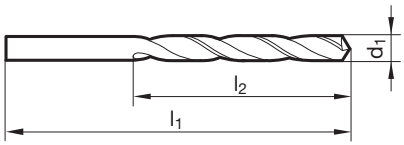
产品代号 84812



P	M	K	N	S	H
•	•	•	•		

HSS-E | T | FU 500 DZ | ~10xD | DIN 340 | 118° | h8 | R | Cyl

芯厚 ≥ Ø 1,000 • 双后刀面 • 高耐磨强度 • 要求低扭矩 • 要求适合低进给率 • 耐磨损 高强度 • 普遍适用
强度小于800N/mm²的合金/非合金钢 • 热/冷锻钢 • 耐磨轴承钢 • 有色金属 • 铸件材料 • 塑料 • 不锈钢



d1 mm	l1 mm	l2 mm	d1 mm	l1 mm	l2 mm
1,000	56,000	33,000	4,000	119,000	78,000
1,100	60,000	37,000	4,100	119,000	78,000
1,200	65,000	41,000	4,200	119,000	78,000
1,300	65,000	41,000	4,300	126,000	82,000
1,400	70,000	45,000	4,400	126,000	82,000
1,500	70,000	45,000	4,500	126,000	82,000
1,600	76,000	50,000	4,600	126,000	82,000
1,700	76,000	50,000	4,700	126,000	82,000
1,800	80,000	53,000	4,800	132,000	87,000
1,900	80,000	53,000	4,900	132,000	87,000
2,000	85,000	56,000	5,000	132,000	87,000
2,100	85,000	56,000	5,100	132,000	87,000
2,200	90,000	59,000	5,200	132,000	87,000
2,300	90,000	59,000	5,300	132,000	87,000
2,400	95,000	62,000	5,400	139,000	91,000
2,500	95,000	62,000	5,500	139,000	91,000
2,600	95,000	62,000	5,600	139,000	91,000
2,700	100,000	66,000	5,700	139,000	91,000
2,800	100,000	66,000	5,800	139,000	91,000
2,900	100,000	66,000	5,900	139,000	91,000
3,000	100,000	66,000	6,000	139,000	91,000
3,100	106,000	69,000	6,100	148,000	97,000
3,200	106,000	69,000	6,200	148,000	97,000
3,300	106,000	69,000	6,300	148,000	97,000
3,400	112,000	73,000	6,400	148,000	97,000
3,500	112,000	73,000	6,500	148,000	97,000
3,600	112,000	73,000	6,600	148,000	97,000
3,700	112,000	73,000	6,700	148,000	97,000
3,800	119,000	78,000	6,800	156,000	102,000
3,900	119,000	78,000	6,900	156,000	102,000

长系列麻花钻

d1 mm	l1 mm	l2 mm	d1 mm	l1 mm	l2 mm
7,000	156,000	102,000	9,500	175,000	115,000
7,100	156,000	102,000	9,600	184,000	121,000
7,200	156,000	102,000	9,700	184,000	121,000
7,300	156,000	102,000	9,800	184,000	121,000
7,400	156,000	102,000	9,900	184,000	121,000
7,500	156,000	102,000	10,000	184,000	121,000
7,600	165,000	109,000	10,100	184,000	121,000
7,700	165,000	109,000	10,200	184,000	121,000
7,800	165,000	109,000	10,300	184,000	121,000
7,900	165,000	109,000	10,400	184,000	121,000
8,000	165,000	109,000	10,500	184,000	121,000
8,100	165,000	109,000	11,000	195,000	128,000
8,200	165,000	109,000	11,500	195,000	128,000
8,300	165,000	109,000	12,000	205,000	134,000
8,400	165,000	109,000	12,500	205,000	134,000
8,500	165,000	109,000	13,000	205,000	134,000
8,600	175,000	115,000	13,500	214,000	140,000
8,700	175,000	115,000	14,000	214,000	140,000
8,800	175,000	115,000			
9,000	175,000	115,000			
9,100	175,000	115,000			
9,200	175,000	115,000			
9,300	175,000	115,000			
9,400	175,000	115,000			

长系列麻花钻

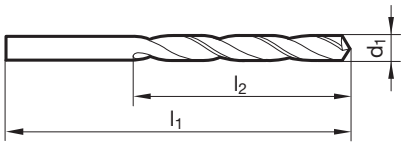
产品代号 89286



P	M	K	N	S	H
○		○			○

VHM | ◯ | N | ~10xD | WN | 130° | h7 | R | Cyl

双后刀面 • 精密磨削过的主切削刃
玻璃纤维增强塑料 • 加工热固性塑料在切削刃和刃带上易磨损



d1 mm	l1 mm	l2 mm
0,500	38,000	8,500
0,600	38,000	9,500
0,650	38,000	10,500
0,700	38,000	10,500
0,750	38,000	12,500
0,800	38,000	12,500
0,850	38,000	14,500
0,900	38,000	14,500
1,000	38,000	17,000
1,050	38,000	17,000
1,100	38,000	17,000
1,200	38,000	17,000

d1 mm	l1 mm	l2 mm
1,300	38,000	17,000
1,400	38,000	17,000
1,450	38,000	17,000
1,500	38,000	17,000

HARTNER

超长麻花钻,系列1

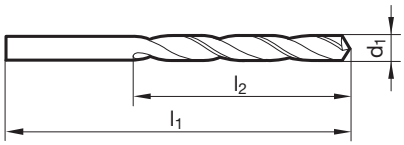
产品代号 81410



P	M	K	N	S	H
●		●	○		

HSS | >Ø 2,36 | N | ~15xD | DIN 1869 | 118° | h8 | R | Cyl

芯厚 ≥ Ø 2,400 • 圆弧后刀面 • 适合加工深孔
适于加工：合金/非合金钢和铸钢 • 灰铸铁,可锻铸铁和球墨铸铁 • 粉末冶金铁，铜镍锌合金,石墨



d1 mm	l1 mm	l2 mm	d1 mm	l1 mm	l2 mm
1,600	115,000	75,000	6,400	215,000	150,000
1,800	120,000	80,000	6,500	215,000	150,000
1,900	120,000	80,000	6,600	215,000	150,000
2,000	125,000	85,000	6,700	215,000	150,000
2,200	135,000	90,000	6,800	225,000	155,000
2,300	135,000	90,000	7,000	225,000	155,000
2,400	140,000	95,000	7,100	225,000	155,000
2,500	140,000	95,000	7,500	225,000	155,000
2,700	150,000	100,000	7,600	240,000	165,000
2,800	150,000	100,000	7,700	240,000	165,000
2,900	150,000	100,000	7,800	240,000	165,000
3,000	150,000	100,000	7,900	240,000	165,000
3,100	155,000	105,000	8,000	240,000	165,000
3,200	155,000	105,000	8,100	240,000	165,000
3,250	155,000	105,000	8,200	240,000	165,000
3,300	155,000	105,000	8,500	240,000	165,000
3,400	165,000	115,000	8,600	250,000	175,000
3,500	165,000	115,000	8,800	250,000	175,000
3,700	165,000	115,000	9,000	250,000	175,000
3,800	175,000	120,000	9,400	250,000	175,000
3,900	175,000	120,000	9,500	250,000	175,000
4,000	175,000	120,000	9,700	265,000	185,000
4,100	175,000	120,000	10,000	265,000	185,000
4,200	175,000	120,000	10,200	265,000	185,000
4,300	185,000	125,000	10,500	265,000	185,000
4,500	185,000	125,000	11,000	280,000	195,000
4,600	185,000	125,000	11,500	280,000	195,000
4,700	185,000	125,000	11,800	280,000	195,000
4,800	195,000	135,000	12,000	295,000	205,000
4,900	195,000	135,000	12,500	295,000	205,000
5,000	195,000	135,000	13,000	295,000	205,000
5,100	195,000	135,000			
5,200	195,000	135,000			
5,300	195,000	135,000			
5,400	205,000	140,000			
5,500	205,000	140,000			
5,700	205,000	140,000			
5,800	205,000	140,000			
5,900	205,000	140,000			
6,000	205,000	140,000			
6,200	215,000	150,000			
6,300	215,000	150,000			

HARTNER

超长麻花钻,系列1

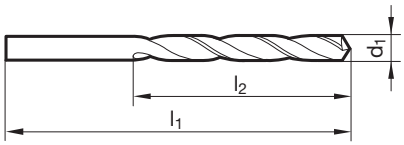
产品代号 81440



P	M	K	N	S	H
•		•	•		

HSS | >Ø 2,36 | FN | ~15xD | DIN 1869 | 130° | h8 | R | Cyl

芯厚 ≥ Ø 2,000 • 圆弧后刀面 • 宽槽 • 适合加工深孔 • 适合排屑条件不佳的场合
适于加工：≤1000N/mm²的铸铁和钢 • 灰铸铁,可锻铸铁和球墨铸铁 - 粉末冶金铁和石墨



d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
2,000		125,000	85,000	6,500		215,000	150,000
2,200		135,000	90,000	6,600		215,000	150,000
2,300		135,000	90,000	6,800		225,000	155,000
2,400		140,000	95,000	7,000		225,000	155,000
2,500		140,000	95,000	7,100		225,000	155,000
2,600		140,000	95,000	7,300		225,000	155,000
2,700		150,000	100,000	7,500		225,000	155,000
2,850		150,000	100,000	7,800		240,000	165,000
2,900		150,000	100,000	7,900		240,000	165,000
2,950		150,000	100,000	8,000		240,000	165,000
3,000		150,000	100,000	8,100		240,000	165,000
3,100		155,000	105,000	8,200		240,000	165,000
3,170	1/8	155,000	105,000	8,400		240,000	165,000
3,200		155,000	105,000	8,500		240,000	165,000
3,300		155,000	105,000	8,800		250,000	175,000
3,400		165,000	115,000	9,000		250,000	175,000
3,500		165,000	115,000	9,200		250,000	175,000
3,600		165,000	115,000	9,300		250,000	175,000
3,700		165,000	115,000	9,400		250,000	175,000
3,750		165,000	115,000	9,500		250,000	175,000
3,800		175,000	120,000	9,600		265,000	185,000
3,900		175,000	120,000	9,700		265,000	185,000
4,000		175,000	120,000	9,800		265,000	185,000
4,200		175,000	120,000	9,900		265,000	185,000
4,500		185,000	125,000	10,000		265,000	185,000
4,600		185,000	125,000	10,200		265,000	185,000
4,700		185,000	125,000	10,500		265,000	185,000
4,800		195,000	135,000	11,000		280,000	195,000
5,000		195,000	135,000	11,500		280,000	195,000
5,100		195,000	135,000	11,750		280,000	195,000
5,200		195,000	135,000	11,800		280,000	195,000
5,300		195,000	135,000	12,000		295,000	205,000
5,400		205,000	140,000	12,500		295,000	205,000
5,500		205,000	140,000	12,700	1/2	295,000	205,000
5,600		205,000	140,000	13,000		295,000	205,000
5,700		205,000	140,000				
5,800		205,000	140,000				
5,900		205,000	140,000				
6,000		205,000	140,000				
6,200		215,000	150,000				
6,300		215,000	150,000				
6,400		215,000	150,000				

HARTNER

超长麻花钻,系列1

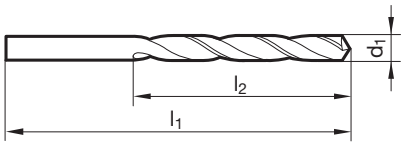
产品代号 84425



P	M	K	N	S	H
•		•	•		

HSS | T | FN | ~15xD | DIN 1869 | 130° | h8 | R | Cyl

芯厚 ≥ Ø 2,000 • 圆弧后刀面 • 宽槽 • 适合加工深孔 • 适合排屑条件不佳的场合
适于加工：≤1000N/mm²的铸铁和钢 • 灰铸铁,可锻铸铁和球墨铸铁 - 粉末冶金铁和石墨



d1 mm	l1 mm	l2 mm	d1 mm	l1 mm	l2 mm
2,000	125,000	85,000	5,500	205,000	140,000
2,100	125,000	85,000	5,800	205,000	140,000
2,500	140,000	95,000	6,000	205,000	140,000
3,000	150,000	100,000	6,500	215,000	150,000
3,200	155,000	105,000	6,600	215,000	150,000
3,500	165,000	115,000	7,000	225,000	155,000
4,000	175,000	120,000	7,500	225,000	155,000
4,200	175,000	120,000	8,000	240,000	165,000
4,500	185,000	125,000	9,000	250,000	175,000
4,600	185,000	125,000	10,000	265,000	185,000
5,000	195,000	135,000	11,000	280,000	195,000
5,100	195,000	135,000	12,000	295,000	205,000

HARTNER

超长麻花钻,系列1

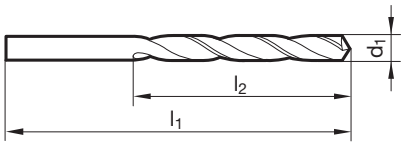
产品代号 81450



P	M	K	N	S	H
○			●		

HSS | ◯ | FW | ~15xD | DIN 1869 | 130° | h8 | R | Cyl

芯厚 ≥ Ø 2,500 • 圆弧后刀面 • 适合加工深孔
≤500 N/mm²的长屑材料 • 低碳钢 • 铝及铝合金 • 锌,精炼铜,硅,电子材料 • 锌合金, 铝, 软塑料、木头



d1 mm	l1 mm	l2 mm	d1 mm	l1 mm	l2 mm
2,000	125,000	85,000	7,000	225,000	155,000
2,500	140,000	95,000	9,500	250,000	175,000
2,600	140,000	95,000			
3,000	150,000	100,000			
3,200	155,000	105,000			
3,500	165,000	115,000			
4,000	175,000	120,000			
5,000	195,000	135,000			
5,500	205,000	140,000			
5,600	205,000	140,000			
6,000	205,000	140,000			
6,500	215,000	150,000			

HARTNER

超长麻花钻,系列1

产品代号 81441

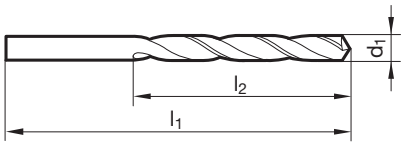


P	M	K	N	S	H
●	●	●	●		○

HSS-E | FN | ~15xD | DIN 1869 | 130° | h8 | R | Cyl

芯厚 ≥ Ø 3,000 • 圆弧后刀面 • 高耐磨强度 • 宽槽 • 耐磨损 高强度 • 适合加工深孔 • 适合排屑条件不佳的场合

适于加工：强度大于800N/mm²的钢（合金 以及 非合金）和铸铁 • 热轧和冷轧钢 • 耐磨轴承钢 • 适于加工：高合金钢 • 热处理钢和淬硬钢



d1 mm	inch	l1 mm	l2 mm
3,000		150,000	100,000
3,500		165,000	115,000
4,000		175,000	120,000
4,300		185,000	125,000
4,500		185,000	125,000
4,760	3/16	195,000	135,000
5,000		195,000	135,000
5,400		205,000	140,000
5,500		205,000	140,000
6,000		205,000	140,000
6,500		215,000	150,000
7,000		225,000	155,000

d1 mm	inch	l1 mm	l2 mm
8,000		240,000	165,000
8,200		240,000	165,000
8,500		240,000	165,000
9,000		250,000	175,000
9,500		250,000	175,000
10,000		265,000	185,000

HARTNER

超长麻花钻,系列2

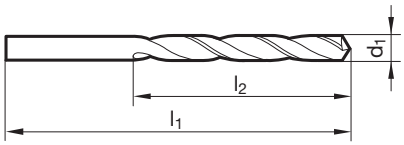
产品代号 81510



P	M	K	N	S	H
●		●	○		

HSS | N | ~20xD | DIN 1869 | 118° | h8 | R | Cyl

芯厚 ≥ Ø 3,000 • 圆弧后刀面 • 适合加工深孔
适于加工：合金/非合金钢和铸钢 • 灰铸铁,可锻铸铁和球墨铸铁 • 粉末冶金铁，铜镍锌合金,石墨



d1 mm	inch	l1 mm	l2 mm	d1 mm	inch	l1 mm	l2 mm
3,000		190,000	130,000	9,000		320,000	220,000
3,170	1/8	200,000	135,000	9,500		320,000	220,000
3,300		200,000	135,000	10,000		340,000	235,000
3,500		210,000	145,000	10,500		340,000	235,000
4,000		220,000	150,000	11,000		365,000	250,000
4,200		220,000	150,000	11,500		365,000	250,000
4,500		235,000	160,000	12,000		375,000	260,000
4,800		245,000	170,000				
5,000		245,000	170,000				
5,200		245,000	170,000				
5,500		260,000	180,000				
5,800		260,000	180,000				
6,000		260,000	180,000				
6,500		275,000	190,000				
6,800		290,000	200,000				
7,000		290,000	200,000				
8,000		305,000	210,000				
8,500		305,000	210,000				

HARTNER

超长麻花钻,系列2

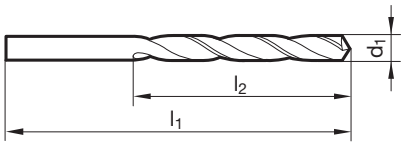
产品代号 81540



P	M	K	N	S	H
•		•	•		

HSS | >Ø 2,36 | FN | ~20xD | DIN 1869 | 130° | h8 | R | Cyl

芯厚 ≥ Ø 2,000 • 圆弧后刀面 • 宽槽 • 适合加工深孔 • 适合排屑条件不佳的场合
适于加工：≤1000N/mm²的铸铁和钢 • 灰铸铁,可锻铸铁和球墨铸铁 - 粉末冶金铁和石墨



d1 mm	inch	l1 mm	l2 mm
2,000		160,000	110,000
2,500		180,000	120,000
2,800		190,000	130,000
3,000		190,000	130,000
3,200		200,000	135,000
3,300		200,000	135,000
3,500		210,000	145,000
4,000		220,000	150,000
4,100		220,000	150,000
4,200		220,000	150,000
4,500		235,000	160,000
5,000		245,000	170,000
5,500		260,000	180,000
6,000		260,000	180,000
6,500		275,000	190,000
7,000		290,000	200,000
7,500		290,000	200,000
8,000		305,000	210,000

d1 mm	inch	l1 mm	l2 mm
8,200		305,000	210,000
8,500		305,000	210,000
9,000		320,000	220,000
9,500		320,000	220,000
9,800		340,000	235,000
10,000		340,000	235,000
10,200		340,000	235,000
10,500		340,000	235,000
10,720	27/64	365,000	250,000
11,000		365,000	250,000
11,500		365,000	250,000
12,000		375,000	260,000
12,500		375,000	260,000
12,700	1/2	375,000	260,000
13,000		375,000	260,000

HARTNER

超长麻花钻,系列2

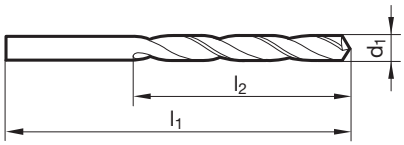
产品代号 84426



P	M	K	N	S	H
●		●	●	○	

HSS | T | FN | ~20xD | DIN 1869 | 130° | h8 | R | Cyl

芯厚 ≥ Ø 3,000 • 圆弧后刀面 • 宽槽 • 适合加工深孔 • 适合排屑条件不佳的场合
适于加工：≤1000N/mm²的铸铁和钢 • 灰铸铁,可锻铸铁和球墨铸铁 - 粉末冶金铁和石墨



d1 mm	l1 mm	l2 mm
3,000	190,000	130,000
4,000	220,000	150,000
4,200	220,000	150,000
4,500	235,000	160,000
5,000	245,000	170,000
6,000	260,000	180,000

d1 mm	l1 mm	l2 mm
6,800	290,000	200,000
7,000	290,000	200,000
8,000	305,000	210,000
8,500	305,000	210,000

HARTNER

超长麻花钻,系列2

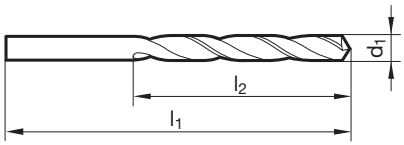
产品代号 81541



P	M	K	N	S	H
●	●	●	●		○

HSS-E | FN | ~20xD | DIN 1869 | 130° | h8 | R | Cyl

芯厚 ≥ Ø 3,000 • 圆弧后刀面 • 高耐磨强度 • 耐磨损 高强度 • 宽槽 • 适合加工深孔 • 适合排屑条件不佳的场合
适于加工：强度大于800 N/mm²的合金/非合金钢和铸件 • 热轧和冷轧钢 • 耐磨轴承钢 • 适于加工：高合金钢 • 热处理钢和淬硬钢



d1 mm	inch	l1 mm	l2 mm
3,000		190,000	130,000
3,170	1/8	200,000	135,000
3,200		200,000	135,000
3,500		210,000	145,000
4,000		220,000	150,000
4,200		220,000	150,000
5,000		245,000	170,000
6,000		260,000	180,000
6,200		275,000	190,000
6,350	1/4	275,000	190,000
6,500		275,000	190,000
7,000		290,000	200,000

d1 mm	inch	l1 mm	l2 mm
7,500		290,000	200,000
8,000		305,000	210,000
8,500		305,000	210,000
9,000		320,000	220,000
10,000		340,000	235,000

HARTNER

超长麻花钻,系列3

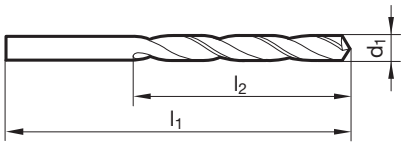
产品代号 81610



P	M	K	N	S	H
●		●	○		

HSS | N | ~25xD | DIN 1869 | 118° | h8 | R | Cyl

芯厚 ≥ Ø 4,000 • 圆弧后刀面 • 适合加工深孔
适于加工：合金/非合金钢和铸钢 • 灰铸铁,可锻铸铁和球墨铸铁 • 粉末冶金铁和石墨



d1 mm	l1 mm	l2 mm
4,000	280,000	190,000
5,000	315,000	210,000
5,500	330,000	225,000
5,800	330,000	225,000
5,900	330,000	225,000
6,000	330,000	225,000
7,000	370,000	250,000
7,500	370,000	250,000
7,800	390,000	265,000
8,000	390,000	265,000
9,000	410,000	280,000
9,500	410,000	280,000

d1 mm	l1 mm	l2 mm
10,000	430,000	295,000
10,500	430,000	295,000
11,000	455,000	310,000
12,000	480,000	330,000

HARTNER

超长麻花钻,系列3

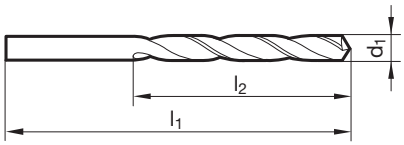
产品代号 81640



P	M	K	N	S	H
•		•	•		

HSS | FN | ~25xD | DIN 1869 | 130° | h8 | R | Cyl

芯厚 ≥ Ø 3,000 • 圆弧后刀面 • 宽槽 • 适合加工深孔 • 适合排屑条件不佳的场合
适于加工：≤1000N/mm²的铸铁和钢 • 灰铸铁,可锻铸铁和球墨铸铁 - 粉末冶金铁和石墨



d1 mm	inch	l1 mm	l2 mm
3,000		240,000	160,000
3,170	1/8	250,000	170,000
3,300		250,000	170,000
3,500		265,000	180,000
3,700		265,000	180,000
4,000		280,000	190,000
4,200		280,000	190,000
4,500		295,000	200,000
5,000		315,000	210,000
5,100		315,000	210,000
5,500		330,000	225,000
6,000		330,000	225,000
6,350	1/4	350,000	235,000
6,500		350,000	235,000
6,800		370,000	250,000
7,000		370,000	250,000
7,500		370,000	250,000
8,000		390,000	265,000

d1 mm	inch	l1 mm	l2 mm
8,200		390,000	265,000
8,500		390,000	265,000
9,000		410,000	280,000
9,500		410,000	280,000
9,520	3/8	430,000	295,000
10,000		430,000	295,000
10,500		430,000	295,000
11,000		455,000	310,000
11,500		455,000	310,000
12,000		480,000	330,000
12,500		480,000	330,000
13,000		480,000	330,000

HARTNER

超长麻花钻

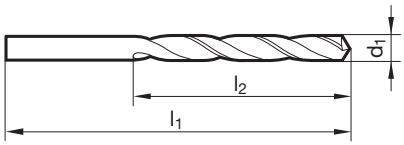
产品代号 81740



P	M	K	N	S	H
•		•	•		

HSS | FN | >25xD | WN | 130° | h8 | R | Cyl

芯厚 ≥ Ø 6,000 • 圆弧后刀面 • 宽槽 • 适合加工深孔 • 适合排屑条件不佳的场合
适于加工：≤1000N/mm²的铸铁和钢 • 灰铸铁,可锻铸铁和球墨铸铁 - 粉末冶金铁和石墨



d1 mm	l1 mm	l2 mm	d1 mm	l1 mm	l2 mm
6,000	500,000	400,000			
8,000	500,000	400,000			
10,000	600,000	500,000			
11,000	600,000	500,000			
12,000	600,000	500,000			

HARTNER

超长麻花钻

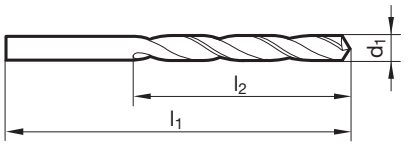
产品代号 81750



P	M	K	N	S	H
•		•	•		

HSS | FN | >25xD | WN | 130° | h8 | R | Cyl

芯厚 ≥ Ø 8,000 • 圆弧后刀面 • 宽槽 • 适合加工深孔 • 适合排屑条件不佳的场合
适于加工：≤1000N/mm²的铸铁和钢 • 灰铸铁,可锻铸铁和球墨铸铁 - 粉末冶金铁和石墨



d1 mm	l1 mm	l2 mm
8,000	750,000	650,000
10,000	750,000	650,000
11,000	750,000	650,000
12,000	750,000	650,000

d1 mm	l1 mm	l2 mm

HARTNER

超长麻花钻

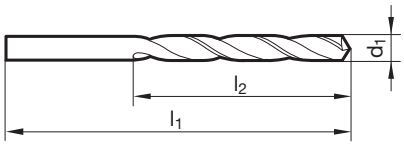
产品代号 81760



P	M	K	N	S	H
•		•	•		

HSS | FN | >25xD | WN | 130° | h8 | R | Cyl

芯厚 ≥ Ø 10,000 • 圆弧后刀面 • 宽槽 • 适合加工深孔 • 适合排屑条件不佳的场合
适于加工：≤1000N/mm²的铸铁和钢 • 灰铸铁,可锻铸铁和球墨铸铁 - 粉末冶金铁和石墨



d1 mm	l1 mm	l2 mm
10,000	1000,000	850,000
12,000	1000,000	850,000

d1 mm	l1 mm	l2 mm

锥孔钻

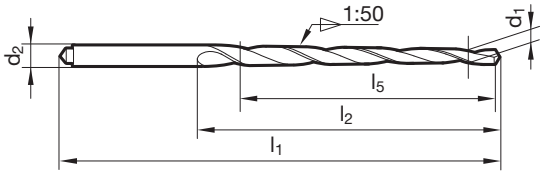
产品代号 81810



P	M	K	N	S	H
●	○	●	○		

HSS | >Ø 2,36 | N | DIN 1898 | 118° | R | Cyl

芯厚 ≥ Ø 2,000 • 圆弧后刀面 • 适合加工锥孔 • 柄凿，DIN 1809标准



d1 mm	d2 mm	l1 mm	l2 mm	l5 mm
2,000	3,150	86,000	52,000	48,000
2,500	3,150	86,000	52,000	48,000
3,000	4,000	100,000	63,000	58,000
4,000	5,000	112,000	74,000	68,000
5,000	6,300	122,000	81,000	73,000
6,000	8,000	160,000	114,000	105,000

d1 mm	d2 mm	l1 mm	l2 mm	l5 mm
8,000	10,000	207,000	157,000	145,000
10,000	12,500	245,000	190,000	175,000
12,000	16,000	290,000	228,000	228,500

HARTNER

硬质合金刀片螺旋槽钻

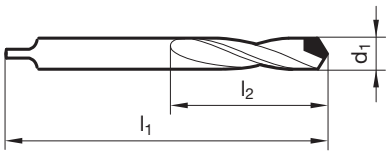
产品代号 89303



P	M	K	N	S	H
○		○			○

HM | ◯ | N | DIN 8038 | 85° | h8 | R | Cyl

芯厚 ≥ Ø 3,100 • 双后刀面 • 镶硬质合金 • 柄凿，DIN 1809标准
玻璃纤维增强塑料 • 加工热固性塑料在切削刃和刃带上易磨损



d1 mm	l1 mm	l2 mm
3,100	56,000	25,000
3,200	56,000	25,000
4,200	63,000	28,000
5,000	63,000	28,000
5,500	71,000	32,000
6,000	71,000	32,000

d1 mm	l1 mm	l2 mm
8,000	80,000	40,000

硬质合金刀片螺旋槽钻

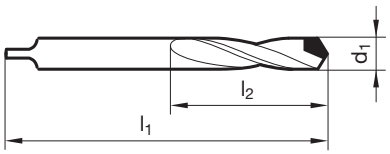
产品代号 89301



P	M	K	N	S	H
○		○			○

HM | ◯ | N | DIN 8037 | 118° | h8 | R | Cyl

芯厚 ≥ Ø 2,600 • 双后刀面 • 镶硬质合金 • 柄凿，DIN 1809标准
适合加工弹簧钢 • 大于300HB 硬铸铁 • 纯钼 • 硬青铜



d1 mm	l1 mm	l2 mm	d1 mm	l1 mm	l2 mm
2,600	50,000	20,000	7,700	80,000	40,000
3,000	50,000	20,000	7,800	80,000	40,000
3,100	56,000	25,000	8,000	80,000	40,000
3,200	56,000	25,000	8,200	90,000	50,000
3,300	56,000	25,000	8,400	90,000	50,000
3,500	56,000	25,000	8,500	90,000	50,000
3,700	56,000	25,000	8,600	90,000	50,000
3,800	56,000	25,000	8,800	90,000	50,000
3,900	56,000	25,000	9,000	90,000	50,000
4,000	56,000	25,000	9,500	90,000	50,000
4,100	63,000	28,000	9,600	100,000	56,000
4,200	63,000	28,000	9,700	100,000	56,000
4,300	63,000	28,000	9,800	100,000	56,000
4,400	63,000	28,000	10,000	100,000	56,000
4,500	63,000	28,000	10,200	100,000	56,000
4,800	63,000	28,000	10,500	100,000	56,000
4,900	63,000	28,000	11,000	100,000	56,000
5,000	63,000	28,000	11,500	112,000	63,000
5,100	71,000	32,000	12,000	112,000	63,000
5,200	71,000	32,000	12,500	112,000	63,000
5,300	71,000	32,000	13,000	112,000	63,000
5,400	71,000	32,000	13,500	125,000	71,000
5,500	71,000	32,000	14,000	125,000	71,000
5,800	71,000	32,000	14,500	125,000	71,000
6,000	71,000	32,000	15,000	125,000	71,000
6,200	71,000	32,000	15,500	140,000	80,000
6,300	71,000	32,000	16,000	140,000	80,000
6,400	71,000	32,000	16,500	140,000	80,000
6,500	71,000	32,000	17,000	140,000	80,000
6,700	80,000	40,000	17,500	160,000	90,000
6,800	80,000	40,000	18,000	160,000	90,000
7,000	80,000	40,000	18,500	160,000	90,000
7,100	80,000	40,000	19,000	160,000	90,000
7,200	80,000	40,000	19,500	160,000	90,000
7,400	80,000	40,000	20,000	160,000	90,000
7,500	80,000	40,000			

HARTNER

直柄扩孔钻

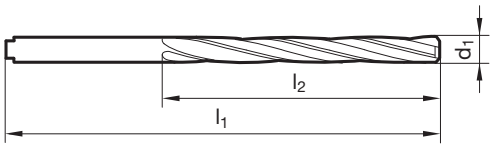
产品代号 86010



P	M	K	N	S	H
●	○	●	○		

HSS | N | DIN 344 | 120° | R | Cyl

圆弧后刀面 • 刚性好 • 柄凿，DIN 1809标准 • 适合加工有预钻//预铸//预冲的孔 • 纠正直线度误差 • 纠正圆度误差 • 改善了孔的表面质量 • 倒角直径<底孔直径 • 使用时，需严格遵守最小底孔直径的要求



d1 mm	inch	d0 mm	l1 mm	l2 mm
3,800		2,8	96,000	64,000
4,000		2,8	96,000	64,000
4,750		3,2	102,000	69,000
4,800		3,5	108,000	74,000
4,900		3,5	108,000	74,000
5,000		3,5	108,000	74,000
5,800		4,2	116,000	80,000
6,000		4,2	116,000	80,000
6,200		4,2	124,000	86,000
6,400		4,2	124,000	86,000
6,800		4,9	133,000	93,000
7,500		4,9	133,000	93,000
7,700		5,6	142,000	100,000
7,800		5,6	142,000	100,000
7,850		5,6	142,000	100,000
8,000		5,6	142,000	100,000
8,050		5,6	142,000	100,000
8,200		5,6	142,000	100,000
8,300		5,6	142,000	100,000
8,600		6,3	151,000	107,000
9,400		6,3	151,000	107,000
9,600		7,0	162,000	116,000
9,800		7,0	162,000	116,000
10,000		7,0	162,000	116,000

d1 mm	inch	d0 mm	l1 mm	l2 mm
10,200		7,0	162,000	116,000
10,500		7,0	162,000	116,000
10,600		7,0	162,000	116,000
11,000		7,7	173,000	125,000
11,300		7,7	173,000	125,000
11,750		8,4	184,000	134,000
12,000		8,4	184,000	134,000
12,700		9,1	184,000	134,000
12,750		9,1	184,000	134,000
13,000		9,1	184,000	134,000
13,500		9,8	194,000	142,000
13,750		9,8	194,000	142,000
14,000		9,8	194,000	142,000
14,750		10,5	202,000	147,000
15,000		10,5	202,000	147,000









HARTNER

Precision Cutting Tools

锥柄麻花钻

HSS，HSS-E，硬质合金
抛光处理或涂层



麻花钻

P	M	K	N	S	H	标准	型号	刀具材料	表面处理	切削方向	柄部形式	钻深	d1/mm	产品代号	页码
															
●		●	○			DIN 345	N	HSS	●	右手	MK	~5xD	3,000 - 70,000	82010	158
															
			●			DIN 345	W	HSS	○	右手	MK	~5xD	6,800 - 30,500	82030	157
															
●		●	○			DIN 345	N	HSS	T	右手	MK	~5xD	5,500 - 30,000	84460	160
															
●	○	●	○			DIN 345	N	HSS-E	●	右手	MK	~5xD	5,000 - 50,000	82011	161
															
○	●		○	○		DIN 345	IS	HSS-E	○	右手	MK	~5xD	11,500 - 32,000	82012	162
															
○		●	○			DIN 345	FN	HSS-E	A	右手	MK	~5xD	14,200 - 28,000	84660	163
															
●	○	●	○			DIN 345	N	HSS-E	T	右手	MK	~5xD	8,000 - 31,000	84859	164

工具钻

															
●	●	●	○	●	○	哈特纳标准	V	HSS-E	●	右手	MK	~3xD	10,000 - 38,000	82971	166
															
○	●		○	○		哈特纳标准	IS	HSS-E	○	右手	MK	~3xD	10,000 - 29,000	82972	165

NC 点钻

															
●	○	●	●	○		哈特纳标准	N	HSS	●	右手	MK		12,000 - 25,000	82191	167
															
●	○	●	●	○		哈特纳标准	N	HSS	●	右手	MK		12,000 - 25,000	82192	167

P	M	K	N	S	H	标准	型号	刀具材料	表面处理	切削方向	柄部形式	钻深	d1/mm	产品代号	页码
长系列麻花钻															
															
●		●	○			DIN 341	N	HSS	⬤	右手	MK	~10xD	4,000 - 50,000	82210	168
															
●	○	●	●	○		DIN 341	N	HSS-E	⬤	右手	MK	~10xD	5,000 - 30,000	82211	169
超长麻花钻,系列1															
															
●		●	○			DIN 1870	N	HSS	⬤	右手	MK	~15xD	8,500 - 33,000	82310	170
															
●		●	●			DIN 1870	FN	HSS	⬤ ≥Ø 16,0	右手	MK	~15xD	8,000 - 30,000	82340	171
															
●	●	●	●	●	○	DIN 1870	FN	HSS-E	⬤ ≥Ø 16,0	右手	MK	~15xD	10,000 - 17,000	82341	172
超长麻花钻,系列2															
															
●		●	○			DIN 1870	N	HSS	⬤	右手	MK	~20xD	8,500 - 49,000	82410	173
															
●		●	●			DIN 1870	FN	HSS	⬤ ≥Ø 16,0	右手	MK	~20xD	8,000 - 30,000	82440	174
超长麻花钻															
															
●		●	●			哈特纳标准	FN	HSS	⬤ ≥Ø 16,0	右手	MK	>20xD	8,000 - 20,000	82466	175
															
●		●	●			哈特纳标准	FN	HSS	⬤ ≥Ø 16,0	右手	MK	>20xD	14,000 - 38,000	82467	176
															
●		●	●			哈特纳标准	FN	HSS	○	右手	MK	>20xD	14,000 - 18,000	82468	177
															
●		●	●			哈特纳标准	FN	HSS	○	右手	MK	>20xD	15,000 - 18,000	82469	178

P	M	K	N	S	H	标准	型号	刀具材料	表面处理	切削方向	柄部形式	钻深	d1/mm	产品代号	页码
长系列油孔钻															
															
●	○	●	●	○		哈特纳标准	N	HSS	◯	右手	MK	~10xD	10,000 - 40,000	82521	180
															
●		●	●			哈特纳标准	FN	HSS	◯	右手	MK	~10xD	10,000 - 20,000	82535	179
															
●	●	●	●	●	○	哈特纳标准	FN	HSS-E	◯	右手	MK	~10xD	15,000 - 32,500	82525	181
超长油孔钻															
															
●	●	●	●	●	○	哈特纳标准	FN	HSS-E	◯	右手	MK	~15xD	14,000 - 29,000	82515	182
硬质合金刀片螺旋槽钻															
															
○		○			○	DIN 8041	N	硬质合金	◯	右手	MK		8,500 - 40,000	89302	183
锥柄扩孔钻															
															
●	○	●	○			DIN 343	N	HSS	◯	右手	MK		8,600 - 40,000	86110	184
															
●	○	●	●	○		DIN 343	N	HSS-E	◯	右手	MK		12,000 - 22,000	86111	185
锥孔钻															
															
●	○	●	○			DIN 1898	N	HSS	◯	右手	MK		5,000 - 20,000	82810	186

麻花钻

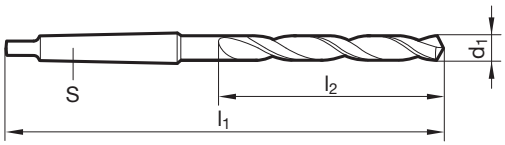
产品代号 82030



P	M	K	N	S	H
			•		

HSS | W | ~5xD | DIN 345 | 130° | h8 | R | MK

芯厚 ≥ Ø 15,000 • 圆弧后刀面
适于加工：软/长屑材料 • 铝及铝合金 • 锌,精炼铜,硅,电子材料



d1 mm	S	l1 mm	l2 mm
6,800	MK-1	150,000	69,000
9,000	MK-1	162,000	81,000
9,500	MK-1	162,000	81,000
10,000	MK-1	168,000	87,000
10,200	MK-1	168,000	87,000
12,000	MK-1	182,000	101,000

d1 mm	S	l1 mm	l2 mm
15,000	MK-2	212,000	114,000
19,000	MK-2	233,000	135,000
24,300	MK-3	281,000	160,000
30,500	MK-3	301,000	180,000

HARTNER

麻花钻

产品代号 82010

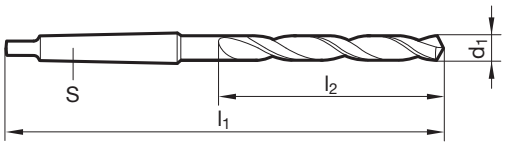


P	M	K	N	S	H
●		●	○		

HSS | N | ~5xD | DIN 345 | 118° | h8 | R | MK

芯厚 ≥ Ø 14,100 • 圆弧后刀面

适于加工：合金/非合金钢和铸钢 • 灰铸铁,可锻铸铁和球墨铸铁 • 粉末冶金铁，铜镍锌合金,石墨



d1 mm	inch	S	l1 mm	l2 mm	d1 mm	inch	S	l1 mm	l2 mm
3,000		MK-1	114,000	33,000	10,200		MK-1	168,000	87,000
3,300		MK-1	117,000	36,000	10,250		MK-1	168,000	87,000
3,600		MK-1	120,000	39,000	10,300		MK-1	168,000	87,000
3,750		MK-1	120,000	39,000	10,500		MK-1	168,000	87,000
4,000		MK-1	124,000	43,000	10,600		MK-1	168,000	87,000
4,100		MK-1	124,000	43,000	10,700		MK-1	175,000	94,000
4,200		MK-1	124,000	43,000	10,750		MK-1	175,000	94,000
4,250		MK-1	124,000	43,000	10,800		MK-1	175,000	94,000
4,500		MK-1	128,000	47,000	11,000		MK-1	175,000	94,000
4,900		MK-1	133,000	52,000	11,100		MK-1	175,000	94,000
5,000		MK-1	133,000	52,000	11,200		MK-1	175,000	94,000
5,200		MK-1	133,000	52,000	11,250		MK-1	175,000	94,000
5,500		MK-1	138,000	57,000	11,500		MK-1	175,000	94,000
5,700		MK-1	138,000	57,000	11,750		MK-1	175,000	94,000
6,000		MK-1	138,000	57,000	11,800		MK-1	175,000	94,000
6,200		MK-1	144,000	63,000	12,000		MK-1	182,000	101,000
6,500		MK-1	144,000	63,000	12,100		MK-1	182,000	101,000
6,600		MK-1	144,000	63,000	12,200		MK-1	182,000	101,000
6,700		MK-1	144,000	63,000	12,250		MK-1	182,000	101,000
6,750	17/64	MK-1	150,000	69,000	12,500		MK-1	182,000	101,000
6,800		MK-1	150,000	69,000	12,750		MK-1	182,000	101,000
7,000		MK-1	150,000	69,000	12,800		MK-1	182,000	101,000
7,250		MK-1	150,000	69,000	13,000		MK-1	182,000	101,000
7,500		MK-1	150,000	69,000	13,200		MK-1	182,000	101,000
7,800		MK-1	156,000	75,000	13,250		MK-1	189,000	108,000
7,900		MK-1	156,000	75,000	13,490	17/32	MK-1	189,000	108,000
8,000		MK-1	156,000	75,000	13,500		MK-1	189,000	108,000
8,100		MK-1	156,000	75,000	13,750		MK-1	189,000	108,000
8,200		MK-1	156,000	75,000	13,800		MK-1	189,000	108,000
8,400		MK-1	156,000	75,000	14,000		MK-1	189,000	108,000
8,500		MK-1	156,000	75,000	14,100		MK-2	212,000	114,000
8,700		MK-1	162,000	81,000	14,200		MK-2	212,000	114,000
8,750		MK-1	162,000	81,000	14,250		MK-2	212,000	114,000
8,800		MK-1	162,000	81,000	14,300		MK-2	212,000	114,000
9,000		MK-1	162,000	81,000	14,500		MK-2	212,000	114,000
9,200		MK-1	162,000	81,000	14,600		MK-2	212,000	114,000
9,500		MK-1	162,000	81,000	14,750		MK-2	212,000	114,000
9,700		MK-1	168,000	87,000	15,000		MK-2	212,000	114,000
9,750		MK-1	168,000	87,000	15,200		MK-2	218,000	120,000
9,800		MK-1	168,000	87,000	15,250		MK-2	218,000	120,000
10,000		MK-1	168,000	87,000	15,500		MK-2	218,000	120,000
10,100		MK-1	168,000	87,000	15,750		MK-2	218,000	120,000

麻花钻

d1 mm	inch	S	l1 mm	l2 mm
15,800		MK-2	218,000	120,000
16,000		MK-2	218,000	120,000
16,100		MK-2	223,000	125,000
16,200		MK-2	223,000	125,000
16,250		MK-2	223,000	125,000
16,500		MK-2	223,000	125,000
16,750		MK-2	223,000	125,000
17,000		MK-2	223,000	125,000
17,250		MK-2	228,000	130,000
17,500		MK-2	228,000	130,000
17,750		MK-2	228,000	130,000
18,000		MK-2	228,000	130,000
18,200		MK-2	233,000	135,000
18,250		MK-2	233,000	135,000
18,500		MK-2	233,000	135,000
18,750		MK-2	233,000	135,000
19,000		MK-2	233,000	135,000
19,250		MK-2	238,000	140,000
19,500		MK-2	238,000	140,000
19,700		MK-2	238,000	140,000
19,750		MK-2	238,000	140,000
20,000		MK-2	238,000	140,000
20,100		MK-2	243,000	145,000
20,200		MK-2	243,000	145,000
20,250		MK-2	243,000	145,000
20,400		MK-2	243,000	145,000
20,500		MK-2	243,000	145,000
20,750		MK-2	243,000	145,000
21,000		MK-2	243,000	145,000
21,250		MK-2	248,000	150,000
21,500		MK-2	248,000	150,000
21,750		MK-2	248,000	150,000
22,000		MK-2	248,000	150,000
22,100		MK-2	248,000	150,000
22,200		MK-2	248,000	150,000
22,250		MK-2	248,000	150,000
22,500		MK-2	253,000	155,000
22,750		MK-2	253,000	155,000
23,000		MK-2	253,000	155,000
23,250		MK-3	276,000	155,000
23,500		MK-3	276,000	155,000
23,750		MK-3	281,000	160,000
24,000		MK-3	281,000	160,000
24,250		MK-3	281,000	160,000
24,500		MK-3	281,000	160,000
24,750		MK-3	281,000	160,000
25,000	63/64	MK-3	281,000	160,000
25,200		MK-3	286,000	165,000
25,250		MK-3	286,000	165,000
25,400	1	MK-3	286,000	165,000
25,500		MK-3	286,000	165,000
25,750		MK-3	286,000	165,000
25,800	1 1/64	MK-3	286,000	165,000
26,000		MK-3	286,000	165,000
26,250		MK-3	286,000	165,000
26,500		MK-3	286,000	165,000
27,000		MK-3	291,000	170,000
27,250		MK-3	291,000	170,000
27,500		MK-3	291,000	170,000
27,750		MK-3	291,000	170,000
28,000		MK-3	291,000	170,000
28,250		MK-3	296,000	175,000
28,500		MK-3	296,000	175,000
28,750		MK-3	296,000	175,000
29,000		MK-3	296,000	175,000
29,250		MK-3	296,000	175,000
29,500		MK-3	296,000	175,000
29,750		MK-3	296,000	175,000
30,000		MK-3	296,000	175,000
30,250		MK-3	301,000	180,000
30,500		MK-3	301,000	180,000
30,600		MK-3	301,000	180,000
30,750		MK-3	301,000	180,000
31,000		MK-3	301,000	180,000
31,250		MK-3	301,000	180,000
31,500		MK-3	301,000	180,000
31,750	1 1/4	MK-3	306,000	185,000
32,000		MK-4	334,000	185,000
32,500		MK-4	334,000	185,000
33,000		MK-4	334,000	185,000
33,500		MK-4	334,000	185,000
34,000		MK-4	339,000	190,000
34,500		MK-4	339,000	190,000
35,000		MK-4	339,000	190,000
35,500		MK-4	339,000	190,000
36,000		MK-4	344,000	195,000
36,500		MK-4	344,000	195,000
37,000		MK-4	344,000	195,000
37,500		MK-4	344,000	195,000
38,000		MK-4	349,000	200,000
38,500	1 33/64	MK-4	349,000	200,000
39,000		MK-4	349,000	200,000
39,500		MK-4	349,000	200,000
40,000		MK-4	349,000	200,000
40,500		MK-4	354,000	205,000
41,000		MK-4	354,000	205,000
41,500		MK-4	354,000	205,000
42,000		MK-4	354,000	205,000
42,500		MK-4	354,000	205,000
43,000		MK-4	359,000	210,000
43,500		MK-4	359,000	210,000
44,000		MK-4	359,000	210,000
44,500		MK-4	359,000	210,000
45,000		MK-4	359,000	210,000
45,500		MK-4	364,000	215,000
46,000		MK-4	364,000	215,000
46,500		MK-4	364,000	215,000
47,000		MK-4	364,000	215,000
47,500		MK-4	364,000	215,000
48,000		MK-4	369,000	220,000
48,500		MK-4	369,000	220,000
49,000		MK-4	369,000	220,000
49,500		MK-4	369,000	220,000
50,000		MK-4	369,000	220,000
50,500		MK-4	374,000	225,000
50,800	2	MK-4	374,000	225,000
51,000		MK-5	412,000	225,000
52,000		MK-5	412,000	225,000
53,000		MK-5	412,000	225,000
54,000		MK-5	417,000	230,000
55,000		MK-5	417,000	230,000
56,000		MK-5	417,000	230,000
56,500		MK-5	422,000	235,000
57,000		MK-5	422,000	235,000
58,000		MK-5	422,000	235,000
59,000		MK-5	422,000	235,000
60,000		MK-5	422,000	235,000
63,000		MK-5	427,000	240,000
65,000		MK-5	432,000	245,000
70,000		MK-5	437,000	250,000

麻花钻

产品代号 84460

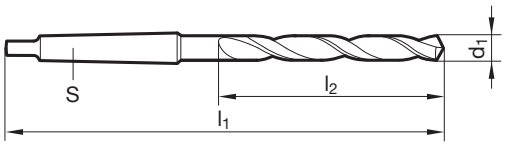


P	M	K	N	S	H
●		●	○		

HSS | T | N | ~5xD | DIN 345 | 118° | h8 | R | MK

芯厚 ≥ Ø 5,500 • 圆弧后刀面

适于加工：合金/非合金钢和铸钢 • 灰铸铁,可锻铸铁和球墨铸铁 • 粉末冶金铁和石墨



d1 mm	inch	S	l1 mm	l2 mm
5,500		MK-1	138,000	57,000
6,000		MK-1	138,000	57,000
6,800		MK-1	150,000	69,000
8,000		MK-1	156,000	75,000
8,200		MK-1	156,000	75,000
8,500		MK-1	156,000	75,000
8,800		MK-1	162,000	81,000
9,000		MK-1	162,000	81,000
9,200		MK-1	162,000	81,000
9,500		MK-1	162,000	81,000
9,800		MK-1	168,000	87,000
10,000		MK-1	168,000	87,000
10,200		MK-1	168,000	87,000
10,250		MK-1	168,000	87,000
10,500		MK-1	168,000	87,000
10,750		MK-1	175,000	94,000
11,000		MK-1	175,000	94,000
11,250		MK-1	175,000	94,000
11,500		MK-1	175,000	94,000
11,750		MK-1	175,000	94,000
12,000		MK-1	182,000	101,000
12,250		MK-1	182,000	101,000
12,500		MK-1	182,000	101,000
12,750		MK-1	182,000	101,000
12,800		MK-1	182,000	101,000
13,000		MK-1	182,000	101,000
13,250		MK-1	189,000	108,000
13,500		MK-1	189,000	108,000
13,750		MK-1	189,000	108,000
14,000		MK-1	189,000	108,000
14,200		MK-2	212,000	114,000
14,250		MK-2	212,000	114,000
14,500		MK-2	212,000	114,000
14,750		MK-2	212,000	114,000
15,000		MK-2	212,000	114,000
15,250		MK-2	218,000	120,000

d1 mm	inch	S	l1 mm	l2 mm
15,500		MK-2	218,000	120,000
16,000		MK-2	218,000	120,000
16,250		MK-2	223,000	125,000
16,500		MK-2	223,000	125,000
16,750		MK-2	223,000	125,000
17,000		MK-2	223,000	125,000
17,250		MK-2	228,000	130,000
17,500		MK-2	228,000	130,000
18,000		MK-2	228,000	130,000
18,500		MK-2	233,000	135,000
19,000		MK-2	233,000	135,000
19,500		MK-2	238,000	140,000
20,000		MK-2	238,000	140,000
20,400		MK-2	243,000	145,000
20,500		MK-2	243,000	145,000
20,750		MK-2	243,000	145,000
21,000		MK-2	243,000	145,000
21,250		MK-2	248,000	150,000
21,750		MK-2	248,000	150,000
22,000		MK-2	248,000	150,000
22,500		MK-2	253,000	155,000
23,000		MK-2	253,000	155,000
24,000		MK-3	281,000	160,000
24,500		MK-3	281,000	160,000
25,000	63/64	MK-3	281,000	160,000
25,500		MK-3	286,000	165,000
26,000		MK-3	286,000	165,000
26,500		MK-3	286,000	165,000
27,000		MK-3	291,000	170,000
28,000		MK-3	291,000	170,000
28,500		MK-3	296,000	175,000
29,000		MK-3	296,000	175,000
29,500		MK-3	296,000	175,000
30,000		MK-3	296,000	175,000

HARTNER

麻花钻

产品代号 82011

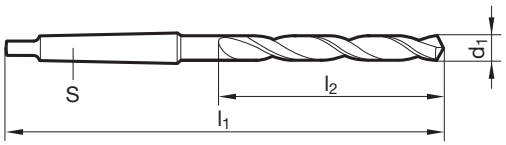


P	M	K	N	S	H
●	○	●	○		

HSS-E | N | ~5xD | DIN 345 | 118° | h8 | R | MK

芯厚 ≥ Ø 5,000 • 圆弧后刀面 • 高耐磨强度 • 耐磨损 高强度

适于加工：强度大于800 N/mm²的合金/非合金钢和铸件 • 热轧和冷轧钢 • 耐磨轴承钢 • 适于加工：高合金钢 • 热处理钢和淬硬钢



d1 mm	inch	S	l1 mm	l2 mm
5,000		MK-1	133,000	52,000
6,000		MK-1	138,000	57,000
7,000		MK-1	150,000	69,000
7,500		MK-1	150,000	69,000
8,000		MK-1	156,000	75,000
8,500		MK-1	156,000	75,000
9,000		MK-1	162,000	81,000
9,500		MK-1	162,000	81,000
10,000		MK-1	168,000	87,000
10,250		MK-1	168,000	87,000
10,500		MK-1	168,000	87,000
11,000		MK-1	175,000	94,000
11,200		MK-1	175,000	94,000
11,500		MK-1	175,000	94,000
12,000		MK-1	182,000	101,000
12,200		MK-1	182,000	101,000
12,250		MK-1	182,000	101,000
12,500		MK-1	182,000	101,000
12,750		MK-1	182,000	101,000
13,000		MK-1	182,000	101,000
13,500		MK-1	189,000	108,000
13,800		MK-1	189,000	108,000
14,000		MK-1	189,000	108,000
14,200		MK-2	212,000	114,000
14,290	9/16	MK-2	212,000	114,000
14,500		MK-2	212,000	114,000
14,750		MK-2	212,000	114,000
15,000		MK-2	212,000	114,000
15,250		MK-2	218,000	120,000
15,500		MK-2	218,000	120,000
15,750		MK-2	218,000	120,000
16,000		MK-2	218,000	120,000
16,250		MK-2	223,000	125,000
16,500		MK-2	223,000	125,000
16,750		MK-2	223,000	125,000
17,000		MK-2	223,000	125,000
17,250		MK-2	228,000	130,000
17,460	11/16	MK-2	228,000	130,000
17,500		MK-2	228,000	130,000
17,750		MK-2	228,000	130,000
18,000		MK-2	228,000	130,000
18,200		MK-2	233,000	135,000

d1 mm	inch	S	l1 mm	l2 mm
18,500		MK-2	233,000	135,000
19,000		MK-2	233,000	135,000
19,050	3/4	MK-2	238,000	140,000
19,500		MK-2	238,000	140,000
20,000		MK-2	238,000	140,000
20,250		MK-2	243,000	145,000
20,500		MK-2	243,000	145,000
20,750		MK-2	243,000	145,000
21,000		MK-2	243,000	145,000
21,500		MK-2	248,000	150,000
22,000		MK-2	248,000	150,000
22,500		MK-2	253,000	155,000
23,000		MK-2	253,000	155,000
23,500		MK-3	276,000	155,000
24,000		MK-3	281,000	160,000
24,500		MK-3	281,000	160,000
25,000	63/64	MK-3	281,000	160,000
25,250		MK-3	286,000	165,000
25,500		MK-3	286,000	165,000
26,000		MK-3	286,000	165,000
26,500		MK-3	286,000	165,000
27,000		MK-3	291,000	170,000
27,500		MK-3	291,000	170,000
28,000		MK-3	291,000	170,000
28,500		MK-3	296,000	175,000
28,570	1 1/8	MK-3	296,000	175,000
29,000		MK-3	296,000	175,000
29,500		MK-3	296,000	175,000
30,000		MK-3	296,000	175,000
31,000		MK-3	301,000	180,000
31,500		MK-3	301,000	180,000
32,000		MK-4	334,000	185,000
33,000		MK-4	334,000	185,000
34,000		MK-4	339,000	190,000
35,000		MK-4	339,000	190,000
36,000		MK-4	344,000	195,000
38,000		MK-4	349,000	200,000
40,000		MK-4	349,000	200,000
50,000		MK-4	369,000	220,000

麻花钻

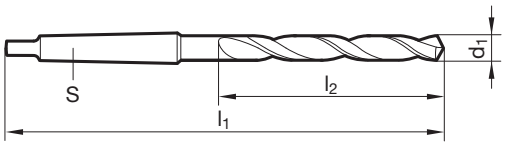
产品代号 82012



P	M	K	N	S	H
○	●		○	○	

HSS-E | IS | ~5xD | DIN 345 | 130° | h8 | R | MK

INOX-钻头 • 圆弧后刀面 • 高耐磨强度 • 耐磨损 高强度
适于加工：不锈钢/耐酸-/耐热奥氏体钢



d1 mm	S	l1 mm	l2 mm
11,500	MK-1	175,000	94,000
12,000	MK-1	182,000	101,000
14,000	MK-1	189,000	108,000
15,000	MK-2	212,000	114,000
15,500	MK-2	218,000	120,000
16,000	MK-2	218,000	120,000
16,500	MK-2	223,000	125,000
17,000	MK-2	223,000	125,000
17,250	MK-2	228,000	130,000
17,500	MK-2	228,000	130,000
18,000	MK-2	228,000	130,000
18,500	MK-2	233,000	135,000
19,500	MK-2	238,000	140,000
20,000	MK-2	238,000	140,000
20,500	MK-2	243,000	145,000
21,000	MK-2	243,000	145,000
22,000	MK-2	248,000	150,000
22,500	MK-2	253,000	155,000

d1 mm	S	l1 mm	l2 mm
23,000	MK-2	253,000	155,000
26,000	MK-3	286,000	165,000
27,500	MK-3	291,000	170,000
28,000	MK-3	291,000	170,000
29,000	MK-3	296,000	175,000
29,500	MK-3	296,000	175,000
31,500	MK-3	301,000	180,000
32,000	MK-4	334,000	185,000

麻花钻

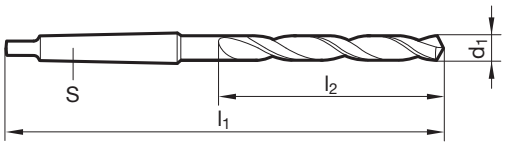
产品代号 84660



P	M	K	N	S	H
○		●	○		

HSS-E | A | FN | ~5xD | DIN 345 | 130° | h8 | R | MK

芯厚 ≥ Ø 14,200 • 圆弧后刀面 • 宽槽 • 高耐磨强度 • 耐磨性增强 • 尤其适合孔深超过3xD
适于加工：强度大于1000 N/mm²的合金/非合金钢和铸件 • 热轧和冷轧钢 • 耐磨轴承钢 • 适于加工：高合金钢 • 热处理钢和淬硬钢



d1 mm	S	l1 mm	l2 mm	d1 mm	S	l1 mm	l2 mm
14,200	MK-2	212,000	114,000				
14,500	MK-2	212,000	114,000				
19,000	MK-2	233,000	135,000				
19,500	MK-2	238,000	140,000				
24,500	MK-3	281,000	160,000				
28,000	MK-3	291,000	170,000				

麻花钻

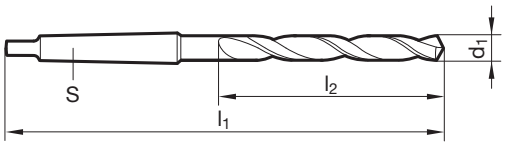
产品代号 84859



P	M	K	N	S	H
●	○	●	○		

HSS-E | T | N | ~5xD | DIN 345 | 118° | h8 | R | MK

芯厚 ≥ Ø 8,000 • 圆弧后刀面 • 高耐磨强度 • 耐磨性增强
适于加工：强度大于800 N/mm²的合金/非合金钢和铸件 • 热轧和冷轧钢 • 耐磨轴承钢 • 适于加工：高合金钢 • 热处理钢和淬硬钢



d1 mm	S	l1 mm	l2 mm
8,000	MK-1	156,000	75,000
14,000	MK-1	189,000	108,000
23,000	MK-2	253,000	155,000
24,500	MK-3	281,000	160,000
31,000	MK-3	301,000	180,000

d1 mm	S	l1 mm	l2 mm

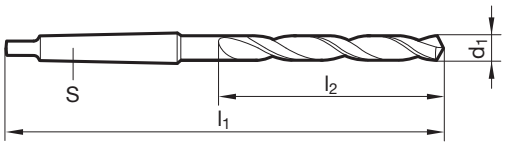
产品代号 82972



P	M	K	N	S	H
○	●		○	○	

HSS-E | IS | ~3xD | WN | 130° | h8 | R | MK

INOX-钻头 • 圆弧后刀面 • 高耐磨强度 • 耐磨损 高强度
适于加工：不锈钢/耐酸-/耐热奥氏体钢



d1 mm	S	l1 mm	l2 mm
10,000	MK-1	138,000	57,000
10,500	MK-1	138,000	57,000
10,800	MK-1	142,000	61,000
11,200	MK-1	142,000	61,000
12,500	MK-1	147,000	66,000
13,200	MK-1	147,000	66,000

d1 mm	S	l1 mm	l2 mm
21,500	MK-3	219,000	98,000
29,000	MK-4	263,000	114,000

工具钻

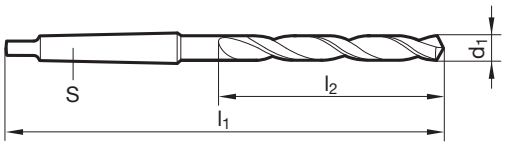
产品代号 82971



P	M	K	N	S	H
●	●	●	○	●	○



芯厚 ≥ Ø 10,000 • 圆弧后刀面 • 高耐磨强度 • 耐磨损 高强度
适于加工：加工难加工材料 • 不锈钢/耐酸钢 • 弹簧钢,奥氏体钢



d1 mm	S	l1 mm	l2 mm
10,000	MK-1	138,000	57,000
10,200	MK-1	138,000	57,000
10,500	MK-1	138,000	57,000
11,000	MK-1	142,000	61,000
11,500	MK-1	142,000	61,000
11,800	MK-1	142,000	61,000
12,000	MK-1	147,000	66,000
12,500	MK-1	147,000	66,000
13,000	MK-1	147,000	66,000
13,500	MK-2	168,000	70,000
14,000	MK-2	168,000	70,000
14,500	MK-2	172,000	74,000
15,000	MK-2	172,000	74,000
15,500	MK-2	176,000	78,000
16,000	MK-2	176,000	78,000
17,000	MK-2	179,000	81,000
17,500	MK-2	183,000	85,000
18,000	MK-2	183,000	85,000

d1 mm	S	l1 mm	l2 mm
18,500	MK-2	186,000	88,000
19,000	MK-2	186,000	88,000
20,000	MK-3	212,000	91,000
21,000	MK-3	216,000	95,000
21,500	MK-3	219,000	98,000
22,000	MK-3	219,000	98,000
23,000	MK-3	222,000	101,000
24,000	MK-3	225,000	104,000
25,000	MK-3	225,000	104,000
26,000	MK-4	256,000	107,000
26,500	MK-4	256,000	107,000
27,000	MK-4	259,000	110,000
28,000	MK-4	259,000	110,000
29,000	MK-4	263,000	114,000
38,000	MK-5	317,000	130,000

产品代号 82192



P	M	K	N	S	H
●	○	●	●	○	

HSS | N | WN | 90° | h6 | R | MK

圆弧后刀面 • 仅适合打定位孔 • 刚性好

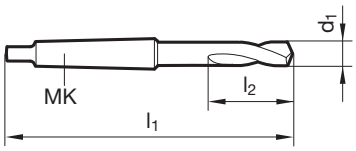
产品代号 82191



P	M	K	N	S	H
●	○	●	●	○	

HSS | N | WN | 120° | h6 | R | MK

圆弧后刀面 • 仅适合打定位孔 • 刚性好



d1 mm	inch	S	l1 mm	l2 mm
12,000		MK-1	122,000	30,000
16,000		MK-2	148,000	37,500
20,000		MK-2	148,000	45,000
25,000		MK-3	171,000	53,000

d1 mm	inch	S	l1 mm	l2 mm

HARTNER

长系列麻花钻

产品代号 82210

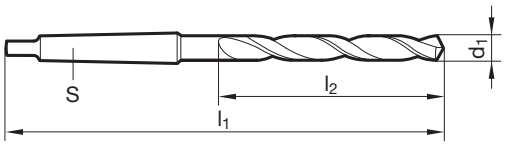


P	M	K	N	S	H
●		●	○		

HSS | N | ~10xD | DIN 341 | 118° | h8 | R | MK

芯厚 ≥ Ø 14,500 • 圆弧后刀面 • 使用钻套钻削

适于加工：合金/非合金钢和铸钢 • 灰铸铁,可锻铸铁和球墨铸铁 • 粉末冶金铁，铜镍锌合金,石墨



d1 mm	inch	S	l1 mm	l2 mm
4,000		MK-1	145,000	64,000
4,200		MK-1	145,000	64,000
5,000		MK-1	155,000	74,000
5,200		MK-1	155,000	74,000
5,500		MK-1	161,000	80,000
5,800		MK-1	161,000	80,000
6,000		MK-1	161,000	80,000
6,800		MK-1	174,000	93,000
7,000		MK-1	174,000	93,000
7,800		MK-1	181,000	100,000
8,000		MK-1	181,000	100,000
8,200		MK-1	181,000	100,000
8,500		MK-1	181,000	100,000
9,000		MK-1	188,000	107,000
9,900		MK-1	197,000	116,000
10,000		MK-1	197,000	116,000
10,200		MK-1	197,000	116,000
10,500		MK-1	197,000	116,000
11,000		MK-1	206,000	125,000
11,500		MK-1	206,000	125,000
11,800		MK-1	206,000	125,000
12,000		MK-1	215,000	134,000
12,500		MK-1	215,000	134,000
13,000		MK-1	215,000	134,000
13,500		MK-1	223,000	142,000
13,750		MK-1	223,000	142,000
14,000		MK-1	223,000	142,000
14,500		MK-2	245,000	147,000
15,000		MK-2	245,000	147,000
15,500		MK-2	251,000	153,000
15,750		MK-2	251,000	153,000
16,000		MK-2	251,000	153,000
16,400		MK-2	257,000	159,000
16,500		MK-2	257,000	159,000
17,000		MK-2	257,000	159,000
17,500		MK-2	263,000	165,000
18,000		MK-2	263,000	165,000
18,750		MK-2	269,000	171,000
19,000		MK-2	269,000	171,000
19,500		MK-2	275,000	177,000
20,000		MK-2	275,000	177,000
20,500		MK-2	282,000	184,000

d1 mm	inch	S	l1 mm	l2 mm
21,000		MK-2	282,000	184,000
21,400		MK-2	289,000	191,000
21,500		MK-2	289,000	191,000
22,000		MK-2	289,000	191,000
22,500		MK-2	296,000	198,000
23,000		MK-2	296,000	198,000
23,250		MK-3	319,000	198,000
24,000		MK-3	327,000	206,000
24,500		MK-3	327,000	206,000
25,000	63/64	MK-3	327,000	206,000
25,500		MK-3	335,000	214,000
26,000		MK-3	335,000	214,000
26,500		MK-3	335,000	214,000
27,000		MK-3	343,000	222,000
27,500		MK-3	343,000	222,000
28,000		MK-3	343,000	222,000
29,000		MK-3	351,000	230,000
29,500		MK-3	351,000	230,000
30,000		MK-3	351,000	230,000
31,000		MK-3	360,000	239,000
32,000		MK-4	397,000	248,000
33,000		MK-4	397,000	248,000
34,000		MK-4	406,000	257,000
35,000		MK-4	406,000	257,000
36,000		MK-4	416,000	267,000
38,000		MK-4	426,000	277,000
39,000		MK-4	426,000	277,000
39,500		MK-4	426,000	277,000
40,000		MK-4	426,000	277,000
41,000		MK-4	436,000	287,000
42,000		MK-4	436,000	287,000
44,000		MK-4	447,000	298,000
45,000		MK-4	447,000	298,000
48,000		MK-4	470,000	321,000
49,000		MK-4	470,000	321,000
50,000		MK-4	470,000	321,000

长系列麻花钻

产品代号 82211

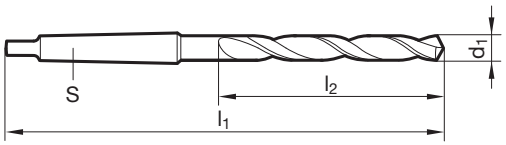


P	M	K	N	S	H
●	○	●	●	○	

HSS-E | N | ~10xD | DIN 341 | 118° | h8 | R | MK

芯厚 ≥ Ø 5,000 • 圆弧后刀面 • 高耐磨强度 • 耐磨损 高强度 • 使用钻套钻削

适于加工：强度大于800N/mm²的钢（合金 以及 非合金）和铸铁 • 热轧和冷轧钢 • 耐磨轴承钢 • 适于加工：高合金钢 • 热处理钢和淬硬钢



d1 mm	inch	S	l1 mm	l2 mm
5,000		MK-1	155,000	74,000
6,800		MK-1	174,000	93,000
8,500		MK-1	181,000	100,000
10,000		MK-1	197,000	116,000
10,200		MK-1	197,000	116,000
11,500		MK-1	206,000	125,000
12,000		MK-1	215,000	134,000
13,000		MK-1	215,000	134,000
14,000		MK-1	223,000	142,000
14,500		MK-2	245,000	147,000
16,000		MK-2	251,000	153,000
17,500		MK-2	263,000	165,000
18,000		MK-2	263,000	165,000
20,000		MK-2	275,000	177,000
22,500		MK-2	296,000	198,000
23,000		MK-2	296,000	198,000
25,000	63/64	MK-3	327,000	206,000
30,000		MK-3	351,000	230,000

HARTNER

超长麻花钻,系列1

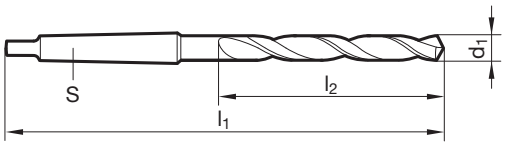
产品代号 82310



P	M	K	N	S	H
●		●	○		

HSS | N | ~15xD | DIN 1870 | 118° | h8 | R | MK

芯厚 ≥ Ø 8,500 • 圆弧后刀面 • 适合加工深孔
适于加工：合金/非合金钢和铸钢 • 灰铸铁,可锻铸铁和球墨铸铁 • 粉末冶金铁和石墨



d1 mm	S	l1 mm	l2 mm
8,500	MK-1	265,000	165,000
9,000	MK-1	275,000	175,000
9,500	MK-1	275,000	175,000
10,000	MK-1	285,000	185,000
10,200	MK-1	285,000	185,000
11,000	MK-1	300,000	195,000
11,800	MK-1	300,000	195,000
12,500	MK-1	310,000	205,000
13,000	MK-1	310,000	205,000
14,000	MK-1	325,000	220,000
14,500	MK-2	340,000	220,000
15,000	MK-2	340,000	220,000
15,750	MK-2	355,000	230,000
15,800	MK-2	355,000	230,000
16,000	MK-2	355,000	230,000
16,250	MK-2	355,000	230,000
17,750	MK-2	370,000	245,000
18,000	MK-2	370,000	245,000

d1 mm	S	l1 mm	l2 mm
18,500	MK-2	370,000	245,000
20,000	MK-2	385,000	260,000
21,000	MK-2	385,000	260,000
22,500	MK-2	405,000	270,000
23,500	MK-3	425,000	270,000
24,000	MK-3	440,000	290,000
24,500	MK-3	440,000	290,000
25,000	MK-3	440,000	290,000
26,000	MK-3	440,000	290,000
26,500	MK-3	440,000	290,000
30,000	MK-3	460,000	305,000
30,500	MK-3	480,000	320,000
33,000	MK-4	505,000	320,000

HARTNER

超长麻花钻,系列1

产品代号 82340

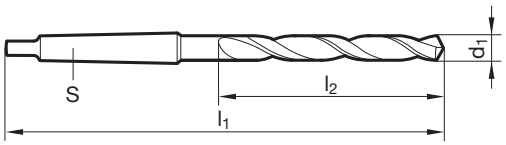


P	M	K	N	S	H
•		•	•		

HSS | >Ø 16,0 | FN | ~15xD | DIN 1870 | 130° | h8 | R | MK

芯厚 ≥ Ø 8,000 • 圆弧后刀面 • 宽槽 • 适合加工深孔 • 适合排屑条件不佳的场合

适于加工：≤1000N/mm²的铸铁和钢 • 灰铸铁,可锻铸铁和球墨铸铁 - 粉末冶金铁和石墨



d1 mm	inch	S	l1 mm	l2 mm
8,000		MK-1	265,000	165,000
8,500		MK-1	265,000	165,000
8,700		MK-1	275,000	175,000
9,000		MK-1	275,000	175,000
10,000		MK-1	285,000	185,000
10,500		MK-1	285,000	185,000
11,000		MK-1	300,000	195,000
11,500		MK-1	300,000	195,000
12,000		MK-1	310,000	205,000
12,500		MK-1	310,000	205,000
13,000		MK-1	310,000	205,000
13,500		MK-1	325,000	220,000
14,000		MK-1	325,000	220,000
14,500		MK-2	340,000	220,000
15,000		MK-2	340,000	220,000
15,500		MK-2	355,000	230,000
16,000		MK-2	355,000	230,000
16,500		MK-2	355,000	230,000

d1 mm	inch	S	l1 mm	l2 mm
17,000		MK-2	355,000	230,000
17,500		MK-2	370,000	245,000
18,000		MK-2	370,000	245,000
19,000		MK-2	370,000	245,000
19,500		MK-2	385,000	260,000
20,000		MK-2	385,000	260,000
20,500		MK-2	385,000	260,000
21,000		MK-2	385,000	260,000
22,000		MK-2	405,000	270,000
23,000		MK-2	405,000	270,000
24,000		MK-3	440,000	290,000
25,000	63/64	MK-3	440,000	290,000
26,000		MK-3	440,000	290,000
28,000		MK-3	460,000	305,000
29,000		MK-3	460,000	305,000
30,000		MK-3	460,000	305,000

HARTNER

超长麻花钻,系列1

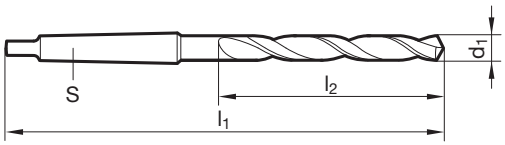
产品代号 82341



P	M	K	N	S	H
●	●	●	●	●	○

HSS-E | >Ø 16,0 | FN | ~15xD | DIN 1870 | 130° | h8 | R | MK

芯厚 ≥ Ø 10,000 • 圆弧后刀面 • 宽槽 • 耐磨损 高强度 • 高耐磨强度 • 适合加工深孔 • 适合排屑条件不佳的场合
适于加工：合金/非合金钢和铸钢 • 灰铸铁,可锻铸铁和球墨铸铁



d1 mm	S	l1 mm	l2 mm
10,000	MK-1	285,000	185,000
14,000	MK-1	325,000	220,000
15,000	MK-2	340,000	220,000
16,500	MK-2	355,000	230,000
17,000	MK-2	355,000	230,000

d1 mm	S	l1 mm	l2 mm

超长麻花钻,系列2

产品代号 82410

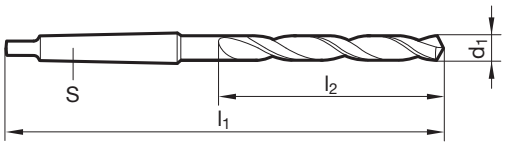


P	M	K	N	S	H
●		●	○		

HSS | N | ~20xD | DIN 1870 | 118° | h8 | R | MK

芯厚 ≥ Ø 8,500 • 圆弧后刀面 • 适合加工深孔

适于加工：合金/非合金钢和铸钢 • 灰铸铁,可锻铸铁和球墨铸铁 • 粉末冶金铁和石墨



d1 mm	inch	S	l1 mm	l2 mm
8,500		MK-1	330,000	210,000
9,000		MK-1	345,000	220,000
9,500		MK-1	345,000	220,000
10,000		MK-1	360,000	235,000
10,500		MK-1	360,000	235,000
11,000		MK-1	375,000	250,000
13,000		MK-1	395,000	260,000
13,500		MK-1	410,000	275,000
14,000		MK-1	410,000	275,000
14,500		MK-2	425,000	275,000
15,000		MK-2	425,000	275,000
15,500		MK-2	445,000	295,000

d1 mm	inch	S	l1 mm	l2 mm
16,000		MK-2	445,000	295,000
18,000		MK-2	465,000	310,000
19,000		MK-2	465,000	310,000
20,000		MK-2	490,000	325,000
21,000		MK-2	490,000	325,000
21,500		MK-2	515,000	345,000
22,000		MK-2	515,000	345,000
23,000		MK-2	515,000	345,000
24,000		MK-3	555,000	365,000
25,000	63/64	MK-3	555,000	365,000
30,000		MK-3	580,000	385,000
49,000		MK-4	765,000	510,000

HARTNER

超长麻花钻,系列2

产品代号 82440

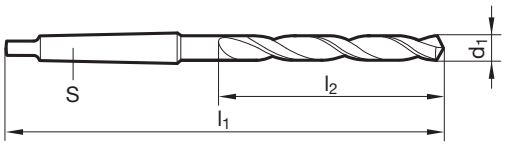


P	M	K	N	S	H
•		•	•		

HSS | >Ø 16,0 | FN | ~20xD | DIN 1870 | 130° | h8 | R | MK

芯厚 ≥ Ø 8,000 • 圆弧后刀面 • 宽槽 • 适合加工深孔 • 适合排屑条件不佳的场合

适于加工：≤1000N/mm²的铸铁和钢 • 灰铸铁,可锻铸铁和球墨铸铁 - 粉末冶金铁和石墨



d1 mm	inch	S	l1 mm	l2 mm
8,000		MK-1	330,000	210,000
8,500		MK-1	330,000	210,000
9,000		MK-1	345,000	220,000
9,500		MK-1	345,000	220,000
9,800		MK-1	360,000	235,000
10,000		MK-1	360,000	235,000
10,500		MK-1	360,000	235,000
11,000		MK-1	375,000	250,000
12,000		MK-1	395,000	260,000
12,500		MK-1	395,000	260,000
13,000		MK-1	395,000	260,000
13,500		MK-1	410,000	275,000
14,000		MK-1	410,000	275,000
14,500		MK-2	425,000	275,000
15,000		MK-2	425,000	275,000
15,500		MK-2	445,000	295,000
16,000		MK-2	445,000	295,000
16,500		MK-2	445,000	295,000

d1 mm	inch	S	l1 mm	l2 mm
17,000		MK-2	445,000	295,000
17,500		MK-2	465,000	310,000
18,000		MK-2	465,000	310,000
18,500		MK-2	465,000	310,000
19,000		MK-2	465,000	310,000
19,500		MK-2	490,000	325,000
20,000		MK-2	490,000	325,000
20,500		MK-2	490,000	325,000
21,000		MK-2	490,000	325,000
22,000		MK-2	515,000	345,000
23,000		MK-2	515,000	345,000
24,000		MK-3	555,000	365,000
25,000	63/64	MK-3	555,000	365,000
26,000		MK-3	555,000	365,000
28,000		MK-3	580,000	385,000
29,000		MK-3	580,000	385,000
30,000		MK-3	580,000	385,000

HARTNER

超长麻花钻

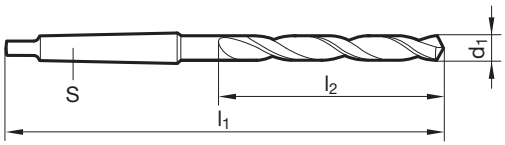
产品代号 82466



P	M	K	N	S	H
•		•	•		

HSS | >Ø 16,0 | FN | >20xD | WN | 130° | h8 | R | MK

芯厚 ≥ Ø 8,000 • 圆弧后刀面 • 宽槽 • 适合加工深孔 • 适合排屑条件不佳的场合
适于加工：≤1000N/mm²的铸铁和钢 • 灰铸铁,可锻铸铁和球墨铸铁 - 粉末冶金铁和石墨



d1 mm	S	l1 mm	l2 mm
8,000	MK-1	500,000	420,000
8,500	MK-1	500,000	420,000
9,000	MK-1	500,000	420,000
10,000	MK-1	500,000	420,000
12,000	MK-1	500,000	420,000
13,000	MK-1	500,000	420,000
14,000	MK-1	500,000	420,000
15,000	MK-2	500,000	400,000
16,000	MK-2	500,000	400,000
17,000	MK-2	500,000	400,000
18,000	MK-2	500,000	400,000
19,000	MK-2	500,000	400,000

d1 mm	S	l1 mm	l2 mm
20,000	MK-2	500,000	400,000

HARTNER

超长麻花钻

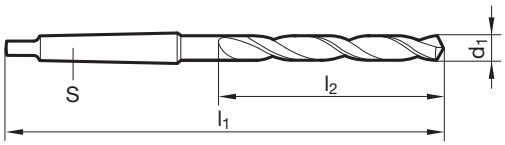
产品代号 82467



P	M	K	N	S	H
•		•	•		

HSS | >Ø 16,0 | FN | >20xD | WN | 130° | h8 | R | MK

芯厚 ≥ Ø 14,000 • 圆弧后刀面 • 宽槽 • 适合加工深孔 • 适合排屑条件不佳的场合
适于加工：≤1000N/mm²的铸铁和钢 • 灰铸铁,可锻铸铁和球墨铸铁 - 粉末冶金铁和石墨



d1 mm	S	l1 mm	l2 mm
14,000	MK-1	600,000	500,000
15,000	MK-2	600,000	500,000
16,000	MK-2	600,000	500,000
18,000	MK-2	600,000	500,000
19,000	MK-2	600,000	500,000
20,000	MK-2	600,000	500,000
21,000	MK-2	600,000	500,000
22,000	MK-2	600,000	500,000
23,000	MK-2	600,000	500,000
24,000	MK-3	600,000	475,000
25,000	MK-3	600,000	475,000
30,000	MK-3	600,000	475,000

d1 mm	S	l1 mm	l2 mm
32,000	MK-4	600,000	450,000
38,000	MK-4	600,000	450,000

超长麻花钻

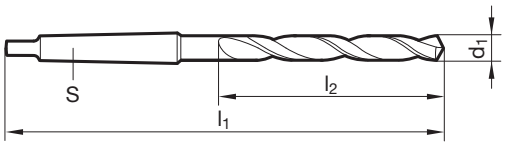
产品代号 82468



P	M	K	N	S	H
•		•	•		

HSS | FN | >20xD | WN | 130° | h8 | R | MK

芯厚 ≥ Ø 14,000 • 圆弧后刀面 • 宽槽 • 适合加工深孔 • 适合排屑条件不佳的场合
适于加工：≤1000N/mm²的铸铁和钢 • 灰铸铁,可锻铸铁和球墨铸铁 - 粉末冶金铁和石墨



d1 mm	S	l1 mm	l2 mm
14,000	MK-1	750,000	650,000
15,000	MK-2	750,000	650,000
16,000	MK-2	750,000	650,000
18,000	MK-2	750,000	650,000

d1 mm	S	l1 mm	l2 mm

HARTNER

超长麻花钻

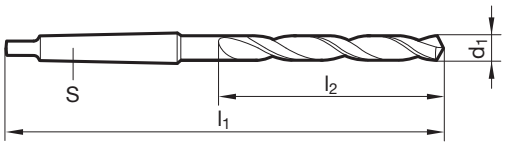
产品代号 82469



P	M	K	N	S	H
•		•	•		

HSS | ○ | FN | >20xD | WN | 130° | h8 | R | MK

芯厚 ≥ Ø 15,000 • 圆弧后刀面 • 宽槽 • 适合加工深孔 • 适合排屑条件不佳的场合
适于加工：≤1000N/mm²的铸铁和钢 • 灰铸铁,可锻铸铁和球墨铸铁 - 粉末冶金铁和石墨



d1 mm	S	l1 mm	l2 mm
15,000	MK-2	1000,000	850,000
18,000	MK-2	1000,000	850,000

d1 mm	S	l1 mm	l2 mm

长系列油孔钻

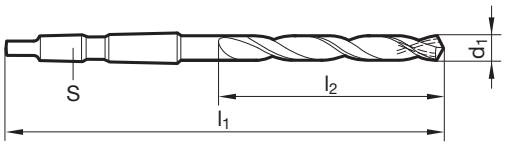
产品代号 82535



P	M	K	N	S	H
•		•	•		

HSS | FN | ~10xD | WN | 118° | h8 | R | MK

芯厚 ≥ Ø 10,000 • 圆弧后刀面 • 莫氏锥柄轴向冷却 • 使用钻套钻削
适于加工：叠层金属薄板件 • 钢和铸钢,灰铸铁 • ≤800N/mm²的奥氏体钢



d1 mm	S	l1 mm	l2 mm
10,000	MK-2	224,000	116,000
10,500	MK-2	224,000	116,000
11,000	MK-2	233,000	125,000
11,500	MK-2	233,000	125,000
12,000	MK-2	242,000	134,000
12,500	MK-2	242,000	134,000
15,000	MK-2	255,000	147,000
16,000	MK-2	261,000	153,000
16,500	MK-2	267,000	159,000
17,000	MK-2	267,000	159,000
17,500	MK-2	273,000	165,000
18,000	MK-2	273,000	165,000

d1 mm	S	l1 mm	l2 mm
18,500	MK-3	303,000	171,000
19,000	MK-3	303,000	171,000
19,500	MK-3	309,000	177,000
20,000	MK-3	309,000	177,000

长系列油孔钻

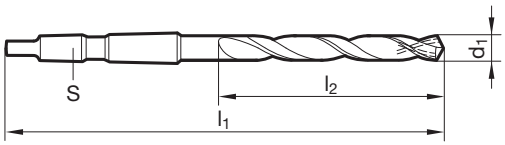
产品代号 82521



P	M	K	N	S	H
●	○	●	●	○	

HSS | N | ~10xD | WN | 118° | h8 | R | MK

芯厚 ≥ Ø 10,000 • 圆弧后刀面 • 莫氏锥柄轴向冷却 • 使用钻套钻削
适于加工：叠层金属薄板件 • 钢和铸钢,灰铸铁 • ≤800N/mm²的奥氏体钢



d1 mm	S	l1 mm	l2 mm
10,000	MK-2	233,000	116,000
11,000	MK-2	242,000	125,000
12,000	MK-2	251,000	134,000
13,000	MK-2	251,000	134,000
13,200	MK-2	251,000	134,000
13,500	MK-2	259,000	142,000
13,800	MK-2	259,000	142,000
14,000	MK-2	259,000	142,000
15,000	MK-2	264,000	147,000
16,000	MK-2	270,000	153,000
16,250	MK-2	276,000	159,000
17,000	MK-2	276,000	159,000
18,000	MK-2	282,000	165,000
18,500	MK-3	307,000	171,000
18,750	MK-3	307,000	171,000
19,000	MK-3	307,000	171,000
19,500	MK-3	313,000	177,000
20,000	MK-3	313,000	177,000

d1 mm	S	l1 mm	l2 mm
21,000	MK-3	320,000	184,000
22,000	MK-3	327,000	191,000
23,000	MK-3	334,000	198,000
24,000	MK-3	342,000	206,000
25,000	MK-3	342,000	206,000
26,000	MK-3	350,000	214,000
26,500	MK-3	350,000	214,000
27,000	MK-4	385,000	222,000
28,000	MK-4	385,000	222,000
29,000	MK-4	393,000	230,000
30,000	MK-4	393,000	230,000
32,000	MK-4	421,000	248,000
33,000	MK-4	421,000	248,000
35,000	MK-4	430,000	257,000
40,000	MK-4	450,000	277,000

长系列油孔钻

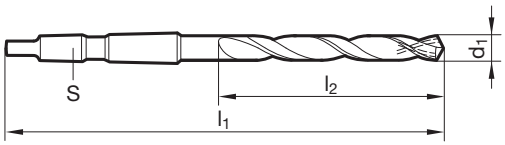
产品代号 82525



P	M	K	N	S	H
●	●	●	●	●	○

HSS-E | FN | ~10xD | WN | 130° | h8 | R | MK

芯厚 ≥ Ø 15,000 • 圆弧后刀面 • 莫氏锥柄轴向冷却 • 高耐磨强度 • 耐磨损 高强度 • 使用钻套钻削
适合加工高拉伸强度钢 • 铸钢,灰铸铁 • 不锈钢/耐酸/耐热钢 • 强度达到1300 N/mm²



d1 mm	S	l1 mm	l2 mm
15,000	MK-2	264,000	147,000
17,000	MK-2	276,000	159,000
18,000	MK-2	282,000	165,000
21,000	MK-3	320,000	184,000
22,000	MK-3	327,000	191,000
32,500	MK-4	421,000	248,000

d1 mm	S	l1 mm	l2 mm

HARTNER

超长油孔钻

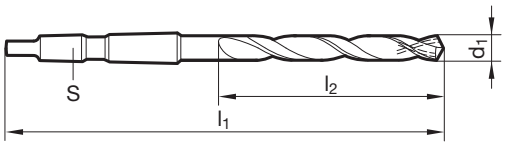
产品代号 82515



P	M	K	N	S	H
●	●	●	●	●	○

HSS-E | FN | ~15xD | WN | 130° | h8 | R | MK

芯厚 ≥ Ø 14,000 • 圆弧后刀面 • 莫氏锥柄轴向冷却 • 高耐磨强度 • 耐磨损 高强度 • 使用钻套钻削
适合加工高拉伸强度钢 • 铸钢,灰铸铁 • 不锈钢/耐酸/耐热钢 • 强度达到1300 N/mm²



d1 mm	S	l1 mm	l2 mm
14,000	MK-2	337,000	220,000
15,000	MK-2	337,000	220,000
16,000	MK-2	347,000	230,000
17,500	MK-2	362,000	245,000
18,000	MK-2	362,000	245,000
20,000	MK-3	396,000	260,000

d1 mm	S	l1 mm	l2 mm
29,000	MK-4	468,000	305,000

HARTNER

硬质合金刀片螺旋槽钻

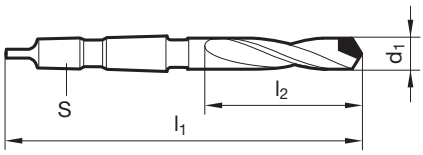
产品代号 89302



P	M	K	N	S	H
○		○			○

HM | ◯ | N | DIN 8041 | 118° | h8 | R | MK

芯厚 ≥ Ø 8,500 • 双后刀面 • 镶硬质合金
适合加工弹簧钢 • 大于300HB 硬铸铁 • 纯钼 • 硬青铜



d1 mm	S	l1 mm	l2 mm
8,500	MK-1	135,000	45,000
10,000	MK-1	140,000	50,000
10,200	MK-1	140,000	50,000
10,500	MK-1	140,000	50,000
11,000	MK-1	140,000	50,000
11,500	MK-1	146,000	56,000
12,000	MK-1	146,000	56,000
12,500	MK-1	146,000	56,000
13,000	MK-1	146,000	56,000
13,500	MK-2	168,000	63,000
14,000	MK-2	168,000	63,000
14,500	MK-2	168,000	63,000
15,000	MK-2	168,000	63,000
15,500	MK-2	175,000	70,000
16,000	MK-2	175,000	70,000
16,500	MK-2	175,000	70,000
17,000	MK-2	175,000	70,000
17,500	MK-2	185,000	80,000

d1 mm	S	l1 mm	l2 mm
18,000	MK-2	185,000	80,000
19,000	MK-2	185,000	80,000
20,000	MK-3	215,000	90,000
21,500	MK-3	215,000	90,000
22,000	MK-3	215,000	90,000
25,000	MK-3	225,000	100,000
26,500	MK-4	260,000	110,000
27,000	MK-4	260,000	110,000
30,000	MK-4	275,000	125,000
32,000	MK-4	275,000	125,000
33,000	MK-4	290,000	140,000
40,000	MK-4	310,000	160,000

HARTNER

锥柄扩孔钻

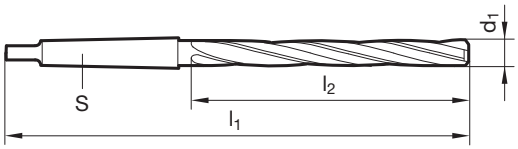
产品代号 86110



P	M	K	N	S	H
●	○	●	○		

HSS | N | DIN 343 | 120° | R | MK

圆弧后刀面 • 三刃 • 刚性好 • 适合加工有预钻//预铸//预冲的孔 • 纠正直线度误差 • 纠正圆度误差 • 改善了孔的表面质量 • 倒角直径<底孔直径 • 使用时，需严格遵守最小底孔直径的要求 • 扩孔后可以进行精铰



d1 mm	d0 mm	S	l1 mm	l2 mm
8,600	6,3	MK-1	162,000	81,000
9,000	6,3	MK-1	162,000	81,000
9,800	7,0	MK-1	168,000	87,000
10,000	7,0	MK-1	168,000	87,000
10,100	7,0	MK-1	168,000	87,000
11,000	7,7	MK-1	175,000	94,000
11,500	7,7	MK-1	175,000	94,000
11,600	7,7	MK-1	175,000	94,000
11,750	8,4	MK-1	182,000	101,000
13,000	9,1	MK-1	182,000	101,000
13,750	9,8	MK-1	189,000	108,000
14,000	9,8	MK-1	189,000	108,000
14,100	10,5	MK-2	212,000	114,000
14,750	10,5	MK-2	212,000	114,000
15,000	10,5	MK-2	212,000	114,000
15,750	11,2	MK-2	218,000	120,000
16,000	11,2	MK-2	218,000	120,000
16,250	11,9	MK-2	223,000	125,000
16,750	11,9	MK-2	223,000	125,000
17,000	11,9	MK-2	223,000	125,000
17,750	12,6	MK-2	228,000	130,000
18,000	12,6	MK-2	228,000	130,000
18,700	13,3	MK-2	233,000	135,000
19,000	13,3	MK-2	233,000	135,000
19,700	14,0	MK-2	238,000	140,000
19,750	14,0	MK-2	238,000	140,000
20,000	14,0	MK-2	238,000	140,000
20,700	14,6	MK-2	243,000	145,000
21,000	14,6	MK-2	243,000	145,000
21,700	15,3	MK-2	248,000	150,000

d1 mm	d0 mm	S	l1 mm	l2 mm
22,000	15,3	MK-2	248,000	150,000
22,700	16,0	MK-2	253,000	155,000
23,000	16,0	MK-2	253,000	155,000
24,000	16,6	MK-3	281,000	160,000
25,000	17,3	MK-3	281,000	160,000
25,700	18,0	MK-3	286,000	165,000
26,000	18,0	MK-3	286,000	165,000
26,700	18,6	MK-3	291,000	170,000
27,000	18,6	MK-3	291,000	170,000
27,700	19,3	MK-3	291,000	170,000
28,000	19,3	MK-3	291,000	170,000
29,000	20,0	MK-3	296,000	175,000
29,700	20,5	MK-3	296,000	175,000
30,000	20,5	MK-3	296,000	175,000
31,000	21,0	MK-3	301,000	180,000
31,600	22,0	MK-4	334,000	185,000
32,000	22,0	MK-4	334,000	185,000
32,600	23,0	MK-4	334,000	185,000
33,000	23,0	MK-4	334,000	185,000
34,000	24,0	MK-4	339,000	190,000
35,000	25,0	MK-4	339,000	190,000
35,600	25,5	MK-4	344,000	195,000
36,000	25,5	MK-4	344,000	195,000
36,600	26,0	MK-4	344,000	195,000
37,600	26,5	MK-4	349,000	200,000
38,000	26,5	MK-4	349,000	200,000
39,000	27,0	MK-4	349,000	200,000
40,000	28,0	MK-4	349,000	200,000

HARTNER

锥柄扩孔钻

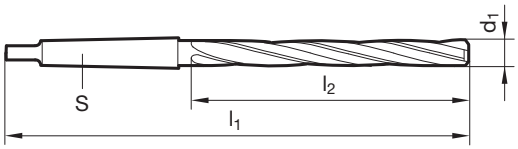
产品代号 86111



P	M	K	N	S	H
●	○	●	●	○	

HSS-E | N | DIN 343 | 120° | R | MK

圆弧后刀面 • 三刃 • 刚性好 • 适合加工有预钻//预铸//预冲的孔 • 纠正直线度误差 • 纠正圆度误差 • 改善了孔的表面质量 • 倒角直径<底孔直径 • 使用时，需严格遵守最小底孔直径的要求 • 扩孔后可以进行精铰



d1 mm	d0 mm	S	l1 mm	l2 mm
12,000	8,400	MK-1	182,000	101,000
14,000	9,800	MK-1	189,000	108,000
22,000	15,300	MK-2	248,000	150,000

d1 mm	d0 mm	S	l1 mm	l2 mm

锥孔钻

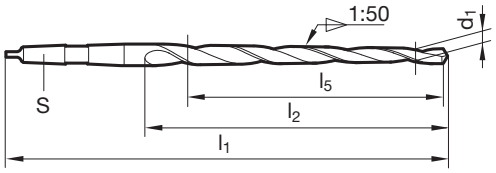
产品代号 82810



P	M	K	N	S	H
●	○	●	○		



芯厚 ≥ Ø 13,000 • 圆弧后刀面 • 用于锥形孔配合锥形销（DIN 1 (new: DIN EN 22 339), DIN 7978 (new: DIN EN 28 736), DIN 7977 (new: DIN EN 28737) 和 DIN 258



d1 mm	S	l1 mm	l2 mm	l5 mm
5,000	MK-1	155,000	81,000	75,000
6,000	MK-1	187,000	108,000	105,000
8,000	MK-1	227,000	149,000	145,000
10,000	MK-1	257,000	180,000	175,000
13,000	MK-2	325,000	229,000	220,000
14,000	MK-2	325,000	229,000	220,000

d1 mm	S	l1 mm	l2 mm	l5 mm
20,000	MK-3	377,000	263,000	250,000

HARTNER

Precision Cutting Tools

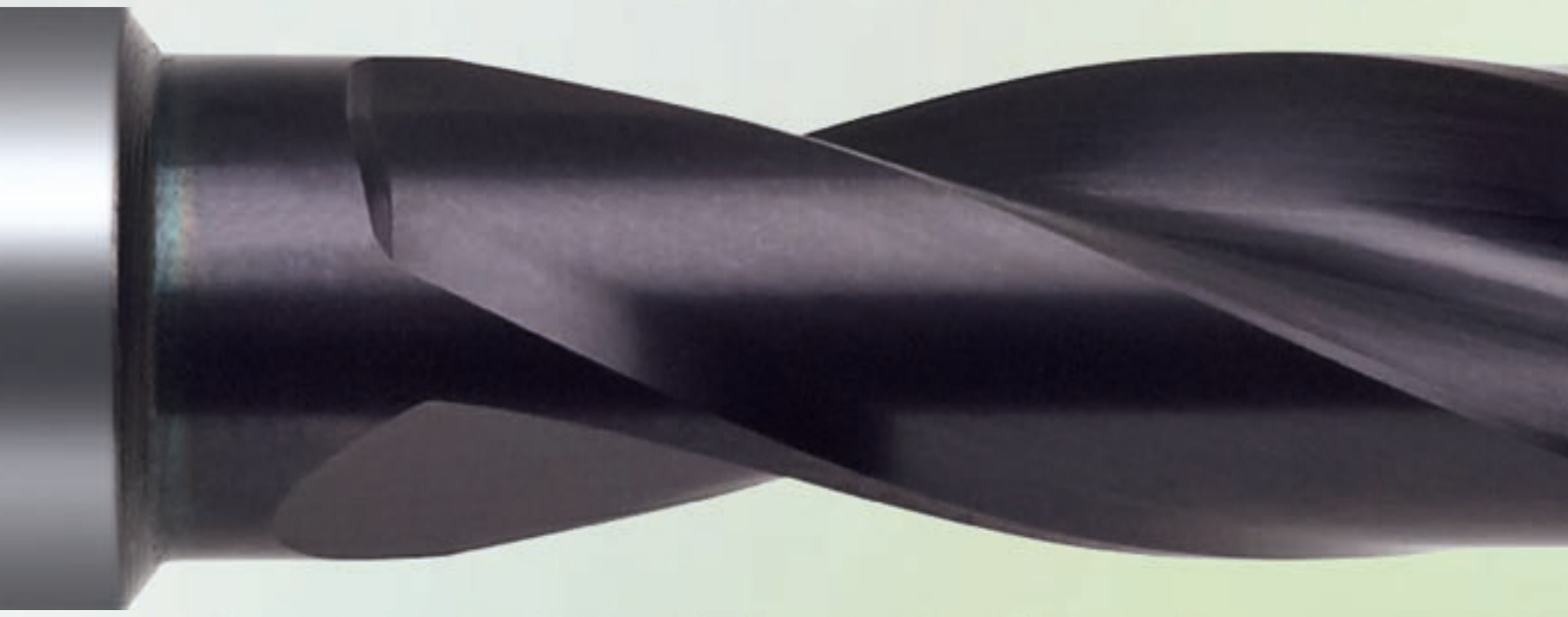
TS-DRILLS









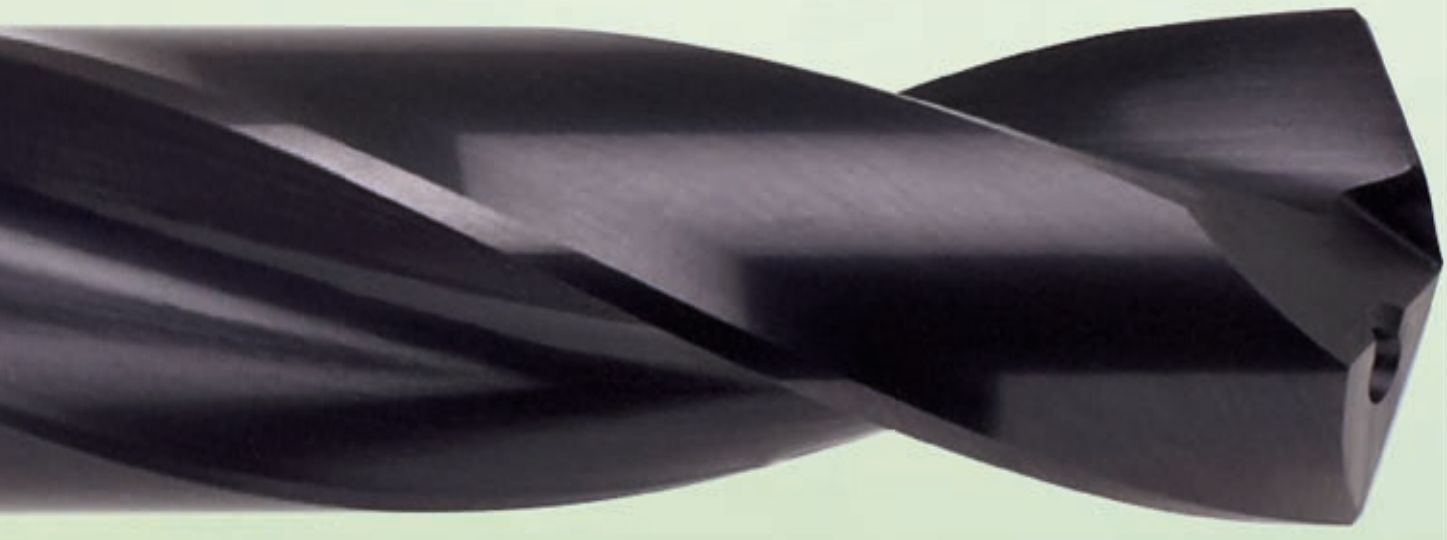


HARTNER

Precision Cutting Tools

TS钻头

硬质合金高性能刀具
抛光处理或涂层



不带内冷TS钻头

P	M	K	N	S	H	标准	型号	刀具材料	表面处理	切削方向	柄部形式	钻深	d1/mm	产品代号	页码
															
●	○	●	○	○	○	DIN 6537K	TS 100 U	整硬	T	右手	HE	3xD	3,000 - 20,000	89264	196
															
●	○	●	○	○	○	DIN 6537K	TS 100 U	整硬	F	右手	HE	3xD	3,000 - 20,000	89402	194
															
●	○	●	○	○	○	DIN 6537K	TS 100 U	整硬	F	右手	HA	3xD	3,000 - 20,000	89413	194
															
●				●	○	DIN 6537K	TS 100 H	整硬	Y	右手	HA	3xD	3,000 - 20,000	89422	198
															
●	○	●	○	○	○	DIN 6539	TS 100 U	整硬	T	右手	圆柱形	3xD	3,000 - 16,000	89237	200
															
●	○	●	○	○	○	DIN 6539	TS 100 U	整硬	F	右手	圆柱形	3xD	3,000 - 16,000	89401	200
															
●	○	●	○	○	○	DIN 6537L	TS 100 U	整硬	F	右手	HA	5xD	3,000 - 20,000	89414	202
															
●	○	●	○	○	○	DIN 6537L	TS 100 U	整硬	F	右手	HE	5xD	3,000 - 20,000	89417	202
															
●	○	●	○	○	○	哈特纳标准	TS 100 U	整硬	T	右手	圆柱形	5xD	5,000 - 16,000	89275	204

带内冷TS钻头

															
●	○	○	○			DIN 6538K	TS 80 U	硬质合金	T	右手	HE	3xD	10,000 - 25,000	89306	208
															
●	○	●	○	○	○	DIN 6537K	TS 100 U	整硬	T	右手	HE	3xD	4,000 - 20,000	89266	207
															
●	○	●	○	○	○	DIN 6537K	TS 100 U	整硬	F	右手	HA	3xD	3,000 - 20,000	89410	205
															
●	○	●	○	○	○	DIN 6537K	TS 100 U	整硬	F	右手	HE	3xD	3,000 - 20,000	89415	205

带内冷TS钻头

P	M	K	N	S	H	标准	型号	刀具材料	表面处理	切削方向	柄部形式	钻深	d1/mm	产品代号	页码
															
●				●	○	DIN 6537K	TS 100 H	整硬	Y	右手	HA	3xD	3,000 - 20,000	89423	211
															
●				●	○	DIN 6537K	TS 100 H	整硬	Y	右手	HE	3xD	3,000 - 20,000	89424	211
															
	●			●		DIN 6537K	TS 100 INOX	整硬	a	右手	HA	3xD	3,000 - 20,000	89450	209
															
	●			●		DIN 6537K	TS 100 INOX	整硬	a	右手	HE	3xD	3,000 - 20,000	89550	209
															
		○	●			哈特纳标准	TS 150 GG	整硬	○	右手	HA	4xD	3,000 - 20,000	89292	213
															
●	○	○	○			DIN 6538M	TS 80 U	硬质合金	T	右手	HE	5xD	9,800 - 25,500	89307	217
															
●	○	●	○	○	○	DIN 6537L	TS 100 U	整硬	T	右手	HE	5xD	3,700 - 19,500	89272	214
															
●	○	●	○	○	○	DIN 6537L	TS 100 U	整硬	F	右手	HE	5xD	3,000 - 20,000	89408	215
															
●	○	●	○	○	○	DIN 6537L	TS 100 U	整硬	F	右手	HA	5xD	3,000 - 20,000	89411	215
															
		●				DIN 6537L	TS 100 R	整硬	F	右手	HA	5xD	3,000 - 20,000	89420	222
															
●				●	○	DIN 6537L	TS 100 H	整硬	Y	右手	HA	5xD	3,000 - 20,000	89425	220
															
●				●	○	DIN 6537L	TS 100 H	整硬	Y	右手	HE	5xD	3,000 - 20,000	89426	220
															
	●			●		DIN 6537L	TS 100 INOX	整硬	a	右手	HA	5xD	3,000 - 20,000	89451	218
															
	●			●		DIN 6537L	TS 100 INOX	整硬	a	右手	HE	5xD	3,000 - 20,000	89551	218

带内冷TS钻头

P	M	K	N	S	H	标准	型号	刀具材料	表面处理	切削方向	柄部形式	钻深	d1/mm	产品代号	页码
															
●	○	○	○			DIN 6538L	TS 80 U	硬质合金	T	右手	HE	7xD	10,000 - 22,000	89308	226
															
		○	●			哈特纳标准	TS 150 GG	整硬	◯	右手	HA	7xD	3,000 - 20,000	89294	230
															
●	○	●	○	○	○	哈特纳标准	TS 100 U	整硬	F	右手	HA	7xD	3,000 - 20,000	89412	224
															
●	○	●	○	○	○	哈特纳标准	TS 100 U	整硬	F	右手	HE	7xD	3,000 - 20,000	89416	224
															
		●				哈特纳标准	TS 100 R	整硬	F	右手	HA	7xD	4,000 - 20,000	89421	228
															
●				●	○	哈特纳标准	TS 100 H	整硬	Y	右手	HA	7xD	3,000 - 16,000	89427	227
															
		○	●			哈特纳标准	TS 150 GG	整硬	◯	右手	HA	10xD	3,000 - 20,000	89293	231
															
		●	○			哈特纳标准	TS 150 GG	整硬	◯	右手	HA	10xD	3,000 - 20,000	89295	231
															
●	○	●	○	○	○	哈特纳标准	TS 100 U	整硬	F	右手	HA	12xD	3,000 - 20,000	89418	233
															
●	●	●	○	○	○	哈特纳标准	TS 100 T	整硬	A	右手	HA	15xD	3,000 - 14,000	86509	235
															
●	●	●	○	○	○	哈特纳标准	TS 100 T	整硬	A	右手	HA	20xD	3,000 - 14,000	86511	236
															
●	●	●	○	○	○	哈特纳标准	TS 100 T	整硬	A	右手	HA	25xD	3,000 - 12,000	86512	237
															
●	●	●	○	○	○	哈特纳标准	TS 100 T	整硬	A	右手	HA	30xD	3,000 - 10,000	86513	238
															
●	●	●	○	○	○	哈特纳标准	TS 100 T	整硬	A	右手	HA	40xD	3,000 - 8,000	86514	239

P	M	K	N	S	H	标准	型号	刀具材料	表面处理	切削方向	柄部形式	钻深	d1/mm	产品代号	页码
3刃TS钻															
															
		●	●			DIN 6537L	TS 3 G	整硬	◯	右手	HA	5xD	3,000 - 20,000	89247	240
															
		●	●			DIN 6539	TS 3 G	整硬	◯	右手	圆柱形	5xD	3,000 - 20,000	89239	241
叉形去毛刺刀															
															
●	●	●	○	●	○	哈特纳标准	TS 100 EG	整硬	◯	右手	圆柱形			84100	243
															
●	●	●	○	●	○	哈特纳标准	TS 100 EG	整硬	◯	右手	HA			84101	244
前/后去毛刺 90°															
															
●	●	●	○	●	○	哈特纳标准	TS 100 VR	整硬	ⓐ	右手	HA		3,000 - 12,000	80495	245

HARTNER

不带内冷TS钻头

产品代号 89413



P	M	K	N	S	H
●	○	●	○	○	○

VHM | F | TS 100 U | 3xD | DIN 6537 K | 140° | m7 | R | HA

芯厚 ⩾ Ø 3,000 • 双后刀面 • 精密磨削过的主切削刃 • 优化了的切削几何参数

适合加工：结构钢和淬硬钢 • 易切削钢和热处理钢 • 钢（合金/非合金），强度小于 1200N/mm² • 铸件材料 • 青铜、黄铜 • 高硅铝合金

产品代号 89402



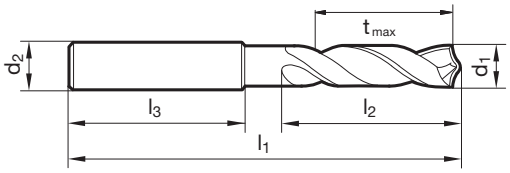
P	M	K	N	S	H
●	○	●	○	○	○

VHM | F | TS 100 U | 3xD | DIN 6537 K | 140° | m7 | R | HE

芯厚 ⩾ Ø 3,000 • 双后刀面 • 精密磨削过的主切削刃 • 优化了的切削几何参数

适合加工：结构钢和淬硬钢 • 易切削钢和热处理钢 • 钢（合金/非合金），强度小于 1200N/mm² • 铸件材料 • 青铜、黄铜 • 高硅铝合金

$t_{max} = l_2 - 1{,}5 \times d_1$



d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm	d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
3,000		6,000	62,000	20,000	36,000	5,200		6,000	66,000	28,000	36,000
3,100		6,000	62,000	20,000	36,000	5,300		6,000	66,000	28,000	36,000
3,170	1/8	6,000	62,000	20,000	36,000	5,400		6,000	66,000	28,000	36,000
3,200		6,000	62,000	20,000	36,000	5,500		6,000	66,000	28,000	36,000
3,250		6,000	62,000	20,000	36,000	5,550		6,000	66,000	28,000	36,000
3,300		6,000	62,000	20,000	36,000	5,560	7/32	6,000	66,000	28,000	36,000
3,400		6,000	62,000	20,000	36,000	5,600		6,000	66,000	28,000	36,000
3,500		6,000	62,000	20,000	36,000	5,700		6,000	66,000	28,000	36,000
3,570	9/64	6,000	62,000	20,000	36,000	5,800		6,000	66,000	28,000	36,000
3,600		6,000	62,000	20,000	36,000	5,900		6,000	66,000	28,000	36,000
3,700		6,000	62,000	20,000	36,000	5,950	15/64	6,000	66,000	28,000	36,000
3,800		6,000	66,000	24,000	36,000	6,000		6,000	66,000	28,000	36,000
3,900		6,000	66,000	24,000	36,000	6,100		8,000	79,000	34,000	36,000
3,970	5/32	6,000	66,000	24,000	36,000	6,200		8,000	79,000	34,000	36,000
4,000		6,000	66,000	24,000	36,000	6,300		8,000	79,000	34,000	36,000
4,100		6,000	66,000	24,000	36,000	6,350	1/4	8,000	79,000	34,000	36,000
4,200		6,000	66,000	24,000	36,000	6,400		8,000	79,000	34,000	36,000
4,300		6,000	66,000	24,000	36,000	6,500		8,000	79,000	34,000	36,000
4,370	11/64	6,000	66,000	24,000	36,000	6,600		8,000	79,000	34,000	36,000
4,400		6,000	66,000	24,000	36,000	6,700		8,000	79,000	34,000	36,000
4,500		6,000	66,000	24,000	36,000	6,750	17/64	8,000	79,000	34,000	36,000
4,600		6,000	66,000	24,000	36,000	6,800		8,000	79,000	34,000	36,000
4,650		6,000	66,000	24,000	36,000	6,900		8,000	79,000	34,000	36,000
4,700		6,000	66,000	24,000	36,000	7,000		8,000	79,000	34,000	36,000
4,760	3/16	6,000	66,000	28,000	36,000	7,100		8,000	79,000	41,000	36,000
4,800		6,000	66,000	28,000	36,000	7,140	9/32	8,000	79,000	41,000	36,000
4,900		6,000	66,000	28,000	36,000	7,200		8,000	79,000	41,000	36,000
5,000		6,000	66,000	28,000	36,000	7,300		8,000	79,000	41,000	36,000
5,100		6,000	66,000	28,000	36,000	7,400		8,000	79,000	41,000	36,000
5,160	13/64	6,000	66,000	28,000	36,000	7,500		8,000	79,000	41,000	36,000

不带内冷TS钻头

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
7,540	19/64	8,000	79,000	41,000	36,000
7,600		8,000	79,000	41,000	36,000
7,700		8,000	79,000	41,000	36,000
7,800		8,000	79,000	41,000	36,000
7,900		8,000	79,000	41,000	36,000
7,940	5/16	8,000	79,000	41,000	36,000
8,000		8,000	79,000	41,000	36,000
8,100		10,000	89,000	47,000	40,000
8,200		10,000	89,000	47,000	40,000
8,300		10,000	89,000	47,000	40,000
8,330	21/64	10,000	89,000	47,000	40,000
8,400		10,000	89,000	47,000	40,000
8,500		10,000	89,000	47,000	40,000
8,600		10,000	89,000	47,000	40,000
8,700		10,000	89,000	47,000	40,000
8,730	11/32	10,000	89,000	47,000	40,000
8,800		10,000	89,000	47,000	40,000
8,900		10,000	89,000	47,000	40,000
9,000		10,000	89,000	47,000	40,000
9,100		10,000	89,000	47,000	40,000
9,130	23/64	10,000	89,000	47,000	40,000
9,200		10,000	89,000	47,000	40,000
9,250		10,000	89,000	47,000	40,000
9,300		10,000	89,000	47,000	40,000
9,400		10,000	89,000	47,000	40,000
9,500		10,000	89,000	47,000	40,000
9,520	3/8	10,000	89,000	47,000	40,000
9,600		10,000	89,000	47,000	40,000
9,700		10,000	89,000	47,000	40,000
9,800		10,000	89,000	47,000	40,000
9,900		10,000	89,000	47,000	40,000
9,920	25/64	10,000	89,000	47,000	40,000
10,000		10,000	89,000	47,000	40,000
10,100		12,000	102,000	55,000	45,000
10,200		12,000	102,000	55,000	45,000
10,300		12,000	102,000	55,000	45,000
10,320	13/32	12,000	102,000	55,000	45,000
10,400		12,000	102,000	55,000	45,000
10,500		12,000	102,000	55,000	45,000
10,600		12,000	102,000	55,000	45,000
10,700		12,000	102,000	55,000	45,000
10,800		12,000	102,000	55,000	45,000
10,900		12,000	102,000	55,000	45,000
11,000		12,000	102,000	55,000	45,000
11,100		12,000	102,000	55,000	45,000
11,110	7/16	12,000	102,000	55,000	45,000
11,200		12,000	102,000	55,000	45,000
11,300		12,000	102,000	55,000	45,000
11,400		12,000	102,000	55,000	45,000
11,500		12,000	102,000	55,000	45,000
11,600		12,000	102,000	55,000	45,000
11,700		12,000	102,000	55,000	45,000
11,800		12,000	102,000	55,000	45,000
11,900		12,000	102,000	55,000	45,000
11,910	15/32	12,000	102,000	55,000	45,000
12,000		12,000	102,000	55,000	45,000
12,100		14,000	107,000	60,000	45,000
12,200		14,000	107,000	60,000	45,000
12,300	31/64	14,000	107,000	60,000	45,000
12,400		14,000	107,000	60,000	45,000
12,500		14,000	107,000	60,000	45,000
12,600		14,000	107,000	60,000	45,000
12,700	1/2	14,000	107,000	60,000	45,000
12,800		14,000	107,000	60,000	45,000
13,000		14,000	107,000	60,000	45,000
13,100	33/64	14,000	107,000	60,000	45,000
13,200		14,000	107,000	60,000	45,000
13,300		14,000	107,000	60,000	45,000
13,500		14,000	107,000	60,000	45,000
13,700		14,000	107,000	60,000	45,000
13,800		14,000	107,000	60,000	45,000
14,000		14,000	107,000	60,000	45,000
14,100		16,000	115,000	65,000	48,000
14,200		16,000	115,000	65,000	48,000
14,290	9/16	16,000	115,000	65,000	48,000
14,500		16,000	115,000	65,000	48,000
14,700		16,000	115,000	65,000	48,000
15,000		16,000	115,000	65,000	48,000
15,100		16,000	115,000	65,000	48,000
15,200		16,000	115,000	65,000	48,000
15,500		16,000	115,000	65,000	48,000
15,700		16,000	115,000	65,000	48,000
15,800		16,000	115,000	65,000	48,000
16,000		16,000	115,000	65,000	48,000
16,200		18,000	123,000	73,000	48,000
16,500		18,000	123,000	73,000	48,000
17,000		18,000	123,000	73,000	48,000
17,500		18,000	123,000	73,000	48,000
18,000		18,000	123,000	73,000	48,000
18,500		20,000	131,000	79,000	50,000
19,000		20,000	131,000	79,000	50,000
19,500		20,000	131,000	79,000	50,000
20,000		20,000	131,000	79,000	50,000

HARTNER

不带内冷TS钻头

产品代号 89264



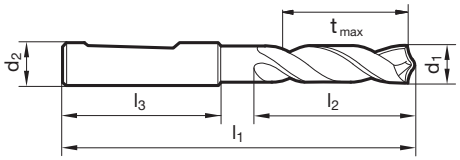
P	M	K	N	S	H
●	○	●	○	○	○

VHM | T | TS 100 U | 3xD | DIN 6537 K | 140° | m7 | R | HE

芯厚 ⩾ Ø 3,000 • 双后刀面 • 精密磨削过的主切削刃 • 优化了的切削几何参数

适合加工：结构钢和淬硬钢 • 易切削钢和热处理钢 • 钢（合金/非合金），强度小于 1200N/mm² • 铸件材料 • 青铜、黄铜 • 高硅铝合金

$t_{max} = l_2 - 1{,}5 \times d_1$



d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
3,000		6,000	62,000	20,000	36,000
3,100		6,000	62,000	20,000	36,000
3,200		6,000	62,000	20,000	36,000
3,300		6,000	62,000	20,000	36,000
3,400		6,000	62,000	20,000	36,000
3,500		6,000	62,000	20,000	36,000
3,600		6,000	62,000	20,000	36,000
3,700		6,000	62,000	20,000	36,000
3,800		6,000	66,000	24,000	36,000
3,900		6,000	66,000	24,000	36,000
4,000		6,000	66,000	24,000	36,000
4,100		6,000	66,000	24,000	36,000
4,200		6,000	66,000	24,000	36,000
4,300		6,000	66,000	24,000	36,000
4,500		6,000	66,000	24,000	36,000
4,600		6,000	66,000	24,000	36,000
4,700		6,000	66,000	24,000	36,000
4,760	3/16	6,000	66,000	28,000	36,000
4,800		6,000	66,000	28,000	36,000
4,900		6,000	66,000	28,000	36,000
5,000		6,000	66,000	28,000	36,000
5,100		6,000	66,000	28,000	36,000
5,200		6,000	66,000	28,000	36,000
5,300		6,000	66,000	28,000	36,000
5,400		6,000	66,000	28,000	36,000
5,500		6,000	66,000	28,000	36,000
5,560	7/32	6,000	66,000	28,000	36,000
5,600		6,000	66,000	28,000	36,000
5,700		6,000	66,000	28,000	36,000
5,800		6,000	66,000	28,000	36,000
5,900		6,000	66,000	28,000	36,000
6,000		6,000	66,000	28,000	36,000
6,100		8,000	79,000	34,000	36,000
6,200		8,000	79,000	34,000	36,000
6,300		8,000	79,000	34,000	36,000
6,400		8,000	79,000	34,000	36,000
6,500		8,000	79,000	34,000	36,000
6,600		8,000	79,000	34,000	36,000
6,700		8,000	79,000	34,000	36,000
6,750	17/64	8,000	79,000	34,000	36,000
6,800		8,000	79,000	34,000	36,000
7,000		8,000	79,000	34,000	36,000

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
7,140	9/32	8,000	79,000	41,000	36,000
7,400		8,000	79,000	41,000	36,000
7,500		8,000	79,000	41,000	36,000
7,600		8,000	79,000	41,000	36,000
7,700		8,000	79,000	41,000	36,000
7,800		8,000	79,000	41,000	36,000
7,900		8,000	79,000	41,000	36,000
8,000		8,000	79,000	41,000	36,000
8,100		10,000	89,000	47,000	40,000
8,200		10,000	89,000	47,000	40,000
8,300		10,000	89,000	47,000	40,000
8,330	21/64	10,000	89,000	47,000	40,000
8,400		10,000	89,000	47,000	40,000
8,500		10,000	89,000	47,000	40,000
8,700		10,000	89,000	47,000	40,000
8,730	11/32	10,000	89,000	47,000	40,000
8,800		10,000	89,000	47,000	40,000
8,900		10,000	89,000	47,000	40,000
9,000		10,000	89,000	47,000	40,000
9,100		10,000	89,000	47,000	40,000
9,300		10,000	89,000	47,000	40,000
9,400		10,000	89,000	47,000	40,000
9,500		10,000	89,000	47,000	40,000
9,600		10,000	89,000	47,000	40,000
9,700		10,000	89,000	47,000	40,000
9,800		10,000	89,000	47,000	40,000
9,900		10,000	89,000	47,000	40,000
9,920	25/64	10,000	89,000	47,000	40,000
10,000		10,000	89,000	47,000	40,000
10,100		12,000	102,000	55,000	45,000
10,200		12,000	102,000	55,000	45,000
10,300		12,000	102,000	55,000	45,000
10,500		12,000	102,000	55,000	45,000
10,600		12,000	102,000	55,000	45,000
10,800		12,000	102,000	55,000	45,000
11,000		12,000	102,000	55,000	45,000
11,100		12,000	102,000	55,000	45,000
11,200		12,000	102,000	55,000	45,000
11,400		12,000	102,000	55,000	45,000
11,500		12,000	102,000	55,000	45,000
11,600		12,000	102,000	55,000	45,000
11,700		12,000	102,000	55,000	45,000

不带内冷TS钻头

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
11,800		12,000	102,000	55,000	45,000
11,900		12,000	102,000	55,000	45,000
12,000		12,000	102,000	55,000	45,000
12,100		14,000	107,000	60,000	45,000
12,200		14,000	107,000	60,000	45,000
12,300	31/64	14,000	107,000	60,000	45,000
12,400		14,000	107,000	60,000	45,000
12,500		14,000	107,000	60,000	45,000
13,000		14,000	107,000	60,000	45,000
13,200		14,000	107,000	60,000	45,000
13,300		14,000	107,000	60,000	45,000
13,500		14,000	107,000	60,000	45,000
13,800		14,000	107,000	60,000	45,000
13,890	35/64	14,000	107,000	60,000	45,000
14,000		14,000	107,000	60,000	45,000
14,200		16,000	115,000	65,000	48,000
14,290	9/16	16,000	115,000	65,000	48,000
14,300		16,000	115,000	65,000	48,000

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
14,400		16,000	115,000	65,000	48,000
15,000		16,000	115,000	65,000	48,000
15,200		16,000	115,000	65,000	48,000
15,800		16,000	115,000	65,000	48,000
15,870	5/8	16,000	115,000	65,000	48,000
16,000		16,000	115,000	65,000	48,000
16,100		18,000	123,000	73,000	48,000
16,300		18,000	123,000	73,000	48,000
16,500		18,000	123,000	73,000	48,000
17,000		18,000	123,000	73,000	48,000
17,500		18,000	123,000	73,000	48,000
18,000		18,000	123,000	73,000	48,000
18,300		20,000	131,000	79,000	50,000
19,000		20,000	131,000	79,000	50,000
19,200		20,000	131,000	79,000	50,000
19,500		20,000	131,000	79,000	50,000
20,000		20,000	131,000	79,000	50,000

HARTNER

不带内冷TS钻头

产品代号 89422

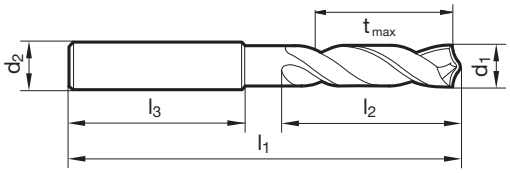


P	M	K	N	S	H
●				●	○

VHM | TS 100 H | 3xD | DIN 6537 K | 140° | m7 | R | HA

芯厚 ⩾ Ø 3,000 • 圆弧后刀面 • 主切削刃轻微内凹 • 优化了的切削几何参数
强度小于1200 N/mm²的合金和高强度钢 • 镍合金，哈氏合金，锰合金 • 钛及钛合金

$t_{max} = l_2 - 1{,}5 \times d_1$



d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
3,000		6,000	62,000	20,000	36,000
3,100		6,000	62,000	20,000	36,000
3,170	1/8	6,000	62,000	20,000	36,000
3,200		6,000	62,000	20,000	36,000
3,250		6,000	62,000	20,000	36,000
3,300		6,000	62,000	20,000	36,000
3,400		6,000	62,000	20,000	36,000
3,500		6,000	62,000	20,000	36,000
3,570	9/64	6,000	62,000	20,000	36,000
3,600		6,000	62,000	20,000	36,000
3,700		6,000	62,000	20,000	36,000
3,800		6,000	66,000	24,000	36,000
3,900		6,000	66,000	24,000	36,000
3,970	5/32	6,000	66,000	24,000	36,000
4,000		6,000	66,000	24,000	36,000
4,100		6,000	66,000	24,000	36,000
4,200		6,000	66,000	24,000	36,000
4,300		6,000	66,000	24,000	36,000
4,370	11/64	6,000	66,000	24,000	36,000
4,400		6,000	66,000	24,000	36,000
4,500		6,000	66,000	24,000	36,000
4,600		6,000	66,000	24,000	36,000
4,650		6,000	66,000	24,000	36,000
4,700		6,000	66,000	24,000	36,000
4,760	3/16	6,000	66,000	28,000	36,000
4,800		6,000	66,000	28,000	36,000
4,900		6,000	66,000	28,000	36,000
5,000		6,000	66,000	28,000	36,000
5,100		6,000	66,000	28,000	36,000
5,160	13/64	6,000	66,000	28,000	36,000
5,200		6,000	66,000	28,000	36,000
5,300		6,000	66,000	28,000	36,000
5,400		6,000	66,000	28,000	36,000
5,500		6,000	66,000	28,000	36,000
5,550		6,000	66,000	28,000	36,000
5,560	7/32	6,000	66,000	28,000	36,000
5,600		6,000	66,000	28,000	36,000
5,700		6,000	66,000	28,000	36,000
5,800		6,000	66,000	28,000	36,000
5,900		6,000	66,000	28,000	36,000
5,950	15/64	6,000	66,000	28,000	36,000
6,000		6,000	66,000	28,000	36,000

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
6,100		8,000	79,000	34,000	36,000
6,200		8,000	79,000	34,000	36,000
6,300		8,000	79,000	34,000	36,000
6,350	1/4	8,000	79,000	34,000	36,000
6,400		8,000	79,000	34,000	36,000
6,500		8,000	79,000	34,000	36,000
6,600		8,000	79,000	34,000	36,000
6,700		8,000	79,000	34,000	36,000
6,750	17/64	8,000	79,000	34,000	36,000
6,800		8,000	79,000	34,000	36,000
6,900		8,000	79,000	34,000	36,000
7,000		8,000	79,000	34,000	36,000
7,100		8,000	79,000	41,000	36,000
7,140	9/32	8,000	79,000	41,000	36,000
7,200		8,000	79,000	41,000	36,000
7,300		8,000	79,000	41,000	36,000
7,400		8,000	79,000	41,000	36,000
7,500		8,000	79,000	41,000	36,000
7,540	19/64	8,000	79,000	41,000	36,000
7,600		8,000	79,000	41,000	36,000
7,700		8,000	79,000	41,000	36,000
7,800		8,000	79,000	41,000	36,000
7,900		8,000	79,000	41,000	36,000
7,940	5/16	8,000	79,000	41,000	36,000
8,000		8,000	79,000	41,000	36,000
8,100		10,000	89,000	47,000	40,000
8,200		10,000	89,000	47,000	40,000
8,300		10,000	89,000	47,000	40,000
8,330	21/64	10,000	89,000	47,000	40,000
8,400		10,000	89,000	47,000	40,000
8,500		10,000	89,000	47,000	40,000
8,600		10,000	89,000	47,000	40,000
8,700		10,000	89,000	47,000	40,000
8,730	11/32	10,000	89,000	47,000	40,000
8,800		10,000	89,000	47,000	40,000
8,900		10,000	89,000	47,000	40,000
9,000		10,000	89,000	47,000	40,000
9,100		10,000	89,000	47,000	40,000
9,130	23/64	10,000	89,000	47,000	40,000
9,200		10,000	89,000	47,000	40,000
9,250		10,000	89,000	47,000	40,000
9,300		10,000	89,000	47,000	40,000

不带内冷TS钻头

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
9,400		10,000	89,000	47,000	40,000
9,500		10,000	89,000	47,000	40,000
9,520	3/8	10,000	89,000	47,000	40,000
9,600		10,000	89,000	47,000	40,000
9,700		10,000	89,000	47,000	40,000
9,800		10,000	89,000	47,000	40,000
9,900		10,000	89,000	47,000	40,000
9,920	25/64	10,000	89,000	47,000	40,000
10,000		10,000	89,000	47,000	40,000
10,100		12,000	102,000	55,000	45,000
10,200		12,000	102,000	55,000	45,000
10,300		12,000	102,000	55,000	45,000
10,320	13/32	12,000	102,000	55,000	45,000
10,400		12,000	102,000	55,000	45,000
10,500		12,000	102,000	55,000	45,000
10,600		12,000	102,000	55,000	45,000
10,700		12,000	102,000	55,000	45,000
10,800		12,000	102,000	55,000	45,000
10,900		12,000	102,000	55,000	45,000
11,000		12,000	102,000	55,000	45,000
11,100		12,000	102,000	55,000	45,000
11,110	7/16	12,000	102,000	55,000	45,000
11,200		12,000	102,000	55,000	45,000
11,300		12,000	102,000	55,000	45,000
11,400		12,000	102,000	55,000	45,000
11,500		12,000	102,000	55,000	45,000
11,600		12,000	102,000	55,000	45,000
11,700		12,000	102,000	55,000	45,000
11,800		12,000	102,000	55,000	45,000
11,900		12,000	102,000	55,000	45,000
11,910	15/32	12,000	102,000	55,000	45,000
12,000		12,000	102,000	55,000	45,000
12,200		14,000	107,000	60,000	45,000
12,500		14,000	107,000	60,000	45,000
12,700	1/2	14,000	107,000	60,000	45,000
12,800		14,000	107,000	60,000	45,000
13,000		14,000	107,000	60,000	45,000
13,300		14,000	107,000	60,000	45,000
13,500		14,000	107,000	60,000	45,000
13,700		14,000	107,000	60,000	45,000
14,000		14,000	107,000	60,000	45,000
14,200		16,000	115,000	65,000	48,000
14,290	9/16	16,000	115,000	65,000	48,000
14,300		16,000	115,000	65,000	48,000
14,500		16,000	115,000	65,000	48,000
14,700		16,000	115,000	65,000	48,000
15,000		16,000	115,000	65,000	48,000
15,200		16,000	115,000	65,000	48,000
15,300		16,000	115,000	65,000	48,000
15,500		16,000	115,000	65,000	48,000
15,700		16,000	115,000	65,000	48,000
16,000		16,000	115,000	65,000	48,000
16,300		18,000	123,000	73,000	48,000
16,500		18,000	123,000	73,000	48,000
16,900		18,000	123,000	73,000	48,000
17,000		18,000	123,000	73,000	48,000
17,300		18,000	123,000	73,000	48,000
17,500		18,000	123,000	73,000	48,000
18,000		18,000	123,000	73,000	48,000
18,500		20,000	131,000	79,000	50,000
18,900		20,000	131,000	79,000	50,000
19,000		20,000	131,000	79,000	50,000
19,050	3/4	20,000	131,000	79,000	50,000
19,300		20,000	131,000	79,000	50,000
19,500		20,000	131,000	79,000	50,000
20,000		20,000	131,000	79,000	50,000

HARTNER

不带内冷TS钻头

产品代号 89237



P	M	K	N	S	H
●	○	●	○	○	○

VHM | T | TS 100 U | 3xD | DIN 6539 | 140° | m7 | R | Cyl

芯厚 ⩾ Ø 3,000 • 双后刀面 • 精密磨削过的主切削刃 • 优化了的切削几何参数

适合加工：结构钢和淬硬钢 • 易切削钢和热处理钢 • 钢（合金/非合金），强度小于 1200N/mm² • 铸件材料 • 青铜、黄铜 • 高硅铝合金

产品代号 89401



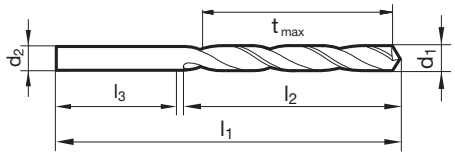
P	M	K	N	S	H
●	○	●	○	○	○

VHM | F | TS 100 U | 3xD | DIN 6539 | 140° | m7 | R | Cyl

芯厚 ⩾ Ø 3,000 • 双后刀面 • 精密磨削过的主切削刃 • 优化了的切削几何参数

适合加工：结构钢和淬硬钢 • 易切削钢和热处理钢 • 钢（合金/非合金），强度小于 1200N/mm² • 铸件材料 • 青铜、黄铜 • 高硅铝合金

$t_{max} = l_2 - 1{,}5 \times d_1$



d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm	d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
3,000		3,000	46,000	16,000	30,000	7,000		7,000	74,000	34,000	40,000
3,100		3,100	49,000	18,000	31,000	7,100		7,100	74,000	34,000	40,000
3,200		3,200	49,000	18,000	31,000	7,140	9/32	7,140	74,000	34,000	40,000
3,300		3,300	49,000	18,000	31,000	7,200		7,200	74,000	34,000	40,000
3,400		3,400	52,000	20,000	32,000	7,400		7,400	74,000	34,000	40,000
3,500		3,500	52,000	20,000	32,000	7,500		7,500	74,000	34,000	40,000
3,600		3,600	52,000	20,000	32,000	7,800		7,800	79,000	37,000	42,000
3,700		3,700	52,000	20,000	32,000	8,000		8,000	79,000	37,000	42,000
3,800		3,800	55,000	22,000	33,000	8,200		8,200	79,000	37,000	42,000
3,900		3,900	55,000	22,000	33,000	8,400		8,400	79,000	37,000	42,000
4,000		4,000	55,000	22,000	33,000	8,500		8,500	79,000	37,000	42,000
4,100		4,100	55,000	22,000	33,000	8,600		8,600	84,000	40,000	44,000
4,200		4,200	55,000	22,000	33,000	8,700		8,700	84,000	40,000	44,000
4,500		4,500	58,000	24,000	34,000	8,800		8,800	84,000	40,000	44,000
4,800		4,800	62,000	26,000	36,000	9,000		9,000	84,000	40,000	44,000
5,000		5,000	62,000	26,000	36,000	9,500		9,500	84,000	40,000	44,000
5,100		5,100	62,000	26,000	36,000	9,800		9,800	89,000	43,000	46,000
5,200		5,200	62,000	26,000	36,000	10,000		10,000	89,000	43,000	46,000
5,300		5,300	62,000	26,000	36,000	10,100		10,100	89,000	43,000	46,000
5,500		5,500	66,000	28,000	38,000	10,200		10,200	89,000	43,000	46,000
5,600		5,600	66,000	28,000	38,000	10,300		10,300	89,000	43,000	46,000
5,700		5,700	66,000	28,000	38,000	10,500		10,500	89,000	43,000	46,000
5,800		5,800	66,000	28,000	38,000	10,600		10,600	89,000	43,000	46,000
6,000		6,000	66,000	28,000	38,000	10,800		10,800	95,000	47,000	48,000
6,100		6,100	70,000	31,000	39,000	11,000		11,000	95,000	47,000	48,000
6,200		6,200	70,000	31,000	39,000	11,110	7/16	11,110	95,000	47,000	48,000
6,400		6,400	70,000	31,000	39,000	11,500		11,500	95,000	47,000	48,000
6,500		6,500	70,000	31,000	39,000	11,800		11,800	95,000	47,000	48,000
6,700		6,700	70,000	31,000	39,000	12,000		12,000	102,000	51,000	51,000
6,800		6,800	74,000	34,000	40,000	12,500		12,500	102,000	51,000	51,000

不带内冷TS钻头

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
12,700	1/2	12,700	102,000	51,000	51,000
13,000		13,000	102,000	51,000	51,000
13,500		13,500	107,000	54,000	53,000
14,000		14,000	107,000	54,000	53,000
14,500		14,500	111,000	56,000	55,000
15,000		15,000	111,000	56,000	55,000

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
15,500		15,500	115,000	58,000	57,000
16,000		16,000	115,000	58,000	57,000

不带内冷TS钻头

产品代号 89414



P	M	K	N	S	H
●	○	●	○	○	○

VHM | F | TS 100 U | 5xD | DIN 6537 L | 140° | m7 | R | HA

芯厚 ⩾ Ø 3,000 • 双后刀面 • 精密磨削过的主切削刃 • 优化了的切削几何参数

适合加工：结构钢和淬硬钢 • 易切削钢和热处理钢 • 钢（合金/非合金），强度小于 1200N/mm² • 铸件材料 • 青铜、黄铜 • 高硅铝合金

产品代号 89417



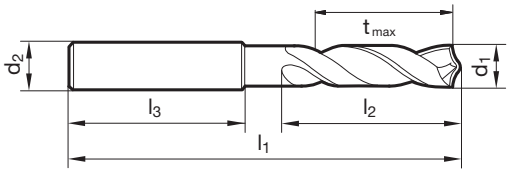
P	M	K	N	S	H
●	○	●	○	○	○

VHM | F | TS 100 U | 5xD | DIN 6537 L | 140° | m7 | R | HE

芯厚 ⩾ Ø 3,000 • 双后刀面 • 精密磨削过的主切削刃 • 优化了的切削几何参数

适合加工：结构钢和淬硬钢 • 易切削钢和热处理钢 • 钢（合金/非合金），强度小于 1200N/mm² • 铸件材料 • 青铜、黄铜 • 高硅铝合金

$t_{max} = l_2 - 1{,}5 \times d_1$



d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm	d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
3,000		6,000	66,000	28,000	36,000	5,200		6,000	82,000	44,000	36,000
3,100		6,000	66,000	28,000	36,000	5,300		6,000	82,000	44,000	36,000
3,170	1/8	6,000	66,000	28,000	36,000	5,400		6,000	82,000	44,000	36,000
3,200		6,000	66,000	28,000	36,000	5,500		6,000	82,000	44,000	36,000
3,250		6,000	66,000	28,000	36,000	5,550		6,000	82,000	44,000	36,000
3,300		6,000	66,000	28,000	36,000	5,560	7/32	6,000	82,000	44,000	36,000
3,400		6,000	66,000	28,000	36,000	5,600		6,000	82,000	44,000	36,000
3,500		6,000	66,000	28,000	36,000	5,700		6,000	82,000	44,000	36,000
3,570	9/64	6,000	66,000	28,000	36,000	5,800		6,000	82,000	44,000	36,000
3,600		6,000	66,000	28,000	36,000	5,900		6,000	82,000	44,000	36,000
3,700		6,000	66,000	28,000	36,000	5,950	15/64	6,000	82,000	44,000	36,000
3,800		6,000	74,000	36,000	36,000	6,000		6,000	82,000	44,000	36,000
3,900		6,000	74,000	36,000	36,000	6,100		8,000	91,000	53,000	36,000
3,970	5/32	6,000	74,000	36,000	36,000	6,200		8,000	91,000	53,000	36,000
4,000		6,000	74,000	36,000	36,000	6,300		8,000	91,000	53,000	36,000
4,100		6,000	74,000	36,000	36,000	6,350	1/4	8,000	91,000	53,000	36,000
4,200		6,000	74,000	36,000	36,000	6,400		8,000	91,000	53,000	36,000
4,300		6,000	74,000	36,000	36,000	6,500		8,000	91,000	53,000	36,000
4,370	11/64	6,000	74,000	36,000	36,000	6,600		8,000	91,000	53,000	36,000
4,400		6,000	74,000	36,000	36,000	6,700		8,000	91,000	53,000	36,000
4,500		6,000	74,000	36,000	36,000	6,750	17/64	8,000	91,000	53,000	36,000
4,600		6,000	74,000	36,000	36,000	6,800		8,000	91,000	53,000	36,000
4,650		6,000	74,000	36,000	36,000	6,900		8,000	91,000	53,000	36,000
4,700		6,000	74,000	36,000	36,000	7,000		8,000	91,000	53,000	36,000
4,760	3/16	6,000	82,000	44,000	36,000	7,100		8,000	91,000	53,000	36,000
4,800		6,000	82,000	44,000	36,000	7,140	9/32	8,000	91,000	53,000	36,000
4,900		6,000	82,000	44,000	36,000	7,200		8,000	91,000	53,000	36,000
5,000		6,000	82,000	44,000	36,000	7,300		8,000	91,000	53,000	36,000
5,100		6,000	82,000	44,000	36,000	7,400		8,000	91,000	53,000	36,000
5,160	13/64	6,000	82,000	44,000	36,000	7,500		8,000	91,000	53,000	36,000

不带内冷TS钻头

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
7,540	19/64	8,000	91,000	53,000	36,000
7,600		8,000	91,000	53,000	36,000
7,700		8,000	91,000	53,000	36,000
7,800		8,000	91,000	53,000	36,000
7,900		8,000	91,000	53,000	36,000
7,940	5/16	8,000	91,000	53,000	36,000
8,000		8,000	91,000	53,000	36,000
8,100		10,000	103,000	61,000	40,000
8,200		10,000	103,000	61,000	40,000
8,300		10,000	103,000	61,000	40,000
8,330	21/64	10,000	103,000	61,000	40,000
8,400		10,000	103,000	61,000	40,000
8,500		10,000	103,000	61,000	40,000
8,600		10,000	103,000	61,000	40,000
8,700		10,000	103,000	61,000	40,000
8,730	11/32	10,000	103,000	61,000	40,000
8,800		10,000	103,000	61,000	40,000
8,900		10,000	103,000	61,000	40,000
9,000		10,000	103,000	61,000	40,000
9,100		10,000	103,000	61,000	40,000
9,130	23/64	10,000	103,000	61,000	40,000
9,200		10,000	103,000	61,000	40,000
9,250		10,000	103,000	61,000	40,000
9,300		10,000	103,000	61,000	40,000
9,400		10,000	103,000	61,000	40,000
9,500		10,000	103,000	61,000	40,000
9,520	3/8	10,000	103,000	61,000	40,000
9,600		10,000	103,000	61,000	40,000
9,700		10,000	103,000	61,000	40,000
9,800		10,000	103,000	61,000	40,000
9,900		10,000	103,000	61,000	40,000
9,920	25/64	10,000	103,000	61,000	40,000
10,000		10,000	103,000	61,000	40,000
10,100		12,000	118,000	71,000	45,000
10,200		12,000	118,000	71,000	45,000
10,300		12,000	118,000	71,000	45,000
10,320	13/32	12,000	118,000	71,000	45,000
10,400		12,000	118,000	71,000	45,000
10,500		12,000	118,000	71,000	45,000
10,600		12,000	118,000	71,000	45,000
10,700		12,000	118,000	71,000	45,000
10,800		12,000	118,000	71,000	45,000
10,900		12,000	118,000	71,000	45,000
11,000		12,000	118,000	71,000	45,000
11,100		12,000	118,000	71,000	45,000
11,110	7/16	12,000	118,000	71,000	45,000
11,200		12,000	118,000	71,000	45,000
11,300		12,000	118,000	71,000	45,000

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
11,400		12,000	118,000	71,000	45,000
11,500		12,000	118,000	71,000	45,000
11,600		12,000	118,000	71,000	45,000
11,700		12,000	118,000	71,000	45,000
11,800		12,000	118,000	71,000	45,000
11,900		12,000	118,000	71,000	45,000
11,910	15/32	12,000	118,000	71,000	45,000
12,000		12,000	118,000	71,000	45,000
12,100		14,000	124,000	77,000	45,000
12,200		14,000	124,000	77,000	45,000
12,500		14,000	124,000	77,000	45,000
12,700	1/2	14,000	124,000	77,000	45,000
13,000		14,000	124,000	77,000	45,000
13,100	33/64	14,000	124,000	77,000	45,000
13,500		14,000	124,000	77,000	45,000
13,700		14,000	124,000	77,000	45,000
13,800		14,000	124,000	77,000	45,000
14,000		14,000	124,000	77,000	45,000
14,100		16,000	133,000	83,000	48,000
14,200		16,000	133,000	83,000	48,000
14,290	9/16	16,000	133,000	83,000	48,000
14,500		16,000	133,000	83,000	48,000
14,700		16,000	133,000	83,000	48,000
15,000		16,000	133,000	83,000	48,000
15,100		16,000	133,000	83,000	48,000
15,200		16,000	133,000	83,000	48,000
15,500		16,000	133,000	83,000	48,000
15,700		16,000	133,000	83,000	48,000
16,000		16,000	133,000	83,000	48,000
16,500		18,000	143,000	93,000	48,000
17,000		18,000	143,000	93,000	48,000
17,500		18,000	143,000	93,000	48,000
18,000		18,000	143,000	93,000	48,000
18,500		20,000	153,000	101,000	50,000
19,000		20,000	153,000	101,000	50,000
19,500		20,000	153,000	101,000	50,000
20,000		20,000	153,000	101,000	50,000

HARTNER

不带内冷TS钻头

产品代号 89275



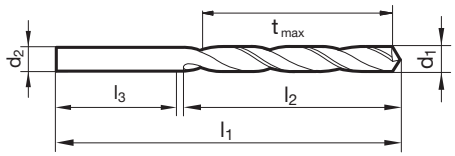
P	M	K	N	S	H
●	○	●	○	○	○

VHM | T | TS 100 U | 5xD | WN | 140° | m7 | R | Cyl

芯厚 ⩾ Ø 5,000 • 双后刀面 • 精密磨削过的主切削刃 • 优化了的切削几何参数

适合加工：结构钢和淬硬钢 • 易切削钢和热处理钢 • 钢（合金/非合金），强度小于 1200N/mm² • 铸件材料 • 青铜、黄铜 • 高硅铝合金

$t_{max} = l_2\text{-}1{,}5 \times d_1$



d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
5,000		5,000	73,000	34,000	39,000
5,160	13/64	5,160	76,000	38,000	38,000
5,200		5,200	76,000	38,000	38,000
5,500		5,500	76,000	38,000	38,000
5,560	7/32	5,560	81,000	41,000	40,000
5,700		5,700	81,000	41,000	40,000
5,800		5,800	81,000	41,000	40,000
6,000		6,000	81,000	41,000	40,000
6,350	1/4	6,350	81,000	41,000	40,000
6,400		6,400	81,000	41,000	40,000
6,500		6,500	81,000	41,000	40,000
6,750	17/64	6,750	83,000	43,000	40,000
6,800		6,800	83,000	43,000	40,000
7,000		7,000	83,000	43,000	40,000
7,500		7,500	87,000	45,000	42,000
7,800		7,800	90,000	48,000	42,000
7,940	5/16	7,940	90,000	48,000	42,000
8,000		8,000	90,000	48,000	42,000
8,100		8,100	96,000	53,000	43,000
8,330	21/64	8,330	96,000	53,000	43,000
8,400		8,400	96,000	53,000	43,000
8,500		8,500	96,000	53,000	43,000
8,600		8,600	98,000	55,000	43,000
8,730	11/32	8,730	98,000	55,000	43,000
8,800		8,800	98,000	55,000	43,000
9,000		9,000	98,000	55,000	43,000
9,130	23/64	9,130	102,000	58,000	44,000
9,500		9,500	102,000	58,000	44,000
9,520	3/8	9,520	105,000	60,000	45,000
9,800		9,800	105,000	60,000	45,000

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
10,000		10,000	105,000	60,000	45,000
10,200		10,200	112,000	66,000	46,000
10,300		10,300	112,000	66,000	46,000
10,320	13/32	10,320	112,000	66,000	46,000
10,500		10,500	112,000	66,000	46,000
10,720	27/64	10,720	114,000	68,000	46,000
10,800		10,800	114,000	68,000	46,000
11,000		11,000	114,000	68,000	46,000
11,110	7/16	11,110	118,000	71,000	47,000
11,500		11,500	118,000	71,000	47,000
11,800		11,800	121,000	73,000	48,000
11,910	15/32	11,910	121,000	73,000	48,000
12,000		12,000	121,000	73,000	48,000
12,500		12,500	135,000	76,000	59,000
12,700	1/2	12,700	137,000	78,000	59,000
13,000		13,000	137,000	78,000	59,000
13,500		13,500	144,000	84,000	60,000
14,000		14,000	147,000	86,000	61,000
14,500		14,500	151,000	89,000	62,000
15,000		15,000	153,000	91,000	62,000
15,500		15,500	157,000	94,000	63,000
16,000		16,000	160,000	96,000	64,000

带内冷TS钻头

产品代号 89410



P	M	K	N	S	H
●	○	●	○	○	○

VHM | F | TS 100 U | 3xD | DIN 6537 K | 140° | m7 | R | HA

芯厚 ⩾ Ø 3,000 • 双后刀面 • 精密磨削过的主切削刃 • 优化了的切削几何参数

适合加工：结构钢和淬硬钢 • 易切削钢和热处理钢 • 钢（合金/非合金），强度小于 1200N/mm² • 铸件材料 • 青铜、黄铜 • 高硅铝合金

产品代号 89415



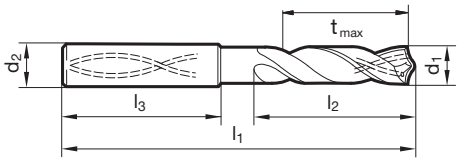
P	M	K	N	S	H
●	○	●	○	○	○

VHM | F | TS 100 U | 3xD | DIN 6537 K | 140° | m7 | R | HE

芯厚 ⩾ Ø 3,000 • 双后刀面 • 精密磨削过的主切削刃 • 优化了的切削几何参数

适合加工：结构钢和淬硬钢 • 易切削钢和热处理钢 • 钢（合金/非合金），强度小于 1200N/mm² • 铸件材料 • 青铜、黄铜 • 高硅铝合金

$t_{max} = l_2\text{-}1{,}5 \times d_1$



d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm	d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
3,000		6,000	62,000	20,000	36,000	5,200		6,000	66,000	28,000	36,000
3,100		6,000	62,000	20,000	36,000	5,300		6,000	66,000	28,000	36,000
3,170	1/8	6,000	62,000	20,000	36,000	5,400		6,000	66,000	28,000	36,000
3,200		6,000	62,000	20,000	36,000	5,500		6,000	66,000	28,000	36,000
3,250		6,000	62,000	20,000	36,000	5,550		6,000	66,000	28,000	36,000
3,300		6,000	62,000	20,000	36,000	5,560	7/32	6,000	66,000	28,000	36,000
3,400		6,000	62,000	20,000	36,000	5,600		6,000	66,000	28,000	36,000
3,500		6,000	62,000	20,000	36,000	5,700		6,000	66,000	28,000	36,000
3,570	9/64	6,000	62,000	20,000	36,000	5,800		6,000	66,000	28,000	36,000
3,600		6,000	62,000	20,000	36,000	5,900		6,000	66,000	28,000	36,000
3,700		6,000	62,000	20,000	36,000	5,950	15/64	6,000	66,000	28,000	36,000
3,800		6,000	66,000	24,000	36,000	6,000		6,000	66,000	28,000	36,000
3,900		6,000	66,000	24,000	36,000	6,100		8,000	79,000	34,000	36,000
3,970	5/32	6,000	66,000	24,000	36,000	6,200		8,000	79,000	34,000	36,000
4,000		6,000	66,000	24,000	36,000	6,300		8,000	79,000	34,000	36,000
4,100		6,000	66,000	24,000	36,000	6,350	1/4	8,000	79,000	34,000	36,000
4,200		6,000	66,000	24,000	36,000	6,400		8,000	79,000	34,000	36,000
4,300		6,000	66,000	24,000	36,000	6,500		8,000	79,000	34,000	36,000
4,370	11/64	6,000	66,000	24,000	36,000	6,600		8,000	79,000	34,000	36,000
4,400		6,000	66,000	24,000	36,000	6,700		8,000	79,000	34,000	36,000
4,500		6,000	66,000	24,000	36,000	6,750	17/64	8,000	79,000	34,000	36,000
4,600		6,000	66,000	24,000	36,000	6,800		8,000	79,000	34,000	36,000
4,650		6,000	66,000	24,000	36,000	6,900		8,000	79,000	34,000	36,000
4,700		6,000	66,000	24,000	36,000	7,000		8,000	79,000	34,000	36,000
4,760	3/16	6,000	66,000	28,000	36,000	7,100		8,000	79,000	41,000	36,000
4,800		6,000	66,000	28,000	36,000	7,140	9/32	8,000	79,000	41,000	36,000
4,900		6,000	66,000	28,000	36,000	7,200		8,000	79,000	41,000	36,000
5,000		6,000	66,000	28,000	36,000	7,300		8,000	79,000	41,000	36,000
5,100		6,000	66,000	28,000	36,000	7,400		8,000	79,000	41,000	36,000
5,160	13/64	6,000	66,000	28,000	36,000	7,500		8,000	79,000	41,000	36,000

带内冷TS钻头

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
7,540	19/64	8,000	79,000	41,000	36,000
7,600		8,000	79,000	41,000	36,000
7,700		8,000	79,000	41,000	36,000
7,800		8,000	79,000	41,000	36,000
7,900		8,000	79,000	41,000	36,000
7,940	5/16	8,000	79,000	41,000	36,000
8,000		8,000	79,000	41,000	36,000
8,100		10,000	89,000	47,000	40,000
8,200		10,000	89,000	47,000	40,000
8,300		10,000	89,000	47,000	40,000
8,330	21/64	10,000	89,000	47,000	40,000
8,400		10,000	89,000	47,000	40,000
8,500		10,000	89,000	47,000	40,000
8,600		10,000	89,000	47,000	40,000
8,700		10,000	89,000	47,000	40,000
8,730	11/32	10,000	89,000	47,000	40,000
8,800		10,000	89,000	47,000	40,000
8,900		10,000	89,000	47,000	40,000
9,000		10,000	89,000	47,000	40,000
9,100		10,000	89,000	47,000	40,000
9,130	23/64	10,000	89,000	47,000	40,000
9,200		10,000	89,000	47,000	40,000
9,250		10,000	89,000	47,000	40,000
9,300		10,000	89,000	47,000	40,000
9,400		10,000	89,000	47,000	40,000
9,500		10,000	89,000	47,000	40,000
9,520	3/8	10,000	89,000	47,000	40,000
9,600		10,000	89,000	47,000	40,000
9,700		10,000	89,000	47,000	40,000
9,800		10,000	89,000	47,000	40,000
9,900		10,000	89,000	47,000	40,000
9,920	25/64	10,000	89,000	47,000	40,000
10,000		10,000	89,000	47,000	40,000
10,100		12,000	102,000	55,000	45,000
10,200		12,000	102,000	55,000	45,000
10,300		12,000	102,000	55,000	45,000
10,320	13/32	12,000	102,000	55,000	45,000
10,400		12,000	102,000	55,000	45,000
10,500		12,000	102,000	55,000	45,000
10,600		12,000	102,000	55,000	45,000
10,700		12,000	102,000	55,000	45,000
10,800		12,000	102,000	55,000	45,000
10,900		12,000	102,000	55,000	45,000
11,000		12,000	102,000	55,000	45,000
11,100		12,000	102,000	55,000	45,000
11,110	7/16	12,000	102,000	55,000	45,000
11,200		12,000	102,000	55,000	45,000
11,300		12,000	102,000	55,000	45,000
11,400		12,000	102,000	55,000	45,000
11,500		12,000	102,000	55,000	45,000
11,600		12,000	102,000	55,000	45,000
11,700		12,000	102,000	55,000	45,000
11,800		12,000	102,000	55,000	45,000
11,900		12,000	102,000	55,000	45,000
11,910	15/32	12,000	102,000	55,000	45,000
12,000		12,000	102,000	55,000	45,000
12,100		14,000	107,000	60,000	45,000
12,200		14,000	107,000	60,000	45,000
12,300	31/64	14,000	107,000	60,000	45,000
12,500		14,000	107,000	60,000	45,000
12,700	1/2	14,000	107,000	60,000	45,000
13,000		14,000	107,000	60,000	45,000
13,200		14,000	107,000	60,000	45,000
13,300		14,000	107,000	60,000	45,000
13,500		14,000	107,000	60,000	45,000
13,700		14,000	107,000	60,000	45,000
14,000		14,000	107,000	60,000	45,000
14,200		16,000	115,000	65,000	48,000
14,290	9/16	16,000	115,000	65,000	48,000
14,400		16,000	115,000	65,000	48,000
14,500		16,000	115,000	65,000	48,000
14,600		16,000	115,000	65,000	48,000
14,700		16,000	115,000	65,000	48,000
15,000		16,000	115,000	65,000	48,000
15,200		16,000	115,000	65,000	48,000
15,500		16,000	115,000	65,000	48,000
15,700		16,000	115,000	65,000	48,000
16,000		16,000	115,000	65,000	48,000
16,100		18,000	123,000	73,000	48,000
16,500		18,000	123,000	73,000	48,000
16,900		18,000	123,000	73,000	48,000
17,000		18,000	123,000	73,000	48,000
17,300		18,000	123,000	73,000	48,000
17,500		18,000	123,000	73,000	48,000
18,000		18,000	123,000	73,000	48,000
18,500		20,000	131,000	79,000	50,000
18,900		20,000	131,000	79,000	50,000
19,000		20,000	131,000	79,000	50,000
19,500		20,000	131,000	79,000	50,000
20,000		20,000	131,000	79,000	50,000

HARTNER

带内冷TS钻头

产品代号 89266



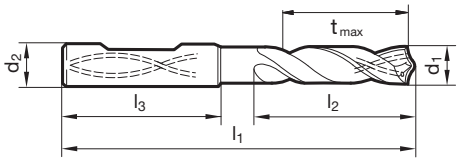
P	M	K	N	S	H
●	○	●	○	○	○

VHM | T | TS 100 U | 3xD | DIN 6537 K | 140° | m7 | R | HE

芯厚 ⩾ Ø 4,000 • 双后刀面 • 精密磨削过的主切削刃 • 优化了的切削几何参数

适合加工：结构钢和淬硬钢 • 易切削钢和热处理钢 • 钢（合金/非合金），强度小于 1200N/mm² • 铸件材料 • 青铜、黄铜 • 高硅铝合金

$t_{max} = l_2\text{-}1{,}5 \times d_1$



d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
4,000		6,000	66,000	24,000	36,000
5,000		6,000	66,000	28,000	36,000
5,500		6,000	66,000	28,000	36,000
5,800		6,000	66,000	28,000	36,000
6,000		6,000	66,000	28,000	36,000
6,400		8,000	79,000	34,000	36,000
6,800		8,000	79,000	34,000	36,000
7,000		8,000	79,000	34,000	36,000
7,400		8,000	79,000	41,000	36,000
7,500		8,000	79,000	41,000	36,000
7,800		8,000	79,000	41,000	36,000
7,940	5/16	8,000	79,000	41,000	36,000
8,000		8,000	79,000	41,000	36,000
8,100		10,000	89,000	47,000	40,000
8,400		10,000	89,000	47,000	40,000
8,500		10,000	89,000	47,000	40,000
8,700		10,000	89,000	47,000	40,000
8,800		10,000	89,000	47,000	40,000
9,000		10,000	89,000	47,000	40,000
9,500		10,000	89,000	47,000	40,000
9,800		10,000	89,000	47,000	40,000
10,000		10,000	89,000	47,000	40,000
10,200		12,000	102,000	55,000	45,000
10,500		12,000	102,000	55,000	45,000

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
10,720	27/64	12,000	102,000	55,000	45,000
10,800		12,000	102,000	55,000	45,000
11,000		12,000	102,000	55,000	45,000
11,500		12,000	102,000	55,000	45,000
11,800		12,000	102,000	55,000	45,000
12,000		12,000	102,000	55,000	45,000
12,500		14,000	107,000	60,000	45,000
12,700	1/2	14,000	107,000	60,000	45,000
13,000		14,000	107,000	60,000	45,000
13,500		14,000	107,000	60,000	45,000
14,000		14,000	107,000	60,000	45,000
14,500		16,000	115,000	65,000	48,000
15,000		16,000	115,000	65,000	48,000
15,200		16,000	115,000	65,000	48,000
15,500		16,000	115,000	65,000	48,000
16,200		18,000	123,000	73,000	48,000
16,500		18,000	123,000	73,000	48,000
18,000		18,000	123,000	73,000	48,000
18,500		20,000	131,000	79,000	50,000
19,000		20,000	131,000	79,000	50,000
20,000		20,000	131,000	79,000	50,000

带内冷TS钻头

产品代号 89306



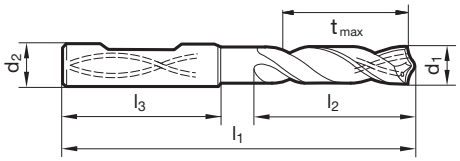
P	M	K	N	S	H
●	○	○	○		

HM | T | TS 80 U | 3xD | DIN 6538K | 140° | h8 | R | HE

芯厚 ≥ Ø 10,000 • 圆弧后刀面 • 抗振动和冲击性好 • 高速钢刀柄焊接硬质合金刀片

非合金钢/低合金钢 • 灰铸铁,球墨铸铁 • 黄铜，青铜，塑料，石墨

$t_{max} = l_2\text{-}1{,}5 \times d_1$



d1 mm	d2 h6 mm	l1 mm	l2 mm	l3 mm
10,000	16,000	103,000	51,000	48,000
10,500	16,000	103,000	51,000	48,000
10,600	16,000	103,000	51,000	48,000
11,000	16,000	103,000	51,000	48,000
12,000	16,000	103,000	51,000	48,000
12,200	16,000	111,000	59,000	48,000
12,500	16,000	111,000	59,000	48,000
13,000	16,000	111,000	59,000	48,000
13,700	16,000	111,000	59,000	48,000
14,000	16,000	111,000	59,000	48,000
14,200	20,000	122,000	68,000	50,000
14,400	20,000	122,000	68,000	50,000
14,600	20,000	122,000	68,000	50,000
15,000	20,000	122,000	68,000	50,000
15,300	20,000	122,000	68,000	50,000
15,800	20,000	122,000	68,000	50,000
16,000	20,000	122,000	68,000	50,000
16,500	20,000	130,000	76,000	50,000

d1 mm	d2 h6 mm	l1 mm	l2 mm	l3 mm
17,000	20,000	130,000	76,000	50,000
17,500	20,000	130,000	76,000	50,000
17,700	20,000	130,000	76,000	50,000
18,000	20,000	130,000	76,000	50,000
18,500	25,000	144,000	84,000	56,000
19,000	25,000	144,000	84,000	56,000
19,700	25,000	144,000	84,000	56,000
20,000	25,000	144,000	84,000	56,000
20,500	25,000	153,000	93,000	56,000
21,000	25,000	153,000	93,000	56,000
21,500	25,000	153,000	93,000	56,000
22,000	25,000	153,000	93,000	56,000
22,500	25,000	161,000	101,000	56,000
23,500	25,000	161,000	101,000	56,000
25,000	32,000	174,000	110,000	60,000

HARTNER

带内冷TS钻头

产品代号 89450



P	M	K	N	S	H
	•			•	

VHM | a | TS 100 INOX | 3xD | DIN 6537 K | 140° | m7 | R | HA

芯厚 ≥ Ø 3,000 • 双后刀面 • 精密磨削过的主切削刃 • 优化了的切削几何参数
不锈钢/耐酸/耐热钢 • 钛及钛合金 • 镍合金，哈氏合金，锰合金

产品代号 89550

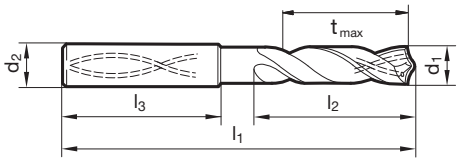


P	M	K	N	S	H
	•			•	

VHM | a | TS 100 INOX | 3xD | DIN 6537 K | 140° | m7 | R | HE

芯厚 ≥ Ø 3,000 • 双后刀面 • 精密磨削过的主切削刃 • 优化了的切削几何参数
不锈钢/耐酸/耐热钢 • 钛及钛合金 • 镍合金，哈氏合金，锰合金

$t_{max} = l_2\text{-}1{,}5 \times d_1$



d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
3,000		6,000	62,000	20,000	36,000
3,100		6,000	62,000	20,000	36,000
3,170	1/8	6,000	62,000	20,000	36,000
3,200		6,000	62,000	20,000	36,000
3,250		6,000	62,000	20,000	36,000
3,300		6,000	62,000	20,000	36,000
3,400		6,000	62,000	20,000	36,000
3,500		6,000	62,000	20,000	36,000
3,570	9/64	6,000	62,000	20,000	36,000
3,600		6,000	62,000	20,000	36,000
3,700		6,000	62,000	20,000	36,000
3,800		6,000	66,000	24,000	36,000
3,900		6,000	66,000	24,000	36,000
3,970	5/32	6,000	66,000	24,000	36,000
4,000		6,000	66,000	24,000	36,000
4,100		6,000	66,000	24,000	36,000
4,200		6,000	66,000	24,000	36,000
4,300		6,000	66,000	24,000	36,000
4,370	11/64	6,000	66,000	24,000	36,000
4,400		6,000	66,000	24,000	36,000
4,500		6,000	66,000	24,000	36,000
4,600		6,000	66,000	24,000	36,000
4,650		6,000	66,000	24,000	36,000
4,700		6,000	66,000	24,000	36,000
4,760	3/16	6,000	66,000	28,000	36,000
4,800		6,000	66,000	28,000	36,000
4,900		6,000	66,000	28,000	36,000
5,000		6,000	66,000	28,000	36,000
5,100		6,000	66,000	28,000	36,000
5,160	13/64	6,000	66,000	28,000	36,000

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
5,200		6,000	66,000	28,000	36,000
5,300		6,000	66,000	28,000	36,000
5,400		6,000	66,000	28,000	36,000
5,500		6,000	66,000	28,000	36,000
5,550		6,000	66,000	28,000	36,000
5,560	7/32	6,000	66,000	28,000	36,000
5,600		6,000	66,000	28,000	36,000
5,700		6,000	66,000	28,000	36,000
5,800		6,000	66,000	28,000	36,000
5,900		6,000	66,000	28,000	36,000
5,950	15/64	6,000	66,000	28,000	36,000
6,000		6,000	66,000	28,000	36,000
6,100		8,000	79,000	34,000	36,000
6,200		8,000	79,000	34,000	36,000
6,300		8,000	79,000	34,000	36,000
6,350	1/4	8,000	79,000	34,000	36,000
6,400		8,000	79,000	34,000	36,000
6,500		8,000	79,000	34,000	36,000
6,600		8,000	79,000	34,000	36,000
6,700		8,000	79,000	34,000	36,000
6,750	17/64	8,000	79,000	34,000	36,000
6,800		8,000	79,000	34,000	36,000
6,900		8,000	79,000	34,000	36,000
7,000		8,000	79,000	34,000	36,000
7,100		8,000	79,000	41,000	36,000
7,140	9/32	8,000	79,000	41,000	36,000
7,200		8,000	79,000	41,000	36,000
7,300		8,000	79,000	41,000	36,000
7,400		8,000	79,000	41,000	36,000
7,500		8,000	79,000	41,000	36,000

带内冷TS钻头

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
7,540	19/64	8,000	79,000	41,000	36,000
7,600		8,000	79,000	41,000	36,000
7,700		8,000	79,000	41,000	36,000
7,800		8,000	79,000	41,000	36,000
7,900		8,000	79,000	41,000	36,000
7,940	5/16	8,000	79,000	41,000	36,000
8,000		8,000	79,000	41,000	36,000
8,100		10,000	89,000	47,000	40,000
8,200		10,000	89,000	47,000	40,000
8,300		10,000	89,000	47,000	40,000
8,330	21/64	10,000	89,000	47,000	40,000
8,400		10,000	89,000	47,000	40,000
8,500		10,000	89,000	47,000	40,000
8,600		10,000	89,000	47,000	40,000
8,700		10,000	89,000	47,000	40,000
8,730	11/32	10,000	89,000	47,000	40,000
8,800		10,000	89,000	47,000	40,000
8,900		10,000	89,000	47,000	40,000
9,000		10,000	89,000	47,000	40,000
9,100		10,000	89,000	47,000	40,000
9,130	23/64	10,000	89,000	47,000	40,000
9,200		10,000	89,000	47,000	40,000
9,250		10,000	89,000	47,000	40,000
9,300		10,000	89,000	47,000	40,000
9,400		10,000	89,000	47,000	40,000
9,500		10,000	89,000	47,000	40,000
9,520	3/8	10,000	89,000	47,000	40,000
9,600		10,000	89,000	47,000	40,000
9,700		10,000	89,000	47,000	40,000
9,800		10,000	89,000	47,000	40,000
9,900		10,000	89,000	47,000	40,000
9,920	25/64	10,000	89,000	47,000	40,000
10,000		10,000	89,000	47,000	40,000
10,100		12,000	102,000	55,000	45,000
10,200		12,000	102,000	55,000	45,000
10,300		12,000	102,000	55,000	45,000
10,320	13/32	12,000	102,000	55,000	45,000
10,400		12,000	102,000	55,000	45,000
10,500		12,000	102,000	55,000	45,000
10,600		12,000	102,000	55,000	45,000
10,700		12,000	102,000	55,000	45,000
10,800		12,000	102,000	55,000	45,000
10,900		12,000	102,000	55,000	45,000
11,000		12,000	102,000	55,000	45,000
11,100		12,000	102,000	55,000	45,000
11,110	7/16	12,000	102,000	55,000	45,000
11,200		12,000	102,000	55,000	45,000
11,300		12,000	102,000	55,000	45,000
11,400		12,000	102,000	55,000	45,000
11,500		12,000	102,000	55,000	45,000
11,600		12,000	102,000	55,000	45,000
11,700		12,000	102,000	55,000	45,000
11,800		12,000	102,000	55,000	45,000
11,900		12,000	102,000	55,000	45,000
11,910	15/32	12,000	102,000	55,000	45,000
12,000		12,000	102,000	55,000	45,000
12,200		14,000	107,000	60,000	45,000
12,500		14,000	107,000	60,000	45,000
12,700	1/2	14,000	107,000	60,000	45,000
12,800		14,000	107,000	60,000	45,000
13,000		14,000	107,000	60,000	45,000
13,300		14,000	107,000	60,000	45,000
13,500		14,000	107,000	60,000	45,000
13,700		14,000	107,000	60,000	45,000
14,000		14,000	107,000	60,000	45,000
14,200		16,000	115,000	65,000	48,000
14,290	9/16	16,000	115,000	65,000	48,000
14,300		16,000	115,000	65,000	48,000
14,500		16,000	115,000	65,000	48,000
14,700		16,000	115,000	65,000	48,000
15,000		16,000	115,000	65,000	48,000
15,200		16,000	115,000	65,000	48,000
15,300		16,000	115,000	65,000	48,000
15,500		16,000	115,000	65,000	48,000
15,700		16,000	115,000	65,000	48,000
16,000		16,000	115,000	65,000	48,000
16,300		18,000	123,000	73,000	48,000
16,500		18,000	123,000	73,000	48,000
16,900		18,000	123,000	73,000	48,000
17,000		18,000	123,000	73,000	48,000
17,300		18,000	123,000	73,000	48,000
17,500		18,000	123,000	73,000	48,000
18,000		18,000	123,000	73,000	48,000
18,500		20,000	131,000	79,000	50,000
18,900		20,000	131,000	79,000	50,000
19,000		20,000	131,000	79,000	50,000
19,300		20,000	131,000	79,000	50,000
19,500		20,000	131,000	79,000	50,000
20,000		20,000	131,000	79,000	50,000

带内冷TS钻头

产品代号 89423



P	M	K	N	S	H
●				●	○

VHM | TS 100 H | 3xD | DIN 6537 K | 140° | m7 | R | HA

芯厚 ≥ Ø 3,000 • 圆弧后刀面 • 主切削刃轻微内凹 • 优化了的切削几何参数
强度小于1200 N/mm²的合金和高强度钢 • 镍合金，哈氏合金，锰合金 • 钛及钛合金

产品代号 89424

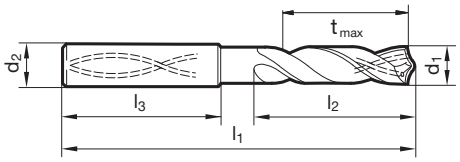


P	M	K	N	S	H
●				●	○

VHM | TS 100 H | 3xD | DIN 6537 K | 140° | m7 | R | HE

芯厚 ≥ Ø 3,000 • 圆弧后刀面 • 主切削刃轻微内凹 • 优化了的切削几何参数
强度小于1200 N/mm²的合金和高强度钢 • 镍合金，哈氏合金，锰合金 • 钛及钛合金

$t_{max} = l_2\text{-}1{,}5 \times d_1$



d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm	d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
3,000		6,000	62,000	20,000	36,000	5,200		6,000	66,000	28,000	36,000
3,100		6,000	62,000	20,000	36,000	5,300		6,000	66,000	28,000	36,000
3,170	1/8	6,000	62,000	20,000	36,000	5,400		6,000	66,000	28,000	36,000
3,200		6,000	62,000	20,000	36,000	5,500		6,000	66,000	28,000	36,000
3,250		6,000	62,000	20,000	36,000	5,550		6,000	66,000	28,000	36,000
3,300		6,000	62,000	20,000	36,000	5,560	7/32	6,000	66,000	28,000	36,000
3,400		6,000	62,000	20,000	36,000	5,600		6,000	66,000	28,000	36,000
3,500		6,000	62,000	20,000	36,000	5,700		6,000	66,000	28,000	36,000
3,570	9/64	6,000	62,000	20,000	36,000	5,800		6,000	66,000	28,000	36,000
3,600		6,000	62,000	20,000	36,000	5,900		6,000	66,000	28,000	36,000
3,700		6,000	62,000	20,000	36,000	5,950	15/64	6,000	66,000	28,000	36,000
3,800		6,000	66,000	24,000	36,000	6,000		6,000	66,000	28,000	36,000
3,900		6,000	66,000	24,000	36,000	6,100		8,000	79,000	34,000	36,000
3,970	5/32	6,000	66,000	24,000	36,000	6,200		8,000	79,000	34,000	36,000
4,000		6,000	66,000	24,000	36,000	6,300		8,000	79,000	34,000	36,000
4,100		6,000	66,000	24,000	36,000	6,350	1/4	8,000	79,000	34,000	36,000
4,200		6,000	66,000	24,000	36,000	6,400		8,000	79,000	34,000	36,000
4,300		6,000	66,000	24,000	36,000	6,500		8,000	79,000	34,000	36,000
4,370	11/64	6,000	66,000	24,000	36,000	6,600		8,000	79,000	34,000	36,000
4,400		6,000	66,000	24,000	36,000	6,700		8,000	79,000	34,000	36,000
4,500		6,000	66,000	24,000	36,000	6,750	17/64	8,000	79,000	34,000	36,000
4,600		6,000	66,000	24,000	36,000	6,800		8,000	79,000	34,000	36,000
4,650		6,000	66,000	24,000	36,000	6,900		8,000	79,000	34,000	36,000
4,700		6,000	66,000	24,000	36,000	7,000		8,000	79,000	34,000	36,000
4,760	3/16	6,000	66,000	28,000	36,000	7,100		8,000	79,000	41,000	36,000
4,800		6,000	66,000	28,000	36,000	7,140	9/32	8,000	79,000	41,000	36,000
4,900		6,000	66,000	28,000	36,000	7,200		8,000	79,000	41,000	36,000
5,000		6,000	66,000	28,000	36,000	7,300		8,000	79,000	41,000	36,000
5,100		6,000	66,000	28,000	36,000	7,400		8,000	79,000	41,000	36,000
5,160	13/64	6,000	66,000	28,000	36,000	7,500		8,000	79,000	41,000	36,000

带内冷TS钻头

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
7,540	19/64	8,000	79,000	41,000	36,000
7,600		8,000	79,000	41,000	36,000
7,700		8,000	79,000	41,000	36,000
7,800		8,000	79,000	41,000	36,000
7,900		8,000	79,000	41,000	36,000
7,940	5/16	8,000	79,000	41,000	36,000
8,000		8,000	79,000	41,000	36,000
8,100		10,000	89,000	47,000	40,000
8,200		10,000	89,000	47,000	40,000
8,300		10,000	89,000	47,000	40,000
8,330	21/64	10,000	89,000	47,000	40,000
8,400		10,000	89,000	47,000	40,000
8,500		10,000	89,000	47,000	40,000
8,600		10,000	89,000	47,000	40,000
8,700		10,000	89,000	47,000	40,000
8,730	11/32	10,000	89,000	47,000	40,000
8,800		10,000	89,000	47,000	40,000
8,900		10,000	89,000	47,000	40,000
9,000		10,000	89,000	47,000	40,000
9,100		10,000	89,000	47,000	40,000
9,130	23/64	10,000	89,000	47,000	40,000
9,200		10,000	89,000	47,000	40,000
9,250		10,000	89,000	47,000	40,000
9,300		10,000	89,000	47,000	40,000
9,400		10,000	89,000	47,000	40,000
9,500		10,000	89,000	47,000	40,000
9,520	3/8	10,000	89,000	47,000	40,000
9,600		10,000	89,000	47,000	40,000
9,700		10,000	89,000	47,000	40,000
9,800		10,000	89,000	47,000	40,000
9,900		10,000	89,000	47,000	40,000
9,920	25/64	10,000	89,000	47,000	40,000
10,000		10,000	89,000	47,000	40,000
10,100		12,000	102,000	55,000	45,000
10,200		12,000	102,000	55,000	45,000
10,300		12,000	102,000	55,000	45,000
10,320	13/32	12,000	102,000	55,000	45,000
10,400		12,000	102,000	55,000	45,000
10,500		12,000	102,000	55,000	45,000
10,600		12,000	102,000	55,000	45,000
10,700		12,000	102,000	55,000	45,000
10,800		12,000	102,000	55,000	45,000
10,900		12,000	102,000	55,000	45,000
11,000		12,000	102,000	55,000	45,000
11,100		12,000	102,000	55,000	45,000
11,110	7/16	12,000	102,000	55,000	45,000
11,200		12,000	102,000	55,000	45,000
11,300		12,000	102,000	55,000	45,000
11,400		12,000	102,000	55,000	45,000
11,500		12,000	102,000	55,000	45,000
11,600		12,000	102,000	55,000	45,000
11,700		12,000	102,000	55,000	45,000
11,800		12,000	102,000	55,000	45,000
11,900		12,000	102,000	55,000	45,000
11,910	15/32	12,000	102,000	55,000	45,000
12,000		12,000	102,000	55,000	45,000
12,200		14,000	107,000	60,000	45,000
12,500		14,000	107,000	60,000	45,000
12,700	1/2	14,000	107,000	60,000	45,000
12,800		14,000	107,000	60,000	45,000
13,000		14,000	107,000	60,000	45,000
13,300		14,000	107,000	60,000	45,000
13,500		14,000	107,000	60,000	45,000
13,700		14,000	107,000	60,000	45,000
14,000		14,000	107,000	60,000	45,000
14,200		16,000	115,000	65,000	48,000
14,290	9/16	16,000	115,000	65,000	48,000
14,300		16,000	115,000	65,000	48,000
14,500		16,000	115,000	65,000	48,000
14,700		16,000	115,000	65,000	48,000
15,000		16,000	115,000	65,000	48,000
15,200		16,000	115,000	65,000	48,000
15,300		16,000	115,000	65,000	48,000
15,500		16,000	115,000	65,000	48,000
15,700		16,000	115,000	65,000	48,000
16,000		16,000	115,000	65,000	48,000
16,300		18,000	123,000	73,000	48,000
16,500		18,000	123,000	73,000	48,000
16,900		18,000	123,000	73,000	48,000
17,000		18,000	123,000	73,000	48,000
17,300		18,000	123,000	73,000	48,000
17,500		18,000	123,000	73,000	48,000
18,000		18,000	123,000	73,000	48,000
18,500		20,000	131,000	79,000	50,000
18,900		20,000	131,000	79,000	50,000
19,000		20,000	131,000	79,000	50,000
19,050	3/4	20,000	131,000	79,000	50,000
19,300		20,000	131,000	79,000	50,000
19,500		20,000	131,000	79,000	50,000
20,000		20,000	131,000	79,000	50,000

HARTNER

带内冷TS钻头

产品代号 89292

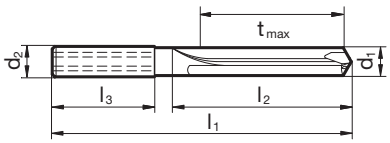


P	M	K	N	S	H
		○	●		

VHM | TS 150 GG | 4xD | WN | 120° | m7 | R | HA

芯厚 ⩾ Ø 3,000 • 双后刀面 • 紧直径公差 • 很好的孔表面质量 • 注意冷却压力
铝和的铝合金 • 铝材料含硅量高

$t_{max} = l_2\text{-}1{,}5 \times d_1$



d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
3,000		6,000	66,000	24,000	36,000
3,100		6,000	66,000	24,000	36,000
3,200		6,000	66,000	24,000	36,000
3,300		6,000	66,000	24,000	36,000
3,400		6,000	66,000	24,000	36,000
3,500		6,000	66,000	24,000	36,000
3,600		6,000	66,000	24,000	36,000
3,700		6,000	66,000	24,000	36,000
3,800		6,000	74,000	30,000	36,000
3,900		6,000	74,000	30,000	36,000
4,000		6,000	74,000	30,000	36,000
4,200		6,000	74,000	30,000	36,000
5,000		6,000	74,000	36,000	36,000
5,100		6,000	74,000	36,000	36,000
5,300		6,000	74,000	36,000	36,000
5,900		6,000	74,000	36,000	36,000
6,000		6,000	74,000	36,000	36,000
6,200		8,000	91,000	53,000	36,000
6,300		8,000	91,000	53,000	36,000
6,400		8,000	91,000	53,000	36,000
6,600		8,000	91,000	53,000	36,000
6,700		8,000	91,000	53,000	36,000
6,800		8,000	91,000	53,000	36,000
7,000		8,000	91,000	53,000	36,000
7,400		8,000	91,000	53,000	36,000
7,500		8,000	91,000	53,000	36,000
8,000		8,000	91,000	53,000	36,000
8,100		10,000	103,000	61,000	40,000
8,200		10,000	103,000	61,000	40,000
8,300		10,000	103,000	61,000	40,000

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
8,400		10,000	103,000	61,000	40,000
8,500		10,000	103,000	61,000	40,000
8,700		10,000	103,000	61,000	40,000
9,000		10,000	103,000	61,000	40,000
9,400		10,000	103,000	61,000	40,000
10,000		10,000	103,000	61,000	40,000
10,200		12,000	118,000	71,000	45,000
10,500		12,000	118,000	71,000	45,000
11,000		12,000	118,000	71,000	45,000
11,500		12,000	118,000	71,000	45,000
12,000		12,000	118,000	71,000	45,000
12,300	31/64	14,000	124,000	74,000	45,000
12,500		14,000	124,000	74,000	45,000
12,700	1/2	14,000	124,000	74,000	45,000
13,000		14,000	124,000	74,000	45,000
14,000		14,000	124,000	74,000	45,000
15,000		16,000	133,000	83,000	48,000
16,000		16,000	133,000	83,000	48,000
16,500		18,000	143,000	93,000	48,000
17,000		18,000	143,000	93,000	48,000
17,500		18,000	143,000	93,000	48,000
18,000		18,000	143,000	93,000	48,000
19,000		20,000	153,000	101,000	50,000
20,000		20,000	153,000	101,000	50,000

HARTNER

带内冷TS钻头

产品代号 89272



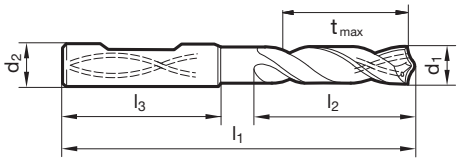
P	M	K	N	S	H
●	○	●	○	○	○

VHM | T | TS 100 U | 5xD | DIN 6537 L | 140° | m7 | R | HE

芯厚 ⩾ Ø 3,700 • 双后刀面 • 精密磨削过的主切削刃 • 优化了的切削几何参数

适合加工：结构钢和淬硬钢 • 易切削钢和热处理钢 • 钢（合金/非合金），强度小于 1200N/mm² • 铸件材料 • 青铜、黄铜 • 高硅铝合金

$t_{max} = l_2\text{-}1{,}5 \times d_1$



d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
3,700		6,000	66,000	28,000	36,000
5,000		6,000	82,000	44,000	36,000
5,160	13/64	6,000	82,000	44,000	36,000
5,500		6,000	82,000	44,000	36,000
5,560	7/32	6,000	82,000	44,000	36,000
5,800		6,000	82,000	44,000	36,000
6,000		6,000	82,000	44,000	36,000
6,350	1/4	8,000	91,000	53,000	36,000
6,400		8,000	91,000	53,000	36,000
6,500		8,000	91,000	53,000	36,000
6,750	17/64	8,000	91,000	53,000	36,000
6,800		8,000	91,000	53,000	36,000
7,000		8,000	91,000	53,000	36,000
7,140	9/32	8,000	91,000	53,000	36,000
7,500		8,000	91,000	53,000	36,000
7,540	19/64	8,000	91,000	53,000	36,000
7,700		8,000	91,000	53,000	36,000
7,800		8,000	91,000	53,000	36,000
7,940	5/16	8,000	91,000	53,000	36,000
8,000		8,000	91,000	53,000	36,000
8,500		10,000	103,000	61,000	40,000
8,600		10,000	103,000	61,000	40,000
8,730	11/32	10,000	103,000	61,000	40,000
8,800		10,000	103,000	61,000	40,000
9,000		10,000	103,000	61,000	40,000
9,300		10,000	103,000	61,000	40,000
9,500		10,000	103,000	61,000	40,000
9,520	3/8	10,000	103,000	61,000	40,000
9,700		10,000	103,000	61,000	40,000
9,800		10,000	103,000	61,000	40,000
9,920	25/64	10,000	103,000	61,000	40,000
10,000		10,000	103,000	61,000	40,000
10,200		12,000	118,000	71,000	45,000
10,320	13/32	12,000	118,000	71,000	45,000
10,500		12,000	118,000	71,000	45,000
10,720	27/64	12,000	118,000	71,000	45,000

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
10,800		12,000	118,000	71,000	45,000
11,000		12,000	118,000	71,000	45,000
11,110	7/16	12,000	118,000	71,000	45,000
11,200		12,000	118,000	71,000	45,000
11,500		12,000	118,000	71,000	45,000
11,510	29/64	12,000	118,000	71,000	45,000
11,800		12,000	118,000	71,000	45,000
11,910	15/32	12,000	118,000	71,000	45,000
12,000		12,000	118,000	71,000	45,000
12,500		14,000	124,000	77,000	45,000
12,700	1/2	14,000	124,000	77,000	45,000
13,000		14,000	124,000	77,000	45,000
13,500		14,000	124,000	77,000	45,000
14,000		14,000	124,000	77,000	45,000
14,290	9/16	16,000	133,000	83,000	48,000
14,500		16,000	133,000	83,000	48,000
15,000		16,000	133,000	83,000	48,000
15,500		16,000	133,000	83,000	48,000
15,870	5/8	16,000	133,000	83,000	48,000
16,000		16,000	133,000	83,000	48,000
16,500		18,000	143,000	93,000	48,000
17,000		18,000	143,000	93,000	48,000
17,500		18,000	143,000	93,000	48,000
18,000		18,000	143,000	93,000	48,000
19,500		20,000	153,000	101,000	50,000

带内冷TS钻头

产品代号 89411



P	M	K	N	S	H
●	○	●	○	○	○

VHM | F | TS 100 U | 5xD | DIN 6537 L | 140° | m7 | R | HA

芯厚 ⩾ Ø 3,000 • 双后刀面 • 精密磨削过的主切削刃 • 优化了的切削几何参数

适合加工：结构钢和淬硬钢 • 易切削钢和热处理钢 • 钢（合金/非合金），强度小于 1200N/mm² • 铸件材料 • 青铜、黄铜 • 高硅铝合金

产品代号 89408



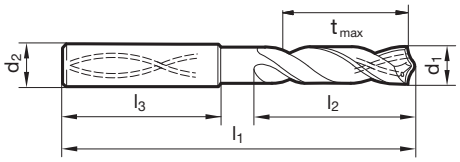
P	M	K	N	S	H
●	○	●	○	○	○

VHM | F | TS 100 U | 5xD | DIN 6537 L | 140° | m7 | R | HE

芯厚 ⩾ Ø 3,000 • 双后刀面 • 精密磨削过的主切削刃 • 优化了的切削几何参数

适合加工：结构钢和淬硬钢 • 易切削钢和热处理钢 • 钢（合金/非合金），强度小于 1200N/mm² • 铸件材料 • 青铜、黄铜 • 高硅铝合金

$t_{max} = l_2\text{-}1{,}5 \times d_1$



d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm	d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
3,000		6,000	66,000	28,000	36,000	5,200		6,000	82,000	44,000	36,000
3,100		6,000	66,000	28,000	36,000	5,300		6,000	82,000	44,000	36,000
3,170	1/8	6,000	66,000	28,000	36,000	5,400		6,000	82,000	44,000	36,000
3,200		6,000	66,000	28,000	36,000	5,500		6,000	82,000	44,000	36,000
3,250		6,000	66,000	28,000	36,000	5,550		6,000	82,000	44,000	36,000
3,300		6,000	66,000	28,000	36,000	5,560	7/32	6,000	82,000	44,000	36,000
3,400		6,000	66,000	28,000	36,000	5,600		6,000	82,000	44,000	36,000
3,500		6,000	66,000	28,000	36,000	5,700		6,000	82,000	44,000	36,000
3,570	9/64	6,000	66,000	28,000	36,000	5,800		6,000	82,000	44,000	36,000
3,600		6,000	66,000	28,000	36,000	5,900		6,000	82,000	44,000	36,000
3,700		6,000	66,000	28,000	36,000	5,950	15/64	6,000	82,000	44,000	36,000
3,800		6,000	74,000	36,000	36,000	6,000		6,000	82,000	44,000	36,000
3,900		6,000	74,000	36,000	36,000	6,100		8,000	91,000	53,000	36,000
3,970	5/32	6,000	74,000	36,000	36,000	6,200		8,000	91,000	53,000	36,000
4,000		6,000	74,000	36,000	36,000	6,300		8,000	91,000	53,000	36,000
4,100		6,000	74,000	36,000	36,000	6,350	1/4	8,000	91,000	53,000	36,000
4,200		6,000	74,000	36,000	36,000	6,400		8,000	91,000	53,000	36,000
4,300		6,000	74,000	36,000	36,000	6,500		8,000	91,000	53,000	36,000
4,370	11/64	6,000	74,000	36,000	36,000	6,600		8,000	91,000	53,000	36,000
4,400		6,000	74,000	36,000	36,000	6,700		8,000	91,000	53,000	36,000
4,500		6,000	74,000	36,000	36,000	6,750	17/64	8,000	91,000	53,000	36,000
4,600		6,000	74,000	36,000	36,000	6,800		8,000	91,000	53,000	36,000
4,650		6,000	74,000	36,000	36,000	6,900		8,000	91,000	53,000	36,000
4,700		6,000	74,000	36,000	36,000	7,000		8,000	91,000	53,000	36,000
4,760	3/16	6,000	82,000	44,000	36,000	7,100		8,000	91,000	53,000	36,000
4,800		6,000	82,000	44,000	36,000	7,140	9/32	8,000	91,000	53,000	36,000
4,900		6,000	82,000	44,000	36,000	7,200		8,000	91,000	53,000	36,000
5,000		6,000	82,000	44,000	36,000	7,300		8,000	91,000	53,000	36,000
5,100		6,000	82,000	44,000	36,000	7,400		8,000	91,000	53,000	36,000
5,160	13/64	6,000	82,000	44,000	36,000	7,500		8,000	91,000	53,000	36,000

带内冷TS钻头

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
7,540	19/64	8,000	91,000	53,000	36,000
7,600		8,000	91,000	53,000	36,000
7,700		8,000	91,000	53,000	36,000
7,800		8,000	91,000	53,000	36,000
7,900		8,000	91,000	53,000	36,000
7,940	5/16	8,000	91,000	53,000	36,000
8,000		8,000	91,000	53,000	36,000
8,100		10,000	103,000	61,000	40,000
8,200		10,000	103,000	61,000	40,000
8,300		10,000	103,000	61,000	40,000
8,330	21/64	10,000	103,000	61,000	40,000
8,400		10,000	103,000	61,000	40,000
8,500		10,000	103,000	61,000	40,000
8,600		10,000	103,000	61,000	40,000
8,700		10,000	103,000	61,000	40,000
8,730	11/32	10,000	103,000	61,000	40,000
8,800		10,000	103,000	61,000	40,000
8,900		10,000	103,000	61,000	40,000
9,000		10,000	103,000	61,000	40,000
9,100		10,000	103,000	61,000	40,000
9,130	23/64	10,000	103,000	61,000	40,000
9,200		10,000	103,000	61,000	40,000
9,250		10,000	103,000	61,000	40,000
9,300		10,000	103,000	61,000	40,000
9,400		10,000	103,000	61,000	40,000
9,500		10,000	103,000	61,000	40,000
9,520	3/8	10,000	103,000	61,000	40,000
9,600		10,000	103,000	61,000	40,000
9,700		10,000	103,000	61,000	40,000
9,800		10,000	103,000	61,000	40,000
9,900		10,000	103,000	61,000	40,000
9,920	25/64	10,000	103,000	61,000	40,000
10,000		10,000	103,000	61,000	40,000
10,100		12,000	118,000	71,000	45,000
10,200		12,000	118,000	71,000	45,000
10,300		12,000	118,000	71,000	45,000
10,320	13/32	12,000	118,000	71,000	45,000
10,400		12,000	118,000	71,000	45,000
10,500		12,000	118,000	71,000	45,000
10,600		12,000	118,000	71,000	45,000
10,700		12,000	118,000	71,000	45,000
10,800		12,000	118,000	71,000	45,000
10,900		12,000	118,000	71,000	45,000
11,000		12,000	118,000	71,000	45,000
11,100		12,000	118,000	71,000	45,000
11,110	7/16	12,000	118,000	71,000	45,000
11,200		12,000	118,000	71,000	45,000
11,300		12,000	118,000	71,000	45,000
11,400		12,000	118,000	71,000	45,000
11,500		12,000	118,000	71,000	45,000
11,600		12,000	118,000	71,000	45,000
11,700		12,000	118,000	71,000	45,000
11,800		12,000	118,000	71,000	45,000
11,900		12,000	118,000	71,000	45,000
11,910	15/32	12,000	118,000	71,000	45,000
12,000		12,000	118,000	71,000	45,000
12,100		14,000	124,000	77,000	45,000
12,200		14,000	124,000	77,000	45,000
12,300	31/64	14,000	124,000	77,000	45,000
12,400		14,000	124,000	77,000	45,000
12,500		14,000	124,000	77,000	45,000
12,600		14,000	124,000	77,000	45,000
12,700	1/2	14,000	124,000	77,000	45,000
12,800		14,000	124,000	77,000	45,000
13,000		14,000	124,000	77,000	45,000
13,100	33/64	14,000	124,000	77,000	45,000
13,300		14,000	124,000	77,000	45,000
13,500		14,000	124,000	77,000	45,000
13,700		14,000	124,000	77,000	45,000
13,800		14,000	124,000	77,000	45,000
14,000		14,000	124,000	77,000	45,000
14,100		16,000	133,000	83,000	48,000
14,200		16,000	133,000	83,000	48,000
14,290	9/16	16,000	133,000	83,000	48,000
14,500		16,000	133,000	83,000	48,000
14,700		16,000	133,000	83,000	48,000
14,800		16,000	133,000	83,000	48,000
15,000		16,000	133,000	83,000	48,000
15,100		16,000	133,000	83,000	48,000
15,200		16,000	133,000	83,000	48,000
15,300		16,000	133,000	83,000	48,000
15,500		16,000	133,000	83,000	48,000
15,700		16,000	133,000	83,000	48,000
15,800		16,000	133,000	83,000	48,000
16,000		16,000	133,000	83,000	48,000
16,500		18,000	143,000	93,000	48,000
16,900		18,000	143,000	93,000	48,000
17,000		18,000	143,000	93,000	48,000
17,500		18,000	143,000	93,000	48,000
18,000		18,000	143,000	93,000	48,000
18,500		20,000	153,000	101,000	50,000
18,900		20,000	153,000	101,000	50,000
19,000		20,000	153,000	101,000	50,000
19,050	3/4	20,000	153,000	101,000	50,000
19,500		20,000	153,000	101,000	50,000
20,000		20,000	153,000	101,000	50,000

带内冷TS钻头

产品代号 89307



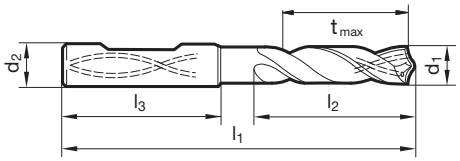
P	M	K	N	S	H
●	○	○	○		

HM | T | TS 80 U | 5xD | DIN 6538M | 140° | h7 | R | HE

芯厚 ⩾ Ø 9,800 • 圆弧后刀面 • 高速钢刀柄焊接硬质合金刀片 • 抗振动和冲击性好

非合金钢/低合金钢 • 灰铸铁,球墨铸铁 • 黄铜，青铜，塑料，石墨

$t_{max} = l_2 - 1{,}5 \times d_1$



d1 mm	d2 h6 mm	l1 mm	l2 mm	l3 mm
9,800	16,000	127,000	75,000	48,000
10,000	16,000	127,000	75,000	48,000
10,200	16,000	127,000	75,000	48,000
10,500	16,000	127,000	75,000	48,000
10,600	16,000	127,000	75,000	48,000
10,700	16,000	127,000	75,000	48,000
10,800	16,000	127,000	75,000	48,000
11,000	16,000	127,000	75,000	48,000
11,800	16,000	127,000	75,000	48,000
11,900	16,000	127,000	75,000	48,000
12,000	16,000	127,000	75,000	48,000
12,300	16,000	139,000	87,000	48,000
12,500	16,000	139,000	87,000	48,000
12,700	16,000	139,000	87,000	48,000
12,900	16,000	139,000	87,000	48,000
13,000	16,000	139,000	87,000	48,000
13,100	16,000	139,000	87,000	48,000
13,500	16,000	139,000	87,000	48,000
13,600	16,000	139,000	87,000	48,000
13,700	16,000	139,000	87,000	48,000
13,900	16,000	139,000	87,000	48,000
14,000	16,000	139,000	87,000	48,000
14,500	20,000	154,000	100,000	50,000
14,600	20,000	154,000	100,000	50,000
15,000	20,000	154,000	100,000	50,000
15,200	20,000	154,000	100,000	50,000
15,500	20,000	154,000	100,000	50,000
15,700	20,000	154,000	100,000	50,000
16,000	20,000	154,000	100,000	50,000
16,200	20,000	166,000	112,000	50,000
16,500	20,000	166,000	112,000	50,000
16,800	20,000	166,000	112,000	50,000
17,000	20,000	166,000	112,000	50,000
17,200	20,000	166,000	112,000	50,000
17,300	20,000	166,000	112,000	50,000
17,500	20,000	166,000	112,000	50,000
18,000	20,000	166,000	112,000	50,000
18,300	25,000	184,000	124,000	56,000
18,500	25,000	184,000	124,000	56,000
19,000	25,000	184,000	124,000	56,000
19,500	25,000	184,000	124,000	56,000
19,700	25,000	184,000	124,000	56,000
20,000	25,000	184,000	124,000	56,000
20,500	25,000	197,000	137,000	56,000
21,000	25,000	197,000	137,000	56,000
22,000	25,000	197,000	137,000	56,000
22,220	25,000	209,000	149,000	56,000
22,500	25,000	209,000	149,000	56,000
23,000	25,000	209,000	149,000	56,000
23,500	25,000	209,000	149,000	56,000
24,000	25,000	209,000	149,000	56,000
24,500	32,000	226,000	162,000	60,000
25,000	32,000	226,000	162,000	60,000
25,500	32,000	226,000	162,000	60,000

HARTNER

带内冷TS钻头

产品代号 89451



P	M	K	N	S	H
	•			•	

VHM | a | TS 100 INOX | 5xD | DIN 6537L | 140° | m7 | R | HA

芯厚 ⩾ Ø 3,000 • 双后刀面 • 精密磨削过的主切削刃 • 优化了的切削几何参数
不锈钢/耐酸/耐热钢 • 钛及钛合金 • 镍合金，哈氏合金，锰合金

产品代号 89551

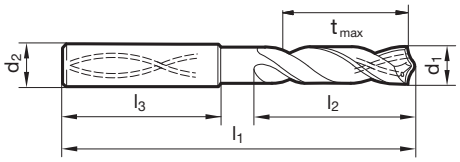


P	M	K	N	S	H
	•			•	

VHM | a | TS 100 INOX | 5xD | DIN 6537L | 140° | m7 | R | HE

芯厚 ⩾ Ø 3,000 • 双后刀面 • 精密磨削过的主切削刃 • 优化了的切削几何参数
不锈钢/耐酸/耐热钢 • 钛及钛合金 • 镍合金，哈氏合金，锰合金

$t_{max} = l_2\text{-}1{,}5 \times d_1$



d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
3,000		6,000	66,000	28,000	36,000
3,100		6,000	66,000	28,000	36,000
3,170	1/8	6,000	66,000	28,000	36,000
3,200		6,000	66,000	28,000	36,000
3,250		6,000	66,000	28,000	36,000
3,300		6,000	66,000	28,000	36,000
3,400		6,000	66,000	28,000	36,000
3,500		6,000	66,000	28,000	36,000
3,570	9/64	6,000	66,000	28,000	36,000
3,600		6,000	66,000	28,000	36,000
3,700		6,000	66,000	28,000	36,000
3,800		6,000	74,000	36,000	36,000
3,900		6,000	74,000	36,000	36,000
3,970	5/32	6,000	74,000	36,000	36,000
4,000		6,000	74,000	36,000	36,000
4,100		6,000	74,000	36,000	36,000
4,200		6,000	74,000	36,000	36,000
4,300		6,000	74,000	36,000	36,000
4,370	11/64	6,000	74,000	36,000	36,000
4,400		6,000	74,000	36,000	36,000
4,500		6,000	74,000	36,000	36,000
4,600		6,000	74,000	36,000	36,000
4,650		6,000	74,000	36,000	36,000
4,700		6,000	74,000	36,000	36,000
4,760	3/16	6,000	82,000	44,000	36,000
4,800		6,000	82,000	44,000	36,000
4,900		6,000	82,000	44,000	36,000
5,000		6,000	82,000	44,000	36,000
5,100		6,000	82,000	44,000	36,000
5,160	13/64	6,000	82,000	44,000	36,000
5,200		6,000	82,000	44,000	36,000
5,300		6,000	82,000	44,000	36,000
5,400		6,000	82,000	44,000	36,000
5,500		6,000	82,000	44,000	36,000
5,550		6,000	82,000	44,000	36,000
5,560	7/32	6,000	82,000	44,000	36,000
5,600		6,000	82,000	44,000	36,000
5,700		6,000	82,000	44,000	36,000
5,800		6,000	82,000	44,000	36,000
5,900		6,000	82,000	44,000	36,000
5,950	15/64	6,000	82,000	44,000	36,000
6,000		6,000	82,000	44,000	36,000
6,100		8,000	91,000	53,000	36,000
6,200		8,000	91,000	53,000	36,000
6,300		8,000	91,000	53,000	36,000
6,350	1/4	8,000	91,000	53,000	36,000
6,400		8,000	91,000	53,000	36,000
6,500		8,000	91,000	53,000	36,000
6,600		8,000	91,000	53,000	36,000
6,700		8,000	91,000	53,000	36,000
6,750	17/64	8,000	91,000	53,000	36,000
6,800		8,000	91,000	53,000	36,000
6,900		8,000	91,000	53,000	36,000
7,000		8,000	91,000	53,000	36,000
7,100		8,000	91,000	53,000	36,000
7,140	9/32	8,000	91,000	53,000	36,000
7,200		8,000	91,000	53,000	36,000
7,300		8,000	91,000	53,000	36,000
7,400		8,000	91,000	53,000	36,000
7,500		8,000	91,000	53,000	36,000

带内冷TS钻头

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
7,540	19/64	8,000	91,000	53,000	36,000
7,600		8,000	91,000	53,000	36,000
7,700		8,000	91,000	53,000	36,000
7,800		8,000	91,000	53,000	36,000
7,900		8,000	91,000	53,000	36,000
7,940	5/16	8,000	91,000	53,000	36,000
8,000		8,000	91,000	53,000	36,000
8,100		10,000	103,000	61,000	40,000
8,200		10,000	103,000	61,000	40,000
8,300		10,000	103,000	61,000	40,000
8,330	21/64	10,000	103,000	61,000	40,000
8,400		10,000	103,000	61,000	40,000
8,500		10,000	103,000	61,000	40,000
8,600		10,000	103,000	61,000	40,000
8,700		10,000	103,000	61,000	40,000
8,730	11/32	10,000	103,000	61,000	40,000
8,800		10,000	103,000	61,000	40,000
8,900		10,000	103,000	61,000	40,000
9,000		10,000	103,000	61,000	40,000
9,100		10,000	103,000	61,000	40,000
9,130	23/64	10,000	103,000	61,000	40,000
9,200		10,000	103,000	61,000	40,000
9,250		10,000	103,000	61,000	40,000
9,300		10,000	103,000	61,000	40,000
9,400		10,000	103,000	61,000	40,000
9,500		10,000	103,000	61,000	40,000
9,520	3/8	10,000	103,000	61,000	40,000
9,600		10,000	103,000	61,000	40,000
9,700		10,000	103,000	61,000	40,000
9,800		10,000	103,000	61,000	40,000
9,900		10,000	103,000	61,000	40,000
9,920	25/64	10,000	103,000	61,000	40,000
10,000		10,000	103,000	61,000	40,000
10,100		12,000	118,000	71,000	45,000
10,200		12,000	118,000	71,000	45,000
10,300		12,000	118,000	71,000	45,000
10,320	13/32	12,000	118,000	71,000	45,000
10,400		12,000	118,000	71,000	45,000
10,500		12,000	118,000	71,000	45,000
10,600		12,000	118,000	71,000	45,000
10,700		12,000	118,000	71,000	45,000
10,800		12,000	118,000	71,000	45,000
10,900		12,000	118,000	71,000	45,000
11,000		12,000	118,000	71,000	45,000
11,100		12,000	118,000	71,000	45,000
11,110	7/16	12,000	118,000	71,000	45,000
11,200		12,000	118,000	71,000	45,000
11,300		12,000	118,000	71,000	45,000
11,400		12,000	118,000	71,000	45,000
11,500		12,000	118,000	71,000	45,000
11,600		12,000	118,000	71,000	45,000
11,700		12,000	118,000	71,000	45,000
11,800		12,000	118,000	71,000	45,000
11,900		12,000	118,000	71,000	45,000
11,910	15/32	12,000	118,000	71,000	45,000
12,000		12,000	118,000	71,000	45,000
12,200		14,000	124,000	77,000	45,000
12,500		14,000	124,000	77,000	45,000
12,700	1/2	14,000	124,000	77,000	45,000
12,800		14,000	124,000	77,000	45,000
13,000		14,000	124,000	77,000	45,000
13,300		14,000	124,000	77,000	45,000
13,500		14,000	124,000	77,000	45,000
13,700		14,000	124,000	77,000	45,000
14,000		14,000	124,000	77,000	45,000
14,200		16,000	133,000	83,000	48,000
14,290	9/16	16,000	133,000	83,000	48,000
14,300		16,000	133,000	83,000	48,000
14,500		16,000	133,000	83,000	48,000
14,700		16,000	133,000	83,000	48,000
15,000		16,000	133,000	83,000	48,000
15,200		16,000	133,000	83,000	48,000
15,300		16,000	133,000	83,000	48,000
15,500		16,000	133,000	83,000	48,000
15,700		16,000	133,000	83,000	48,000
16,000		16,000	133,000	83,000	48,000
16,300		18,000	143,000	93,000	48,000
16,500		18,000	143,000	93,000	48,000
16,900		18,000	143,000	93,000	48,000
17,000		18,000	143,000	93,000	48,000
17,300		18,000	143,000	93,000	48,000
17,500		18,000	143,000	93,000	48,000
18,000		18,000	143,000	93,000	48,000
18,500		20,000	153,000	101,000	50,000
18,900		20,000	153,000	101,000	50,000
19,000		20,000	153,000	101,000	50,000
19,050	3/4	20,000	153,000	101,000	50,000
19,300		20,000	153,000	101,000	50,000
19,500		20,000	153,000	101,000	50,000
20,000		20,000	153,000	101,000	50,000

HARTNER

带内冷TS钻头

产品代号 89425



P	M	K	N	S	H
●				●	○

VHM | TS 100 H | 5xD | DIN 6537 L | 140° | m7 | R | HA

芯厚 ≥ Ø 3,000 • 圆弧后刀面 • 主切削刃轻微内凹 • 优化了的切削几何参数
强度小于1200 N/mm²的合金和高强度钢 • 镍合金，哈氏合金，锰合金 • 钛及钛合金

产品代号 89426

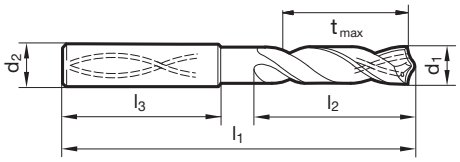


P	M	K	N	S	H
●				●	○

VHM | TS 100 H | 5xD | DIN 6537 L | 140° | m7 | R | HE

芯厚 ≥ Ø 3,000 • 圆弧后刀面 • 主切削刃轻微内凹 • 优化了的切削几何参数
强度小于1200 N/mm²的合金和高强度钢 • 镍合金，哈氏合金，锰合金 • 钛及钛合金

$t_{max} = l_2\text{-}1{,}5 \times d_1$



d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm	d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
3,000		6,000	66,000	28,000	36,000	5,200		6,000	82,000	44,000	36,000
3,100		6,000	66,000	28,000	36,000	5,300		6,000	82,000	44,000	36,000
3,170	1/8	6,000	66,000	28,000	36,000	5,400		6,000	82,000	44,000	36,000
3,200		6,000	66,000	28,000	36,000	5,500		6,000	82,000	44,000	36,000
3,250		6,000	66,000	28,000	36,000	5,550		6,000	82,000	44,000	36,000
3,300		6,000	66,000	28,000	36,000	5,560	7/32	6,000	82,000	44,000	36,000
3,400		6,000	66,000	28,000	36,000	5,600		6,000	82,000	44,000	36,000
3,500		6,000	66,000	28,000	36,000	5,700		6,000	82,000	44,000	36,000
3,570	9/64	6,000	66,000	28,000	36,000	5,800		6,000	82,000	44,000	36,000
3,600		6,000	66,000	28,000	36,000	5,900		6,000	82,000	44,000	36,000
3,700		6,000	66,000	28,000	36,000	5,950	15/64	6,000	82,000	44,000	36,000
3,800		6,000	74,000	36,000	36,000	6,000		6,000	82,000	44,000	36,000
3,900		6,000	74,000	36,000	36,000	6,100		8,000	91,000	53,000	36,000
3,970	5/32	6,000	74,000	36,000	36,000	6,200		8,000	91,000	53,000	36,000
4,000		6,000	74,000	36,000	36,000	6,300		8,000	91,000	53,000	36,000
4,100		6,000	74,000	36,000	36,000	6,350	1/4	8,000	91,000	53,000	36,000
4,200		6,000	74,000	36,000	36,000	6,400		8,000	91,000	53,000	36,000
4,300		6,000	74,000	36,000	36,000	6,500		8,000	91,000	53,000	36,000
4,370	11/64	6,000	74,000	36,000	36,000	6,600		8,000	91,000	53,000	36,000
4,400		6,000	74,000	36,000	36,000	6,700		8,000	91,000	53,000	36,000
4,500		6,000	74,000	36,000	36,000	6,750	17/64	8,000	91,000	53,000	36,000
4,600		6,000	74,000	36,000	36,000	6,800		8,000	91,000	53,000	36,000
4,650		6,000	74,000	36,000	36,000	6,900		8,000	91,000	53,000	36,000
4,700		6,000	74,000	36,000	36,000	7,000		8,000	91,000	53,000	36,000
4,760	3/16	6,000	82,000	44,000	36,000	7,100		8,000	91,000	53,000	36,000
4,800		6,000	82,000	44,000	36,000	7,140	9/32	8,000	91,000	53,000	36,000
4,900		6,000	82,000	44,000	36,000	7,200		8,000	91,000	53,000	36,000
5,000		6,000	82,000	44,000	36,000	7,300		8,000	91,000	53,000	36,000
5,100		6,000	82,000	44,000	36,000	7,400		8,000	91,000	53,000	36,000
5,160	13/64	6,000	82,000	44,000	36,000	7,500		8,000	91,000	53,000	36,000

带内冷TS钻头

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
7,540	19/64	8,000	91,000	53,000	36,000
7,600		8,000	91,000	53,000	36,000
7,700		8,000	91,000	53,000	36,000
7,800		8,000	91,000	53,000	36,000
7,900		8,000	91,000	53,000	36,000
7,940	5/16	8,000	91,000	53,000	36,000
8,000		8,000	91,000	53,000	36,000
8,100		10,000	103,000	61,000	40,000
8,200		10,000	103,000	61,000	40,000
8,300		10,000	103,000	61,000	40,000
8,330	21/64	10,000	103,000	61,000	40,000
8,400		10,000	103,000	61,000	40,000
8,500		10,000	103,000	61,000	40,000
8,600		10,000	103,000	61,000	40,000
8,700		10,000	103,000	61,000	40,000
8,730	11/32	10,000	103,000	61,000	40,000
8,800		10,000	103,000	61,000	40,000
8,900		10,000	103,000	61,000	40,000
9,000		10,000	103,000	61,000	40,000
9,100		10,000	103,000	61,000	40,000
9,130	23/64	10,000	103,000	61,000	40,000
9,200		10,000	103,000	61,000	40,000
9,250		10,000	103,000	61,000	40,000
9,300		10,000	103,000	61,000	40,000
9,400		10,000	103,000	61,000	40,000
9,500		10,000	103,000	61,000	40,000
9,520	3/8	10,000	103,000	61,000	40,000
9,600		10,000	103,000	61,000	40,000
9,700		10,000	103,000	61,000	40,000
9,800		10,000	103,000	61,000	40,000
9,900		10,000	103,000	61,000	40,000
9,920	25/64	10,000	103,000	61,000	40,000
10,000		10,000	103,000	61,000	40,000
10,100		12,000	118,000	71,000	45,000
10,200		12,000	118,000	71,000	45,000
10,300		12,000	118,000	71,000	45,000
10,320	13/32	12,000	118,000	71,000	45,000
10,400		12,000	118,000	71,000	45,000
10,500		12,000	118,000	71,000	45,000
10,600		12,000	118,000	71,000	45,000
10,700		12,000	118,000	71,000	45,000
10,800		12,000	118,000	71,000	45,000
10,900		12,000	118,000	71,000	45,000
11,000		12,000	118,000	71,000	45,000
11,100		12,000	118,000	71,000	45,000
11,110	7/16	12,000	118,000	71,000	45,000
11,200		12,000	118,000	71,000	45,000
11,300		12,000	118,000	71,000	45,000
11,400		12,000	118,000	71,000	45,000
11,500		12,000	118,000	71,000	45,000
11,600		12,000	118,000	71,000	45,000
11,700		12,000	118,000	71,000	45,000
11,800		12,000	118,000	71,000	45,000
11,900		12,000	118,000	71,000	45,000
11,910	15/32	12,000	118,000	71,000	45,000
12,000		12,000	118,000	71,000	45,000
12,200		14,000	124,000	77,000	45,000
12,500		14,000	124,000	77,000	45,000
12,700	1/2	14,000	124,000	77,000	45,000
12,800		14,000	124,000	77,000	45,000
13,000		14,000	124,000	77,000	45,000
13,300		14,000	124,000	77,000	45,000
13,500		14,000	124,000	77,000	45,000
13,700		14,000	124,000	77,000	45,000
14,000		14,000	124,000	77,000	45,000
14,200		16,000	133,000	83,000	48,000
14,290	9/16	16,000	133,000	83,000	48,000
14,300		16,000	133,000	83,000	48,000
14,500		16,000	133,000	83,000	48,000
14,700		16,000	133,000	83,000	48,000
15,000		16,000	133,000	83,000	48,000
15,200		16,000	133,000	83,000	48,000
15,300		16,000	133,000	83,000	48,000
15,500		16,000	133,000	83,000	48,000
15,700		16,000	133,000	83,000	48,000
16,000		16,000	133,000	83,000	48,000
16,300		18,000	143,000	93,000	48,000
16,500		18,000	143,000	93,000	48,000
16,900		18,000	143,000	93,000	48,000
17,000		18,000	143,000	93,000	48,000
17,300		18,000	143,000	93,000	48,000
17,500		18,000	143,000	93,000	48,000
18,000		18,000	143,000	93,000	48,000
18,500		20,000	153,000	101,000	50,000
18,900		20,000	153,000	101,000	50,000
19,000		20,000	153,000	101,000	50,000
19,050	3/4	20,000	153,000	101,000	50,000
19,300		20,000	153,000	101,000	50,000
19,500		20,000	153,000	101,000	50,000
20,000		20,000	153,000	101,000	50,000

带内冷TS钻头

产品代号 89420

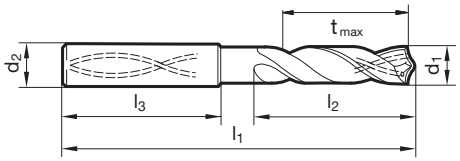


P	M	K	N	S	H
		•			

VHM | F | TS 100 R | 5xD | DIN 6537L | m7 | R | HA

芯厚 ⩾ Ø 3,000 • 专利弧形钻尖 • 直型切削刃（通过刃修正）
蠕墨铸铁GGV 和 ADI、CDI • 灰铸铁,可锻铸铁和球墨铸铁

$t_{max} = l_2\text{-}1{,}5 \times d_1$



d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm	d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
3,000		6,000	66,000	28,000	36,000	6,100		8,000	91,000	53,000	36,000
3,100		6,000	66,000	28,000	36,000	6,200		8,000	91,000	53,000	36,000
3,170	1/8	6,000	66,000	28,000	36,000	6,300		8,000	91,000	53,000	36,000
3,200		6,000	66,000	28,000	36,000	6,350	1/4	8,000	91,000	53,000	36,000
3,250		6,000	66,000	28,000	36,000	6,400		8,000	91,000	53,000	36,000
3,300		6,000	66,000	28,000	36,000	6,500		8,000	91,000	53,000	36,000
3,400		6,000	66,000	28,000	36,000	6,600		8,000	91,000	53,000	36,000
3,500		6,000	66,000	28,000	36,000	6,700		8,000	91,000	53,000	36,000
3,570	9/64	6,000	66,000	28,000	36,000	6,750	17/64	8,000	91,000	53,000	36,000
3,600		6,000	66,000	28,000	36,000	6,800		8,000	91,000	53,000	36,000
3,700		6,000	66,000	28,000	36,000	6,900		8,000	91,000	53,000	36,000
3,800		6,000	74,000	36,000	36,000	7,000		8,000	91,000	53,000	36,000
3,900		6,000	74,000	36,000	36,000	7,100		8,000	91,000	53,000	36,000
3,970	5/32	6,000	74,000	36,000	36,000	7,140	9/32	8,000	91,000	53,000	36,000
4,000		6,000	74,000	36,000	36,000	7,200		8,000	91,000	53,000	36,000
4,100		6,000	74,000	36,000	36,000	7,300		8,000	91,000	53,000	36,000
4,200		6,000	74,000	36,000	36,000	7,400		8,000	91,000	53,000	36,000
4,300		6,000	74,000	36,000	36,000	7,500		8,000	91,000	53,000	36,000
4,370	11/64	6,000	74,000	36,000	36,000	7,540	19/64	8,000	91,000	53,000	36,000
4,400		6,000	74,000	36,000	36,000	7,600		8,000	91,000	53,000	36,000
4,500		6,000	74,000	36,000	36,000	7,700		8,000	91,000	53,000	36,000
4,600		6,000	74,000	36,000	36,000	7,800		8,000	91,000	53,000	36,000
4,650		6,000	74,000	36,000	36,000	7,900		8,000	91,000	53,000	36,000
4,700		6,000	74,000	36,000	36,000	7,940	5/16	8,000	91,000	53,000	36,000
4,760	3/16	6,000	82,000	44,000	36,000	8,000		8,000	91,000	53,000	36,000
4,800		6,000	82,000	44,000	36,000	8,100		10,000	103,000	61,000	40,000
4,900		6,000	82,000	44,000	36,000	8,200		10,000	103,000	61,000	40,000
5,000		6,000	82,000	44,000	36,000	8,300		10,000	103,000	61,000	40,000
5,100		6,000	82,000	44,000	36,000	8,330	21/64	10,000	103,000	61,000	40,000
5,160	13/64	6,000	82,000	44,000	36,000	8,400		10,000	103,000	61,000	40,000
5,200		6,000	82,000	44,000	36,000	8,500		10,000	103,000	61,000	40,000
5,300		6,000	82,000	44,000	36,000	8,600		10,000	103,000	61,000	40,000
5,400		6,000	82,000	44,000	36,000	8,700		10,000	103,000	61,000	40,000
5,500		6,000	82,000	44,000	36,000	8,730	11/32	10,000	103,000	61,000	40,000
5,550		6,000	82,000	44,000	36,000	8,800		10,000	103,000	61,000	40,000
5,560	7/32	6,000	82,000	44,000	36,000	8,900		10,000	103,000	61,000	40,000
5,600		6,000	82,000	44,000	36,000	9,000		10,000	103,000	61,000	40,000
5,700		6,000	82,000	44,000	36,000	9,100		10,000	103,000	61,000	40,000
5,800		6,000	82,000	44,000	36,000	9,130	23/64	10,000	103,000	61,000	40,000
5,900		6,000	82,000	44,000	36,000	9,200		10,000	103,000	61,000	40,000
5,950	15/64	6,000	82,000	44,000	36,000	9,250		10,000	103,000	61,000	40,000
6,000		6,000	82,000	44,000	36,000	9,300		10,000	103,000	61,000	40,000

带内冷TS钻头

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
9,400		10,000	103,000	61,000	40,000
9,500		10,000	103,000	61,000	40,000
9,520	3/8	10,000	103,000	61,000	40,000
9,600		10,000	103,000	61,000	40,000
9,700		10,000	103,000	61,000	40,000
9,800		10,000	103,000	61,000	40,000
9,900		10,000	103,000	61,000	40,000
9,920	25/64	10,000	103,000	61,000	40,000
10,000		10,000	103,000	61,000	40,000
10,100		12,000	118,000	71,000	45,000
10,200		12,000	118,000	71,000	45,000
10,300		12,000	118,000	71,000	45,000
10,320	13/32	12,000	118,000	71,000	45,000
10,400		12,000	118,000	71,000	45,000
10,500		12,000	118,000	71,000	45,000
10,600		12,000	118,000	71,000	45,000
10,700		12,000	118,000	71,000	45,000
10,720	27/64	12,000	118,000	71,000	45,000
10,800		12,000	118,000	71,000	45,000
10,900		12,000	118,000	71,000	45,000
11,000		12,000	118,000	71,000	45,000
11,100		12,000	118,000	71,000	45,000
11,110	7/16	12,000	118,000	71,000	45,000
11,200		12,000	118,000	71,000	45,000
11,300		12,000	118,000	71,000	45,000
11,400		12,000	118,000	71,000	45,000
11,500		12,000	118,000	71,000	45,000
11,600		12,000	118,000	71,000	45,000
11,700		12,000	118,000	71,000	45,000
11,800		12,000	118,000	71,000	45,000
11,900		12,000	118,000	71,000	45,000
11,910	15/32	12,000	118,000	71,000	45,000
12,000		12,000	118,000	71,000	45,000
12,100		14,000	124,000	77,000	45,000
12,200		14,000	124,000	77,000	45,000
12,300	31/64	14,000	124,000	77,000	45,000
12,400		14,000	124,000	77,000	45,000
12,500		14,000	124,000	77,000	45,000
12,600		14,000	124,000	77,000	45,000
12,700	1/2	14,000	124,000	77,000	45,000
12,800		14,000	124,000	77,000	45,000
12,900		14,000	124,000	77,000	45,000
13,000		14,000	124,000	77,000	45,000
13,100	33/64	14,000	124,000	77,000	45,000
13,300		14,000	124,000	77,000	45,000
13,400		14,000	124,000	77,000	45,000
13,500		14,000	124,000	77,000	45,000
13,700		14,000	124,000	77,000	45,000
13,800		14,000	124,000	77,000	45,000
13,900		14,000	124,000	77,000	45,000
14,000		14,000	124,000	77,000	45,000
14,100		16,000	133,000	83,000	48,000
14,200		16,000	133,000	83,000	48,000
14,290	9/16	16,000	133,000	83,000	48,000
14,300		16,000	133,000	83,000	48,000
14,400		16,000	133,000	83,000	48,000
14,500		16,000	133,000	83,000	48,000
14,600		16,000	133,000	83,000	48,000
14,700		16,000	133,000	83,000	48,000
14,900		16,000	133,000	83,000	48,000
15,000		16,000	133,000	83,000	48,000
15,100		16,000	133,000	83,000	48,000
15,200		16,000	133,000	83,000	48,000
15,300		16,000	133,000	83,000	48,000
15,400		16,000	133,000	83,000	48,000
15,500		16,000	133,000	83,000	48,000
15,600		16,000	133,000	83,000	48,000
15,700		16,000	133,000	83,000	48,000
15,800		16,000	133,000	83,000	48,000
15,870	5/8	16,000	133,000	83,000	48,000
15,900		16,000	133,000	83,000	48,000
16,000		16,000	133,000	83,000	48,000
16,500		18,000	143,000	93,000	48,000
16,670	21/32	18,000	143,000	93,000	48,000
17,000		18,000	143,000	93,000	48,000
17,500		18,000	143,000	93,000	48,000
18,000		18,000	143,000	93,000	48,000
18,500		20,000	153,000	101,000	50,000
19,000		20,000	153,000	101,000	50,000
19,500		20,000	153,000	101,000	50,000
20,000		20,000	153,000	101,000	50,000

带内冷TS钻头

产品代号 89412



P	M	K	N	S	H
●	○	●	○	○	○

VHM | F | TS 100 U | 7xD | WN | 140° | m7 | R | HA

芯厚 ⩾ Ø 3,000 • 双后刀面 • 精密磨削过的主切削刃 • 优化了的切削几何参数

适合加工：结构钢和淬硬钢 • 易切削钢和热处理钢 • 钢（合金/非合金），强度小于 1200N/mm² • 铸件材料 • 青铜、黄铜 • 高硅铝合金

产品代号 89416



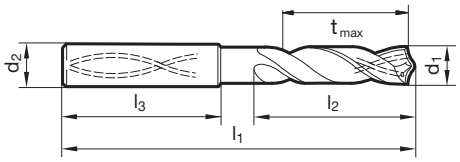
P	M	K	N	S	H
●	○	●	○	○	○

VHM | F | TS 100 U | 7xD | WN | 140° | m7 | R | HE

芯厚 ⩾ Ø 3,000 • 双后刀面 • 精密磨削过的主切削刃 • 优化了的切削几何参数

适合加工：结构钢和淬硬钢 • 易切削钢和热处理钢 • 钢（合金/非合金），强度小于 1200N/mm² • 铸件材料 • 青铜、黄铜 • 高硅铝合金

$t_{max} = l_2\text{-}1{,}5 \times d_1$



d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm	d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
3,000		6,000	70,000	30,000	36,000	5,200		6,000	90,000	50,000	36,000
3,100		6,000	70,000	30,000	36,000	5,300		6,000	90,000	50,000	36,000
3,170	1/8	6,000	70,000	30,000	36,000	5,400		6,000	97,000	57,000	36,000
3,200		6,000	70,000	30,000	36,000	5,500		6,000	97,000	57,000	36,000
3,250		6,000	70,000	30,000	36,000	5,700		6,000	97,000	57,000	36,000
3,300		6,000	70,000	30,000	36,000	5,800		6,000	97,000	57,000	36,000
3,400		6,000	75,000	35,500	36,000	5,900		6,000	97,000	57,000	36,000
3,500		6,000	75,000	35,500	36,000	5,950	15/64	6,000	97,000	57,000	36,000
3,570	9/64	6,000	75,000	35,500	36,000	6,000		6,000	97,000	57,000	36,000
3,600		6,000	75,000	35,500	36,000	6,200		8,000	106,000	66,000	36,000
3,700		6,000	75,000	35,500	36,000	6,300		8,000	106,000	66,000	36,000
3,800		6,000	75,000	37,500	36,000	6,350	1/4	8,000	106,000	66,000	36,000
3,900		6,000	75,000	37,500	36,000	6,500		8,000	106,000	66,000	36,000
3,970	5/32	6,000	75,000	37,500	36,000	6,600		8,000	106,000	66,000	36,000
4,000		6,000	75,000	37,500	36,000	6,700		8,000	106,000	66,000	36,000
4,100		6,000	75,000	37,500	36,000	6,800		8,000	106,000	66,000	36,000
4,200		6,000	75,000	37,500	36,000	6,900		8,000	116,000	76,000	36,000
4,300		6,000	85,000	45,000	36,000	7,000		8,000	116,000	76,000	36,000
4,370	11/64	6,000	85,000	45,000	36,000	7,100		8,000	116,000	76,000	36,000
4,400		6,000	85,000	45,000	36,000	7,200		8,000	116,000	76,000	36,000
4,500		6,000	85,000	45,000	36,000	7,500		8,000	116,000	76,000	36,000
4,600		6,000	85,000	45,000	36,000	7,600		8,000	116,000	76,000	36,000
4,650		6,000	85,000	45,000	36,000	7,700		8,000	116,000	76,000	36,000
4,700		6,000	85,000	45,000	36,000	7,800		8,000	116,000	76,000	36,000
4,760	3/16	6,000	90,000	50,000	36,000	8,000		8,000	116,000	76,000	36,000
4,800		6,000	90,000	50,000	36,000	8,100		10,000	131,000	87,000	40,000
4,900		6,000	90,000	50,000	36,000	8,200		10,000	131,000	87,000	40,000
5,000		6,000	90,000	50,000	36,000	8,400		10,000	131,000	87,000	40,000
5,100		6,000	90,000	50,000	36,000	8,500		10,000	131,000	87,000	40,000
5,160	13/64	6,000	90,000	50,000	36,000	8,600		10,000	131,000	87,000	40,000

带内冷TS钻头

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
8,700		10,000	131,000	87,000	40,000
8,800		10,000	131,000	87,000	40,000
9,000		10,000	131,000	87,000	40,000
9,100		10,000	139,000	95,000	40,000
9,200		10,000	139,000	95,000	40,000
9,250		10,000	139,000	95,000	40,000
9,300		10,000	139,000	95,000	40,000
9,400		10,000	139,000	95,000	40,000
9,500		10,000	139,000	95,000	40,000
9,520	3/8	10,000	139,000	95,000	40,000
9,700		10,000	139,000	95,000	40,000
9,800		10,000	139,000	95,000	40,000
9,900		10,000	139,000	95,000	40,000
10,000		10,000	139,000	95,000	40,000
10,200		12,000	155,000	106,000	45,000
10,300		12,000	155,000	106,000	45,000
10,500		12,000	155,000	106,000	45,000
10,800		12,000	155,000	106,000	45,000
11,000		12,000	155,000	106,000	45,000
11,200		12,000	163,000	114,000	45,000
11,500		12,000	163,000	114,000	45,000
11,800		12,000	163,000	114,000	45,000
12,000		12,000	163,000	114,000	45,000
12,100		14,000	182,000	133,000	45,000
12,200		14,000	182,000	133,000	45,000
12,500		14,000	182,000	133,000	45,000
12,700	1/2	14,000	182,000	133,000	45,000
13,000		14,000	182,000	133,000	45,000
13,100	33/64	14,000	182,000	133,000	45,000
13,500		14,000	182,000	133,000	45,000

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
14,000		14,000	182,000	133,000	45,000
14,100		16,000	204,000	152,000	48,000
14,200		16,000	204,000	152,000	48,000
14,500		16,000	204,000	152,000	48,000
15,000		16,000	204,000	152,000	48,000
15,100		16,000	204,000	152,000	48,000
15,500		16,000	204,000	152,000	48,000
16,000		16,000	204,000	152,000	48,000
16,500		18,000	223,000	171,000	48,000
16,900		18,000	223,000	171,000	48,000
17,000		18,000	223,000	171,000	48,000
17,500		18,000	223,000	171,000	48,000
18,000		18,000	223,000	171,000	48,000
18,500		20,000	244,000	190,000	50,000
18,900		20,000	244,000	190,000	50,000
19,000		20,000	244,000	190,000	50,000
19,050	3/4	20,000	244,000	190,000	50,000
19,500		20,000	244,000	190,000	50,000
20,000		20,000	244,000	190,000	50,000

带内冷TS钻头

产品代号 89308



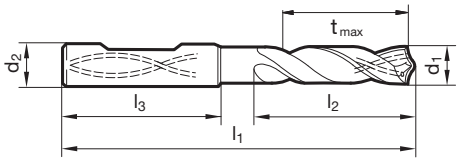
P	M	K	N	S	H
●	○	○	○		

HM | T | TS 80 U | 7xD | DIN 6538L | 140° | h8 | R | HE

芯厚 ⩾ Ø 10,000 • 圆弧后刀面 • 抗振动和冲击性好 • 高速钢刀柄焊接硬质合金刀片

非合金钢/低合金钢 • 灰铸铁,球墨铸铁 • 黄铜，青铜，塑料，石墨

$t_{max} = l_2\text{-}1{,}5 \times d_1$



d1 mm	d2 h6 mm	l1 mm	l2 mm	l3 mm
10,000	16,000	151,000	99,000	48,000
11,000	16,000	151,000	99,000	48,000
11,800	16,000	151,000	99,000	48,000
12,000	16,000	151,000	99,000	48,000
13,000	16,000	167,000	115,000	48,000
13,500	16,000	167,000	115,000	48,000
14,000	16,000	167,000	115,000	48,000
15,000	20,000	186,000	132,000	50,000
16,000	20,000	186,000	132,000	50,000
16,500	20,000	202,000	148,000	50,000
17,000	20,000	202,000	148,000	50,000
17,500	20,000	202,000	148,000	50,000

d1 mm	d2 h6 mm	l1 mm	l2 mm	l3 mm
18,000	20,000	202,000	148,000	50,000
19,000	25,000	224,000	164,000	56,000
20,000	25,000	224,000	164,000	56,000
22,000	25,000	241,000	181,000	56,000

HARTNER

带内冷TS钻头

产品代号 89427

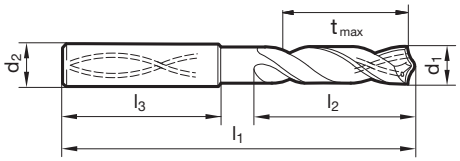


P	M	K	N	S	H
●				●	○

VHM | TS 100 H | 7xD | WN | 140° | m7 | R | HA

芯厚 ⩾ Ø 3,000 • 圆弧后刀面 • 主切削刃轻微内凹 • 优化了的切削几何参数
强度小于1200 N/mm²的合金和高强度钢 • 镍合金，哈氏合金，锰合金 • 钛及钛合金

$t_{max} = l_2 - 1{,}5 \times d_1$



d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
3,000		6,000	70,000	30,000	36,000
3,250		6,000	70,000	30,000	36,000
3,300		6,000	70,000	30,000	36,000
3,400		6,000	75,000	35,500	36,000
3,500		6,000	75,000	35,500	36,000
3,700		6,000	75,000	35,500	36,000
4,000		6,000	75,000	37,500	36,000
4,200		6,000	75,000	37,500	36,000
4,300		6,000	85,000	45,000	36,000
4,500		6,000	85,000	45,000	36,000
4,650		6,000	85,000	45,000	36,000
5,000		6,000	90,000	50,000	36,000
5,100		6,000	90,000	50,000	36,000
5,200		6,000	90,000	50,000	36,000
5,500		6,000	97,000	57,000	36,000
5,550		6,000	97,000	57,000	36,000
6,000		6,000	97,000	57,000	36,000
6,500		8,000	106,000	66,000	36,000
6,750	17/64	8,000	106,000	66,000	36,000
6,800		8,000	106,000	66,000	36,000
6,900		8,000	116,000	76,000	36,000
7,000		8,000	116,000	76,000	36,000
7,400		8,000	116,000	76,000	36,000
7,500		8,000	116,000	76,000	36,000
7,800		8,000	116,000	76,000	36,000
8,000		8,000	116,000	76,000	36,000
8,500		10,000	131,000	87,000	40,000
8,600		10,000	131,000	87,000	40,000
8,800		10,000	131,000	87,000	40,000
9,000		10,000	131,000	87,000	40,000

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
9,250		10,000	139,000	95,000	40,000
9,400		10,000	139,000	95,000	40,000
9,500		10,000	139,000	95,000	40,000
10,000		10,000	139,000	95,000	40,000
10,200		12,000	155,000	106,000	45,000
10,400		12,000	155,000	106,000	45,000
10,500		12,000	155,000	106,000	45,000
10,800		12,000	155,000	106,000	45,000
11,000		12,000	155,000	106,000	45,000
11,300		12,000	163,000	114,000	45,000
11,400		12,000	163,000	114,000	45,000
11,500		12,000	163,000	114,000	45,000
12,000		12,000	163,000	114,000	45,000
12,500		14,000	182,000	133,000	45,000
13,000		14,000	182,000	133,000	45,000
13,100	33/64	14,000	182,000	133,000	45,000
13,500		14,000	182,000	133,000	45,000
14,000		14,000	182,000	133,000	45,000
14,500		16,000	204,000	152,000	48,000
15,000		16,000	204,000	152,000	48,000
15,100		16,000	204,000	152,000	48,000
15,500		16,000	204,000	152,000	48,000
16,000		16,000	204,000	152,000	48,000

带内冷TS钻头

产品代号 89421

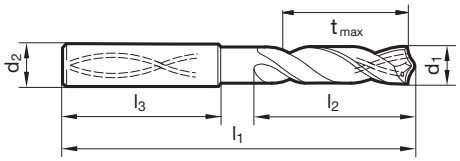


P	M	K	N	S	H
		•			

VHM | F | TS 100 R | 7xD | WN | m7 | R | HA

芯厚 ≥ Ø 4,000 • 专利弧形钻尖 • 直型切削刃（通过刃修正）
蠕墨铸铁GGV 和 ADI、CDI • 灰铸铁,可锻铸铁和球墨铸铁

$t_{max} = l_2\text{-}1{,}5 \times d_1$



d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
4,000		6,000	75,000	37,500	36,000
4,100		6,000	75,000	37,500	36,000
4,200		6,000	75,000	37,500	36,000
4,300		6,000	85,000	45,000	36,000
4,370	11/64	6,000	85,000	45,000	36,000
4,400		6,000	85,000	45,000	36,000
4,500		6,000	85,000	45,000	36,000
4,600		6,000	85,000	45,000	36,000
4,650		6,000	85,000	45,000	36,000
4,700		6,000	85,000	45,000	36,000
4,760	3/16	6,000	90,000	50,000	36,000
4,800		6,000	90,000	50,000	36,000
4,900		6,000	90,000	50,000	36,000
5,000		6,000	90,000	50,000	36,000
5,100		6,000	90,000	50,000	36,000
5,160	13/64	6,000	90,000	50,000	36,000
5,200		6,000	90,000	50,000	36,000
5,300		6,000	90,000	50,000	36,000
5,400		6,000	97,000	57,000	36,000
5,500		6,000	97,000	57,000	36,000
5,550		6,000	97,000	57,000	36,000
5,560	7/32	6,000	97,000	57,000	36,000
5,600		6,000	97,000	57,000	36,000
5,700		6,000	97,000	57,000	36,000
5,800		6,000	97,000	57,000	36,000
5,900		6,000	97,000	57,000	36,000
5,950	15/64	6,000	97,000	57,000	36,000
6,000		6,000	97,000	57,000	36,000
6,100		8,000	106,000	66,000	36,000
6,200		8,000	106,000	66,000	36,000
6,300		8,000	106,000	66,000	36,000
6,350	1/4	8,000	106,000	66,000	36,000
6,400		8,000	106,000	66,000	36,000
6,500		8,000	106,000	66,000	36,000
6,600		8,000	106,000	66,000	36,000
6,700		8,000	106,000	66,000	36,000
6,750	17/64	8,000	106,000	66,000	36,000
6,800		8,000	106,000	66,000	36,000
6,900		8,000	116,000	76,000	36,000
7,000		8,000	116,000	76,000	36,000
7,100		8,000	116,000	76,000	36,000
7,140	9/32	8,000	116,000	76,000	36,000
7,200		8,000	116,000	76,000	36,000
7,300		8,000	116,000	76,000	36,000
7,400		8,000	116,000	76,000	36,000
7,500		8,000	116,000	76,000	36,000
7,540	19/64	8,000	116,000	76,000	36,000
7,600		8,000	116,000	76,000	36,000
7,700		8,000	116,000	76,000	36,000
7,800		8,000	116,000	76,000	36,000
7,900		8,000	116,000	76,000	36,000
7,940	5/16	8,000	116,000	76,000	36,000
8,000		8,000	116,000	76,000	36,000
8,100		10,000	131,000	87,000	40,000
8,200		10,000	131,000	87,000	40,000
8,300		10,000	131,000	87,000	40,000
8,330	21/64	10,000	131,000	87,000	40,000
8,400		10,000	131,000	87,000	40,000
8,500		10,000	131,000	87,000	40,000
8,600		10,000	131,000	87,000	40,000
8,700		10,000	131,000	87,000	40,000
8,730	11/32	10,000	131,000	87,000	40,000
8,800		10,000	131,000	87,000	40,000
8,900		10,000	131,000	87,000	40,000
9,000		10,000	131,000	87,000	40,000
9,100		10,000	139,000	95,000	40,000
9,130	23/64	10,000	139,000	95,000	40,000
9,200		10,000	139,000	95,000	40,000
9,250		10,000	139,000	95,000	40,000
9,300		10,000	139,000	95,000	40,000
9,400		10,000	139,000	95,000	40,000
9,500		10,000	139,000	95,000	40,000
9,520	3/8	10,000	139,000	95,000	40,000
9,600		10,000	139,000	95,000	40,000
9,700		10,000	139,000	95,000	40,000
9,800		10,000	139,000	95,000	40,000
9,900		10,000	139,000	95,000	40,000
9,920	25/64	10,000	139,000	95,000	40,000
10,000		10,000	139,000	95,000	40,000
10,100		12,000	155,000	106,000	45,000
10,200		12,000	155,000	106,000	45,000
10,300		12,000	155,000	106,000	45,000
10,320	13/32	12,000	155,000	106,000	45,000
10,400		12,000	155,000	106,000	45,000

带内冷TS钻头

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
10,500		12,000	155,000	106,000	45,000
10,600		12,000	155,000	106,000	45,000
10,700		12,000	155,000	106,000	45,000
10,720	27/64	12,000	155,000	106,000	45,000
10,800		12,000	155,000	106,000	45,000
10,900		12,000	155,000	106,000	45,000
11,000		12,000	155,000	106,000	45,000
11,100		12,000	163,000	114,000	45,000
11,110	7/16	12,000	163,000	114,000	45,000
11,200		12,000	163,000	114,000	45,000
11,300		12,000	163,000	114,000	45,000
11,400		12,000	163,000	114,000	45,000
11,500		12,000	163,000	114,000	45,000
11,600		12,000	163,000	114,000	45,000
11,700		12,000	163,000	114,000	45,000
11,800		12,000	163,000	114,000	45,000
11,900		12,000	163,000	114,000	45,000
11,910	15/32	12,000	163,000	114,000	45,000
12,000		12,000	163,000	114,000	45,000
12,100		14,000	182,000	133,000	45,000
12,200		14,000	182,000	133,000	45,000
12,300	31/64	14,000	182,000	133,000	45,000
12,400		14,000	182,000	133,000	45,000
12,500		14,000	182,000	133,000	45,000
12,600		14,000	182,000	133,000	45,000
12,700	1/2	14,000	182,000	133,000	45,000
12,800		14,000	182,000	133,000	45,000
12,900		14,000	182,000	133,000	45,000
13,000		14,000	182,000	133,000	45,000
13,100	33/64	14,000	182,000	133,000	45,000
13,300		14,000	182,000	133,000	45,000
13,400		14,000	182,000	133,000	45,000
13,500		14,000	182,000	133,000	45,000
13,700		14,000	182,000	133,000	45,000
13,800		14,000	182,000	133,000	45,000
13,900		14,000	182,000	133,000	45,000

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
14,000		14,000	182,000	133,000	45,000
14,100		16,000	204,000	152,000	48,000
14,200		16,000	204,000	152,000	48,000
14,290	9/16	16,000	204,000	152,000	48,000
14,300		16,000	204,000	152,000	48,000
14,400		16,000	204,000	152,000	48,000
14,500		16,000	204,000	152,000	48,000
14,600		16,000	204,000	152,000	48,000
14,700		16,000	204,000	152,000	48,000
14,900		16,000	204,000	152,000	48,000
15,000		16,000	204,000	152,000	48,000
15,100		16,000	204,000	152,000	48,000
15,200		16,000	204,000	152,000	48,000
15,300		16,000	204,000	152,000	48,000
15,400		16,000	204,000	152,000	48,000
15,500		16,000	204,000	152,000	48,000
15,600		16,000	204,000	152,000	48,000
15,700		16,000	204,000	152,000	48,000
15,800		16,000	204,000	152,000	48,000
15,870	5/8	16,000	204,000	152,000	48,000
15,900		16,000	204,000	152,000	48,000
16,000		16,000	204,000	152,000	48,000
16,500		18,000	223,000	171,000	48,000
16,670	21/32	18,000	223,000	171,000	48,000
17,000		18,000	223,000	171,000	48,000
17,500		18,000	223,000	171,000	48,000
18,000		18,000	223,000	171,000	48,000
18,500		20,000	244,000	190,000	50,000
19,000		20,000	244,000	190,000	50,000
19,500		20,000	244,000	190,000	50,000
20,000		20,000	244,000	190,000	50,000

HARTNER

带内冷TS钻头

产品代号 89294

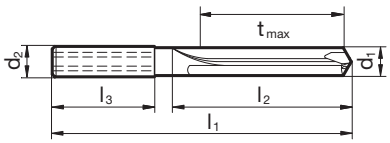


P	M	K	N	S	H
		○	●		

VHM | TS 150 GG | 7xD | WN | 120° | m7 | R | HA

芯厚 ⩾ Ø 3,000 • 圆弧后刀面 • 紧直径公差 • 很好的孔表面质量 • 注意最佳冷却压力
铝和的铝合金 • 铝材料含硅量高

$t_{max} = l_2\text{-}1{,}5 \times d_1$



d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
3,000		6,000	74,000	32,000	36,000
3,100		6,000	74,000	32,000	36,000
3,200		6,000	74,000	32,000	36,000
3,300		6,000	74,000	32,000	36,000
3,400		6,000	74,000	34,000	36,000
3,500		6,000	74,000	34,000	36,000
3,600		6,000	74,000	34,000	36,000
3,700		6,000	74,000	34,000	36,000
3,800		6,000	97,000	45,000	36,000
3,900		6,000	97,000	45,000	36,000
4,000		6,000	97,000	45,000	36,000
4,100		6,000	97,000	45,000	36,000
4,200		6,000	97,000	45,000	36,000
4,300		6,000	97,000	45,000	36,000
4,400		6,000	97,000	45,000	36,000
4,500		6,000	97,000	45,000	36,000
4,700		6,000	97,000	45,000	36,000
4,800		6,000	97,000	57,000	36,000
4,900		6,000	97,000	57,000	36,000
5,000		6,000	97,000	57,000	36,000
5,500		6,000	97,000	57,000	36,000
6,000		6,000	97,000	57,000	36,000
6,500		8,000	116,000	76,000	36,000
6,800		8,000	116,000	76,000	36,000
7,000		8,000	116,000	76,000	36,000
7,500		8,000	116,000	76,000	36,000
7,800		8,000	116,000	76,000	36,000
8,000		8,000	116,000	76,000	36,000
8,500		10,000	139,000	95,000	40,000
9,000		10,000	139,000	95,000	40,000

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
9,500		10,000	139,000	95,000	40,000
10,000		10,000	139,000	95,000	40,000
10,200		12,000	163,000	114,000	45,000
10,500		12,000	163,000	114,000	45,000
11,000		12,000	163,000	114,000	45,000
11,500		12,000	163,000	114,000	45,000
12,000		12,000	163,000	114,000	45,000
12,300	31/64	14,000	182,000	133,000	45,000
12,500		14,000	182,000	133,000	45,000
12,700	1/2	14,000	182,000	133,000	45,000
13,000		14,000	182,000	133,000	45,000
13,500		14,000	182,000	133,000	45,000
14,000		14,000	182,000	133,000	45,000
14,500		16,000	204,000	152,000	48,000
15,000		16,000	204,000	152,000	48,000
15,500		16,000	204,000	152,000	48,000
16,000		16,000	204,000	152,000	48,000
16,500		18,000	223,000	171,000	48,000
17,000		18,000	223,000	171,000	48,000
17,500		18,000	223,000	171,000	48,000
18,000		18,000	223,000	171,000	48,000
18,500		20,000	244,000	190,000	50,000
19,000		20,000	244,000	190,000	50,000
19,500		20,000	244,000	190,000	50,000
20,000		20,000	244,000	190,000	50,000

带内冷TS钻头

产品代号 89293



P	M	K	N	S	H
		○	●		

VHM | TS 150 GG | 10xD | WN | 120° | m7 | R | HA

芯厚 ⩾ Ø 3,000 • 圆弧后刀面 • 紧直径公差 • 很好的孔表面质量 • 注意最佳冷却压力
铝和的铝合金 • 铝材料含硅量高

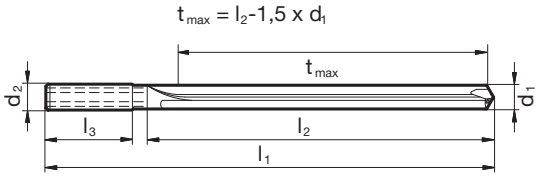
产品代号 89295



P	M	K	N	S	H
		●	○		

VHM | TS 150 GG | 10xD | WN | 130° | m7 | R | HA

芯厚 ⩾ Ø 3,000 • 双后刀面 • 紧直径公差 • 很好的孔表面质量 • 注意最佳冷却压力
灰铸铁,可锻铸铁和球墨铸铁



d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
3,000		6,000	91,000	42,000	36,000
3,100		6,000	91,000	42,000	36,000
3,170	1/8	6,000	91,000	42,000	36,000
3,250		6,000	91,000	42,000	36,000
3,300		6,000	91,000	42,000	36,000
3,500		6,000	91,000	48,000	36,000
3,570	9/64	6,000	91,000	48,000	36,000
3,600		6,000	91,000	48,000	36,000
3,700		6,000	91,000	48,000	36,000
3,800		6,000	121,000	77,000	36,000
3,900		6,000	121,000	77,000	36,000
3,970	5/32	6,000	121,000	77,000	36,000
4,000		6,000	121,000	77,000	36,000
4,200		6,000	121,000	77,000	36,000
4,400		6,000	121,000	77,000	36,000
4,500		6,000	121,000	77,000	36,000
4,700		6,000	121,000	77,000	36,000
4,800		6,000	121,000	82,000	36,000
4,900		6,000	121,000	82,000	36,000
5,000		6,000	121,000	82,000	36,000
5,500		6,000	121,000	82,000	36,000
6,000		6,000	121,000	82,000	36,000
6,350	1/4	8,000	146,000	106,000	36,000
6,500		8,000	146,000	106,000	36,000
6,800		8,000	146,000	106,000	36,000
7,000		8,000	146,000	106,000	36,000
7,140	9/32	8,000	146,000	106,000	36,000
7,500		8,000	146,000	106,000	36,000
7,800		8,000	146,000	106,000	36,000
7,940	5/16	8,000	146,000	106,000	36,000

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
8,000		8,000	146,000	106,000	36,000
8,330	21/64	10,000	175,000	130,000	40,000
8,500		10,000	175,000	130,000	40,000
8,730	11/32	10,000	175,000	130,000	40,000
9,000		10,000	175,000	130,000	40,000
9,130	23/64	10,000	175,000	130,000	40,000
9,500		10,000	175,000	130,000	40,000
9,520	3/8	10,000	175,000	130,000	40,000
10,000		10,000	175,000	130,000	40,000
10,200		12,000	209,000	159,000	45,000
10,320	13/32	12,000	209,000	159,000	45,000
10,500		12,000	209,000	159,000	45,000
10,720	27/64	12,000	209,000	159,000	45,000
11,000		12,000	209,000	159,000	45,000
11,110	7/16	12,000	209,000	159,000	45,000
11,500		12,000	209,000	159,000	45,000
11,510	29/64	12,000	209,000	159,000	45,000
12,000		12,000	209,000	159,000	45,000
12,300	31/64	14,000	233,000	183,000	45,000
12,500		14,000	233,000	183,000	45,000
12,700	1/2	14,000	233,000	183,000	45,000
13,000		14,000	233,000	183,000	45,000
13,500		14,000	233,000	183,000	45,000
14,000		14,000	233,000	183,000	45,000
14,500		16,000	260,000	207,000	48,000
15,000		16,000	260,000	207,000	48,000
15,500		16,000	260,000	207,000	48,000
16,000		16,000	260,000	207,000	48,000
17,500		18,000	284,000	231,000	48,000
18,000		18,000	284,000	231,000	48,000

带内冷TS钻头

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
18,500		20,000	308,000	255,000	50,000
19,500		20,000	308,000	255,000	50,000
20,000		20,000	308,000	255,000	50,000

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm

HARTNER

带内冷TS钻头

产品代号 89418

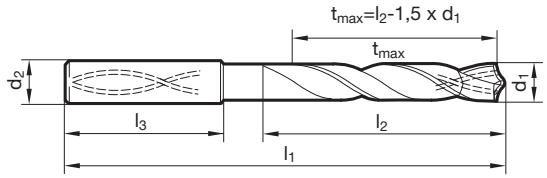


P	M	K	N	S	H
●	○	●	○	○	○

VHM | F | TS 100 U | 12xD | WN | 135° | h7 | R | HA

芯厚 ⩾ Ø 3,000 • 双后刀面 • 刀尖涂层 • 精密磨削过的主切削刃 • 优化了的切削几何参数

适合加工：结构钢和淬硬钢 • 易切削钢和热处理钢 • 钢（合金/非合金），强度小于 1200N/mm² • 铸件材料 • 青铜、黄铜 • 高硅铝合金



d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
3,000		6,000	90,000	50,000	36,000
3,100		6,000	90,000	50,000	36,000
3,170	1/8	6,000	90,000	50,000	36,000
3,200		6,000	90,000	50,000	36,000
3,300		6,000	90,000	50,000	36,000
3,400		6,000	90,000	50,000	36,000
3,500		6,000	90,000	50,000	36,000
3,600		6,000	90,000	50,000	36,000
3,700		6,000	90,000	50,000	36,000
3,800		6,000	102,000	64,000	36,000
3,900		6,000	102,000	64,000	36,000
4,000		6,000	102,000	64,000	36,000
4,100		6,000	102,000	64,000	36,000
4,200		6,000	102,000	64,000	36,000
4,300		6,000	102,000	64,000	36,000
4,400		6,000	102,000	64,000	36,000
4,500		6,000	102,000	64,000	36,000
4,600		6,000	102,000	64,000	36,000
4,700		6,000	102,000	64,000	36,000
4,800		6,000	116,000	78,000	36,000
4,900		6,000	116,000	78,000	36,000
5,000		6,000	116,000	78,000	36,000
5,100		6,000	116,000	78,000	36,000
5,200		6,000	116,000	78,000	36,000
5,300		6,000	116,000	78,000	36,000
5,400		6,000	116,000	78,000	36,000
5,500		6,000	116,000	78,000	36,000
5,600		6,000	116,000	78,000	36,000
5,700		6,000	116,000	78,000	36,000
5,800		6,000	116,000	78,000	36,000
5,900		6,000	116,000	78,000	36,000
6,000		6,000	116,000	78,000	36,000
6,100		8,000	146,000	108,000	36,000
6,200		8,000	146,000	108,000	36,000
6,300		8,000	146,000	108,000	36,000
6,350	1/4	8,000	146,000	108,000	36,000
6,400		8,000	146,000	108,000	36,000
6,500		8,000	146,000	108,000	36,000
6,600		8,000	146,000	108,000	36,000
6,700		8,000	146,000	108,000	36,000
6,800		8,000	146,000	108,000	36,000
6,900		8,000	146,000	108,000	36,000

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
7,000		8,000	146,000	108,000	36,000
7,100		8,000	146,000	108,000	36,000
7,200		8,000	146,000	108,000	36,000
7,300		8,000	146,000	108,000	36,000
7,400		8,000	146,000	108,000	36,000
7,500		8,000	146,000	108,000	36,000
7,600		8,000	146,000	108,000	36,000
7,700		8,000	146,000	108,000	36,000
7,800		8,000	146,000	108,000	36,000
7,900		8,000	146,000	108,000	36,000
8,000		8,000	146,000	108,000	36,000
8,100		10,000	162,000	120,000	40,000
8,200		10,000	162,000	120,000	40,000
8,300		10,000	162,000	120,000	40,000
8,400		10,000	162,000	120,000	40,000
8,500		10,000	162,000	120,000	40,000
8,600		10,000	162,000	120,000	40,000
8,700		10,000	162,000	120,000	40,000
8,800		10,000	162,000	120,000	40,000
8,900		10,000	162,000	120,000	40,000
9,000		10,000	162,000	120,000	40,000
9,100		10,000	162,000	120,000	40,000
9,200		10,000	162,000	120,000	40,000
9,300		10,000	162,000	120,000	40,000
9,400		10,000	162,000	120,000	40,000
9,500		10,000	162,000	120,000	40,000
9,520	3/8	10,000	162,000	120,000	40,000
9,600		10,000	162,000	120,000	40,000
9,700		10,000	162,000	120,000	40,000
9,800		10,000	162,000	120,000	40,000
9,900		10,000	162,000	120,000	40,000
10,000		10,000	162,000	120,000	40,000
10,200		12,000	204,000	156,000	45,000
10,500		12,000	204,000	156,000	45,000
11,000		12,000	204,000	156,000	45,000
11,500		12,000	204,000	156,000	45,000
12,000		12,000	204,000	156,000	45,000
12,500		14,000	230,000	182,000	45,000
12,700	1/2	14,000	230,000	182,000	45,000
13,000		14,000	230,000	182,000	45,000
13,500		14,000	230,000	182,000	45,000
14,000		14,000	230,000	182,000	45,000

带内冷TS钻头

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
14,500		16,000	260,000	208,000	48,000
15,000		16,000	260,000	208,000	48,000
15,500		16,000	260,000	208,000	48,000
16,000		16,000	260,000	208,000	48,000
16,500		18,000	285,000	234,000	48,000
17,000		18,000	285,000	234,000	48,000
17,500		18,000	285,000	234,000	48,000
18,000		18,000	285,000	234,000	48,000
18,500		20,000	310,000	258,000	50,000
19,000		20,000	310,000	258,000	50,000
19,050	3/4	20,000	310,000	258,000	50,000
19,500		20,000	310,000	258,000	50,000

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
20,000		20,000	310,000	258,000	50,000

HARTNER

带内冷TS钻头

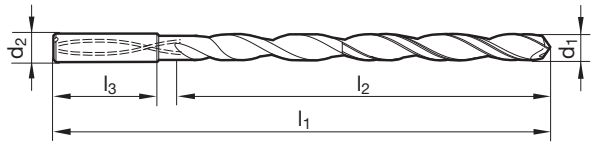
产品代号 86509



P	M	K	N	S	H
●	●	●	○	○	○

VHM | A | TS 100 T | 15xD | WN | 135° | h7 | R | HA

芯厚 ⩾ Ø 3,000 • 圆弧后刀面 • 刀尖涂层 • 凹形主切屑刃形状 • 优化槽型设计 • 最大冷却孔直径 • 注意冷却压力
适合加工：结构钢和淬硬钢 • 易切削钢和热处理钢 • 强度小于1200N/mm²的合金钢 • 不锈钢 • 铸件材料



d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
3,000		6,000	95,000	55,000	36,000
3,170	1/8	6,000	106,000	67,000	36,000
3,500		6,000	116,000	76,000	36,000
3,570	9/64	6,000	116,000	76,000	36,000
3,970	5/32	6,000	116,000	76,000	36,000
4,000		6,000	116,000	76,000	36,000
4,370	11/64	6,000	133,000	93,000	36,000
4,500		6,000	133,000	93,000	36,000
4,760	3/16	6,000	133,000	93,000	36,000
5,000		6,000	133,000	93,000	36,000
5,100		6,000	150,000	110,000	36,000
5,160	13/64	6,000	150,000	110,000	36,000
5,410		6,000	150,000	110,000	36,000
5,500		6,000	150,000	110,000	36,000
5,560	7/32	6,000	150,000	110,000	36,000
5,950	15/64	6,000	150,000	110,000	36,000
6,000		6,000	150,000	110,000	36,000
6,350	1/4	8,000	167,000	127,000	36,000
6,500		8,000	167,000	127,000	36,000
6,750	17/64	8,000	167,000	127,000	36,000
7,000		8,000	167,000	127,000	36,000
7,140	9/32	8,000	183,000	143,000	36,000
7,500		8,000	183,000	143,000	36,000
7,540	19/64	8,000	183,000	143,000	36,000

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
7,940	5/16	8,000	183,000	143,000	36,000
8,000		8,000	183,000	143,000	36,000
8,330	21/64	10,000	204,000	160,000	40,000
8,500		10,000	204,000	160,000	40,000
9,000		10,000	204,000	160,000	40,000
9,130	23/64	10,000	221,000	177,000	40,000
9,520	3/8	10,000	221,000	177,000	40,000
9,920	25/64	10,000	221,000	177,000	40,000
10,000		10,000	221,000	177,000	40,000
10,320	13/32	12,000	247,000	198,000	45,000
10,720	27/64	12,000	247,000	198,000	45,000
11,000		12,000	247,000	198,000	45,000
11,110	7/16	12,000	263,000	214,000	45,000
11,510	29/64	12,000	263,000	214,000	45,000
11,910	15/32	12,000	263,000	214,000	45,000
12,000		12,000	263,000	214,000	45,000
12,300	31/64	14,000	297,000	248,000	45,000
12,700	1/2	14,000	297,000	248,000	45,000
13,100	33/64	14,000	297,000	248,000	45,000
13,490	17/32	14,000	297,000	248,000	45,000
13,890	35/64	14,000	297,000	248,000	45,000
14,000		14,000	297,000	248,000	45,000

HARTNER

带内冷TS钻头

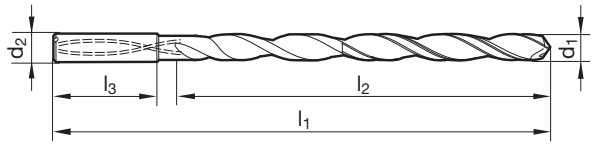
产品代号 86511



P	M	K	N	S	H
●	●	●	○	○	○

VHM | A | TS 100 T | 20xD | WN | 135° | h7 | R | HA

芯厚 ⩾ Ø 3,000 • 圆弧后刀面 • 刀尖涂层 • 凹形主切屑刃形状 • 优化槽型设计 • 最大冷却孔直径 • 注意冷却压力
适合加工：结构钢和淬硬钢 • 易切削钢和热处理钢 • 强度小于1200N/mm²的合金钢 • 不锈钢 • 铸件材料



d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
3,000		6,000	110,000	70,000	36,000
3,170	1/8	6,000	123,000	83,000	36,000
3,500		6,000	136,000	96,000	36,000
3,970	5/32	6,000	136,000	96,000	36,000
4,000		6,000	136,000	96,000	36,000
4,500		6,000	158,000	118,000	36,000
4,760	3/16	6,000	158,000	118,000	36,000
5,000		6,000	158,000	118,000	36,000
5,500		6,000	180,000	140,000	36,000
5,560	7/32	6,000	180,000	140,000	36,000
6,000		6,000	180,000	140,000	36,000
6,350	1/4	8,000	202,000	162,000	36,000
6,500		8,000	202,000	162,000	36,000
7,000		8,000	202,000	162,000	36,000
7,140	9/32	8,000	223,000	183,000	36,000
7,500		8,000	223,000	183,000	36,000
8,000		8,000	223,000	183,000	36,000
8,500		10,000	249,000	205,000	40,000

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
9,000		10,000	249,000	205,000	40,000
9,920	25/64	10,000	271,000	227,000	40,000
10,000		10,000	271,000	227,000	40,000
11,000		12,000	302,000	253,000	45,000
12,000		12,000	323,000	274,000	45,000
12,300	31/64	14,000	367,000	318,000	45,000
13,100	33/64	14,000	367,000	318,000	45,000
13,490	17/32	14,000	367,000	318,000	45,000
13,890	35/64	14,000	367,000	318,000	45,000
14,000		14,000	367,000	318,000	45,000

HARTNER

带内冷TS钻头

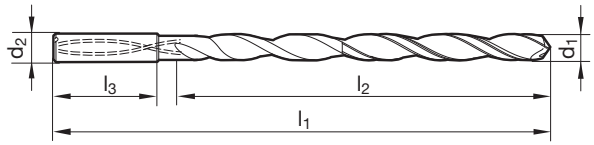
产品代号 86512



P	M	K	N	S	H
●	●	●	○	○	○

VHM | A | TS 100 T | 25xD | WN | 135° | h7 | R | HA

芯厚 ⩾ Ø 3,000 • 圆弧后刀面 • 刀尖涂层 • 凹形主切屑刃形状 • 优化槽型设计 • 最大冷却孔直径 • 注意冷却压力
适合加工：结构钢和淬硬钢 • 易切削钢和热处理钢 • 强度小于1200N/mm²的合金钢 • 不锈钢 • 铸件材料



d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
3,000		6,000	125,000	85,000	36,000
3,100		6,000	141,000	101,000	36,000
3,170	1/8	6,000	141,000	101,000	36,000
3,500		6,000	156,000	116,000	36,000
3,800		6,000	156,000	116,000	36,000
3,970	5/32	6,000	156,000	116,000	36,000
4,000		6,000	156,000	116,000	36,000
4,200		6,000	183,000	143,000	36,000
4,500		6,000	183,000	143,000	36,000
4,760	3/16	6,000	183,000	143,000	36,000
5,000		6,000	183,000	143,000	36,000
5,500		6,000	210,000	170,000	36,000
5,560	7/32	6,000	210,000	170,000	36,000
6,000		6,000	210,000	170,000	36,000
6,300		8,000	237,000	197,000	36,000
6,350	1/4	8,000	237,000	197,000	36,000
6,500		8,000	237,000	197,000	36,000
7,000		8,000	237,000	197,000	36,000

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
7,140	9/32	8,000	263,000	223,000	36,000
7,500		8,000	263,000	223,000	36,000
8,000		8,000	263,000	223,000	36,000
8,500		10,000	294,000	250,000	40,000
8,800		10,000	294,000	250,000	40,000
9,000		10,000	294,000	250,000	40,000
9,920	25/64	10,000	321,000	277,000	40,000
10,000		10,000	321,000	277,000	40,000
10,320	13/32	12,000	359,000	310,000	45,000
11,000		12,000	359,000	310,000	45,000
11,510	29/64	12,000	386,000	337,000	45,000
11,910	15/32	12,000	386,000	337,000	45,000
12,000		12,000	386,000	337,000	45,000

HARTNER

带内冷TS钻头

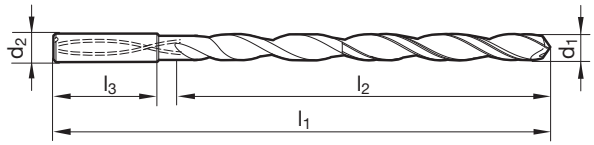
产品代号 86513



P	M	K	N	S	H
●	●	●	○	○	○

VHM | A | TS 100 T | 30xD | WN | 135° | h7 | R | HA

芯厚 ⩾ Ø 3,000 • 圆弧后刀面 • 刀尖涂层 • 凹形主切屑刃形状 • 优化槽型设计 • 最大冷却孔直径 • 注意冷却压力
适合加工：结构钢和淬硬钢 • 易切削钢和热处理钢 • 强度小于1200N/mm²的合金钢 • 不锈钢 • 铸件材料



d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
3,000		6,000	140,000	100,000	36,000
3,100		6,000	158,000	118,000	36,000
3,170	1/8	6,000	158,000	118,000	36,000
3,500		6,000	176,000	136,000	36,000
3,800		6,000	176,000	136,000	36,000
3,970	5/32	6,000	176,000	136,000	36,000
4,000		6,000	176,000	136,000	36,000
4,200		6,000	208,000	168,000	36,000
4,500		6,000	208,000	168,000	36,000
4,760	3/16	6,000	208,000	168,000	36,000
5,000		6,000	208,000	168,000	36,000
5,500		6,000	240,000	200,000	36,000
5,560	7/32	6,000	240,000	200,000	36,000
6,000		6,000	240,000	200,000	36,000
6,300		8,000	272,000	232,000	36,000
6,350	1/4	8,000	272,000	232,000	36,000
6,500		8,000	272,000	232,000	36,000
7,000		8,000	272,000	232,000	36,000

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
7,140	9/32	8,000	303,000	263,000	36,000
7,500		8,000	303,000	263,000	36,000
8,000		8,000	303,000	263,000	36,000
8,500		10,000	339,000	295,000	40,000
8,800		10,000	339,000	295,000	40,000
9,000		10,000	339,000	295,000	40,000
9,920	25/64	10,000	371,000	327,000	40,000
10,000		10,000	371,000	327,000	40,000

HARTNER

带内冷TS钻头

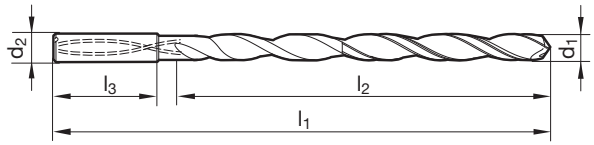
产品代号 86514



P	M	K	N	S	H
●	●	●	○	○	○

VHM | A | TS 100 T | 40xD | WN | 135° | h7 | R | HA

芯厚 ⩾ Ø 3,000 • 圆弧后刀面 • 刀尖涂层 • 凹形主切屑刃形状 • 优化槽型设计 • 最大冷却孔直径 • 注意冷却压力
适合加工：结构钢和淬硬钢 • 易切削钢和热处理钢 • 强度小于1200N/mm²的合金钢 • 不锈钢 • 铸件材料



d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
3,000		6,000	170,000	130,000	36,000
3,100		6,000	193,000	153,000	36,000
3,170	1/8	6,000	193,000	153,000	36,000
3,500		6,000	193,000	153,000	36,000
3,570	9/64	6,000	216,000	176,000	36,000
3,800		6,000	216,000	176,000	36,000
3,970	5/32	6,000	216,000	176,000	36,000
4,000		6,000	216,000	176,000	36,000
4,200		6,000	238,000	198,000	36,000
4,370	11/64	6,000	238,000	198,000	36,000
4,500		6,000	238,000	198,000	36,000
4,760	3/16	6,000	258,000	218,000	36,000
5,000		6,000	258,000	218,000	36,000
5,100		6,000	280,000	240,000	36,000
5,160	13/64	6,000	280,000	240,000	36,000
5,410		6,000	280,000	240,000	36,000
5,500		6,000	280,000	240,000	36,000
5,560	7/32	6,000	300,000	260,000	36,000

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
5,950	15/64	6,000	300,000	260,000	36,000
6,000		6,000	300,000	260,000	36,000
6,300		8,000	322,000	282,000	36,000
6,350	1/4	8,000	322,000	282,000	36,000
6,500		8,000	322,000	282,000	36,000
6,750	17/64	8,000	342,000	302,000	36,000
7,000		8,000	342,000	302,000	36,000
7,140	9/32	8,000	363,000	323,000	36,000
7,500		8,000	363,000	323,000	36,000
7,540	19/64	8,000	383,000	343,000	36,000
7,940	5/16	8,000	383,000	343,000	36,000
8,000		8,000	383,000	343,000	36,000

3刃TS钻

产品代号 89247



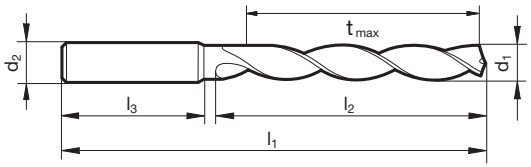
P	M	K	N	S	H
		•	•		

VHM | TS 3 G | 5xD | DIN 6537 L | 130° | m7 | R | HA

芯厚 ⩾ Ø 3,000 • 波楞刀尖 • 宽槽 • 最佳定心 • 适用于断续切削

铸铁 • 长屑铝合金 • 黄铜，青铜

$t_{max} = l_2 - 1{,}5 \times d_1$



d1 mm	d2 mm	l1 mm	l2 mm	l3 mm
3,000	6,000	66,000	28,000	36,000
3,100	6,000	66,000	28,000	36,000
3,200	6,000	66,000	28,000	36,000
3,300	6,000	66,000	28,000	36,000
3,500	6,000	66,000	28,000	36,000
3,700	6,000	66,000	28,000	36,000
3,800	6,000	74,000	36,000	36,000
4,000	6,000	74,000	36,000	36,000
4,100	6,000	74,000	36,000	36,000
4,200	6,000	74,000	36,000	36,000
4,500	6,000	74,000	36,000	36,000
4,800	6,000	82,000	44,000	36,000
5,000	6,000	82,000	44,000	36,000
5,100	6,000	82,000	44,000	36,000
5,200	6,000	82,000	44,000	36,000
5,300	6,000	82,000	44,000	36,000
5,500	6,000	82,000	44,000	36,000
5,800	6,000	82,000	44,000	36,000
6,000	6,000	82,000	44,000	36,000
6,100	8,000	91,000	53,000	36,000
6,200	8,000	91,000	53,000	36,000
6,400	8,000	91,000	53,000	36,000
6,500	8,000	91,000	53,000	36,000
6,700	8,000	91,000	53,000	36,000
6,800	8,000	91,000	53,000	36,000
7,000	8,000	91,000	53,000	36,000
7,100	8,000	91,000	53,000	36,000
7,400	8,000	91,000	53,000	36,000
7,500	8,000	91,000	53,000	36,000
7,800	8,000	91,000	53,000	36,000
8,000	8,000	91,000	53,000	36,000
8,100	10,000	103,000	61,000	40,000
8,200	10,000	103,000	61,000	40,000
8,400	10,000	103,000	61,000	40,000
8,500	10,000	103,000	61,000	40,000
8,600	10,000	103,000	61,000	40,000

d1 mm	d2 mm	l1 mm	l2 mm	l3 mm
8,700	10,000	103,000	61,000	40,000
8,800	10,000	103,000	61,000	40,000
9,000	10,000	103,000	61,000	40,000
9,100	10,000	103,000	61,000	40,000
9,500	10,000	103,000	61,000	40,000
9,800	10,000	103,000	61,000	40,000
10,000	10,000	103,000	61,000	40,000
10,100	12,000	118,000	71,000	45,000
10,200	12,000	118,000	71,000	45,000
10,300	12,000	118,000	71,000	45,000
10,500	12,000	118,000	71,000	45,000
11,000	12,000	118,000	71,000	45,000
11,200	12,000	118,000	71,000	45,000
11,500	12,000	118,000	71,000	45,000
11,800	12,000	118,000	71,000	45,000
12,000	12,000	118,000	71,000	45,000
12,100	14,000	124,000	77,000	45,000
12,500	14,000	124,000	77,000	45,000
13,000	14,000	124,000	77,000	45,000
13,500	14,000	124,000	77,000	45,000
14,000	14,000	124,000	77,000	45,000
14,500	16,000	133,000	83,000	48,000
15,000	16,000	133,000	83,000	48,000
15,500	16,000	133,000	83,000	48,000
16,000	16,000	133,000	83,000	48,000
16,500	18,000	143,000	93,000	48,000
17,000	18,000	143,000	93,000	48,000
17,500	18,000	143,000	93,000	48,000
18,000	18,000	143,000	93,000	48,000
18,500	20,000	153,000	101,000	50,000
19,000	20,000	153,000	101,000	50,000
19,500	20,000	153,000	101,000	50,000
20,000	20,000	153,000	101,000	50,000

HARTNER

3刃TS钻

产品代号 89239

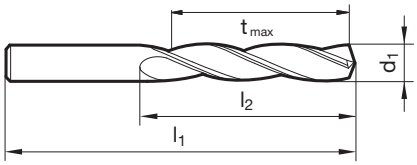


P	M	K	N	S	H
		•	•		

VHM | TS 3 G | 5xD | DIN 6539 | 150° | h7 | R | Cyl

芯厚 ⩾ Ø 3,000 • 双后刀面 • 孔精度高 • 很好的孔表面质量 • 适用于断续切削
铸件材料 • 铸铝

$t_{max} = l_2\text{-}1{,}5 \times d_1$



d1 mm	l1 mm	l2 mm	d1 mm	l1 mm	l2 mm
3,000	46,000	22,000	7,400	74,000	45,000
3,100	49,000	24,000	7,500	74,000	45,000
3,200	49,000	24,000	7,600	79,000	48,000
3,300	49,000	24,000	7,700	79,000	48,000
3,400	52,000	27,000	7,800	79,000	48,000
3,500	52,000	27,000	8,000	79,000	48,000
3,600	52,000	27,000	8,100	79,000	48,000
3,700	52,000	27,000	8,200	79,000	48,000
3,800	55,000	30,000	8,400	79,000	48,000
3,900	55,000	30,000	8,500	79,000	48,000
4,000	55,000	30,000	8,700	84,000	52,000
4,100	55,000	30,000	8,800	84,000	52,000
4,200	55,000	30,000	9,000	84,000	52,000
4,300	58,000	32,000	9,100	84,000	52,000
4,500	58,000	32,000	9,200	84,000	52,000
4,600	58,000	32,000	9,300	84,000	52,000
4,700	58,000	32,000	9,500	84,000	52,000
4,800	62,000	35,000	9,600	89,000	55,000
4,900	62,000	35,000	9,700	89,000	55,000
5,000	62,000	35,000	9,800	89,000	55,000
5,100	62,000	35,000	10,000	89,000	55,000
5,200	62,000	35,000	10,200	89,000	55,000
5,300	62,000	35,000	10,300	89,000	55,000
5,400	66,000	39,000	10,500	89,000	55,000
5,500	66,000	39,000	10,700	95,000	60,000
5,600	66,000	39,000	11,000	95,000	60,000
5,700	66,000	39,000	11,110	95,000	60,000
5,800	66,000	39,000	11,200	95,000	60,000
5,900	66,000	39,000	11,500	95,000	60,000
6,000	66,000	39,000	11,800	95,000	60,000
6,100	70,000	42,000	12,000	102,000	65,000
6,200	70,000	42,000	12,500	102,000	65,000
6,300	70,000	42,000	12,700	102,000	65,000
6,400	70,000	42,000	13,000	102,000	65,000
6,500	70,000	42,000	13,500	107,000	66,000
6,600	70,000	42,000	13,800	107,000	66,000
6,700	70,000	42,000	14,000	107,000	66,000
6,800	74,000	45,000	14,300	111,000	70,000
7,000	74,000	45,000	14,500	111,000	70,000
7,100	74,000	45,000	15,000	111,000	70,000
7,200	74,000	45,000	15,500	115,000	73,000
7,300	74,000	45,000	16,000	115,000	73,000

3刃TS钻

d1 mm	l1 mm	l2 mm	d1 mm	l1 mm	l2 mm
17,000	119,000	73,000			
18,500	127,000	76,000			
19,000	127,000	76,000			
20,000	131,000	79,000			

HARTNER

叉形去毛刺刀

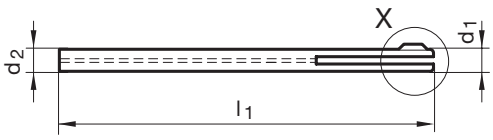
产品代号 84100

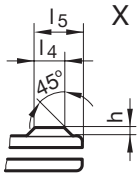


P	M	K	N	S	H
●	●	●	○	●	○

VHM | TS 100 EG | WN | R | Cyl

内冷供给 • 适用于弹簧夹套刀柄的普通锥柄
内部-外部去毛刺 • 适合在所有机床上使用，如铣床、车床等等。





Ø-范围	d1 mm	d2 mm	l1 mm	l4 mm	l5 mm	h mm	代号
1,91-2,15	1,900	1,900	80,000	1,000	2,050	0,350	2,000
2,16-2,40	2,100	2,100	80,000	1,500	2,600	0,400	2,250
2,41-2,70	2,400	2,400	80,000	1,500	2,900	0,400	2,500
2,71-2,90	2,600	2,600	90,000	1,500	2,950	0,450	2,750
2,91-3,25	2,900	2,900	90,000	2,000	3,650	0,450	3,000
3,26-3,60	3,200	3,200	90,000	2,000	3,800	0,600	3,500
3,61-4,25	3,600	3,600	90,000	2,000	4,100	0,700	4,000
4,26-4,75	4,200	4,200	90,000	2,500	4,600	0,700	4,500
4,76-5,30	4,700	4,700	100,000	2,500	4,850	0,750	5,000
5,31-5,80	5,200	5,200	100,000	2,500	4,850	0,750	5,500
5,81-6,20	5,600	5,600	110,000	3,000	5,800	0,800	6,000
6,21-6,70	6,000	6,000	110,000	3,000	5,900	0,900	6,500
6,71-7,10	6,500	6,500	110,000	3,000	5,850	0,850	7,000
7,11-7,60	6,900	6,900	110,000	3,500	6,950	0,950	7,500
7,61-8,05	7,300	7,300	110,000	3,500	7,000	1,000	8,000

HARTNER

叉形去毛刺刀

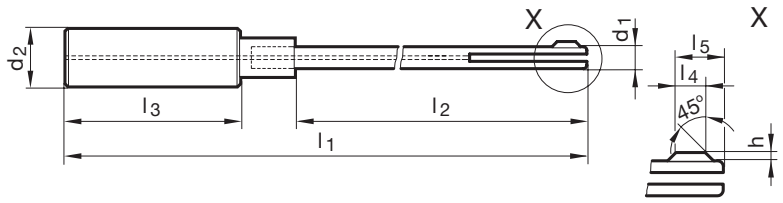
产品代号 84101



P	M	K	N	S	H
●	●	●	○	●	○

VHM | TS 100 EG | WN | R | HA

适合液压刀柄和热胀刀柄 • 柄, 根据DIN 6535标准 • 内冷供给
内部-外部去毛刺 • 适合在所有机床上使用，如铣床、车床等等。



Ø-范围	d1 mm	d2 mm	l1 mm	l2 mm	l3 mm	l4 mm	l5 mm	h mm	代号
1,91 -2,15	1,900	6,000	120,000	69,000	36,000	1,000	2,050	0,350	2,000
2,16 -2,40	2,100	6,000	120,000	69,000	36,000	1,500	2,600	0,400	2,250
2,41 -2,70	2,400	6,000	120,000	69,000	36,000	1,500	2,900	0,400	2,500
2,71 -2,90	2,600	6,000	130,000	79,000	36,000	1,500	2,950	0,450	2,750
2,91 -3,25	2,900	6,000	130,000	79,000	36,000	2,000	3,650	0,450	3,000
3,26 -3,60	3,200	10,000	135,000	80,000	40,000	2,000	3,800	0,600	3,500
3,61 -4,25	3,600	10,000	135,000	80,000	40,000	2,000	4,100	0,700	4,000
4,26 -4,75	4,200	10,000	135,000	80,000	40,000	2,500	4,600	0,700	4,500
4,76 -5,30	4,700	10,000	145,000	80,000	40,000	2,500	4,850	0,750	5,000
5,31 -5,80	5,200	10,000	145,000	90,000	40,000	2,500	4,850	0,750	5,500
5,81 -6,20	5,600	10,000	155,000	90,000	40,000	3,000	5,800	0,800	6,000
6,21 -6,70	6,000	16,000	165,000	102,000	48,000	3,000	5,900	0,900	6,500
6,71 -7,10	6,500	16,000	165,000	102,000	48,000	3,000	5,850	0,850	7,000
7,11 -7,60	6,900	16,000	165,000	102,000	48,000	3,500	6,950	0,950	7,500
7,61 -8,05	7,300	16,000	165,000	102,000	48,000	3,500	7,000	1,000	8,000

前/后去毛刺 90°

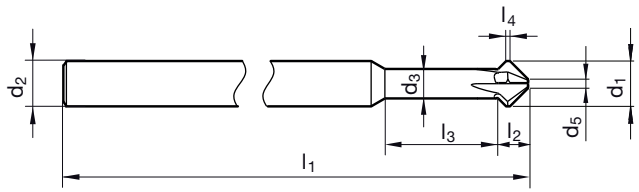
产品代号 80495



P	M	K	N	S	H
●	●	●	○	●	○

VHM | a | TS 100 VR | WN | 90° | R | ~HA

柄, 根据DIN 6535标准 • 适合液压刀柄和热胀刀柄
内部-外部去毛刺 • 加工孔以及工件的外轮廓去毛刺

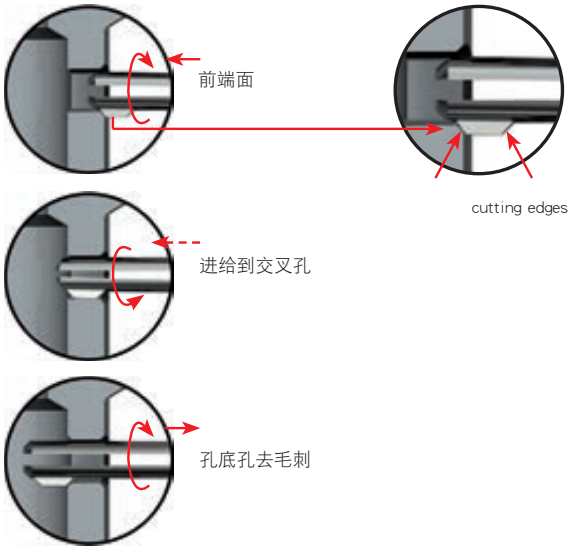


d1 mm	d2 h6 mm	d3 mm	d5 mm	l1 mm	l2 mm	l3 mm	l4 mm	Z	代号
3,000	4,000	2,200	0,600	75,000	2,10	9,300	0,500	4	3,000
4,000	4,000	2,900	0,800	75,000	2,70	12,300	0,500	4	4,000
5,000	5,000	3,900	1,000	75,000	3,00	15,000	0,500	4	5,000
6,000	6,000	3,900	1,200	100,000	3,90	14,300	0,500	4	6,000
8,000	6,000	6,000	1,600	100,000	4,70		0,500	4	8,000
10,000	6,000	6,000	2,000	100,000	6,50		0,500	4	10,000
12,000	6,000	6,000	2,400	100,000	8,30		0,500	4	12,000

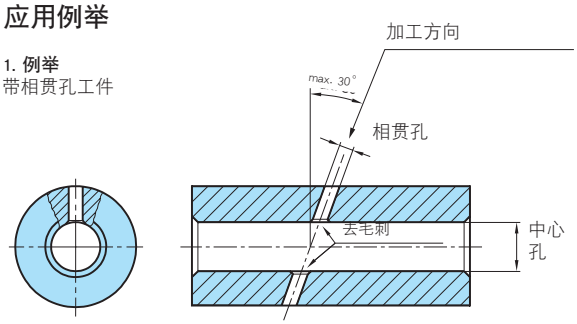
HARTNER

TS 100 EG 整体硬质合金去毛刺刀

操作

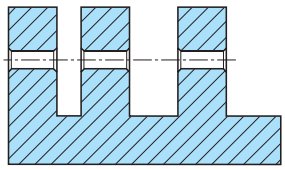


应用例举



在加工带交叉孔工件时,请注意
- 相贯孔孔径为最大中心孔孔径的35%
- 相贯孔孔径比切削长度（l4）大40%

2. 例举
带多层断续加工工件



应用步骤

硬质合金去毛刺刀可自动对内和外孔口去毛刺.
TS 100EG是一种使用简便、成本低廉并可使用
普通的手动操作的去毛刺工具
仅一款刀具就可以用于所有的加工步骤.

通用性应用:

新式的ex-stock去毛刺刀不仅可以加工那些带相贯
孔的工件，同时也可以加工那些带多层断续加工的
工件.并且加工出的表面具有很高的表面质量.

Ø 范围 (mm)	v_c m/min	fu (mm)
< Ø 4	8 - 10	0.1 - 0.2
Ø 4 - < Ø 6	10 - 14	0.1 - 0.2
6 - Ø 8	14 - 20	0.1 - 0.2

重要提示:
请注意推荐的切削参数可以上下调整。

TS 100 VR 前/后去毛刺

切削参数 TS 100 VR

材料组	拉伸强度 MPa (N/mm²)	v_c (m/min)	进给代号
钢件	< 850	120 - 200	71
	850-1200	100 - 180	71
	> 1200	80 - 140	71
淬火钢	< 54 HRC	60 - 120	71
	54-60 HRC	40 - 80	71
不锈钢/耐酸钢	< 850	80 - 120	71
镍基合金	< 1300	30 - 60	71
钛合金	< 1300	50 - 100	71
铸件材料	< 240 HB30	120 - 180	72
	> 240 HB30	100 - 160	72
锻铝合金 < 3% Si		150 - 250	72
铸铝合金 > 3% Si		100 - 200	72
锰合金		150 - 250	72
有色金属	< 850	30 - 200	72

进给代号 (mm/rev.)

Ø	71	72
⩽ 3.00	0.060	0.080
4.00	0.100	0.125
5.00	0.100	0.125
6.30	0.125	0.160
8.00	0.160	0.200
10.00	0.200	0.250
12.50	0.200	0.250

重要提示:
请注意推荐的切削参数可以上下调整。

HARTNER

Precision Cutting Tools



MULTIPLEX





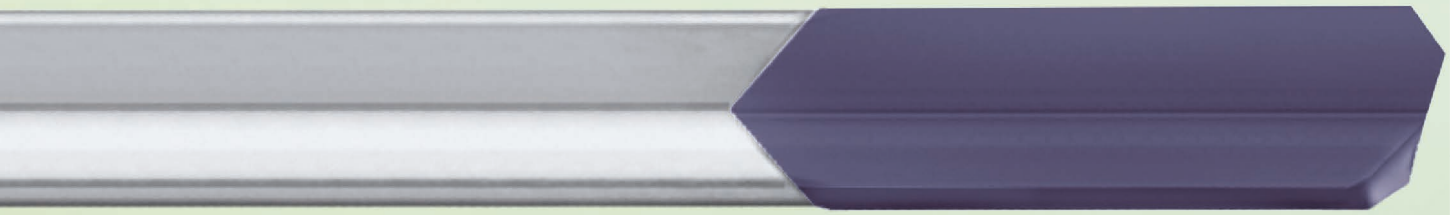


HARTNER

Precision Cutting Tools

单刃枪钻 双刃枪钻

硬质合金材质，带硬质合金头部或可换式刀片.
抛光处理和涂层



E 100单刃枪钻

P	M	K	N	S	H	标准	型号	刀具材料	表面处理	切削方向	柄部形式	钻深	d1/mm	产品代号	页码
															
●	●	○	●	○	○	哈特纳标准	TLB E 100	整硬	a	右手	HA	25xD	2,380 - 12,000	89520	253
															
●	●	○	●	○	○	哈特纳标准	TLB E 100	整硬	a	右手	HA	50xD	2,380 - 8,000	89521	254
															
●	●	○	●	○	○	哈特纳标准	TLB E 100	整硬	a	右手	HA	75xD	2,380 - 6,000	89522	255
															
○	○	○	●	●	○	哈特纳标准	TLB E 100	整硬	○	右手	HA	45.000	1,200 - 3,200	89503	256
															
●	○	●	○	○	○	哈特纳标准	TLB E 100	整硬	A	右手	HA	45.000	1,200 - 3,200	89510	256
															
○	○	○	●	●	○	哈特纳标准	TLB E 100	整硬	○	右手	HA	80.000	1,200 - 5,000	89501	257
															
●	○	●	○	○	○	哈特纳标准	TLB E 100	整硬	A	右手	HA	80.000	1,200 - 5,000	89511	257
															
○	○	○	●	●	○	哈特纳标准	TLB E 100	整硬	○	右手	HA	120.000	1,500 - 5,000	89504	258
															
●	○	●	○	○	○	哈特纳标准	TLB E 100	整硬	A	右手	HA	120.000	1,500 - 5,000	89512	258
															
○	○	○	●	●	○	哈特纳标准	TLB E 100	整硬	○	右手	HA	160.000	1,500 - 8,000	89502	259
															
●	○	●	○	○	○	哈特纳标准	TLB E 100	整硬	A	右手	HA	160.000	1,500 - 8,000	89513	259

E 80单刃枪钻

															
●	○	●	○	○	○	哈特纳标准	TLB E 80	硬质合金	T	右手	HA	20xD	3,970 - 12,700	89505	260
															
○	●	○	○	●	○	哈特纳标准	TLB E 80	硬质合金	C	右手	HA	20xD	3,970 - 12,700	89514	260

P	M	K	N	S	H	标准	型号	刀具材料	表面处理	切削方向	柄部形式	钻深	d1/mm	产品代号	页码
E 80单刃枪钻															
															
●	○	●	○	○	○	哈特纳标准	TLB E 80	硬质合金	T	右手	HA	30xD	3,970 - 12,700	89509	261
															
○	●	○	○	●	○	哈特纳标准	TLB E 80	硬质合金	C	右手	HA	30xD	3,970 - 12,700	89515	261
															
●	○	●	○	○	○	哈特纳标准	TLB E 80	硬质合金	T	右手	HA	40xD	3,970 - 12,700	89506	262
															
○	●	○	○	●	○	哈特纳标准	TLB E 80	硬质合金	C	右手	HA	40xD	3,970 - 12,700	89516	262
															
●	○	●	○	○	○	哈特纳标准	TLB E 80	硬质合金	T	右手	HA	80xD	4,950 - 12,650	89507	263
															
○	●	○	○	●	○	哈特纳标准	TLB E 80	硬质合金	C	右手	HA	80xD	4,950 - 12,650	89517	263
带可换刀片的E 800单刃枪钻															
															
●	○	○	●	○		哈特纳标准	TLB E 800	硬质合金	T	右手	HB	30xD	12,000 - 24,000	89530	264
单刃枪钻E800的刀片															
●	○	○	●	○		哈特纳标准		整硬	T	右手			12,000 - 40,000	89535	265
单刃枪钻E800的支撑条															
●	○	○	●	○		哈特纳标准		整硬	T				12,000 - 40,000	89536	266
Z 80双刃枪钻															
															
			●			哈特纳标准	TLB Z 80	硬质合金	○	右手	HA	30xD	8,000 - 12,000	89508	267

P	M	K	N	S	H	标准	型号	刀具材料	表面处理	切削方向	柄部形式	钻深	d1/mm	产品代号	页码

Z 80双刃枪钻



		•				哈特纳标准	TLB Z 80	硬质合金	◯	右手	HA	30xD	8,000 - 12,000	89518	267

E 100单刃枪钻

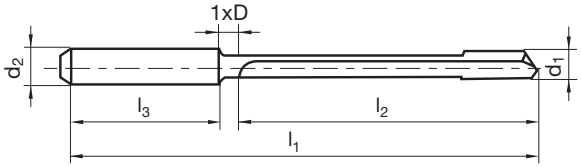
产品代号 89520



P	M	K	N	S	H
●	●	○	●	○	○

VHM | a | TLB E 100 | 25xD | WN | h5 | R | HA

钻深25 x D • 头部形式G型 • MQL柄锥，冷却槽d1 = 3 mm 或者 d2 = 6 mm



d1 mm	 inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
2,380	3/32	4,000	100,000	70,000	28,000
2,500		4,000	115,000	85,000	28,000
2,780	7/64	4,000	115,000	85,000	28,000
3,000		6,000	145,000	105,000	36,000
3,170	1/8	6,000	145,000	105,000	36,000
3,500		6,000	145,000	105,000	36,000
3,970	5/32	6,000	160,000	120,000	36,000
4,000		6,000	160,000	120,000	36,000
5,000		6,000	220,000	180,000	36,000
5,560	7/32	6,000	220,000	180,000	36,000
6,000		6,000	220,000	180,000	36,000
6,350	1/4	8,000	260,000	210,000	36,000
7,000		8,000	260,000	210,000	36,000
7,140	9/32	8,000	285,000	240,000	36,000
8,000		8,000	285,000	240,000	36,000
9,000		10,000	350,000	300,000	40,000
10,000		10,000	350,000	300,000	40,000
11,000		12,000	420,000	360,000	45,000
12,000		12,000	420,000	360,000	45,000

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E 100单刃枪钻

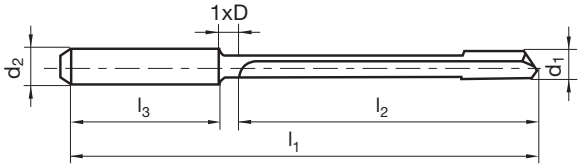
产品代号 89521



P	M	K	N	S	H
●	●	○	●	○	○

VHM | a | TLB E 100 | 50xD | WN | h5 | R | HA

钻深50 x D • 头部形式G型 • MQL柄锥，冷却槽d1 = 3 mm 或者 d2 = 6 mm



d1 mm	 inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
2,380	3/32	4,000	160,000	130,000	28,000
2,500		4,000	185,000	155,000	28,000
2,780	7/64	4,000	185,000	155,000	28,000
3,000		6,000	230,000	190,000	36,000
3,170	1/8	6,000	230,000	190,000	36,000
3,500		6,000	230,000	190,000	36,000
3,970	5/32	6,000	260,000	220,000	36,000
4,000		6,000	260,000	220,000	36,000
5,000		6,000	370,000	330,000	36,000
5,560	7/32	6,000	370,000	330,000	36,000
6,000		6,000	370,000	330,000	36,000
6,350	1/4	8,000	430,000	385,000	36,000
7,000		8,000	430,000	385,000	36,000
7,140	9/32	8,000	485,000	440,000	36,000
8,000		8,000	485,000	440,000	36,000

E 100单刃枪钻

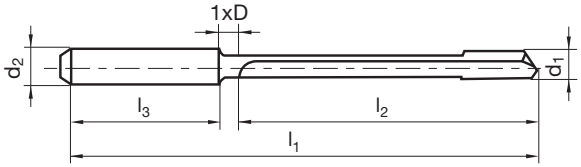
产品代号 89522



P	M	K	N	S	H
●	●	○	●	○	○

VHM | a | TLB E 100 | 75xD | WN | h5 | R | HA

钻深75 x D • 头部形式G型 • MQL柄锥，冷却槽d1 = 3 mm 或者 d2 = 6 mm



d1 mm	 inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
2,380	3/32	4,000	220,000	190,000	28,000
2,500		4,000	255,000	220,000	28,000
2,780	7/64	4,000	255,000	220,000	28,000
3,000		6,000	320,000	280,000	36,000
3,170	1/8	6,000	320,000	280,000	36,000
3,500		6,000	320,000	280,000	36,000
3,970	5/32	6,000	360,000	320,000	36,000
4,000		6,000	360,000	320,000	36,000
5,000		6,000	525,000	485,000	36,000
5,560	7/32	6,000	525,000	485,000	36,000
6,000		6,000	525,000	485,000	36,000

E 100单刃枪钻

产品代号 89503



P	M	K	N	S	H
○	○	○	●	●	○

VHM | ◯ | TLB E 100 | 45,00 | WN | h5 | R | HA

槽长45mm • 头部形式G型

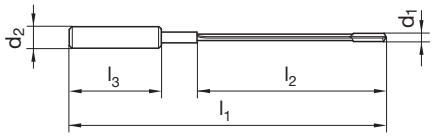
产品代号 89510



P	M	K	N	S	H
●	○	●	○	○	○

VHM | A | TLB E 100 | 45,00 | WN | h5 | R | HA

槽长45mm • 头部形式G型



d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
1,200		4,000	90,000	45,000	28,000
1,500		4,000	90,000	45,000	28,000
1,600		4,000	90,000	45,000	28,000
2,000		4,000	90,000	45,000	28,000
2,500		10,000	100,000	45,000	40,000
2,700		10,000	100,000	45,000	40,000
3,000		10,000	100,000	45,000	40,000
3,200		10,000	100,000	45,000	40,000

E 100单刃枪钻

产品代号 89501



P	M	K	N	S	H
○	○	○	●	●	○

VHM | ◯ | TLB E 100 | 80,00 | WN | h5 | R | HA

槽长80mm • 头部形式G型

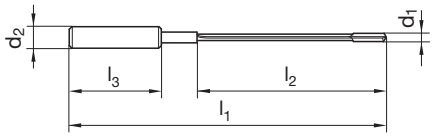
产品代号 89511



P	M	K	N	S	H
●	○	●	○	○	○

VHM | A | TLB E 100 | 80,00 | WN | h5 | R | HA

槽长80mm • 头部形式G型



d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
1,200		4,000	125,000	80,000	28,000
1,500		4,000	125,000	80,000	28,000
1,600		4,000	125,000	80,000	28,000
2,000		4,000	125,000	80,000	28,000
2,500		10,000	135,000	80,000	40,000
2,700		10,000	135,000	80,000	40,000
3,000		10,000	135,000	80,000	40,000
3,200		10,000	135,000	80,000	40,000
3,500		10,000	135,000	80,000	40,000
4,000		10,000	135,000	80,000	40,000
4,200		10,000	135,000	80,000	40,000
4,500		10,000	135,000	80,000	40,000
5,000		10,000	135,000	80,000	40,000

E 100单刃枪钻

产品代号 89504



P	M	K	N	S	H
○	○	○	●	●	○

VHM | ◯ | TLB E 100 | 120,00 | WN | h5 | R | HA

槽长120mm • 头部形式G型

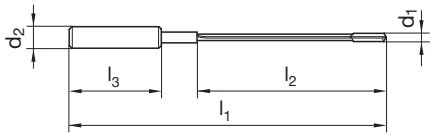
产品代号 89512



P	M	K	N	S	H
●	○	●	○	○	○

VHM | A | TLB E 100 | 120,00 | WN | h5 | R | HA

槽长120mm • 头部形式G型



d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
1,500		4,000	165,000	120,000	28,000
1,600		4,000	165,000	120,000	28,000
2,000		4,000	165,000	120,000	28,000
2,500		10,000	175,000	120,000	40,000
2,700		10,000	175,000	120,000	40,000
3,000		10,000	175,000	120,000	40,000
3,200		10,000	175,000	120,000	40,000
3,500		10,000	175,000	120,000	40,000
4,000		10,000	175,000	120,000	40,000
4,200		10,000	175,000	120,000	40,000
4,500		10,000	175,000	120,000	40,000
5,000		10,000	175,000	120,000	40,000

E 100单刃枪钻

产品代号 89502



P	M	K	N	S	H
○	○	○	●	●	○

VHM | ◯ | TLB E 100 | 160,00 | WN | h5 | R | HA

槽长160mm • 头部形式G型

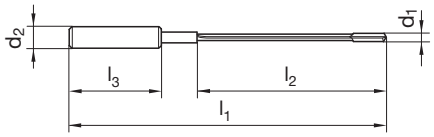
产品代号 89513



P	M	K	N	S	H
●	○	●	○	○	○

VHM | A | TLB E 100 | 160,00 | WN | h5 | R | HA

槽长160mm • 头部形式G型



d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
1,500		4,000	205,000	160,000	28,000
1,600		4,000	205,000	160,000	28,000
2,000		4,000	205,000	160,000	28,000
2,500		10,000	215,000	160,000	40,000
2,700		10,000	215,000	160,000	40,000
3,000		10,000	215,000	160,000	40,000
3,200		10,000	215,000	160,000	40,000
3,500		10,000	215,000	160,000	40,000
4,000		10,000	215,000	160,000	40,000
4,200		10,000	215,000	160,000	40,000
4,500		10,000	215,000	160,000	40,000
5,000		10,000	215,000	160,000	40,000
6,000		16,000	225,000	160,000	48,000
8,000		16,000	225,000	160,000	48,000

E 80单刃枪钻

产品代号 89505



P	M	K	N	S	H
●	○	●	○	○	○

HM | T | TLB E 80 | 20xD | WN | h5 | R | HA

钻深20 x D • 头部形式G型 • 横向断屑槽

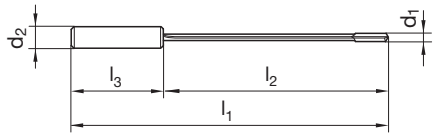
产品代号 89514



P	M	K	N	S	H
○	●	○	○	●	○

HM | C | TLB E 80 | 20xD | WN | h5 | R | HA

钻深20 x D • 头部形式G型 • 适合合金和高合金钢



d1 mm	 inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
3,970	5/32	10,000	150,000	100,000	40,000
4,000		12,000	150,000	100,000	45,000
4,200		12,000	160,000	110,000	45,000
4,500		12,000	170,000	120,000	45,000
5,000		16,000	180,000	130,000	48,000
5,156		16,000	180,000	130,000	48,000
5,500		16,000	190,000	140,000	48,000
6,000		16,000	210,000	160,000	48,000
6,350	1/4	16,000	220,000	170,000	48,000
6,500		16,000	220,000	170,000	48,000
7,000		16,000	235,000	185,000	48,000
7,938	5/16	16,000	260,000	210,000	48,000
8,000		16,000	260,000	210,000	48,000
9,000		16,000	280,000	230,000	48,000
9,525	3/8	16,000	290,000	240,000	48,000
10,000		20,000	320,000	260,000	50,000
11,000		20,000	340,000	290,000	50,000
11,113	7/16	20,000	340,000	290,000	50,000
12,000		20,000	370,000	310,000	50,000
12,700	1/2	20,000	385,000	330,000	50,000

E 80单刃枪钻

产品代号 89509



P	M	K	N	S	H
●	○	●	○	○	○

HM | T | TLB E 80 | 30xD | WN | h5 | R | HA

钻深30 x D • 头部形式G型 • 横向断屑槽

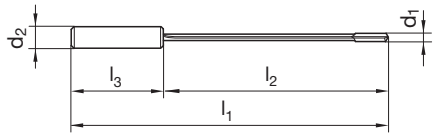
产品代号 89515



P	M	K	N	S	H
○	●	○	○	●	○

HM | C | TLB E 80 | 30xD | WN | h5 | R | HA

钻深30 x D • 头部形式G型 • 适合合金和高合金钢



d1 mm	 inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
3,970	5/32	10,000	200,000	155,000	40,000
4,000		12,000	200,000	155,000	45,000
4,200		12,000	210,000	165,000	45,000
4,500		12,000	220,000	175,000	45,000
5,000		16,000	230,000	182,000	48,000
5,156		16,000	230,000	182,000	48,000
5,500		16,000	245,000	197,000	48,000
6,000		16,000	260,000	212,000	48,000
6,350	1/4	16,000	275,000	227,000	48,000
6,500		16,000	275,000	227,000	48,000
7,000		16,000	290,000	242,000	48,000
7,938	5/16	16,000	320,000	272,000	48,000
8,000		16,000	320,000	272,000	48,000
9,000		16,000	350,000	302,000	48,000
9,525	3/8	16,000	380,000	330,000	48,000
10,000		20,000	400,000	350,000	50,000
11,000		20,000	430,000	380,000	50,000
11,113	7/16	20,000	430,000	380,000	50,000
12,000		20,000	450,000	400,000	50,000
12,700	1/2	20,000	500,000	450,000	50,000

HARTNER

E 80单刃枪钻

产品代号 89506



P	M	K	N	S	H
●	○	●	○	○	○

HM | T | TLB E 80 | 40xD | WN | h5 | R | HA

钻深40 x D • 头部形式G型 • 横向断屑槽

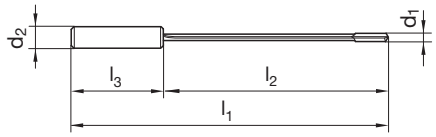
产品代号 89516



P	M	K	N	S	H
○	●	○	○	●	○

HM | C | TLB E 80 | 40xD | WN | h5 | R | HA

钻深40 x D • 头部形式G型 • 适合合金和高合金钢



d1 mm	 inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
3,970	5/32	10,000	230,000	185,000	40,000
4,000		12,000	230,000	185,000	45,000
4,200		12,000	240,000	195,000	45,000
4,500		12,000	250,000	205,000	45,000
5,000		16,000	280,000	232,000	48,000
5,156		16,000	280,000	232,000	48,000
5,500		16,000	300,000	252,000	48,000
6,000		16,000	320,000	272,000	48,000
6,350	1/4	16,000	340,000	292,000	48,000
6,500		16,000	340,000	292,000	48,000
7,000		16,000	370,000	322,000	48,000
7,938	5/16	16,000	420,000	372,000	48,000
8,000		16,000	420,000	372,000	48,000
9,000		16,000	450,000	402,000	48,000
9,525	3/8	16,000	480,000	432,000	48,000
10,000		20,000	510,000	460,000	50,000
11,000		20,000	550,000	500,000	50,000
11,113	7/16	20,000	550,000	500,000	50,000
12,000		20,000	600,000	550,000	50,000
12,700	1/2	20,000	635,000	585,000	50,000

E 80单刃枪钻

产品代号 89507



P	M	K	N	S	H
●	○	●	○	○	○

HM | T | TLB E 80 | 80xD | WN | h5 | R | HA

钻深80 x D • 头部形式G型 • 横向断屑槽 • 适合加工长屑材料 • 40XD最大钻深的首选钻头 物料号No.75022

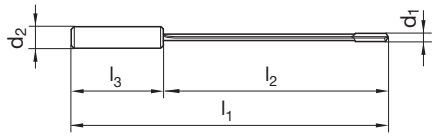
产品代号 89517



P	M	K	N	S	H
○	●	○	○	●	○

HM | C | TLB E 80 | 80xD | WN | h5 | R | HA

钻深80 x D • 头部形式G型 • 40XD最大钻深的首选钻头 样本 No.89516 • 适合合金和高合金钢



d1 mm	 inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
4,950		16,000	480,000	432,000	48,000
5,106		16,000	480,000	432,000	48,000
5,950	15/64	16,000	560,000	512,000	48,000
6,300		16,000	590,000	542,000	48,000
6,950		16,000	650,000	602,000	48,000
7,888		16,000	740,000	692,000	48,000
7,950		16,000	740,000	692,000	48,000
8,950		16,000	820,000	772,000	48,000
9,475		16,000	870,000	822,000	48,000
9,950		20,000	910,000	860,000	50,000
10,950		20,000	995,000	945,000	50,000
11,063		20,000	995,000	945,000	50,000
11,950		20,000	1080,000	1030,000	50,000
12,650		20,000	1140,000	1090,000	50,000

HARTNER

带可换刀片的E 800单刃枪钻

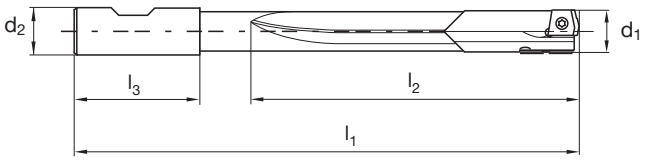
产品代号 89530



P	M	K	N	S	H
●	○	○	●	○	

HM | T | TLB E 800 | 30xD | WN | h8 | R | HB

钻深30 x D • 可换刀片 • 可换支撑导条 • 带扳手 • 带螺钉 • 普遍适用



d1 mm	 inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
12,000		20,000	446,000	384,000	50,000
12,700	1/2	20,000	468,000	406,000	50,000
14,000		20,000	510,000	448,000	50,000
15,000		25,000	548,000	480,000	56,000
16,000		25,000	580,000	512,000	56,000
18,000		25,000	644,000	576,000	56,000
20,000		32,000	712,000	640,000	60,000
24,000		32,000	840,000	768,000	60,000

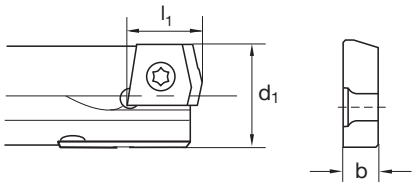
单刃枪钻E800的刀片

产品代号 89535

P	M	K	N	S	H
●	○	○	●	○	

VHM T WN R

普遍适用



d1 mm	l1 mm	b mm	代号
12,000	10,000	2,800	12,000
12,500	10,000	2,800	12,500
12,700	10,000	2,800	12,700
13,000	10,000	2,800	13,000
13,500	10,000	2,800	13,500
14,000	10,000	2,800	14,000
14,500	10,000	2,800	14,500
15,000	10,000	2,800	15,000
16,000	12,000	3,000	16,000
16,100	12,000	3,000	16,100
16,300	12,000	3,000	16,300
16,500	12,000	3,000	16,500
17,000	12,000	3,000	17,000
17,500	12,000	3,000	17,500
18,000	12,000	3,000	18,000
18,400	12,000	3,000	18,400
18,500	12,000	3,000	18,500
19,000	12,000	3,000	19,000
19,300	12,000	3,000	19,300
19,500	12,000	3,000	19,500
19,800	12,000	3,000	19,800
20,000	15,000	4,000	20,000
20,200	15,000	4,000	20,200
20,500	15,000	4,000	20,500
21,000	15,000	4,000	21,000
21,500	15,000	4,000	21,500
22,000	15,000	4,000	22,000
22,200	15,000	4,000	22,200
22,500	15,000	4,000	22,500
23,000	15,000	4,000	23,000
23,500	15,000	4,000	23,500
24,000	15,000	4,000	24,000
24,500	15,000	4,000	24,500
25,000	15,000	4,000	25,000
25,100	15,000	4,000	25,100
25,400	15,000	4,000	25,400

d1 mm	l1 mm	b mm	代号
25,500	15,000	4,000	25,500
25,800	15,000	4,000	25,800
26,000	16,000	5,000	26,000
26,500	16,000	5,000	26,500
27,000	16,000	5,000	27,000
27,500	16,000	5,000	27,500
28,000	16,000	5,000	28,000
28,100	16,000	5,000	28,100
28,500	16,000	5,000	28,500
29,000	16,000	5,000	29,000
29,500	16,000	5,000	29,500
29,700	16,000	5,000	29,700
30,000	18,000	6,000	30,000
30,100	18,000	6,000	30,100
30,500	18,000	6,000	30,500
31,000	18,000	6,000	31,000
31,500	18,000	6,000	31,500
32,000	18,000	6,000	32,000
32,500	18,000	6,000	32,500
33,000	18,000	6,000	33,000
33,500	18,000	6,000	33,500
34,000	19,000	6,500	34,000
34,500	19,000	6,500	34,500
35,000	19,000	6,500	35,000
35,500	19,000	6,500	35,500
36,000	19,000	6,500	36,000
36,500	19,000	6,500	36,500
37,000	19,000	6,500	37,000
37,500	19,000	6,500	37,500
37,700	19,000	6,500	37,700
38,000	20,000	7,000	38,000
38,100	20,000	7,000	38,100
38,500	20,000	7,000	38,500
39,000	20,000	7,000	39,000
39,500	20,000	7,000	39,500
40,000	20,000	7,000	40,000

HARTNER

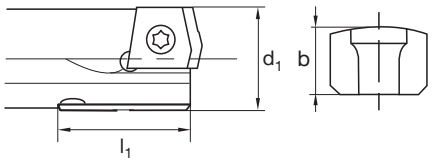
单刃枪钻E800的支撑条

产品代号 89536

P	M	K	N	S	H
●	○	○	●	○	

VHM T WN

普遍适用



d1 mm	l1 mm	b mm	代号	d1 mm	l1 mm	b mm	代号
12,000	19,950	2,150	12,000	25,500	25,000	3,350	25,500
12,500	19,950	2,150	12,500	25,800	25,000	3,500	25,800
12,700	19,950	2,250	12,700	26,000	25,000	3,850	26,000
13,000	19,950	2,150	13,000	26,500	25,000	3,850	26,500
13,500	19,950	2,150	13,500	27,000	25,000	3,850	27,000
14,000	19,950	2,150	14,000	27,500	25,000	3,850	27,500
14,500	19,950	2,150	14,500	28,000	25,000	3,850	28,000
15,000	19,950	2,150	15,000	28,100	25,000	3,900	28,100
16,000	20,000	2,850	16,000	28,500	25,000	3,850	28,500
16,100	20,000	2,900	16,100	29,000	25,000	3,850	29,000
16,300	20,000	3,000	16,300	29,500	25,000	3,850	29,500
16,500	20,000	2,850	16,500	29,700	25,000	3,950	29,700
17,000	20,000	2,850	17,000	30,000	30,000	4,350	30,000
17,500	20,000	2,850	17,500	30,100	30,000	4,400	30,100
18,000	20,000	2,850	18,000	30,500	30,000	4,350	30,500
18,400	20,000	3,050	18,400	31,000	30,000	4,350	31,000
18,500	20,000	2,850	18,500	31,500	30,000	4,350	31,500
19,000	20,000	2,850	19,000	32,000	30,000	4,350	32,000
19,300	20,000	3,000	19,300	32,500	30,000	4,350	32,500
19,500	20,000	2,850	19,500	33,000	30,000	4,350	33,000
19,800	20,000	3,000	19,800	33,500	30,000	4,350	33,500
20,000	25,000	3,350	20,000	34,000	30,000	4,850	34,000
20,200	25,000	3,450	20,200	34,500	30,000	4,850	34,500
20,500	25,000	3,350	20,500	35,000	30,000	4,850	35,000
21,000	25,000	3,350	21,000	35,500	30,000	4,850	35,500
21,500	25,000	3,350	21,500	36,000	30,000	4,850	36,000
22,000	25,000	3,350	22,000	36,500	30,000	4,850	36,500
22,200	25,000	3,450	22,200	37,000	30,000	4,850	37,000
22,500	25,000	3,350	22,500	37,500	30,000	4,850	37,500
23,000	25,000	3,350	23,000	37,700	30,000	4,950	37,700
23,500	25,000	3,350	23,500	38,000	30,000	5,350	38,000
24,000	25,000	3,350	24,000	38,100	30,000	5,400	38,100
24,500	25,000	3,350	24,500	38,500	30,000	5,350	38,500
25,000	25,000	3,350	25,000	39,000	30,000	5,350	39,000
25,100	25,000	3,400	25,100	39,500	30,000	5,350	39,500
25,400	25,000	3,550	25,400	40,000	30,000	5,600	40,000

Z 80双刃枪钻

产品代号 89508



P	M	K	N	S	H
			•		

HM | TLB Z 80 | 30xD | WN | h5 | R | HA

钻深30 x D • 双后刀面枪钻 • 适合加工铝

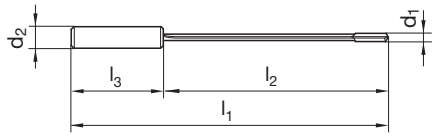
产品代号 89518



P	M	K	N	S	H
		•			

HM | TLB Z 80 | 30xD | WN | h5 | R | HA

钻深30 x D • 双后刀面枪钻 • 适合加工铸件材料



d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	l3 mm
8,000		16,000	330,000	280,000	48,000
10,000		20,000	390,000	340,000	50,000
12,000		20,000	450,000	400,000	50,000

HARTNER

整体硬质合金单刃枪钻 drill E 100

几乎适合加工所有材料 Ø 0.9 - 12.0 mm,
最大槽长 500 mm



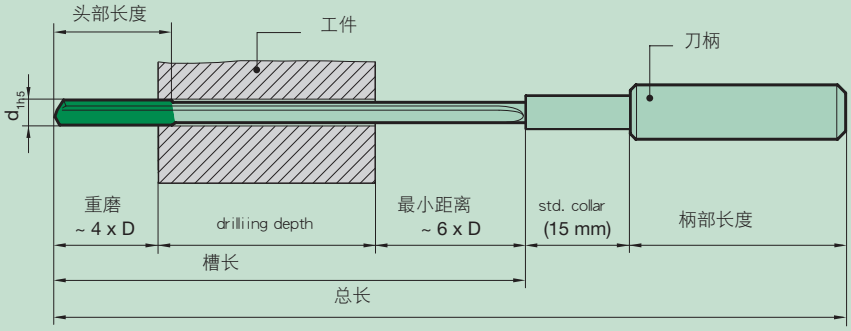


为方便您询问或订购Hartner 整体硬质合金枪钻E 100，请填写我们的传真格式询价单。

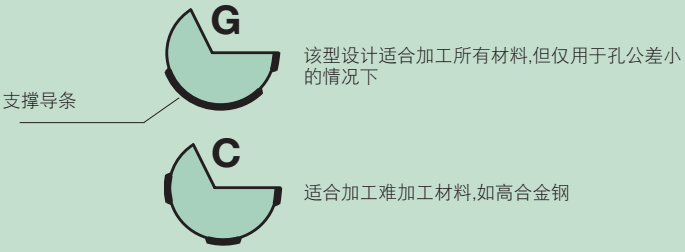
对有些材料而言，枪钻仅有表面抛光是不行的，涂层是必须的。
对涂层的定义，请参见Hartner应用指导。

S TiN　A TiAlN　C TiCN　F FIRE　Y TiAlSiN　A AlTiN　a AlTiN nano

使用普通机床时必须计算行程长度



头部形式
(支撑导条位置，
在客户的要求下头部可修磨成特殊形式。)

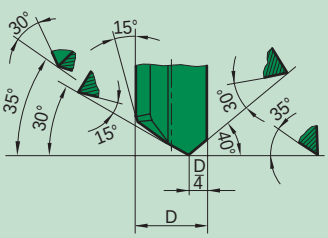


该型设计适合加工所有材料,但仅用于孔公差小的情况下

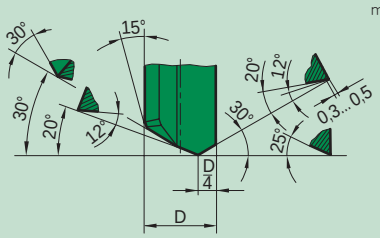
适合加工难加工材料,如高合金钢

标准头部修磨形式
(在客户的要求下头部可修磨成特殊形式)

Ø 2...4,00 mm

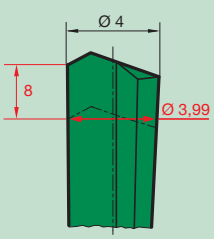


Ø > 4,01...20 mm

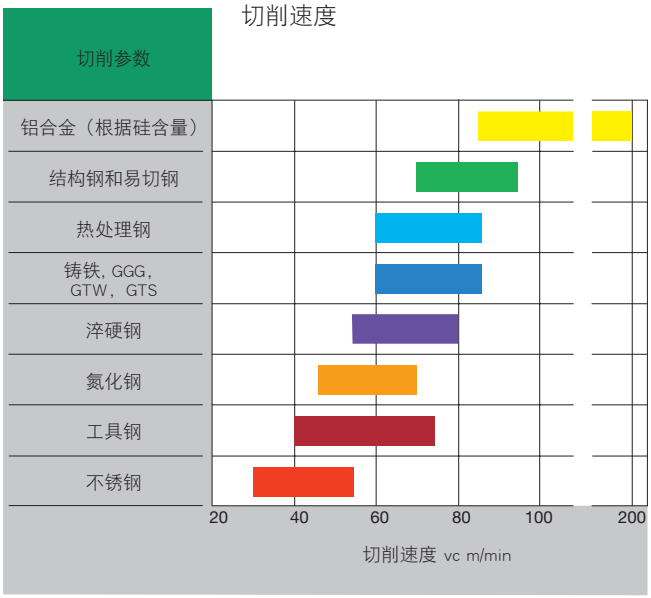


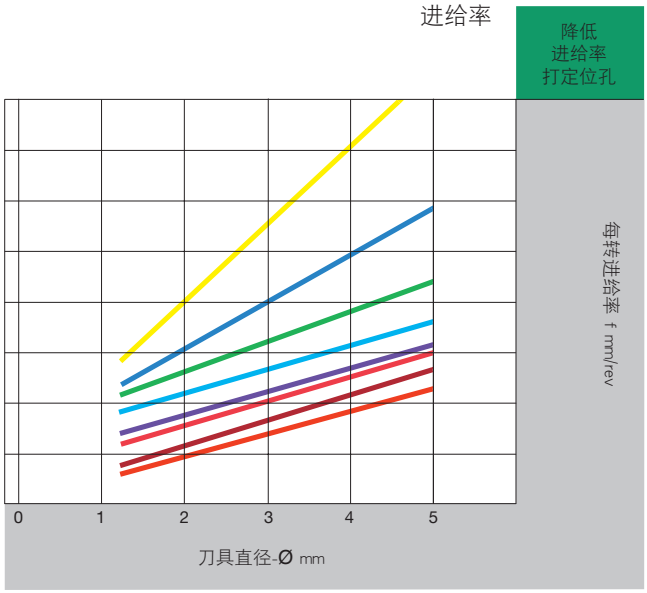
倒锥锥度
(尺寸单位 mm)

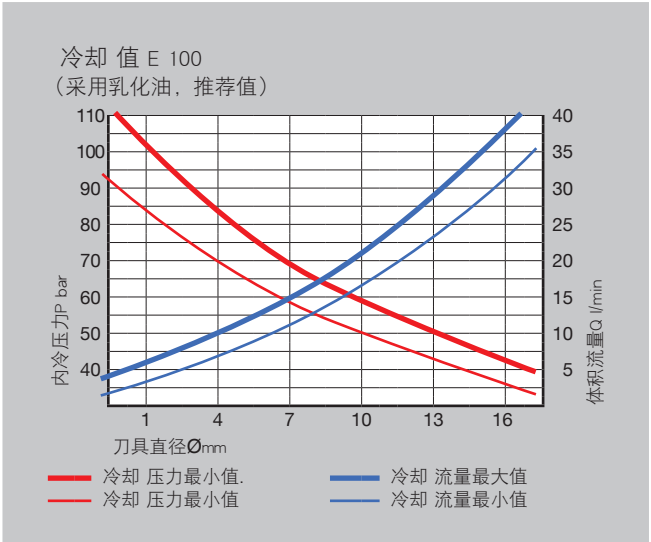
1:800 (standard)



整体硬质合金单刃枪钻 drill E 100







E100 整体硬质合金枪钻



AlTiN nanoA涂层设计适用于所有材料



硬质合金柄部带MQL锥尾设计

HARTNER

单刃硬质合金头部枪钻 E 80

几乎适合加工所有材料，直径 Ø 2 - 40.0 mm，最大长度可达 3000 mm





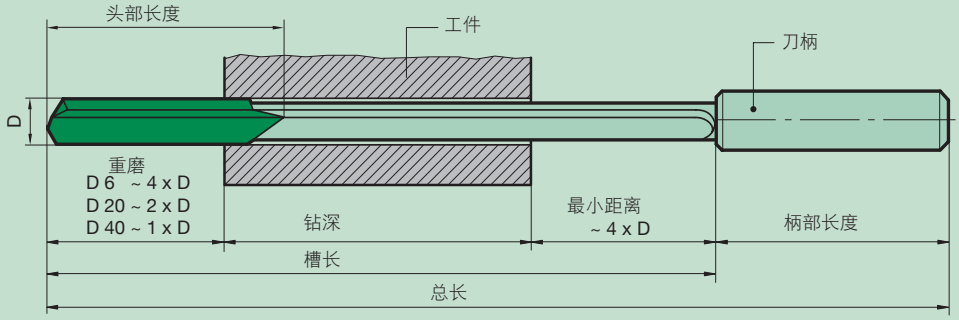
为方便您询问或订购Hartner E80型单刃焊接式硬质合金头部枪钻，请填写传真格式询价单。
从 Ø 6.0... Ø 20.0我们可以提供焊PCD或CBN的切削刃枪钻.
例如在加工硅铝合金时,可以获得包括刀具寿命增加在内的多种好处.

对有些材料而言，枪钻仅有表面抛光是不行的，涂层是必须的。
对涂层的定义，请参见Hartner应用指导。

T TiN　A TiAlN　C TiCN　F FIRE　Y TiAlSiN　A AlTiN　a AlTiN nano

使用普通机床时必须计算行程长度

*最大槽长40×D,若加工更深的孔建议采用两把枪钻加工。
(Ø10x450和 Ø9,95x850mm)



头部形式
(支撑导条位置)

标准设计



该型设计适合加工所有材料,但仅用于孔公差小的情况下



适合加工难加工材料,如高合金钢

支撑导条

非标设计



该型设计适合加工所有材料,但仅用于孔公差大的情况下



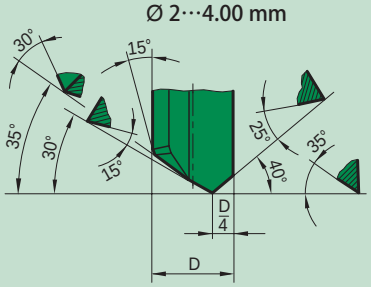
该型设计适合加工所有材料,但仅用于表面定位不好的情况下



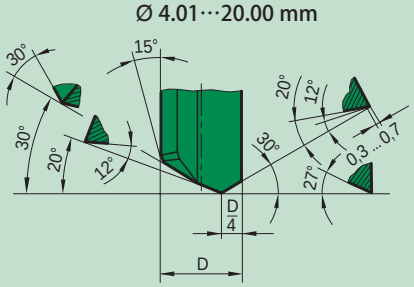
该型设计主要适合加工灰铸铁

标准头部修磨形式 ((在客户要求下头部可修磨成特殊形式)

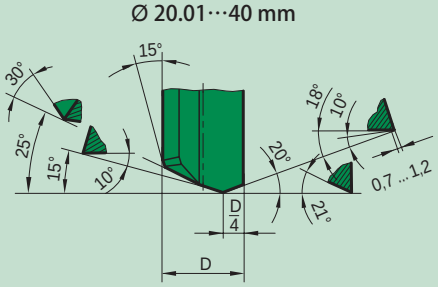
Ø 2···4.00 mm



Ø 4.01···20.00 mm



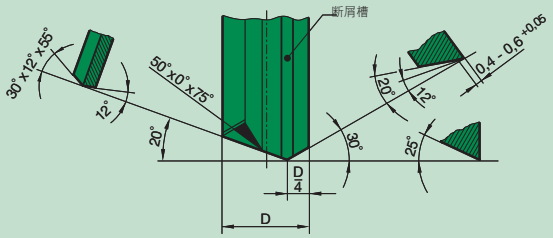
Ø 20.01···40 mm



HARTNER

单刃硬质合金头部枪钻 E 80

EB 80 标准带断屑槽头部刃磨
订货号如： 89505, 89509, 89506 and 89507



焊硬质合金单刃枪钻的快速供货

Hartner能为具有标准头部和标准柄的以下尺寸枪钻提供快速供货。
交货期最多3周。

公称直径-Ø mm	递增尺寸 mm	头部形式	总长	
2,00...13,90	0,1	G	≤ 7,5 mm Ø 650 max	价格待询
4,00...13,90	0,1	C	> 7,5 mm Ø 1200 max	
14,00...22,00	0,5	G	1200 max	
14,00...22,00	0,5	C		

刀具材质：整体硬质合金/K15

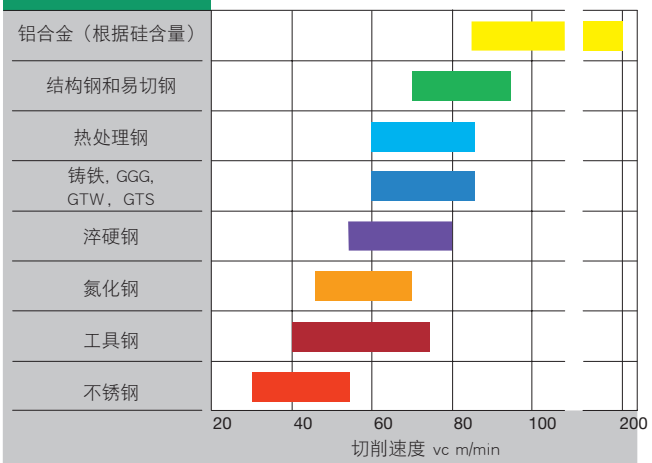
表面处理：○

标准头部长度(mm)

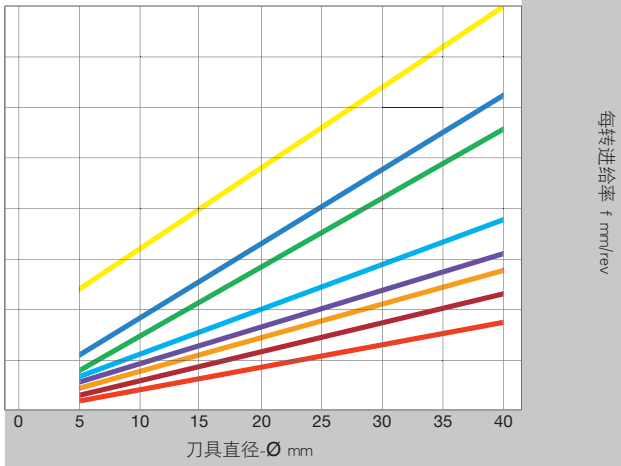
Ø-直径范围	长度	Ø-直径范围	长度
2,00...2,49	15	10,00...10,99	35
2,50...2,99	18	11,00...17,00	40
3,00...3,99	20	17,01...20,00	45
4,00...5,19	25	20,01...23,00	50
5,20...6,99	30	23,01...26,00	55
7,00...9,99	35	26,01...40,00	65

槽长：最小20xD

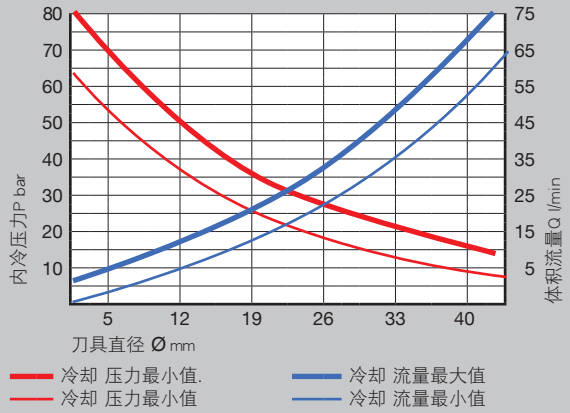
切削参数



进给率



冷却 值 E 80
（采用乳化油，推荐值）





TiN涂层带断屑槽设计
用于长屑钢件加工



TiCN涂层无断屑槽设计
用于合金及高合金钢加工

HARTNER

Z 80 硬质合金头部双刃枪钻

适合于加工铸铁、铝和短屑非铁金属。
直径 Ø 6.0 - 27.0 mm, 最大长度可达 1000 mm





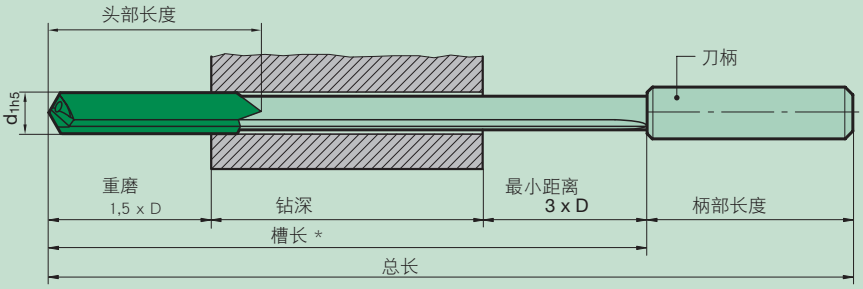
为方便您询问或订购Hartner Z80型双刃硬质合金头部枪钻，请填写传真格式询价单。

F FIRE **a** TiN nano
对有些材料而言，枪钻仅有表面抛光是不行的，涂层是必须的。

由于双刃枪钻有两条切削刃、两个排屑槽，与单刃枪钻相比，双刃枪钻能达到更快的进给速度，提高了钻孔的效率。另一方面，由于双刃枪钻有两条对称的切削刃，与单刃枪钻相比，导向条没有足够的挤压力，对内孔表面不能够产生充分的挤压效果，所以不能达到单刃枪钻的加工精度和表面粗糙度。对钻深小于10xD，我们推荐使用TS系列钻头TS 150GG，相比枪钻，TS钻头库存更及时，效率更高。另外，在大多数应用中，TS 150 GG不需要导引孔。

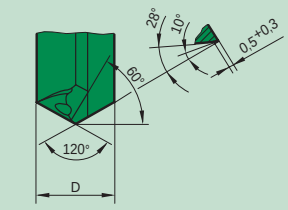
使用普通机床时必须计算行程长度

* 最大槽长40×D,若加工更深的孔建议采用两把枪钻加工. (如 Ø10x450和 Ø 9.95x850mm)

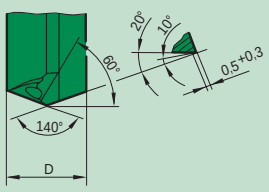


标准头部修磨形式 ((在客户要求下头部可修磨成特殊形式))

G型 适合加工铸铁

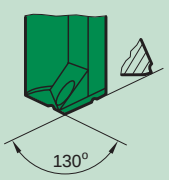


A型 适合加工铝

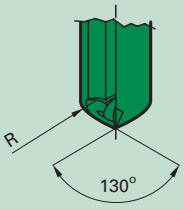


特殊头部刃磨，如:

铝合金



铸造材料

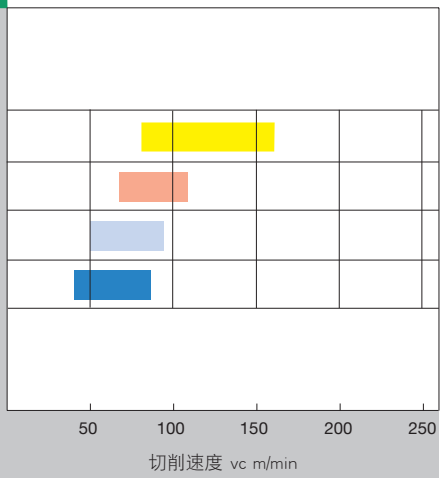


Z 80 硬质合金头部双刃枪钻

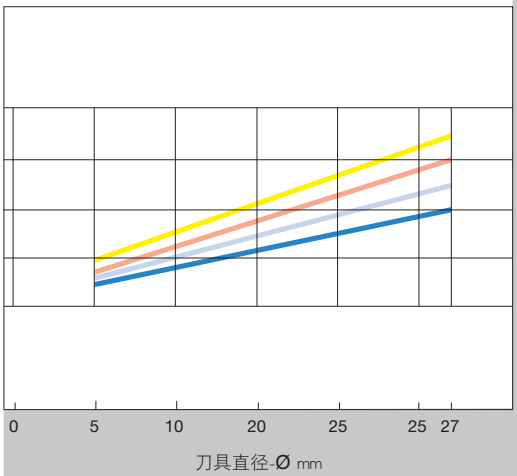
切削参数

铝合金（根据硅含量）
短屑非铁金属
铸铁
GGG, GTW, GTS

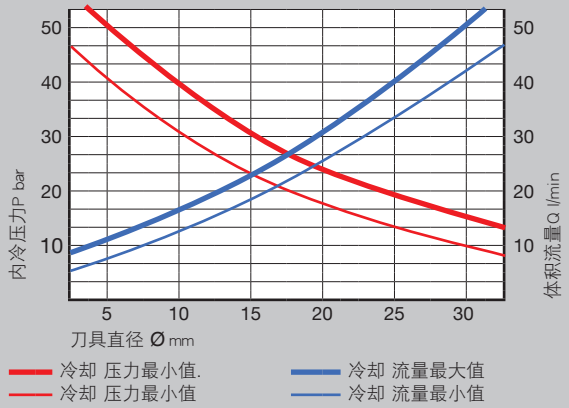
切削速度



进给率



冷却 值 Z 80
（采用乳化油，推荐值）





89518头部刃磨形式用于铸造材料

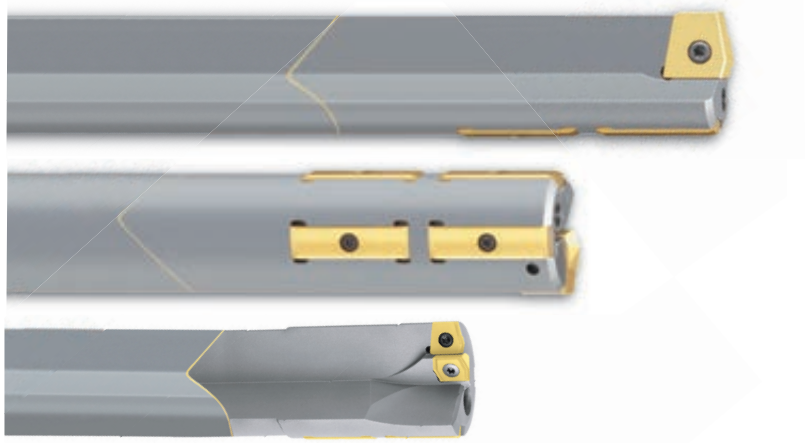


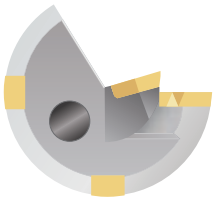
89518头部刃磨形式用于铝合金

单刃枪钻 E 800

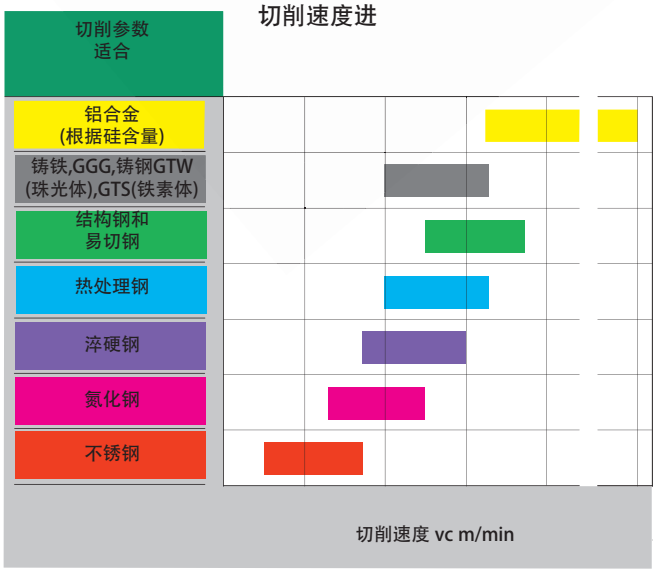
带可换支撑导条，适用于几乎所有材料加工，直径范围12.0 - 52.0 mm，最大长度可达 3000 mm

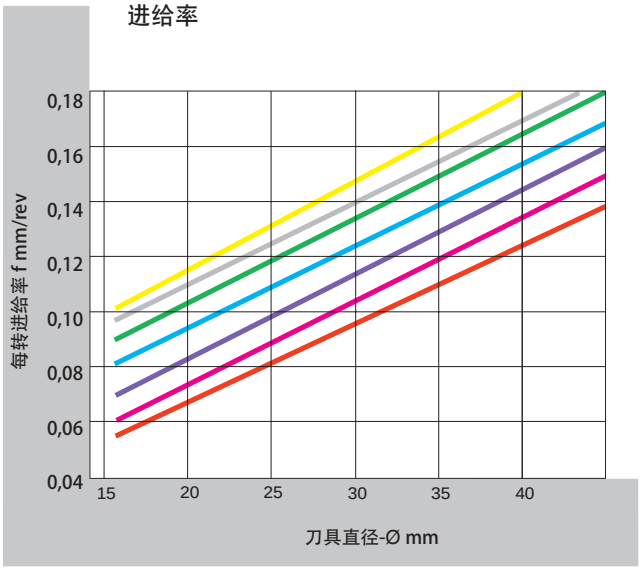


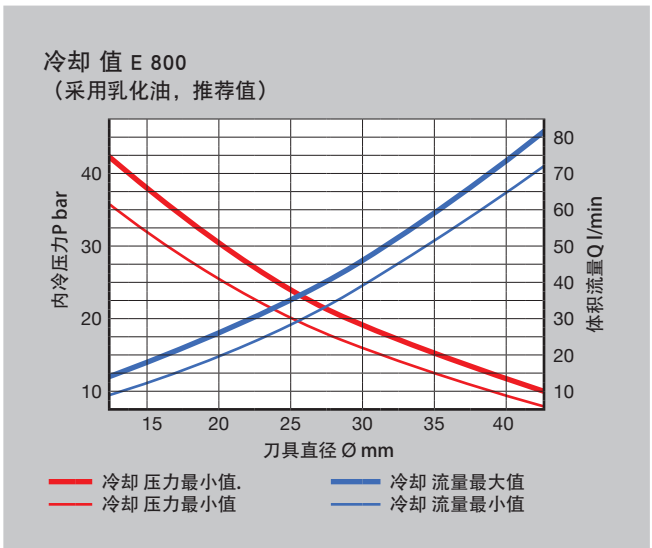




Ø 40.01 - 52.00 mm with internal and external







为方便您询问或订购Hartner E800型双刃硬质合金头部枪钻，请填写传真格式询价单。

单刃枪钻 E 800

附件

在第一次定购EB800型可换刀片钻枪时,已经包含有可换刀片支撑导条及其附件.在您再次定购时请使用以下定货号

Ø	可换刀片	刀片安装螺钉	刀片安装螺丝刀	支撑导条	支撑导条安装螺钉	支撑导条安装螺丝刀
16	No. 89535 Ø 16.0 + TiN	89537 3,002	89538 9,001	No. 89536 Ø 16.0 + TiN	89537 2,203	89538 7,001
18	No. 89535 Ø 18.0 + TiN	89537 3,002	89538 9,001	No. 89536 Ø 18.0 + TiN	89537 2,203	89538 7,001
20	No. 89535 Ø 20.0 + TiN	89537 4,001	89538 15,001	No. 89536 Ø 20.0 + TiN	89537 2,502	89538 8,001
24	No. 89535 Ø 24.0 + TiN	89537 4,001	89538 15,001	No. 89536 Ø 24.0 + TiN	89537 2,502	89538 8,001

在直径范围内的所有规格都能生产

规格直	直径范围(mm)
0.00	12.00 - 12.49
0.01	12.50 - 12.99
0.02	13.00 - 13.49
0.03	13.50 - 13.99
0.04	14.00 - 14.49
0.05	14.50 - 14.99
0.06	15.00 - 15.49
0.07	15.50 - 15.99
1.00	16.00 - 16.49
1.01	16.50 - 16.99
1.02	17.00 - 17.49
1.03	17.50 - 17.99
1.04	18.00 - 18.49
1.05	18.50 - 18.99
1.06	19.00 - 19.49
1.07	19.50 - 19.99
2.00	20.00 - 20.49
2.01	20.50 - 20.99
2.02	21.00 - 21.49
2.03	21.50 - 21.99
2.04	22.00 - 22.49
2.05	22.50 - 22.99
2.06	23.00 - 23.49
2.07	23.50 - 23.99
2.08	24.00 - 24.49
2.09	24.50 - 24.99
2.10	25.00 - 25.49
2.11	25.50 - 25.99
3.00	26.00 - 26.49
3.01	26.50 - 26.99

规格直	直径范围(mm)
3.02	27.00 - 27.49
3.03	27.50 - 27.99
3.04	28.00 - 28.49
3.05	28.50 - 28.99
3.06	29.00 - 29.49
3.07	29.50 - 29.99
4.00	30.00 - 30.49
4.01	30.50 - 30.99
4.02	31.00 - 31.49
4.03	31.50 - 31.99
4.04	32.00 - 32.49
4.05	32.50 - 32.99
4.06	33.00 - 33.49
4.07	33.50 - 33.99
5.00	34.00 - 34.49
5.01	34.50 - 34.99
5.02	35.00 - 35.49
5.03	35.50 - 35.99
5.04	36.00 - 36.49
5.05	36.50 - 36.99
5.06	37.00 - 37.49
5.07	37.50 - 37.99
6.00	38.00 - 38.49
6.01	38.50 - 38.99
6.02	39.00 - 39.49
6.03	39.50 - 40.00
7.00	40.01 - 43.99
8.00	44.00 - 47.99
9.00	48.00 - 52.00

HARTNER

可换刀片的E800单刃型枪钻

可以供应直径Φ12mm到Φ52mm

规格	刀杆直径	刀杆	可换刀片		
			刀片	螺丝	螺丝刀
			TIN 涂层		
0.	Ø12.00 - Ø12.49 Ø12.50 - Ø12.99 Ø13.00 - Ø13.49 Ø13.50 - Ø13.99 Ø14.00 - Ø14.49 Ø14.50 - Ø14.99 Ø15.00 - Ø15.49 Ø15.50 - Ø15.99	刀杆的长度可以根据客户的要求定制，最长到3000mm,钻深从15xD开始。 另外，我们也有标准品： 产品型号 No.89530 从直径12mm到直径24mm,它配备了可换的TIN涂层的刀片和TIN涂层的支撑块	产品型号 No. 89535 + 直径 Ø = 订货号	订货号 4071 2,502 T8 M2.5x 5.2	订货号 86842 8,001
1.	Ø16.00 - Ø16.49 Ø16.50 - Ø16.99 Ø17.00 - Ø17.49 Ø17.50 - Ø17.99 Ø18.00 - Ø18.49 Ø18.50 - Ø18.99 Ø19.00 - Ø19.49 Ø19.50 - Ø19.99			订货号 4071 3,002 T9 M3x6.4	订货号 86842 9,001
2.	Ø20.00 - Ø20.49 Ø20.50 - Ø20.99 Ø21.00 - Ø21.49 Ø21.50 - Ø21.99 Ø22.00 - Ø22.49 Ø22.50 - Ø22.99 Ø23.00 - Ø23.49 Ø23.50 - Ø23.99 Ø24.00 - Ø24.49 Ø24.50 - Ø24.99 Ø25.00 - Ø25.49 Ø25.50 - Ø25.99			订货号 4071 4,001 T15 M4x7.7	订货号 86842 15,001
3.	Ø26.00 - Ø26.49 Ø26.50 - Ø26.99 Ø27.00 - Ø27.49 Ø27.50 - Ø27.99 Ø28.00 - Ø28.49 Ø28.50 - Ø28.99 Ø29.00 - Ø29.49 Ø29.50 - Ø29.99			订货号 4071 4,002 T15 M4x10.6	
4.	Ø30.00 - Ø30.49 Ø30.50 - Ø30.99 Ø31.00 - Ø31.49 Ø31.50 - Ø31.99 Ø32.00 - Ø32.49 Ø32.50 - Ø32.99 Ø33.00 - Ø33.49 Ø33.50 - Ø33.99				
5.	Ø34.00 - Ø34.49 Ø34.50 - Ø34.99 Ø35.00 - Ø35.49 Ø35.50 - Ø35.99 Ø36.00 - Ø36.49 Ø36.50 - Ø36.99 Ø37.00 - Ø37.49 Ø37.50 - Ø37.99			订货号 4071 5,002 T20 M5x14.2	订货号 86842 20,001
6.	Ø38.00 - Ø38.49 Ø38.50 - Ø38.99 Ø39.00 - Ø39.49 Ø39.50 - Ø40.00				
7.	Ø40.01 - Ø40.49 Ø40.50 - Ø40.99 Ø41.00 - Ø41.49 Ø41.50 - Ø41.99 Ø42.00 - Ø42.49 Ø42.50 - Ø42.99 Ø43.00 - Ø43.49 Ø43.50 - Ø43.99		按需生产	订货号 4071 3,002 TX9 M3x6.4	订货号 86842 9,001
8.	Ø44.00 - Ø44.49 Ø44.50 - Ø44.99 Ø45.00 - Ø45.49 Ø45.50 - Ø45.99 Ø46.00 - Ø46.49 Ø46.50 - Ø46.99 Ø47.00 - Ø47.49 Ø47.50 - Ø47.99			订货号 4071 4,001 TX15 M4x7.7	订货号 86842 15,001
9.	Ø48.00 - Ø48.49 Ø48.50 - Ø48.99 Ø49.00 - Ø49.49 Ø49.50 - Ø49.99 Ø50.00 - Ø50.49 Ø50.50 - Ø50.99 Ø51.00 - Ø51.49 Ø51.50 - Ø52.00			订货号 4071 4,002 TX15 M4x10.6	

其他涂层按需生产

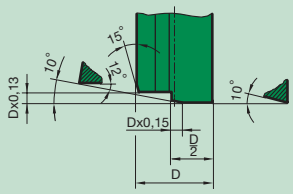
带可换刀片的E 800单刃枪钻

<table>
<tr><th colspan="3">内部的刀片</th><th colspan="3">支撑块</th></tr>
<tr><th>刀片</th><th>螺丝</th><th>螺丝刀</th><th>支撑块</th><th>螺丝</th><th>螺丝刀</th></tr>
<tr><td></td><td></td><td></td><td>TIN 涂层</td><td></td><td></td></tr>
<tr><td colspan="3" rowspan="5"></td><td rowspan="5">产品型号 No. 89535
+ 直径 Ø
= 订货号</td><td>订货号
4071 1,601
T5
M1.6x4.4</td><td>订货号
86842 5,001</td></tr>
<tr><td>订货号
4071 2,203
T7 / M2.2x 4.6</td><td rowspan="2">订货号
86842 7,001</td></tr>
<tr><td>订货号
4071 2,202
T7 / M2.2x5.6</td></tr>
<tr><td>订货号
4071 2,502
T8
M2.5x 5.2</td><td rowspan="2">订货号
86842 8,001</td></tr>
<tr><td>订货号
4071 2,501
T8
M2.5x6.4</td></tr>
<tr><td>按需生产</td><td>订货号
4071 4,501
T15
M4.5x11.8</td><td>订货号
86842 15,001</td><td>按需生产</td><td>订货号
4071 3,003
T9
M3x8</td><td>订货号
86842 9,001</td></tr>
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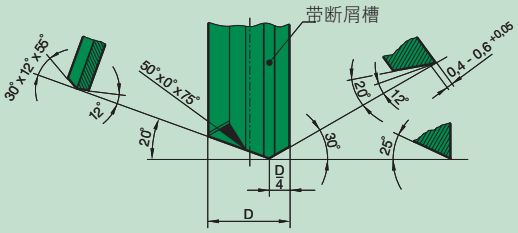
附加技术参数

单刃枪钻特殊的头部形式

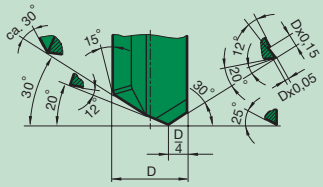
带内凹冷却倒角



带断屑槽



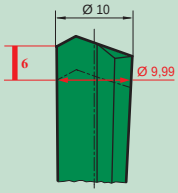
带断屑导向台阶



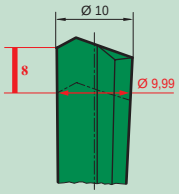
枪钻刀头倒锥

（尺寸单位:mm）

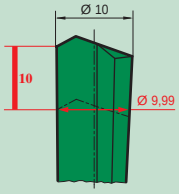
1:600



1:800 (标准)



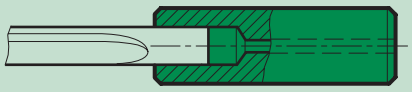
1:1000



钢管变化以与枪钻柄连接

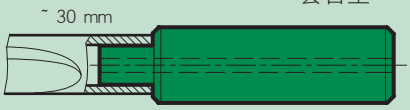
刀柄直径-刀头名义尺寸
（间距需大约6mm）：
钢管位于刀柄中

标准



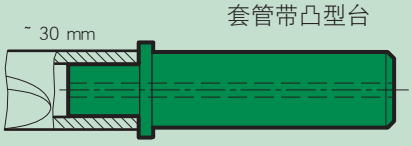
刀柄直径-刀头名义尺寸
（接近平行）
钢管超过衬套

套管型



刀柄直径-刀头名义尺寸
钢管超过衬套，
内部钢管直径>柄部直径，
钢管与法兰与凸台持平

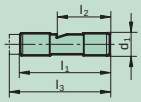
套管带凸型台



驱动柄

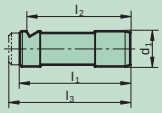
驱动柄 用于深孔专机

1



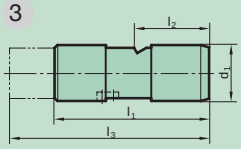
规格代号	d_1	l_1	l_2	l_3
1.1	10	40	24	-
1.2	10	40	24	45
1.3	10	40	24	55
1.4	16	45	31,2	-
1.5	25	70	34	-
1.6	25	70	34	78

2



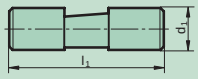
规格代号	d_1	l_1	l_2	l_3
2.1	16	50	47	-
2.2	16	50	47	55
2.3	16	50	47	70

3



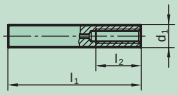
规格代号	d_1	l_1	l_2	l_3
3.1	25	70	34	100

4



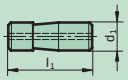
规格代号	d_1	l_1
4.1	19,05	70
4.2	12,70	70
4.3	25,40	70
4.4	31,75	70
4.5	38,10	70

5



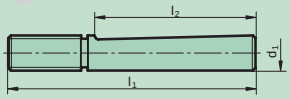
规格代号	d_1	l_1	l_2
5.1	10	60	20
5.2	16	80	28
5.3	25	100	50
5.4	10	100	
5.5	10	110	

6



规格代号	d_1	l_1
6.1	12.7	38
6.2	19.05	70
6.3	38.1	70

7



规格代号	d_1	l_1	l_2
7.1	16	112	73
7.2	20	126	82

驱动柄 根据DIN 1835标准

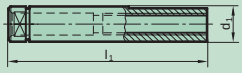
9 Form E



规格代号	d_1	l_1
9.1	8	36
9.2	10	40
9.3	12	45
9.4	16	48
9.5	20	50
9.6	25	56
9.7	32	60
9.8	31.75	70
9.9	38.1	70
9.10	40	70

驱动柄 VDI型

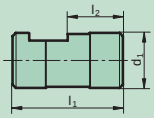
12



规格代号	d_1	l_1
12.1	10	68
12.2	16	90
12.3	25	112

驱动柄 适合加速控制系统

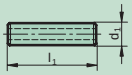
13



规格代号	d_1	l_1	l_2
13.1	16	40	16
13.2	25	50	25
13.3	35.6	60	

驱动柄 根据DIN 6535标准

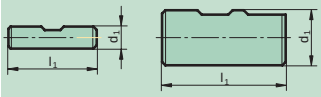
10 Form HA



规格代号	d_1	l_1
10.1	8	36
10.2	10	40
10.3	12	45
10.4	16	48
10.5	20	50
10.6	25	56
10.7	32	60
10.8	25	70
10.9	40	70

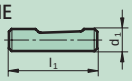
8 Form HB

规格代号 8.6, 8.7, 8.8



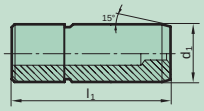
规格代号	d_1	l_1
8.1	8	36
8.2	10	40
8.3	12	45
8.4	16	48
8.5	20	50
8.6	25	56
8.7	32	60
8.8	40	70

11 Form HE



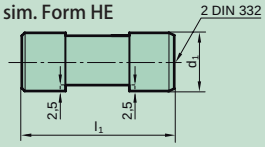
规格代号	d_1	l_1
11.1	8	36
11.2	10	40
11.3	12	45
11.4	16	48
11.5	20	50
11.6	25.4	70
11.7	25	56
11.8	32	60
11.9	40	70

16 sim. Form HA



规格代号	d_1	l_1
16.1	10	50
16.2	16	64
16.3	20	70
16.4	25	81
16.5	32	92

17 sim. Form HE



规格代号	d_1	l_1
17.1	19.05	70
17.2	25.40	70
17.3	31.75	70
17.4	38.1	70

下列驱动柄是常规库存规格，然而，这只是我们所有刀柄规格中　的一小部分。我们也可以根据客户的图纸制造特殊要求的刀柄。
注意：对于整体硬质合金单刃枪钻的驱动柄，需要增加定位凸 台。更多信息请咨询我们。

关于枪钻的简要介绍

在机加行业，钻头钻孔深度达到或超过10XD时我们就成为深孔加工了，枪钻能加工甚至更深的孔。枪钻的优点：具有更高的表面光洁度，同轴度和直线度。并能达到严格控制的孔径公差要求。

在普通设备上使用枪钻的典型步骤为：

- 预钻导引孔。枪钻低转速快进给地进入到导引孔内，一般n=200rev./min,F=500mm/min。
- 设定冷却压力和切削参数。
- 连续进给，直至钻孔结束，期间不需要排屑退刀。在使用较大长径比的枪钻刀具时（如排屑长度为160mm的整体硬质合金枪钻），我们建议在钻孔的前25mm以较低进给速度钻孔（正常进给的75%）。
- 加工到预定深度后关闭冷却液.
- 停转并快速退刀.

高压内冷-已成为理所当然的事。
近年来，带内冷的钻孔刀具越来越普及。冷却液及时的通过内部通道到达加工区域。
这就大大提高了钻头、丝锥等刀具的寿命，降低了刀具的崩损。
目前市场上的内冷刀具都能使用较高压力，故也能加工较深的孔。
枪钻可在加工中心、车床等设备上使用。这已经成为了机加工领域的一大热门课题。

应用建议

- 在加工深度超过40×D时我们推荐用两支或更多枪钻由浅到深来加工,例如. § 10×400mm和 § 9,95×800mm.
- 枪钻长度超过40×D时,要求枪钻反转进入引导孔.
- 在加工长屑材料时我们建议选用排屑槽抛光的枪钻.
- 单刃枪钻加工长屑铝时我们建议选用平头(180°)带冷却倒角的头部形式.
- 通常我们推荐乳化液的油脂含量至少为10%.



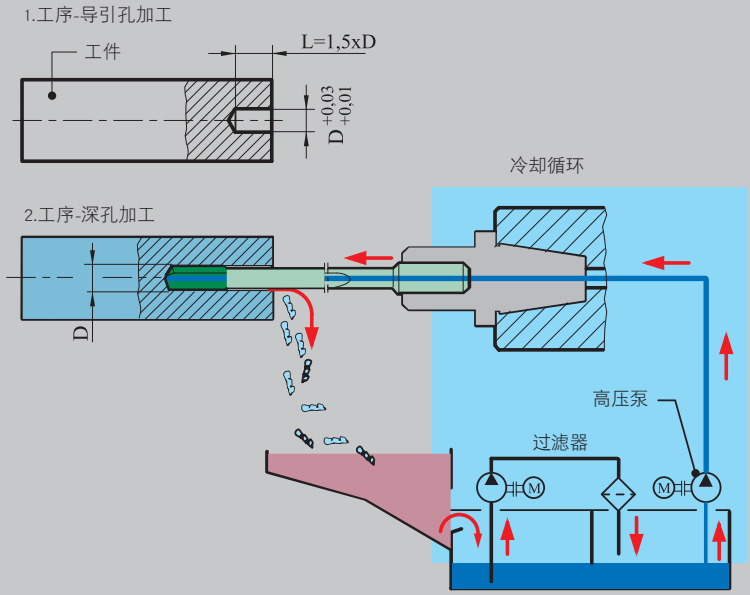
所有枪钻使用时都必须有引导孔或钻套的导引。

枪钻切不可在没有导引的情况下全速运转。

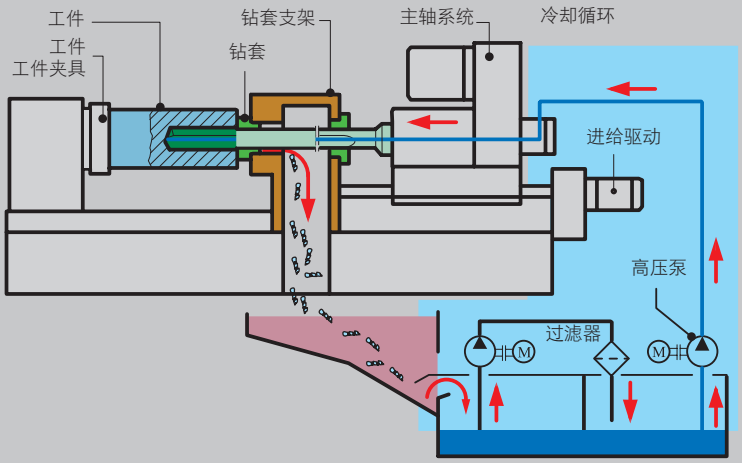
深孔加工对于我们来说已不再是陌生的领域,并且随着我们使用的日益平凡而对其越加熟悉。
Hartner各型枪钻推荐的切削参数在样本中都可找到!

示意图

在普通机床上使用枪钻

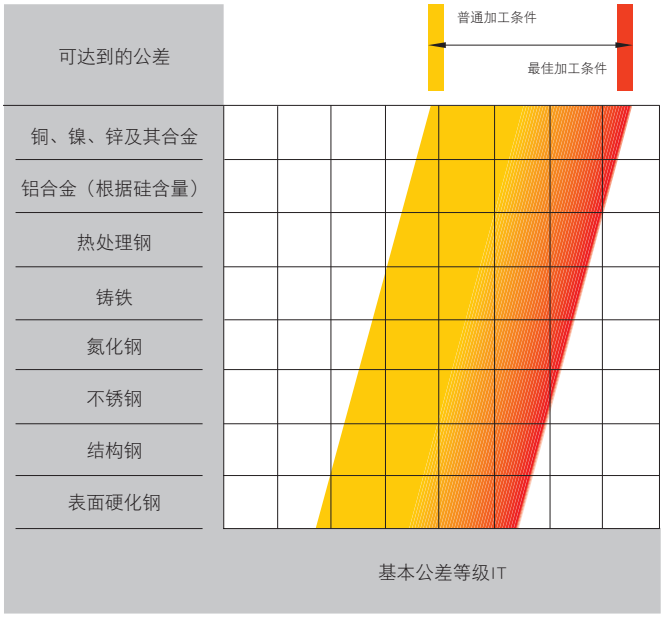


在深孔专机上使用枪钻



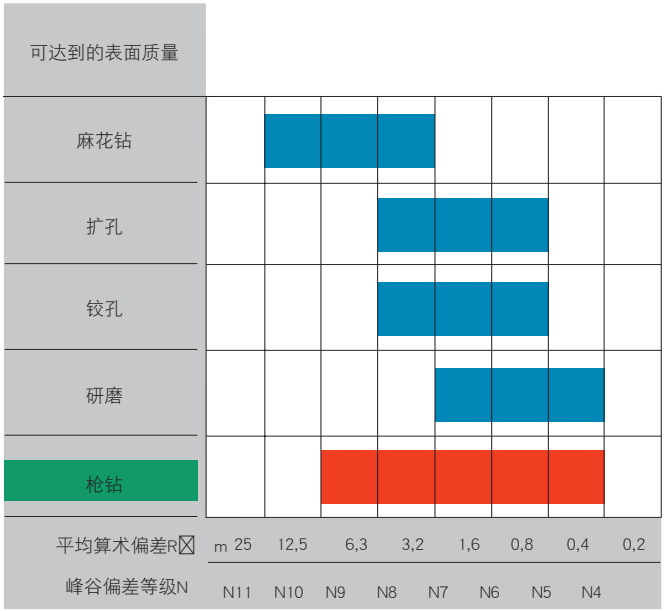
单刃深孔枪钻

基本公差
单刃枪钻加工的孔能达到一个较紧的基本公差,因其切削刃不对称,加工时的径向切削力只能通过侧面支撑条的反作用力而抵消,而不象麻花钻径向切削力几乎为零故而易导致孔径偏大。



表面质量
加工时的径向切削力通过支撑导条而作用在孔壁,可使孔表面因挤压作用而更加光亮。故支撑导条和孔壁之间的润滑就非常重要。

润滑效果越好，表面质量也就越好。

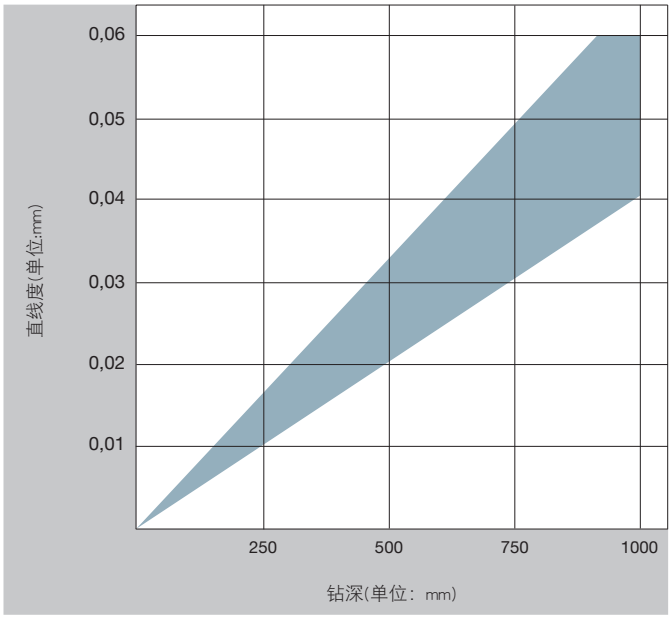




加工精度

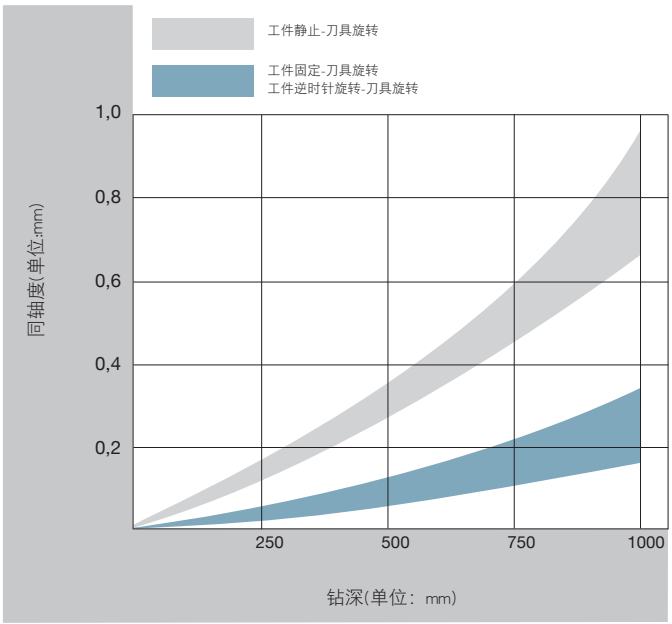
直线度

因为焊硬质合金枪钻是把高精度的硬质合金头部焊在韧性极好的钢管上,故孔能达到一很高的直线度。然而,工件材料及其它不利因素都会影响到孔的精度。



同轴度

由于导向条的支撑作用，使用单刃枪钻可以达到高精度的孔径公差要求，而在使用麻花钻时，由于两条切削刃的不对称会导致加工的孔径偏大。





HARTNER

传真询价/订单

❑ 询价 ❑ 订单传真至： +49 74 31 125 - 21547

客户号：　　新客户　　订单号：

联系方式

公司　　联系人

地址　　邮编

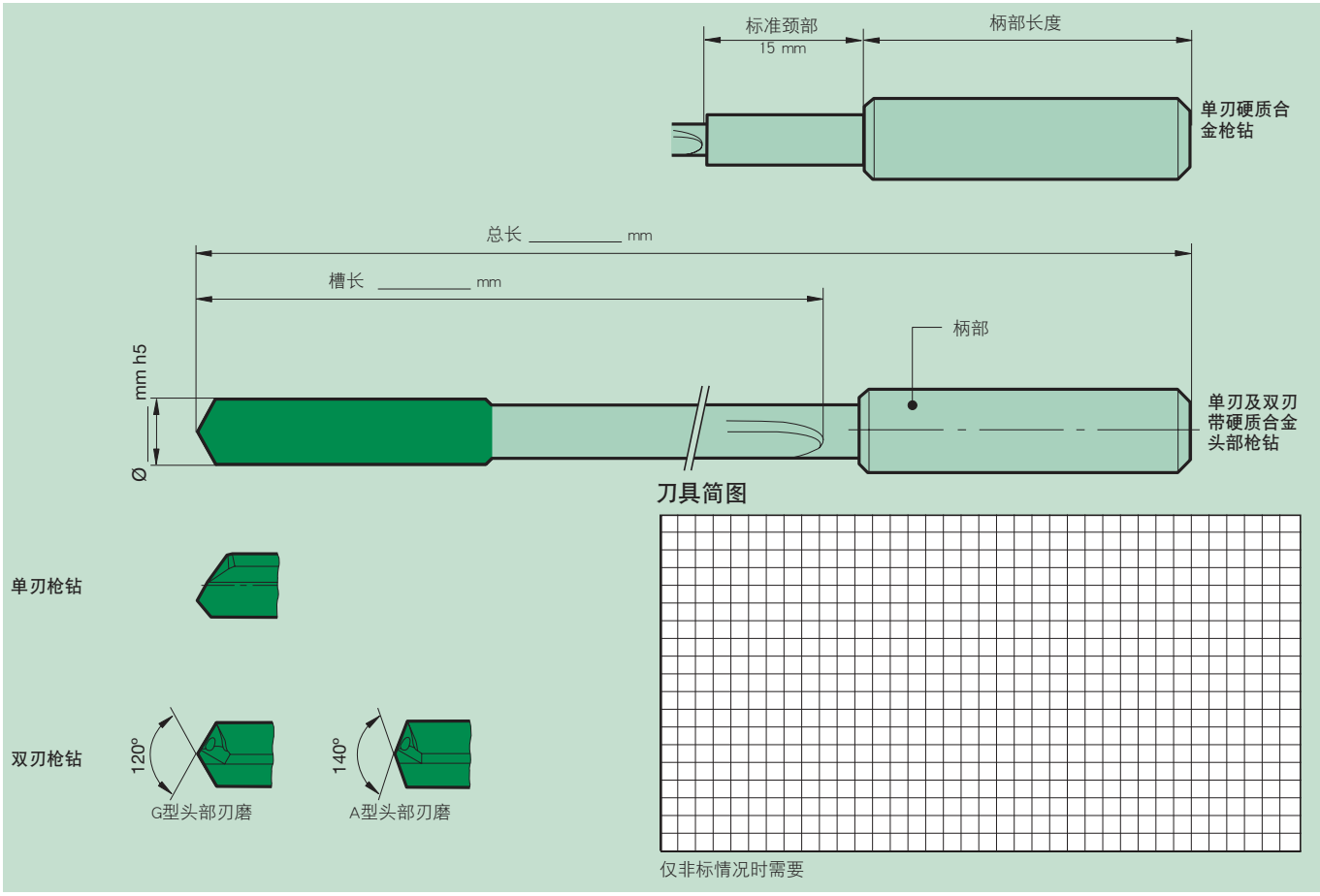
电话　　传真

日期　　签名

Hartner GmbH
P. O. Box 10 04 27
D-72425 Albstadt
Tel.: +497431 125-0
Fax: +497431 125-21547
www.hartner.de

深孔枪钻：　❑ E 100 单刃硬质合枪钻　❑ E 80单刃硬质合金头部枪钻　❑ Z 80双刃硬质合金头部枪钻

头部形式：_____　需求数量：_____ 件



柄部：　❑ 无　❑ 代号：　❑ 代号

涂层：　❑ TiN　❑ FIRE　❑ 复合涂层　❑ TiAlN　❑ nanoA　❑ TiCN　❑ _____

工件：　钻深：_____　孔径公差：_____　材料/名称：_____

机床类型：　❑ 深孔专机　❑ 普通机床　❑ 导引孔　❑ 深钻　❑ 传统的造纸机工具

冷却形式：　❑ 深孔润滑油　❑ 乳化液

压力 _____bar　流量 _____bar

HARTNER

传真询价/订单

❑ 询价 ❑ 订单传真至： +49 74 31 125 - 21547

客户号：　　新客户　　订单号：

联系方式

公司　　联系人

地址　　邮编

电话　　传真

日期　　签名

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P. O. Box 10 04 27
D-72425 Albstadt
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Fax: +497431 125-21547
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工件

材质：　　孔径：　　表面质量要求：

描述：　　孔公差：　　翻边毛刺：
不可以　可以　mm

数量/年：　　钻深：　　附加说明：

机床

加工中心：　　深孔加工机床：　　冷却/润滑：
乳化液　润滑油

刀柄：　　刀柄：　　冷却压力：
bar

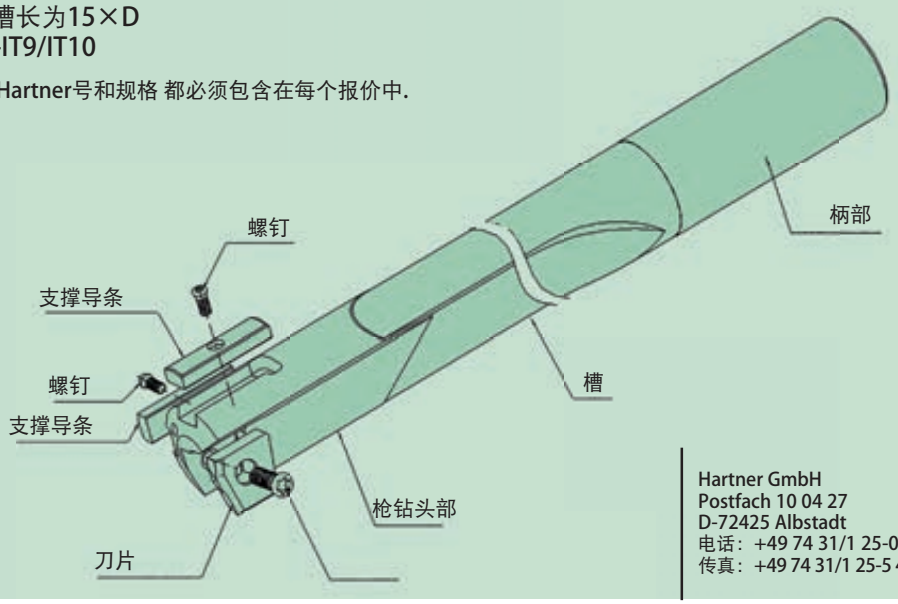
主轴数量：　　主轴数量：　　流量：
l/min

刀具总长：

Hartner E800型枪钻适合你的需求

注意:最短槽长为15×D
-直径公差-IT9/IT10

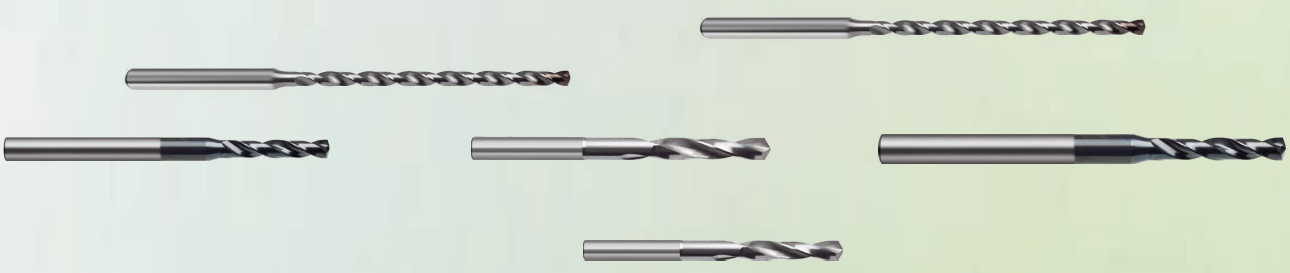
图中,所有的Hartner号和规格 都必须包含在每个报价中.



Hartner GmbH
Postfach 10 04 27
D-72425 Albstadt
电话：+49 74 31/1 25-0
传真：+49 74 31/1 25-5 47

该枪钻带可换刀片和支撑条，
内冷，
直径范围：12.00-40.00mm





HARTNER

Precision Cutting Tools

微精密钻头

HSS-E-PM和硬质合金 /
抛光处理和涂层



无内冷微钻

P	M	K	N	S	H	标准	型号	刀具材料	表面处理	切削方向	柄部形式	钻深	d1/mm	产品代号	页码
●	●	●	●	○		DIN 1899	N	HSS-E-PM	◯	右手	圆柱形	~5xD	0,050 - 1,900	87011	289
●	●	●	●	○		DIN 1899	N	HSS-E-PM	◯	左手	圆柱形	~5xD	0,150 - 1,450	87016	291
●	●	●	●	○		DIN 1899	N	HSS-E-PM	Ⓣ	右手	圆柱形	~5xD	0,200 - 1,500	84810	292
															
●		●				哈特纳标准	N	整硬	Ⓐ	右手	圆柱形		0,100 - 3,000	86402	294
															
●	●	●	○	○		哈特纳标准	N	整硬	Ⓐ	右手	圆柱形	4xD	0,500 - 3,000	86400	295
●	○	●	○	○	○	哈特纳标准	N	整硬	◯	右手	圆柱形	~5xD	0,200 - 1,300	89281	293
															
●	●	●	○	○		哈特纳标准	N	整硬	Ⓐ	右手	圆柱形	7xD	0,500 - 3,000	86401	296

带内冷微钻

															
●	●	●	○	○		哈特纳标准	N	整硬	Ⓐ	右手	圆柱形	5xD	1,400 - 3,000	86405	297
															
●	●	●	○	○		哈特纳标准	N	整硬	Ⓐ	右手	圆柱形	8xD	1,400 - 3,000	86408	298
															
●	●	●	○	○		哈特纳标准	N	整硬	Ⓐ	右手	圆柱形	15xD	1,400 - 3,000	86412	299

HARTNER

无内冷微钻

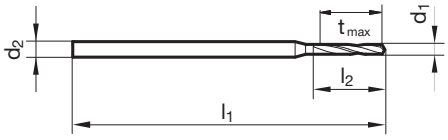
产品代号 87011

P	M	K	N	S	H
●	●	●	●	○	

HSS-E-PM | N | ~5xD | DIN 1899 | 118° | 0/-0,004 | R | Cyl

双后刃面 • < Φ 0.15 mm 含钴高速钢 • 增强柄
适于加工：高合金钢

$t_{max} = l_2\text{-}1{,}5 \times d_1$



d1 mm	d2 mm	l1 mm	l2 mm	d1 mm	d2 mm	l1 mm	l2 mm
0,050	1,000	25,000	0,400	0,345	1,000	25,000	2,400
0,060	1,000	25,000	0,400	0,350	1,000	25,000	2,400
0,080	1,000	25,000	0,500	0,355	1,000	25,000	2,400
0,090	1,000	25,000	0,500	0,360	1,000	25,000	2,400
0,100	1,000	25,000	0,500	0,365	1,000	25,000	2,400
0,110	1,000	25,000	0,500	0,370	1,000	25,000	2,400
0,120	1,000	25,000	0,500	0,375	1,000	25,000	2,400
0,130	1,000	25,000	0,800	0,380	1,000	25,000	2,400
0,140	1,000	25,000	0,800	0,390	1,000	25,000	3,000
0,150	1,000	25,000	0,800	0,400	1,000	25,000	3,000
0,160	1,000	25,000	1,100	0,405	1,000	25,000	3,000
0,170	1,000	25,000	1,100	0,410	1,000	25,000	3,000
0,180	1,000	25,000	1,100	0,415	1,000	25,000	3,000
0,190	1,000	25,000	1,100	0,420	1,000	25,000	3,000
0,200	1,000	25,000	1,500	0,425	1,000	25,000	3,000
0,205	1,000	25,000	1,500	0,430	1,000	25,000	3,000
0,210	1,000	25,000	1,500	0,440	1,000	25,000	3,000
0,215	1,000	25,000	1,500	0,450	1,000	25,000	3,000
0,220	1,000	25,000	1,500	0,460	1,000	25,000	3,000
0,225	1,000	25,000	1,500	0,470	1,000	25,000	3,000
0,230	1,000	25,000	1,500	0,480	1,000	25,000	3,000
0,235	1,000	25,000	1,500	0,485	1,000	25,000	3,400
0,240	1,000	25,000	1,500	0,490	1,000	25,000	3,400
0,245	1,000	25,000	1,900	0,495	1,000	25,000	3,400
0,250	1,000	25,000	1,900	0,500	1,000	25,000	3,400
0,255	1,000	25,000	1,900	0,510	1,000	25,000	3,400
0,260	1,000	25,000	1,900	0,520	1,000	25,000	3,400
0,265	1,000	25,000	1,900	0,530	1,000	25,000	3,400
0,270	1,000	25,000	1,900	0,535	1,000	25,000	3,900
0,275	1,000	25,000	1,900	0,540	1,000	25,000	3,900
0,280	1,000	25,000	1,900	0,550	1,000	25,000	3,900
0,285	1,000	25,000	1,900	0,555	1,000	25,000	3,900
0,290	1,000	25,000	1,900	0,560	1,000	25,000	3,900
0,295	1,000	25,000	1,900	0,570	1,000	25,000	3,900
0,300	1,000	25,000	1,900	0,580	1,000	25,000	3,900
0,310	1,000	25,000	2,400	0,585	1,000	25,000	3,900
0,315	1,000	25,000	2,400	0,590	1,000	25,000	3,900
0,320	1,000	25,000	2,400	0,600	1,000	25,000	3,900
0,325	1,000	25,000	2,400	0,610	1,000	25,000	4,200
0,330	1,000	25,000	2,400	0,620	1,000	25,000	4,200
0,335	1,000	25,000	2,400	0,630	1,000	25,000	4,200
0,340	1,000	25,000	2,400	0,640	1,000	25,000	4,200

无内冷微钻

d1 mm	d2 mm	l1 mm	l2 mm	d1 mm	d2 mm	l1 mm	l2 mm
0,650	1,000	25,000	4,200	1,060	1,500	25,000	6,800
0,660	1,000	25,000	4,200	1,070	1,500	25,000	7,600
0,665	1,000	25,000	4,200	1,080	1,500	25,000	7,600
0,670	1,000	25,000	4,200	1,100	1,500	25,000	7,600
0,680	1,000	25,000	4,800	1,110	1,500	25,000	7,600
0,690	1,000	25,000	4,800	1,120	1,500	25,000	7,600
0,700	1,000	25,000	4,800	1,140	1,500	25,000	7,600
0,710	1,000	25,000	4,800	1,150	1,500	25,000	7,600
0,720	1,000	25,000	4,800	1,160	1,500	25,000	7,600
0,730	1,000	25,000	4,800	1,180	1,500	25,000	7,600
0,740	1,000	25,000	4,800	1,190	1,500	25,000	8,500
0,750	1,000	25,000	4,800	1,200	1,500	25,000	8,500
0,760	1,000	25,000	5,300	1,210	1,500	25,000	8,500
0,770	1,000	25,000	5,300	1,230	1,500	25,000	8,500
0,780	1,000	25,000	5,300	1,240	1,500	25,000	8,500
0,790	1,000	25,000	5,300	1,250	1,500	25,000	8,500
0,800	1,500	25,000	5,300	1,260	1,500	25,000	8,500
0,810	1,500	25,000	5,300	1,270	1,500	25,000	8,500
0,820	1,500	25,000	5,300	1,280	1,500	25,000	8,500
0,830	1,500	25,000	5,300	1,300	1,500	25,000	8,500
0,840	1,500	25,000	5,300	1,310	1,500	25,000	8,500
0,850	1,500	25,000	5,300	1,320	1,500	25,000	8,500
0,860	1,500	25,000	6,000	1,340	1,500	25,000	9,500
0,870	1,500	25,000	6,000	1,350	1,500	25,000	9,500
0,880	1,500	25,000	6,000	1,380	1,500	25,000	9,500
0,890	1,500	25,000	6,000	1,390	1,500	25,000	9,500
0,900	1,500	25,000	6,000	1,400	1,500	25,000	9,500
0,910	1,500	25,000	6,000	1,410	1,500	25,000	9,500
0,920	1,500	25,000	6,000	1,420	1,500	25,000	9,500
0,930	1,500	25,000	6,000	1,430	1,500	25,000	9,500
0,940	1,500	25,000	6,000	1,440	1,500	25,000	9,500
0,950	1,500	25,000	6,000	1,450	1,500	25,000	9,500
0,960	1,500	25,000	6,800	1,500	2,000	30,000	9,500
0,970	1,500	25,000	6,800	1,600	2,000	30,000	10,600
0,980	1,500	25,000	6,800	1,630	2,000	30,000	10,600
0,990	1,500	25,000	6,800	1,800	2,000	30,000	11,800
1,000	1,500	25,000	6,800	1,850	2,000	30,000	11,800
1,010	1,500	25,000	6,800	1,900	2,000	30,000	11,800
1,020	1,500	25,000	6,800				
1,030	1,500	25,000	6,800				
1,040	1,500	25,000	6,800				
1,050	1,500	25,000	6,800				

无内冷微钻

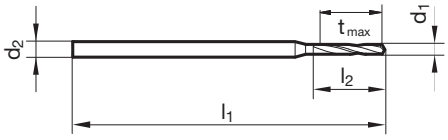
产品代号 87016

P	M	K	N	S	H
●	●	●	●	○	

HSS-E-PM | N | ~5xD | DIN 1899 | 118° | 0/-0,004 | L | Cyl

双后刃面 • < Φ 0.15 mm 含钴高速钢 • 增强柄
适于加工：高合金钢

$t_{max} = l_2\text{-}1{,}5 \times d_1$



d1 mm	d2 mm	l1 mm	l2 mm
0,150	1,000	25,000	0,800
0,160	1,000	25,000	1,100
0,200	1,000	25,000	1,500
0,210	1,000	25,000	1,500
0,220	1,000	25,000	1,500
0,230	1,000	25,000	1,500
0,240	1,000	25,000	1,500
0,280	1,000	25,000	1,900
0,300	1,000	25,000	1,900
0,310	1,000	25,000	2,400
0,330	1,000	25,000	2,400
0,350	1,000	25,000	2,400
0,370	1,000	25,000	2,400
0,380	1,000	25,000	2,400
0,390	1,000	25,000	3,000
0,400	1,000	25,000	3,000
0,410	1,000	25,000	3,000
0,420	1,000	25,000	3,000
0,430	1,000	25,000	3,000
0,440	1,000	25,000	3,000
0,450	1,000	25,000	3,000
0,460	1,000	25,000	3,000
0,480	1,000	25,000	3,000
0,490	1,000	25,000	3,400
0,500	1,000	25,000	3,400
0,510	1,000	25,000	3,400
0,520	1,000	25,000	3,400
0,540	1,000	25,000	3,900
0,550	1,000	25,000	3,900
0,560	1,000	25,000	3,900
0,570	1,000	25,000	3,900
0,600	1,000	25,000	3,900
0,610	1,000	25,000	4,200
0,670	1,000	25,000	4,200
0,680	1,000	25,000	4,800
0,700	1,000	25,000	4,800

d1 mm	d2 mm	l1 mm	l2 mm
0,710	1,000	25,000	4,800
0,750	1,000	25,000	4,800
0,760	1,000	25,000	5,300
0,780	1,000	25,000	5,300
0,800	1,500	25,000	5,300
0,820	1,500	25,000	5,300
0,830	1,500	25,000	5,300
0,840	1,500	25,000	5,300
0,870	1,500	25,000	6,000
0,900	1,500	25,000	6,000
0,910	1,500	25,000	6,000
0,920	1,500	25,000	6,000
0,930	1,500	25,000	6,000
0,940	1,500	25,000	6,000
0,950	1,500	25,000	6,000
0,970	1,500	25,000	6,800
0,980	1,500	25,000	6,800
0,990	1,500	25,000	6,800
1,000	1,500	25,000	6,800
1,010	1,500	25,000	6,800
1,040	1,500	25,000	6,800
1,080	1,500	25,000	7,600
1,100	1,500	25,000	7,600
1,150	1,500	25,000	7,600
1,250	1,500	25,000	8,500
1,300	1,500	25,000	8,500
1,340	1,500	25,000	9,500
1,350	1,500	25,000	9,500
1,450	1,500	25,000	9,500

HARTNER

无内冷微钻

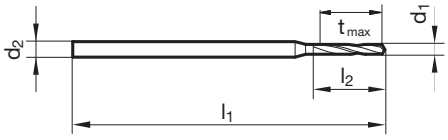
产品代号 84810

P	M	K	N	S	H
●	●	●	●	○	

HSS-E-PM | T | N | ~5xD | DIN 1899 | 118° | 0/-0,004 | R | Cyl

双后刀面 • 增强柄 • 耐磨损 高强度
适于加工：高合金钢

$t_{max} = l_2 - 1{,}5 \times d_1$



d1 mm	d2 mm	l1 mm	l2 mm	d1 mm	d2 mm	l1 mm	l2 mm
0,200	1,000	25,000	1,500	1,050	1,500	25,000	6,800
0,300	1,000	25,000	1,900	1,100	1,500	25,000	7,600
0,450	1,000	25,000	3,000	1,150	1,500	25,000	7,600
0,490	1,000	25,000	3,400	1,180	1,500	25,000	7,600
0,500	1,000	25,000	3,400	1,200	1,500	25,000	8,500
0,510	1,000	25,000	3,400	1,250	1,500	25,000	8,500
0,520	1,000	25,000	3,400	1,400	1,500	25,000	9,500
0,590	1,000	25,000	3,900	1,450	1,500	25,000	9,500
0,600	1,000	25,000	3,900	1,500	2,000	30,000	9,500
0,700	1,000	25,000	4,800				
0,760	1,000	25,000	5,300				
0,800	1,500	25,000	5,300				
0,880	1,500	25,000	6,000				
0,900	1,500	25,000	6,000				
0,920	1,500	25,000	6,000				
0,950	1,500	25,000	6,000				
0,980	1,500	25,000	6,800				
1,000	1,500	25,000	6,800				

无内冷微钻

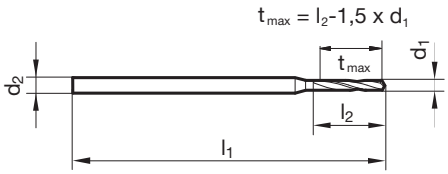
产品代号 89281



P	M	K	N	S	H
●	○	●	○	○	○



芯厚 ⩾ Ø 0,800 • 双后刀面 • 精密磨削过的主切削刃
适合加工：结构钢和淬硬钢 • 铸件材料 • 青铜、黄铜 • 铝和的铝合金 • 镁和镁合金 • 塑料及纤维增强塑料



d1 mm	d2 mm	l1 mm	l2 mm	d1 mm	d2 mm	l1 mm	l2 mm
0,200	1,000	25,000	1,500	0,700	1,000	25,000	4,800
0,300	1,000	25,000	1,900	0,800	1,500	25,000	5,300
0,350	1,000	25,000	2,400	1,000	1,500	25,000	6,800
0,400	1,000	25,000	3,000	1,100	1,500	25,000	7,600
0,500	1,000	25,000	3,400	1,250	1,500	25,000	8,500
0,600	1,000	25,000	3,900	1,300	1,500	25,000	8,500

HARTNER

无内冷微钻

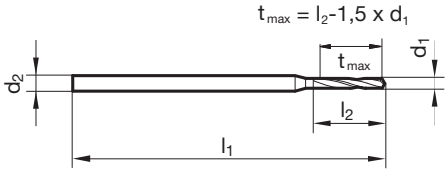
产品代号 86402



P	M	K	N	S	H
•		•			

VHM | A | N | WN | 140° | h7 | R | Cyl

芯厚 ⩾ Ø 0,800 • 双后刀面 • 统一柄径3mm • 统一长度38mm
适合加工：结构钢和淬硬钢 • 易切削钢和热处理钢 • 强度小于1200N/mm²的合金钢 • 铸件材料 • 板材加工



d1 mm	inch	d2 h6 mm	l1 mm	l2 mm	d1 mm	inch	d2 h6 mm	l1 mm	l2 mm
0,100		3,000	38,000	1,200	0,980		3,000	38,000	10,000
0,150		3,000	38,000	2,000	0,990		3,000	38,000	10,000
0,200		3,000	38,000	2,500	1,000		3,000	38,000	10,000
0,250		3,000	38,000	3,000	1,100		3,000	38,000	10,000
0,300		3,000	38,000	5,000	1,110		3,000	38,000	10,000
0,310		3,000	38,000	5,000	1,150		3,000	38,000	10,000
0,350		3,000	38,000	6,000	1,200		3,000	38,000	10,000
0,370		3,000	38,000	6,000	1,210		3,000	38,000	10,000
0,400		3,000	38,000	7,000	1,400		3,000	38,000	10,000
0,450		3,000	38,000	7,000	1,450		3,000	38,000	10,000
0,500		3,000	38,000	7,000	1,500		3,000	38,000	10,000
0,550		3,000	38,000	7,000	1,510		3,000	38,000	10,000
0,600		3,000	38,000	7,000	1,520		3,000	38,000	10,000
0,640		3,000	38,000	7,000	1,550		3,000	38,000	10,000
0,650		3,000	38,000	7,000	1,600		3,000	38,000	12,000
0,700		3,000	38,000	8,000	1,650		3,000	38,000	12,000
0,710		3,000	38,000	8,000	1,700		3,000	38,000	12,000
0,720		3,000	38,000	8,000	1,800		3,000	38,000	12,000
0,740		3,000	38,000	8,000	1,810		3,000	38,000	12,000
0,750		3,000	38,000	8,000	1,830		3,000	38,000	12,000
0,760		3,000	38,000	8,000	1,850		3,000	38,000	12,000
0,770		3,000	38,000	8,000	1,900		3,000	38,000	12,000
0,780		3,000	38,000	8,000	1,920		3,000	38,000	12,000
0,790		3,000	38,000	8,000	1,950		3,000	38,000	12,000
0,800		3,000	38,000	10,000	1,980		3,000	38,000	12,000
0,810		3,000	38,000	10,000	2,000		3,000	38,000	12,000
0,820		3,000	38,000	10,000	2,050		3,000	38,000	12,000
0,830		3,000	38,000	10,000	2,100		3,000	38,000	12,000
0,840		3,000	38,000	10,000	2,400		3,000	38,000	12,000
0,850		3,000	38,000	10,000	2,500		3,000	38,000	12,000
0,860		3,000	38,000	10,000	2,600		3,000	38,000	12,000
0,870		3,000	38,000	10,000	2,750		3,000	38,000	12,000
0,880		3,000	38,000	10,000	2,950		3,000	38,000	12,000
0,890		3,000	38,000	10,000	3,000		3,000	38,000	12,000
0,900		3,000	38,000	10,000					
0,910		3,000	38,000	10,000					
0,920		3,000	38,000	10,000					
0,930		3,000	38,000	10,000					
0,940		3,000	38,000	10,000					
0,950		3,000	38,000	10,000					
0,960		3,000	38,000	10,000					
0,970		3,000	38,000	10,000					

HARTNER

无内冷微钻

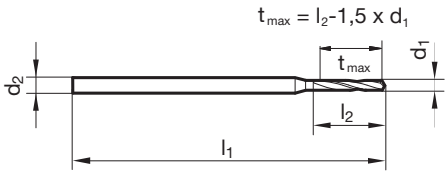
产品代号 86400



P	M	K	N	S	H
●	●	●	○	○	

VHM | A | N | 4xD | WN | 140° | m7 | R | Cyl

芯厚 ⩾ Ø 0,500 • 双后刀面 • 精密磨削过的主切削刃 • 精密磨削过的倒棱
适合加工：结构钢和淬硬钢 • 易切削钢和热处理钢 • 强度小于1200N/mm²的合金钢 • 不锈钢 • 铸件材料



d1 mm	inch	d2 h6 mm	l1 mm	l2 mm
0,500		3,000	47,000	3,000
0,550		3,000	47,000	3,300
0,600		3,000	47,000	3,600
0,650		3,000	47,000	3,900
0,700		3,000	47,000	4,200
0,750		3,000	47,000	4,500
0,800		3,000	47,000	4,800
0,850		3,000	47,000	5,100
0,900		3,000	47,000	5,400
0,950		3,000	47,000	5,700
1,000		3,000	47,000	6,000
1,050		3,000	47,000	6,300
1,100		3,000	47,000	6,600
1,150		3,000	47,000	6,900
1,200		3,000	47,000	7,200
1,250		3,000	47,000	7,500
1,300		3,000	47,000	7,800
1,350		3,000	47,000	8,100
1,400		3,000	47,000	8,400
1,450		3,000	47,000	8,700
1,500		3,000	47,000	9,000
1,550		3,000	47,000	9,300
1,590		3,000	47,000	9,600
1,600		3,000	47,000	9,600
1,650		3,000	47,000	9,900
1,700		3,000	47,000	10,200
1,750		3,000	47,000	10,500
1,800		3,000	52,000	10,800
1,850		3,000	52,000	11,100
1,900		3,000	52,000	11,400

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm
1,950		3,000	52,000	11,700
1,980		4,000	59,000	12,000
2,000		4,000	59,000	12,000
2,050		4,000	59,000	12,300
2,100		4,000	59,000	12,600
2,150		4,000	59,000	12,900
2,200		4,000	59,000	13,200
2,250		4,000	59,000	13,500
2,300		4,000	59,000	13,800
2,350		4,000	59,000	14,100
2,380		4,000	59,000	14,400
2,400		4,000	59,000	14,400
2,450		4,000	59,000	14,700
2,500		4,000	59,000	15,000
2,550		4,000	59,000	15,300
2,600		4,000	59,000	15,600
2,650		4,000	59,000	15,900
2,700		4,000	59,000	16,200
2,750		4,000	59,000	16,500
2,780		4,000	59,000	16,800
2,800		4,000	59,000	16,800
2,850		4,000	59,000	17,100
2,900		4,000	59,000	17,400
2,950		4,000	59,000	17,700
3,000		4,000	59,000	18,000

HARTNER

无内冷微钻

产品代号 86401

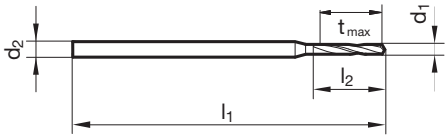


P	M	K	N	S	H
●	●	●	○	○	

VHM | A | N | 7xD | WN | 140° | m7 | R | Cyl

芯厚 ⩾ Ø 0,500 • 双后刀面 • 精密磨削过的主切削刃 • 精密磨削过的倒棱
适合加工：结构钢和淬硬钢 • 易切削钢和热处理钢 • 强度小于1200N/mm²的合金钢 • 不锈钢 • 铸件材料

$t_{max} = l_2\text{-}1{,}5 \times d_1$



d1 mm	inch	d2 h6 mm	l1 mm	l2 mm
0,500		3,000	47,000	4,000
0,550		3,000	47,000	4,400
0,600		3,000	47,000	4,800
0,650		3,000	47,000	5,200
0,700		3,000	47,000	5,600
0,750		3,000	47,000	6,000
0,800		3,000	47,000	6,400
0,850		3,000	47,000	6,800
0,900		3,000	47,000	7,200
0,950		3,000	47,000	7,600
1,000		3,000	47,000	8,000
1,050		3,000	47,000	8,400
1,100		3,000	47,000	8,800
1,150		3,000	47,000	9,200
1,200		3,000	52,000	10,800
1,250		3,000	52,000	11,300
1,300		3,000	52,000	11,700
1,350		3,000	52,000	12,200
1,400		3,000	52,000	12,600
1,450		3,000	52,000	13,100
1,500		3,000	52,000	13,500
1,550		3,000	52,000	14,000
1,590		3,000	52,000	14,400
1,600		3,000	52,000	14,400
1,650		3,000	52,000	14,900
1,700		3,000	52,000	15,300
1,750		3,000	52,000	15,800
1,800		3,000	52,000	16,200
1,850		3,000	52,000	16,700
1,900		3,000	52,000	17,100

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm
1,950		3,000	52,000	17,600
1,980		4,000	63,000	18,000
2,000		4,000	63,000	18,000
2,050		4,000	63,000	18,500
2,100		4,000	63,000	18,900
2,150		4,000	63,000	19,400
2,200		4,000	63,000	19,800
2,250		4,000	63,000	20,300
2,300		4,000	63,000	20,700
2,350		4,000	63,000	21,200
2,380		4,000	63,000	21,600
2,400		4,000	63,000	21,600
2,450		4,000	63,000	22,100
2,500		4,000	63,000	22,500
2,550		4,000	63,000	23,000
2,600		4,000	67,000	23,400
2,650		4,000	67,000	23,900
2,700		4,000	67,000	24,300
2,750		4,000	67,000	24,800
2,780		4,000	67,000	25,200
2,800		4,000	67,000	25,200
2,850		4,000	67,000	25,700
2,900		4,000	67,000	26,100
2,950		4,000	67,000	26,600
3,000		4,000	67,000	27,000

带内冷微钻

产品代号 86405

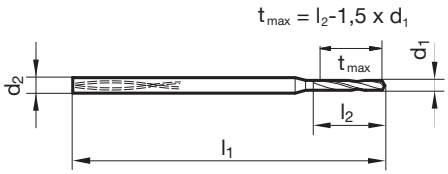


P	M	K	N	S	H
●	●	●	○	○	

VHM | A | N | 5xD | WN | 140° | m7 | R | Cyl

芯厚 ⩾ Ø 1,400 • 双后刀面 • 精密磨削过的主切削刃 • 精密磨削过的倒棱

适合加工：结构钢和淬硬钢 • 易切削钢和热处理钢 • 强度小于1200N/mm²的合金钢 • 不锈钢 • 铸件材料



d1 mm	inch	d2 h6 mm	l1 mm	l2 mm
1,400		4,000	52,000	11,000
1,450		4,000	52,000	12,000
1,500		4,000	52,000	12,000
1,550		4,000	52,000	12,000
1,590		4,000	52,000	13,000
1,600		4,000	52,000	13,000
1,650		4,000	52,000	13,000
1,700		4,000	56,000	14,000
1,750		4,000	56,000	14,000
1,800		4,000	56,000	14,000
1,850		4,000	56,000	15,000
1,900		4,000	56,000	15,000
1,950		4,000	56,000	16,000
1,980		4,000	56,000	16,000
2,000		4,000	56,000	16,000
2,050		4,000	56,000	16,000
2,100		4,000	62,000	17,000
2,150		4,000	62,000	17,000
2,200		4,000	62,000	18,000
2,250		4,000	62,000	18,000
2,300		4,000	62,000	18,000
2,350		4,000	62,000	19,000
2,380		4,000	62,000	19,000
2,400		4,000	62,000	19,000

d1 mm	inch	d2 h6 mm	l1 mm	l2 mm
2,450		4,000	62,000	20,000
2,500		4,000	62,000	20,000
2,550		4,000	62,000	20,000
2,600		4,000	66,000	21,000
2,650		4,000	66,000	21,000
2,700		4,000	66,000	22,000
2,750		4,000	66,000	22,000
2,780		4,000	66,000	22,000
2,800		4,000	66,000	22,000
2,850		4,000	66,000	23,000
2,900		4,000	66,000	23,000
2,950		4,000	66,000	24,000
3,000		4,000	66,000	24,000

带内冷微钻

产品代号 86408

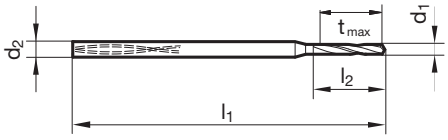


P	M	K	N	S	H
●	●	●	○	○	

VHM | A | N | 8xD | WN | 135° | h7 | R | Cyl

芯厚 ⩾ Ø 1,400 • 双后刀面 • 精密磨削过的主切削刃 • 精密磨削过的倒棱
适合加工：结构钢和淬硬钢 • 易切削钢和热处理钢 • 强度小于1200N/mm²的合金钢 • 不锈钢 • 铸件材料

$t_{max} = l_2\text{-}1{,}5 \times d_1$



d1 mm	d2 h6 mm	l1 mm	l2 mm	d1 mm	d2 h6 mm	l1 mm	l2 mm
1,400	4,000	52,000	15,000	2,600	4,000	66,000	29,000
1,500	4,000	52,000	17,000	2,700	4,000	66,000	30,000
1,600	4,000	52,000	18,000	2,800	4,000	66,000	31,000
1,700	4,000	56,000	19,000	2,900	4,000	66,000	32,000
1,800	4,000	56,000	20,000	3,000	4,000	66,000	33,000
1,900	4,000	56,000	21,000				
2,000	4,000	56,000	22,000				
2,100	4,000	62,000	23,000				
2,200	4,000	62,000	24,000				
2,300	4,000	62,000	25,000				
2,400	4,000	62,000	26,000				
2,500	4,000	62,000	28,000				

带内冷微钻

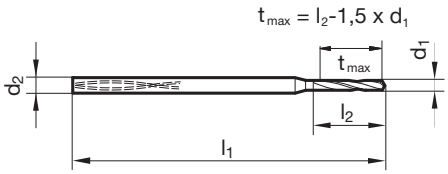
产品代号 86412



P	M	K	N	S	H
●	●	●	○	○	



芯厚 ⩾ Ø 1,400 • 双后刀面 • 精密磨削过的主切削刃 • 精密磨削过的倒棱
适合加工：结构钢和淬硬钢 • 易切削钢和热处理钢 • 强度小于1200N/mm²的合金钢 • 不锈钢 • 铸件材料



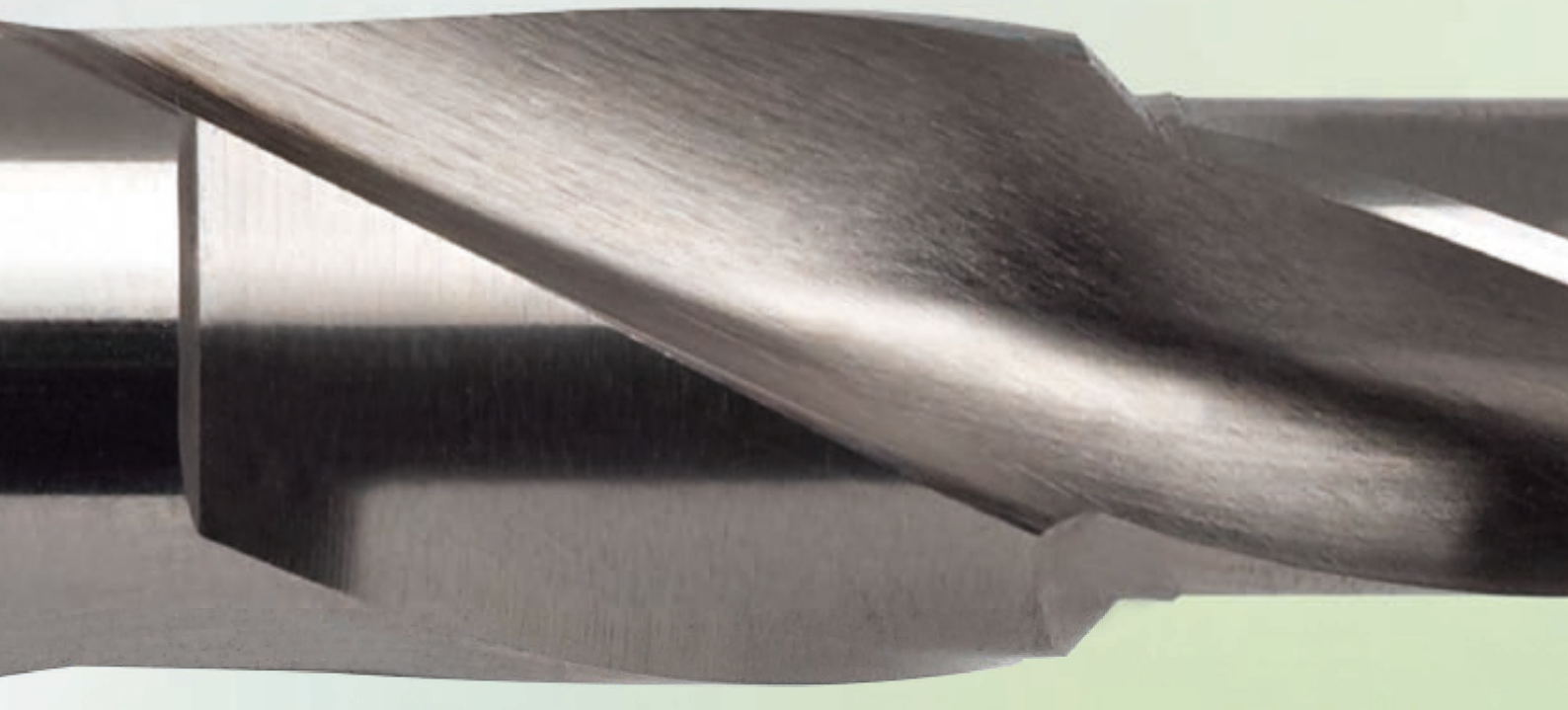
d1 mm	d2 h6 mm	l1 mm	l2 mm
1,400	4,000	62,000	25,000
1,500	4,000	62,000	27,000
1,600	4,000	62,000	29,000
1,700	4,000	70,000	31,000
1,800	4,000	70,000	32,000
1,900	4,000	70,000	34,000
2,000	4,000	70,000	36,000
2,100	4,000	78,000	38,000
2,200	4,000	78,000	40,000
2,300	4,000	78,000	42,000
2,400	4,000	78,000	44,000
2,500	4,000	78,000	45,000

d1 mm	d2 h6 mm	l1 mm	l2 mm
2,600	4,000	87,000	47,000
2,700	4,000	87,000	48,000
2,800	4,000	87,000	50,000
2,900	4,000	87,000	52,000
3,000	4,000	87,000	54,000









HARTNER

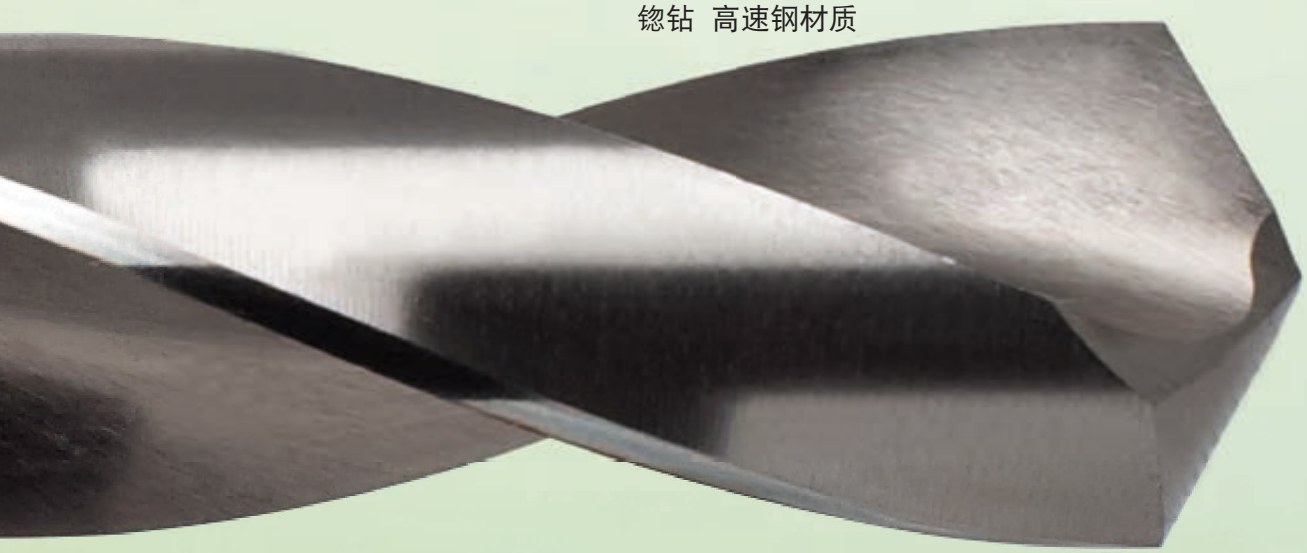
Precision Cutting Tools

中心钻，阶梯钻，锪钻

短阶梯钻 阶梯钻
HSS高速钢和硬质合金材料，有直柄和锥柄

中心钻
高速钢HSS 和含钴高速钢HSSE,以及硬质合金 表面有光亮的，也有带涂层的

锪钻 高速钢材质



依照DIN332标准的中心阶梯钻

P	M	K	N	S	H	标准	型号	刀具材料	表面处理	切削方向	柄部形式	哈特纳标准	d1/mm	产品代号	页码
															
●	○	●	●			哈特纳标准	N	HSS	●	右手	圆柱形	90	8,000 - 40,000	85910	306
															
●	○	●	●			哈特纳标准	N	HSS	●	右手	圆柱形	90	8,000 - 40,000	85911	306
															
●	○	●	●			哈特纳标准	N	HSS	●	右手	圆柱形	90	8,000 - 20,000	85912	307
															
●	○	●	●			哈特纳标准	N	HSS	●	右手	MK	90	14,000 - 40,000	85914	308

直柄短款阶梯钻

															
●	○	●	●			哈特纳标准	N	HSS	Ⓣ	右手	圆柱形	90	3,400 - 13,500	84445	313
															
●	○	●	●			哈特纳标准	N	HSS	○	右手	圆柱形	90	6,000 - 19,000	85916	310
															
●	○	●	●			哈特纳标准	N	HSS	○	右手	圆柱形	90	6,600 - 21,500	85917	311
															
●	○	●	●			哈特纳标准	N	HSS	○	右手	圆柱形	180	6,000 - 18,000	85918	312
															
●	○	●	●			哈特纳标准	N	HSS	○	右手	圆柱形	90	3,400 - 13,500	85920	314
															
○	○	○	●	○		哈特纳标准	N	整硬	○	右手	HE	90	5,500 - 9,000	89254	309

直柄阶梯钻

															
●	○	●	○			DIN 8374	N	HSS	●	右手	圆柱形	90	6,000 - 19,000	85010	315
															
●	○	●	○			DIN 8374	N	HSS	●	右手	圆柱形	90	7,500 - 19,000	85218	318

直柄阶梯钻

P	M	K	N	S	H	标准	型号	刀具材料	表面处理	切削方向	柄部形式	哈特纳标准	d1/mm	产品代号	页码
															
●	○	●	○			DIN 8376	N	HSS	◯	右手	圆柱形	180	6,000 - 18,000	85210	319
															
●	○	●	○			DIN 8378	N	HSS	◯	右手	圆柱形	90	3,400 - 13,500	85310	317
															
●	○	●	○			哈特纳标准	N	HSS	◯	右手	圆柱形	90	6,600 - 17,200	85110	316
															
●	○	●	○			哈特纳标准	N	HSS	◯	右手	圆柱形	180	5,900 - 16,500	85216	320
															
○	○	○	○	○	○		N	整硬	○	右手	圆柱形	180	6,000 - 11,000	89252	321

锥柄阶梯钻

															
●	○	●	○			DIN 8375	N	HSS	◯	右手	MK	90	12,000 - 23,000	85619	326
															
●	○	●	○			DIN 8377	N	HSS	◯	右手	MK	180	10,000 - 33,000	85610	324
															
●	○	●	○			DIN 8379	N	HSS	◯	右手	MK	90	9,000 - 22,000	85710	323
															
●	○	●	○			哈特纳标准	N	HSS	◯	右手	MK	90	11,000 - 21,500	85510	322
															
●	○	●	○			哈特纳标准	N	HSS	◯	右手	MK	180	9,400 - 33,000	85616	325

90° 锪钻

															
●	○	●	●			DIN 335		HSS	○	右手	圆柱形	C	4,300 - 31,000	88200	327

不带侧平面中心钻

P	M	K	N	S	H	标准	型号	刀具材料	表面处理	切削方向	柄部形式	哈特纳标准	d1/mm	产品代号	页码
															
●	○	●	●			DIN 333	N	HSS	◯	右手	圆柱形	A	0,500 - 12,500	83100	328
															
●	○	●	●			DIN 333	N	HSS	◯	左手	圆柱形	A	0,500 - 4,000	83105	329
															
●	○	●	●			DIN 333	N	HSS	◯	右手	圆柱形	A	1,000 - 10,000	83300	332
															
●	○	●	●			DIN 333	N	HSS	Ⓣ	右手	圆柱形	A	0,500 - 12,500	84450	328
															
●	○	●	●	○		DIN 333	N	HSS	◯	右手	圆柱形	B	1,000 - 10,000	83200	335
															
●	○	●	●			DIN 333	N	HSS	◯	右手	圆柱形	R	0,500 - 10,000	83000	330
															
●	○	●	●			DIN 333	N	HSS	◯	左手	圆柱形	R	1,000 - 4,000	83005	331
															
●	○	●	●			DIN 333	N	HSS	Ⓣ	右手	圆柱形	R	0,500 - 10,000	84448	330
															
●	○	●	●			哈特纳标准	N	HSS	◯	右手	圆柱形	A	1,000 - 3,150	83110	334
															
●	●	●	●	○		DIN 333	N	HSS-E	◯	右手	圆柱形	A	1,000 - 4,000	83101	333
															
○	○	○	○	○	○	哈特纳标准	N	整硬	◯	右手	圆柱形	A	0,500 - 6,300	83370	336

带侧平面中心钻

															
●	○	●	●			DIN 333	N	HSS	◯	右手	圆柱形	A	1,600 - 12,500	83600	337
															
●	○	●	●			DIN 333	N	HSS	◯	右手	圆柱形	B	1,600 - 8,000	83700	338

带侧平面中心钻

P	M	K	N	S	H	标准	型号	刀具材料	表面处理	切削方向	柄部形式	哈特纳标准	d1/mm	产品代号	页码
															
●	○	●	●			DIN 333	N	HSS	◯	右手	圆柱形	R	1,600 - 12,500	83500	337

依照DIN332标准的中心阶梯钻

产品代号 85910



P	M	K	N	S	H
●	○	●	●		

HSS | N | WN | 118° | h8 | R | Cyl

芯厚 ≥ Ø 8,000 • 圆弧后刀面 • 柄部带侧平面 • 60° 阶梯 • DIN 332标准，表2,D型 • 适用于定点打孔/定长的机床

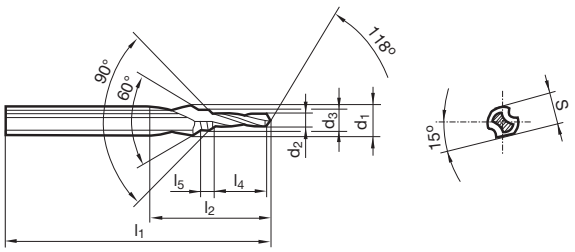
产品代号 85911



P	M	K	N	S	H
●	○	●	●		

HSS | N | WN | 118° | h8 | R | Cyl

芯厚 ≥ Ø 8,000 • 圆弧后刀面 • 柄部带侧平面 • 60° 阶梯 • DIN 332标准，表2,DR型 • 适用于定点打孔/定长的机床



d1 h7 mm	d3 h11 mm	d2 h8 mm	S mm	l1 mm	l2 mm	l4 mm	l5 mm	攻丝
8,000	4,300	3,300	6,750	63,000	23,000	11,000	1,600	M 4
10,000	5,300	4,200	8,450	67,000	27,000	13,000	2,150	M 5
12,500	6,400	5,000	10,450	71,000	33,000	16,000	2,900	M 6
14,000	8,400	6,800	12,500	88,000	41,000	19,500	3,500	M 8
16,000	10,500	8,500	14,850	94,000	47,000	23,000	4,700	M10
20,000	13,000	10,200	18,450	105,000	59,000	28,000	6,500	M12
25,000	17,000	14,000	23,400	132,000	67,000	33,000	8,300	M16
31,500	21,000	17,500	29,350	145,000	76,500	38,000	10,350	M20
40,000	25,000	21,000	36,500	160,000	90,000	45,000	12,000	M24

HARTNER

依照DIN332标准的中心阶梯钻

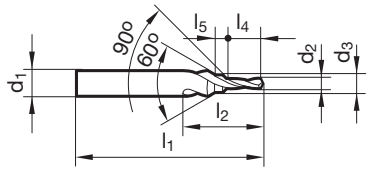
产品代号 85912



P	M	K	N	S	H
●	○	●	●		

HSS | N | WN | 118° | h8 | R | Cyl

芯厚 ⩾ Ø 8,000 • 圆弧后刀面 • 60° 阶梯 • DIN 332标准，表2,D型



d1 h7 mm	d3 h11 mm	d2 h8 mm	l1 mm	l2 mm	l4 mm	l5 mm	攻丝
8,000	4,300	3,300	63,000	23,000	11,000	1,600	M 4
10,000	5,300	4,200	67,000	27,000	13,000	2,150	M 5
12,500	6,400	5,000	71,000	33,000	16,000	2,900	M 6
14,000	8,400	6,800	88,000	41,000	19,500	3,500	M 8
16,000	10,500	8,500	94,000	47,000	23,000	4,700	M10
20,000	13,000	10,200	105,000	59,000	28,000	6,500	M12

HARTNER

依照DIN332标准的中心阶梯钻

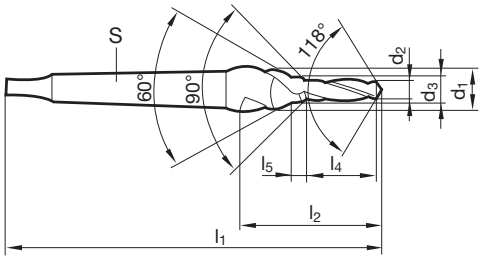
产品代号 85914



P	M	K	N	S	H
●	○	●	●		

HSS | N | WN | 118° | h8 | R | MK

芯厚 ≥ Ø 14,000 • 圆弧后刀面 • 60° 阶梯 • DIN 332标准，表2,D型



d1 h7 mm	d3 h11 mm	d2 h8 mm	S	l1 mm	l2 mm	l4 mm	l5 mm	攻丝
14,000	8,400	6,800	MK-1	110,000	41,000	19,500	3,500	M 8
16,000	10,500	8,500	MK-2	131,000	47,000	23,000	4,700	M10
20,000	13,000	10,200	MK-2	145,000	59,000	28,000	6,500	M12
25,000	17,000	14,000	MK-3	172,000	67,000	33,000	8,300	M16
31,500	21,000	17,500	MK-3	184,000	76,500	38,000	10,350	M20
40,000	25,000	21,000	MK-4	222,000	90,000	45,000	12,000	M24

HARTNER

直柄短款阶梯钻

产品代号 89254

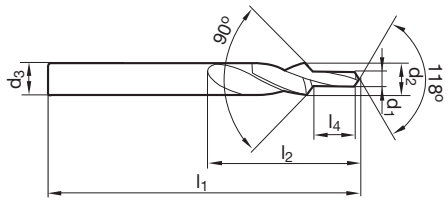


P	M	K	N	S	H
○	○	○	●	○	

VHM | ◯ | N | WN | 118° | h7 | R | HE | 

芯厚 ⩾ Ø 3,400 • 双后刀面 • 具有很高的抗扭稳定性 • 适合在数控机床和加工中心上使用 • 用于DIN336标准的螺纹底孔 • 锪倒角90° • 每转进给f的选用依据小径 • 切削速度Vc的选用依据直径

适于加工：铸铁,灰铸铁,冷硬铸铁 • 硬锰钢,青铜 • 轻金属和有色金属 • 研磨性材料(如硅铝合金) • 纤维增强塑料 • 加工热固性塑料在切削刃和刃带上易磨损



d1 h7 mm	d2 h9 mm	d3 mm	l1 mm	l2 mm	l4 mm	攻丝
5,500	4,200	6,000	66,000	28,000	13,600	M 5
6,600	5,000	8,000	70,000	31,000	16,500	M 6
9,000	6,800	10,000	84,000	40,000	21,000	M 8

HARTNER

直柄短款阶梯钻

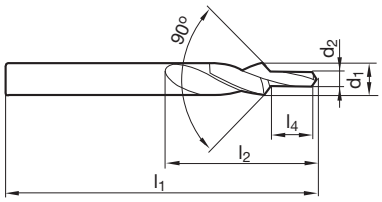
产品代号 85916



P	M	K	N	S	H
●	○	●	●		

HSS | N | WN | 118° | h6 | R | Cyl

芯厚 ⩾ Ø 6,000 • 圆弧后刀面 • 具有很高的抗扭稳定性 • 适合在数控机床和加工中心上使用 • 根据 DIN EN 20273, 精加工系列 • 加工90° 螺纹沉孔 • 每转进给f的选用依据小径 • 切削速度Vc的选用依据直径



d1 h6 mm	d2 h9 mm	l1 mm	l2 mm	l4 mm	攻丝
6,000	3,200	66,000	28,000	9,000	M 3
8,000	4,300	79,000	37,000	11,000	M 4
10,000	5,300	89,000	43,000	13,000	M 5
11,500	6,400	95,000	47,000	15,000	M 6
15,000	8,400	111,000	56,000	19,000	M 8
19,000	10,500	127,000	64,000	23,000	M 10

HARTNER

直柄短款阶梯钻

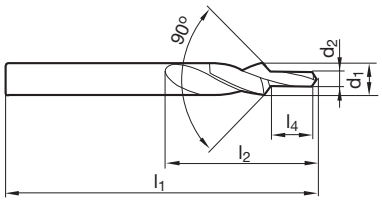
产品代号 85917



P	M	K	N	S	H
●	○	●	●		

HSS | N | WN | 118° | h6 | R | Cyl

芯厚 ⩾ Ø 6,600 • 圆弧后刀面 • 具有很高的抗扭稳定性 • 适合在数控机床和加工中心上使用 • 用于通孔 DIN EN 20273 系列 中 • 用于90°螺钉头沉孔基于DIN74，formA • 每转进给f的选用依据小径 • 切削速度Vc的选用依据直径



d1 h6 mm	d2 h9 mm	l1 mm	l2 mm	l4 mm	攻丝
6,600	3,400	70,000	31,000	9,000	M 3
9,000	4,500	84,000	40,000	11,000	M 4
11,000	5,500	95,000	47,000	13,000	M 5
13,000	6,600	102,000	51,000	15,000	M 6
17,200	9,000	123,000	62,000	19,000	M 8
21,500	11,000	141,000	70,000	23,000	M 10

HARTNER

直柄短款阶梯钻

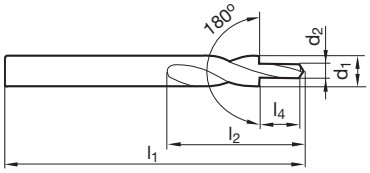
产品代号 85918



P	M	K	N	S	H
●	○	●	●		

HSS | ◯ | N | WN | 118° | h6 | R | Cyl

芯厚 ⩾ Ø 6,000 • 圆弧后刀面 • 具有很高的抗扭稳定性 • 适合在数控机床和加工中心上使用 • 用于通孔 DIN EN 20273 系列 中 • 加工180° 螺纹沉孔 • DIN 6912, 7984, 34821, DIN EN ISO 1207, 4762, 14579, 14580标准 • 每转进给f的选用依据小径 • 切削速度Vc的选用依据直径



d1 h6 mm	d2 h9 mm	l1 mm	l2 mm	l4 mm	攻丝
6,000	3,400	66,000	28,000	9,000	M 3
8,000	4,500	79,000	37,000	11,000	M 4
10,000	5,500	89,000	43,000	13,000	M 5
11,000	6,600	95,000	47,000	15,000	M 6
15,000	9,000	111,000	56,000	19,000	M 8
18,000	11,000	123,000	62,000	23,000	M 10

HARTNER

直柄短款阶梯钻

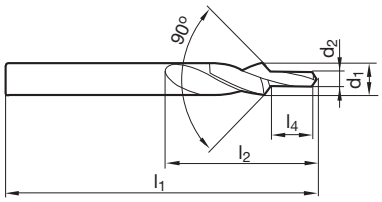
产品代号 84445



P	M	K	N	S	H
●	○	●	●		

HSS | T | N | WN | 118° | h6 | R | Cyl

芯厚 ⩾ Ø 3,400 • 圆弧后刀面 • 具有很高的抗扭稳定性 • 适合在数控机床和加工中心上使用 • 用于DIN336标准的螺纹底孔 • 锪倒角90° • 每转进给f的选用依据小径 • 切削速度Vc的选用依据直径



d1 h6 mm	d2 h9 mm	l1 mm	l2 mm	l4 mm	攻丝
3,400	2,500	52,000	20,000	8,800	M 3
4,500	3,300	58,000	24,000	11,400	M 4
6,600	5,000	70,000	31,000	16,500	M 6
9,000	6,800	84,000	40,000	21,000	M 8
11,000	8,500	95,000	47,000	25,500	M 10
13,500	10,200	107,000	54,000	30,000	M 12

HARTNER

直柄短款阶梯钻

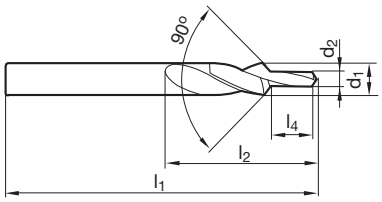
产品代号 85920



P	M	K	N	S	H
●	○	●	●		

HSS | N | WN | 118° | h6 | R | Cyl

芯厚 ⩾ Ø 3,400 • 圆弧后刀面 • 具有很高的抗扭稳定性 • 适合在数控机床和加工中心上使用 • 用于DIN336标准的螺纹底孔 • 锪倒角90° • 每转进给f的选用依据小径 • 切削速度Vc的选用依据直径



d1 h6 mm	d2 h9 mm	l1 mm	l2 mm	l4 mm	攻丝
3,400	2,500	52,000	20,000	8,800	M 3
4,500	3,300	58,000	24,000	11,400	M 4
5,500	4,200	66,000	28,000	13,600	M 5
6,600	5,000	70,000	31,000	16,500	M 6
9,000	6,800	84,000	40,000	21,000	M 8
11,000	8,500	95,000	47,000	25,500	M 10
13,500	10,200	107,000	54,000	30,000	M 12

HARTNER

直柄阶梯钻

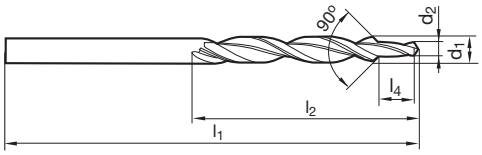
产品代号 85010



P	M	K	N	S	H
●	○	●	○		

HSS | N | DIN 8374 | 118° | h8 | R | Cyl | A

芯厚 ⩾ Ø 6,000 • 圆弧后刀面 • 根据 DIN EN 20273, 精加工系列 • 加工90° 螺纹沉孔 • 每转进给f的选用依据小径 • 切削速度 Vc的选用依据直径



d1 h8 mm	d2 h9 mm	l1 mm	l2 mm	l4 mm	攻丝
6,000	3,200	93,000	57,000	9,000	M 3
8,000	4,300	117,000	75,000	11,000	M 4
10,000	5,300	133,000	87,000	13,000	M 5
11,500	6,400	142,000	94,000	15,000	M 6
15,000	8,400	169,000	114,000	19,000	M 8
19,000	10,500	198,000	135,000	23,000	M 10

HARTNER

直柄阶梯钻

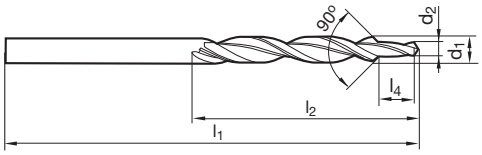
产品代号 85110



P	M	K	N	S	H
●	○	●	○		

HSS | N | WN | 118° | h8 | R | Cyl

芯厚 ⩾ Ø 6,600 • 圆弧后刀面 • 用于通孔 DIN EN 20273 系列 中 • 用于90° 螺栓头沉孔，DIN74 第一节（版本 12.1980） • 每转进给f的选用依据小径 • 切削速度Vc的选用依据直径



d1 h8 mm	d2 h9 mm	l1 mm	l2 mm	l4 mm	攻丝
6,600	3,400	101,000	63,000	9,000	M 3
9,000	4,500	125,000	81,000	11,000	M 4
11,000	5,500	142,000	94,000	13,000	M 5
13,000	6,600	151,000	101,000	15,000	M 6
17,200	9,000	191,000	130,000	19,000	M 8

HARTNER

直柄阶梯钻

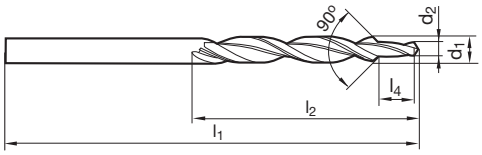
产品代号 85310



P	M	K	N	S	H
●	○	●	○		

HSS | N | DIN 8378 | 118° | h8 | R | Cyl

芯厚 ⩾ Ø 3,400 • 圆弧后刀面 • 用于DIN336标准的螺纹底孔 • 锪倒角90° • 每转进给f的选用依据小径 • 切削速度Vc的选用依据直径



d1 h8 mm	d2 h9 mm	l1 mm	l2 mm	l4 mm	攻丝
3,400	2,500	70,000	39,000	8,800	M 3
4,500	3,300	80,000	47,000	11,400	M 4
5,500	4,200	93,000	57,000	13,600	M 5
6,600	5,000	101,000	63,000	16,500	M 6
9,000	6,800	125,000	81,000	21,000	M 8
11,000	8,500	142,000	94,000	25,500	M 10
13,500	10,200	160,000	108,000	30,000	M 12

HARTNER

直柄阶梯钻

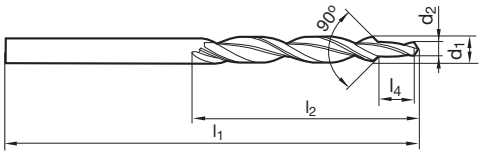
产品代号 85218



P	M	K	N	S	H
●	○	●	○		

HSS | N | DIN 8374 | 118° | h8 | R | Cyl | B

芯厚 ⩾ Ø 7,500 • 圆弧后刀面 • 用于通孔 DIN EN 20273 系列 中 • 用于90°螺栓头沉孔，DIN74 里Form A和F • 每转进给f的选用依据小径 • 切削速度Vc的选用依据直径



d1 h8 mm	d2 h9 mm	l1 mm	l2 mm	l4 mm	攻丝
7,500	3,400	109,000	69,000	9,000	M 3
9,700	4,500	133,000	87,000	11,000	M 4
12,000	5,500	151,000	101,000	13,000	M 5
14,500	6,600	169,000	114,000	15,000	M 6
19,000	9,000	198,000	135,000	19,000	M 8

HARTNER

直柄阶梯钻

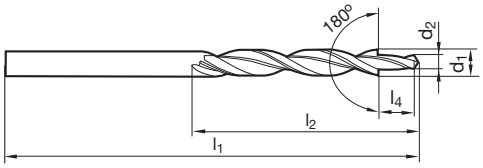
产品代号 85210



P	M	K	N	S	H
●	○	●	○		

HSS | N | DIN 8376 | 118° | h8 | R | Cyl

芯厚 ⩾ Ø 6,000 • 圆弧后刀面 • 用于通孔 DIN EN 20273 系列 中 • 加工180° 螺纹沉孔 • 根据DIN 6912, 7984, 34821, DIN EN ISO 1207, 4762, 14579, 14580 and DIN 7513, 7516, 7500-1 • 每转进给f的选用依据小径 • 切削速度Vc的选用依据直径



d1 h8 mm	d2 h9 mm	l1 mm	l2 mm	l4 mm	攻丝
6,000	3,400	93,000	57,000	9,000	M 3
8,000	4,500	117,000	75,000	11,000	M 4
10,000	5,500	133,000	87,000	13,000	M 5
11,000	6,600	142,000	94,000	15,000	M 6
15,000	9,000	169,000	114,000	19,000	M 8
18,000	11,000	191,000	130,000	23,000	M 10

HARTNER

直柄阶梯钻

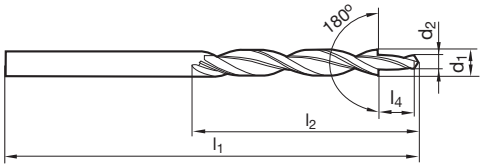
产品代号 85216



P	M	K	N	S	H
●	○	●	○		

HSS | N | WN | 118° | h8 | R | Cyl

芯厚 ⩾ Ø 5,900 • 圆弧后刀面 • 根据DIN 75第2部分（1968.04版本） 用于加工通孔的老款形式的扩孔钻 Form H、J、K，设计款有 普通的和精细的 • 加工螺纹底孔 DIN 84, 912, 6712标准 • 每转进给f的选用依据小径 • 切削速度Vc的选用依据直径



d1 h8 mm	d2 h9 mm	l1 mm	l2 mm	l4 mm	攻丝
5,900	3,200	93,000	57,000	11,000	M 3
7,400	4,300	109,000	69,000	13,000	M 4
9,400	5,300	125,000	81,000	16,000	M 5
10,000	5,800	133,000	87,000	16,000	M 5
10,400	6,400	133,000	87,000	19,000	M 6
11,000	7,000	142,000	94,000	19,000	M 6
13,500	8,400	160,000	108,000	22,000	M 8
16,500	10,500	184,000	125,000	25,000	M 10

HARTNER

直柄阶梯钻

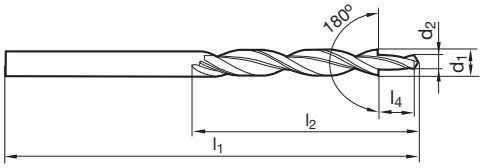
产品代号 89252



P	M	K	N	S	H
○	○	○	○	○	○

VHM | N | 118° | h8 | R | Cyl

芯厚 ⩾ Ø 8,000 • 圆弧后刀面 • 用于通孔 DIN EN 20273 系列 中 • 加工180° 螺纹沉孔 • 根据DIN 6912, 7984, 34821, DIN EN ISO 1207, 4762, 14579, 14580 and DIN 7513, 7516, 7500-1 • 每转进给f的选用依据小径 • 切削速度Vc的选用依据直径



d1 h8 mm	d2 h9 mm	l1 mm	l2 mm	l4 mm	攻丝
6,000	3,400	93,000	57,000	9,000	M 3
10,000	5,500	133,000	87,000	13,000	M 5
11,000	6,600	142,000	94,000	15,000	M 6

HARTNER

锥柄阶梯钻

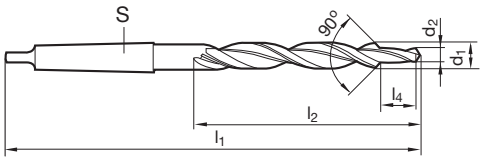
产品代号 85510



P	M	K	N	S	H
●	○	●	○		

HSS | N | WN | 118° | h8 | R | MK

芯厚 ⩾ Ø 11,000 • 圆弧后刀面 • 用于通孔 DIN EN 20273 系列 中 • 用于90°螺栓头沉孔，DIN74 第一节（版本 12.1980） • 每转进给f的选用依据小径 • 切削速度Vc的选用依据直径



d1 h8 mm	d2 h9 mm	S	l1 mm	l2 mm	l4 mm	攻丝
11,000	5,500	MK-1	175,000	94,000	13,000	M 5
13,000	6,600	MK-1	182,000	101,000	15,000	M 6
17,200	9,000	MK-2	228,000	130,000	19,000	M 8
21,500	11,000	MK-2	248,000	150,000	23,000	M 10

HARTNER

锥柄阶梯钻

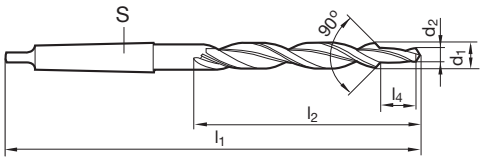
产品代号 85710



P	M	K	N	S	H
●	○	●	○		

HSS | N | DIN 8379 | 118° | h8 | R | MK

芯厚 ⩾ Ø 9,000 • 圆弧后刀面 • 用于DIN336标准的螺纹底孔 • 锪倒角90° • 每转进给f的选用依据小径 • 切削速度Vc的选用依据直径



d1 h8 mm	d2 h9 mm	S	l1 mm	l2 mm	l4 mm	攻丝
9,000	6,800	MK-1	162,000	81,000	21,000	M 8
11,000	8,500	MK-1	175,000	94,000	25,500	M 10
13,500	10,200	MK-1	189,000	108,000	30,000	M 12
15,500	12,000	MK-2	218,000	120,000	34,500	M 14
17,500	14,000	MK-2	228,000	130,000	38,500	M 16
20,000	15,500	MK-2	238,000	140,000	43,500	M 18
22,000	17,500	MK-2	248,000	150,000	47,500	M 20

HARTNER

锥柄阶梯钻

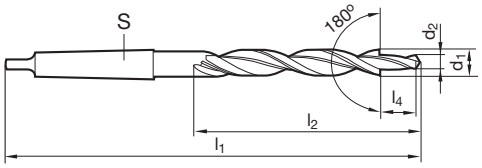
产品代号 85610



P	M	K	N	S	H
●	○	●	○		

HSS | N | DIN 8377 | 118° | h8 | R | MK

芯厚 ⩾ Ø 10,000 • 圆弧后刀面 • 用于通孔 DIN EN 20273 系列 中 • 加工180° 螺纹沉孔 • 根据DIN 6912, 7984, 34821, DIN EN ISO 1207, 4762, 14579, 14580 and DIN 7513, 7516, 7500-1 • 每转进给f的选用依据小径 • 切削速度Vc的选用依据直径



d1 h8 mm	d2 h9 mm	S	l1 mm	l2 mm	l4 mm	攻丝
10,000	5,500	MK-1	168,000	87,000	13,000	M 5
11,000	6,600	MK-1	175,000	94,000	15,000	M 6
15,000	9,000	MK-2	212,000	114,000	19,000	M 8
18,000	11,000	MK-2	228,000	130,000	23,000	M 10
20,000	13,500	MK-2	238,000	140,000	27,000	M 12
24,000	15,500	MK-3	281,000	160,000	31,000	M 14
26,000	17,500	MK-3	286,000	165,000	35,000	M 16
30,000	20,000	MK-3	296,000	175,000	39,000	M 18
33,000	22,000	MK-4	334,000	185,000	43,000	M 20

HARTNER

锥柄阶梯钻

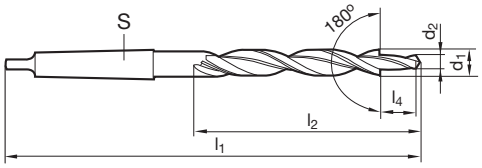
产品代号 85616



P	M	K	N	S	H
●	○	●	○		

HSS | N | WN | 118° | h8 | R | MK

芯厚 ⩾ Ø 9,400 • 圆弧后刀面 • 根据DIN 75第2部分（1968.04版本） 用于加工通孔的老款形式的扩孔钻 Form H、J、K，设计款有 普通的和精细的 • 加工螺纹底孔 DIN 84, 912, 6712标准 • 每转进给f的选用依据小径 • 切削速度Vc的选用依据直径



d1 h8 mm	d2 h9 mm	S	l1 mm	l2 mm	l4 mm	攻丝
9,400	5,300	MK-1	162,000	81,000	16,000	M 5
10,000	5,800	MK-1	168,000	87,000	16,000	M 5
10,400	6,400	MK-1	168,000	87,000	19,000	M 6
11,000	7,000	MK-1	175,000	94,000	19,000	M 6
14,500	9,500	MK-2	212,000	114,000	22,000	M 8
17,500	11,500	MK-2	228,000	130,000	25,000	M 10
19,000	13,000	MK-2	233,000	135,000	28,000	M 12
20,000	14,000	MK-2	238,000	140,000	28,000	M 12
23,000	15,000	MK-2	253,000	155,000	30,000	M 14
24,000	16,000	MK-3	281,000	160,000	30,000	M 14
25,000	17,000	MK-3	281,000	160,000	33,000	M 16
28,000	19,000	MK-3	291,000	170,000	36,000	M 18
29,000	20,000	MK-3	296,000	175,000	36,000	M 18
31,000	21,000	MK-3	301,000	180,000	39,000	M 20
33,000	23,000	MK-4	334,000	185,000	39,000	M 20

HARTNER

锥柄阶梯钻

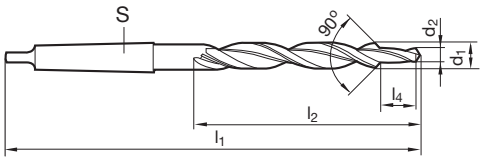
产品代号 85619



P	M	K	N	S	H
●	○	●	○		

HSS | N | DIN 8375 | 118° | h8 | R | MK

芯厚 ⩾ Ø 12,000 • 圆弧后刀面 • 根据 DIN EN 20273, 精加工系列 • 用于90°螺栓头沉孔，DIN74 里Form A和F • 每转进给f的选用依据小径 • 切削速度Vc的选用依据直径



d1 h8 mm	d2 h9 mm	S	l1 mm	l2 mm	l4 mm	攻丝
12,000	5,500	MK-1	182,000	101,000	13,000	M 5
14,500	6,600	MK-2	212,000	114,000	15,000	M 6
19,000	9,000	MK-2	233,000	135,000	19,000	M 8
23,000	11,000	MK-2	253,000	155,000	23,000	M10

90° 锪钻

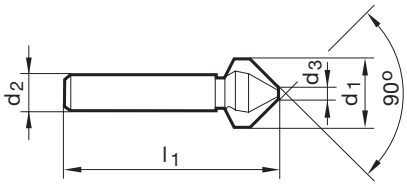
产品代号 88200



P	M	K	N	S	H
●	○	●	●		

HSS | ○ | DIN 335 | 90° | R | Cyl | C

圆弧后刀面修磨 • 三刃



d1 mm	d2 h9 mm	d3 mm	l1 mm	Z	代号
4,300	4,000	4,300	40,000	3	4,300
5,000	4,000	5,000	40,000	3	5,000
5,300	4,000	5,300	40,000	3	5,300
5,800	5,000	5,800	45,000	3	5,800
6,000	5,000	6,000	45,000	3	6,000
6,300	5,000	6,300	45,000	3	6,300
7,000	6,000	7,000	50,000	3	7,000
7,300	6,000	7,300	50,000	3	7,300
8,000	6,000	8,000	50,000	3	8,000
8,300	6,000	8,300	50,000	3	8,300
9,400	6,000	9,400	50,000	3	9,400
10,000	6,000	10,000	50,000	3	10,000
10,400	6,000	10,400	50,000	3	10,400
11,500	8,000	11,500	56,000	3	11,500
12,400	8,000	12,400	56,000	3	12,400
13,400	10,000	13,400	56,000	3	13,400
15,000	10,000	15,000	60,000	3	15,000
16,500	10,000	16,500	60,000	3	16,500
19,000	10,000	19,000	63,000	3	19,000
20,500	10,000	20,500	63,000	3	20,500
23,000	10,000	23,000	67,000	3	23,000
25,000	10,000	25,000	67,000	3	25,000
26,000	10,000	26,000	67,000	3	26,000
28,000	12,000	28,000	71,000	3	28,000
30,000	12,000	30,000	71,000	3	30,000
31,000	12,000	31,000	71,000	3	31,000

不带侧平面中心钻

产品代号 83100



P	M	K	N	S	H
●	○	●	●		

HSS | ◯ | N | DIN 333 | 118° | R | Cyl | | A

芯厚 ⩾ Ø 2,000 • 圆弧后刀面 • 无护锥 • DIN 332标准，表1,A型 • d 1 ⩽ 0,8 mm:单头

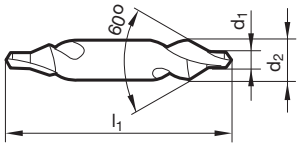
产品代号 84450



P	M	K	N	S	H
●	○	●	●		

HSS | T | N | DIN 333 | 118° | R | Cyl | | A

芯厚 ⩾ Ø 2,000 • 圆弧后刀面 • 无护锥 • DIN 332标准，表1,A型 • d 1 ⩽ 0,8 mm:单头 • 耐磨损 高强度



d1 mm	d2 h8 mm	l1 mm	d1 mm	d2 h8 mm	l1 mm
0,500	3,150	25,000	10,000	25,000	100,000
0,800	3,150	25,000	12,500	31,500	125,000
1,000	3,150	31,500			
1,250	3,150	31,500			
1,600	4,000	35,500			
2,000	5,000	40,000			
2,500	6,300	45,000			
3,150	8,000	50,000			
4,000	10,000	56,000			
5,000	12,500	63,000			
6,300	16,000	71,000			
8,000	20,000	80,000			

HARTNER

不带侧平面中心钻

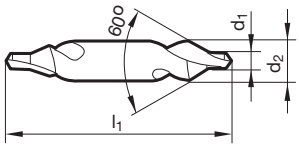
产品代号 83105



P	M	K	N	S	H
●	○	●	●		

HSS | ◯ | N | DIN 333 | 118° | L | Cyl | | A

芯厚 ⩾ Ø 2,000 • 圆弧后刀面 • 无护锥 • DIN 332标准，表1,A型 • d 1 ⩽ 0,8 mm:单头



d1 mm	d2 h8 mm	l1 mm	d1 mm	d2 h8 mm	l1 mm
0,500	3,150	25,000	2,500	6,300	45,000
0,800	3,150	25,000	3,150	8,000	50,000
1,000	3,150	31,500	4,000	10,000	56,000
1,250	3,150	31,500			
1,600	4,000	35,500			
2,000	5,000	40,000			

不带侧平面中心钻

产品代号 83000



P	M	K	N	S	H
●	○	●	●		

HSS | ◯ | N | DIN 333 | 118° | R | Cyl | | R

芯厚 ⩾ Ø 2,000 • 圆弧后刀面 • 车床对准中心时纠偏 • 根据DIN 332 第一部分 Form R 用于中心孔 • d 1 ⩽ 0,8 mm:单头

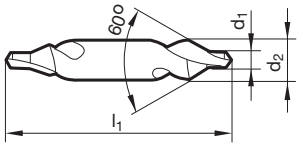
产品代号 84448



P	M	K	N	S	H
●	○	●	●		

HSS | T | N | DIN 333 | 118° | R | Cyl | | R

芯厚 ⩾ Ø 2,000 • 圆弧后刀面 • 车床对准中心时纠偏 • 根据DIN 332 第一部分 Form R 用于中心孔 • d 1 ⩽ 0,8 mm:单头 • 耐磨损 高强度



d1 mm	d2 h8 mm	l1 mm
0,500	3,150	25,000
0,800	3,150	25,000
1,000	3,150	31,500
1,250	3,150	31,500
1,600	4,000	35,500
2,000	5,000	40,000
2,500	6,300	45,000
3,150	8,000	50,000
4,000	10,000	56,000
5,000	12,500	63,000
6,300	16,000	71,000
8,000	20,000	80,000

d1 mm	d2 h8 mm	l1 mm
10,000	25,000	100,000

HARTNER

不带侧平面中心钻

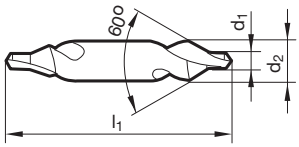
产品代号 83005



P	M	K	N	S	H
●	○	●	●		

HSS | ◯ | N | DIN 333 | 118° | L | Cyl | | R

芯厚 ⩾ Ø 2,000 • 圆弧后刀面 • 车床对准中心时纠偏 • 根据DIN 332 第一部分 Form R 用于中心孔 • d 1 ⩽ 0,8 mm:单头



d1 mm	d2 h8 mm	l1 mm	d1 mm	d2 h8 mm	l1 mm
1,000	3,150	31,500			
1,250	3,150	31,500			
1,600	4,000	35,500			
2,000	5,000	40,000			
3,150	8,000	50,000			
4,000	10,000	56,000			

HARTNER

不带侧平面中心钻

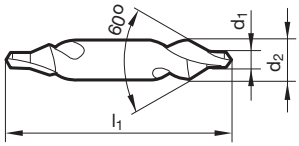
产品代号 83300



P	M	K	N	S	H
●	○	●	●		

HSS | ◯ | N | DIN 333 | 118° | R | Cyl | A

芯厚 ⩾ Ø 2,000 • 圆弧后刀面 • 加粗部分为了更高的抗断强度 • 无护锥 • 孔与锪交界处开槽为了给冷却润滑液提供额外的空间 • DIN 332标准，表1,A型



d1 mm	d2 h8 mm	l1 mm	d1 mm	d2 h8 mm	l1 mm
1,000	3,150	31,500	4,000	10,000	56,000
1,250	3,150	31,500	5,000	12,500	63,000
1,600	4,000	35,500	6,300	16,000	71,000
2,000	5,000	40,000	8,000	20,000	80,000
2,500	6,300	45,000	10,000	25,000	100,000
3,150	8,000	50,000			

HARTNER

不带侧平面中心钻

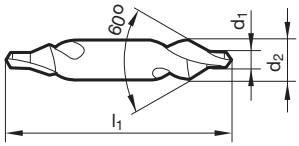
产品代号 83101



P	M	K	N	S	H
●	●	●	●	○	

HSS-E | ◯ | N | DIN 333 | 118° | R | Cyl | A

芯厚 ⩾ Ø 2,000 • 圆弧后刀面 • 无护锥 • 耐磨损 高强度 • DIN 332标准，表1,A型
强度超过800N/mm² 的材料 • 不锈钢/耐酸/耐热 CrNi 钢



d1 mm	d2 h8 mm	l1 mm	d1 mm	d2 h8 mm	l1 mm
1,000	3,150	31,500			
1,600	4,000	35,500			
2,000	5,000	40,000			
2,500	6,300	45,000			
3,150	8,000	50,000			
4,000	10,000	56,000			

HARTNER

不带侧平面中心钻

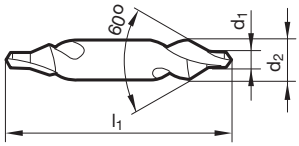
产品代号 83110



P	M	K	N	S	H
●	○	●	●		

HSS | N | WN | 118° | R | Cyl | A

芯厚 ⩾ Ø 2,000 • 圆弧后刀面 • 超长中心钻 • 无护锥 • 用于中心孔基于DIN332，表格1，form A • 适合深孔定位



d1 mm	d2 h8 mm	l1 mm	d1 mm	d2 h8 mm	l1 mm
1,000	4,000	120,000			
1,600	5,000	120,000			
2,000	6,000	120,000			
2,500	8,000	120,000			
3,150	10,000	120,000			

HARTNER

不带侧平面中心钻

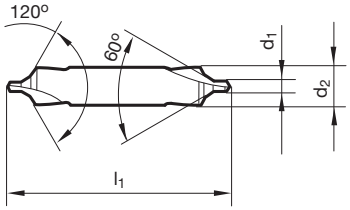
产品代号 83200



P	M	K	N	S	H
●	○	●	●	○	

HSS | ◯ | N | DIN 333 | 118° | R | Cyl | | B

芯厚 ⩾ Ø 2,000 • 圆弧后刀面 • DIN 332标准，表1,B型 • 120° 护锥



d1 mm	d2 h8 mm	l1 mm	d1 mm	d2 h8 mm	l1 mm
1,000	4,000	35,500	4,000	14,000	67,000
1,250	5,000	40,000	5,000	18,000	75,000
1,600	6,300	45,000	6,300	20,000	80,000
2,000	8,000	50,000	8,000	25,000	100,000
2,500	10,000	56,000	10,000	31,500	125,000
3,150	11,200	60,000			

HARTNER

不带侧平面中心钻

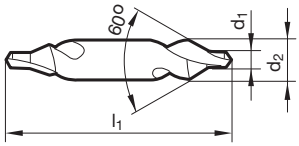
产品代号 83370



P	M	K	N	S	H
○	○	○	○	○	○

VHM | ○ | N | WN | 118° | R | Cyl | | A

芯厚 ⩾ Ø 2,000 • 圆弧后刀面 • 无护锥 • DIN 332标准，表1,A型 • d 1 ⩽ 0,8 mm:单头
通用场合



d1 mm	d2 h8 mm	l1 mm	d1 mm	d2 h8 mm	l1 mm
0,500	3,150	25,000	2,500	6,300	45,000
0,800	3,150	25,000	3,150	8,000	50,000
1,000	3,150	31,500	4,000	10,000	56,000
1,250	3,150	31,500	5,000	12,500	63,000
1,600	4,000	35,500	6,300	16,000	71,000
2,000	5,000	40,000			

HARTNER

带侧平面中心钻

产品代号 83600



P	M	K	N	S	H
●	○	●	●		

HSS | ◯ | N | DIN 333 | 118° | R | Cyl | A

芯厚 ≥ Ø 2,000 • 圆弧后刀面 • DIN 332标准，表1,A型 • 无护锥

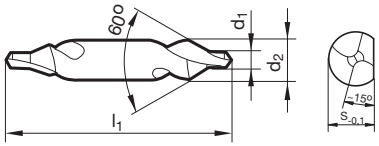
产品代号 83500



P	M	K	N	S	H
●	○	●	●		

HSS | ◯ | N | DIN 333 | 118° | R | Cyl | R

芯厚 ≥ Ø 2,000 • 圆弧后刀面 • 车床对准中心时纠偏 • 根据DIN 332 第一部分 Form R 用于中心孔



d1 mm	d2 h8 mm	l1 mm	S mm
1,600	4,000	35,500	3,250
2,000	5,000	40,000	4,200
2,500	6,300	45,000	5,350
3,150	8,000	50,000	6,950
4,000	10,000	56,000	8,400
5,000	12,500	63,000	10,950

d1 mm	d2 h8 mm	l1 mm	S mm
6,300	16,000	71,000	14,000
8,000	20,000	80,000	17,900
10,000	25,000	100,000	22,500
12,500	31,500	125,000	28,400

HARTNER

带侧平面中心钻

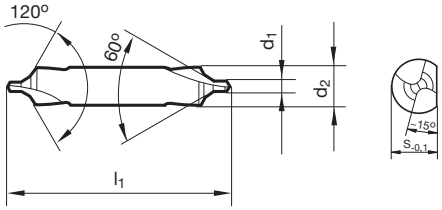
产品代号 83700



P	M	K	N	S	H
●	○	●	●		

HSS | ◯ | N | DIN 333 | 118° | R | Cyl | | B

芯厚 ⩾ Ø 2,000 • 圆弧后刀面 • DIN 332标准，表1,B型 • 120° 护锥



d1 mm	d2 h8 mm	l1 mm	S mm
1,600	6,300	45,000	5,350
2,000	8,000	50,000	6,950
2,500	10,000	56,000	8,400
3,150	11,200	60,000	10,000
4,000	14,000	67,000	12,650
5,000	18,000	75,000	16,400
6,300	20,000	80,000	17,900
8,000	25,000	100,000	22,500

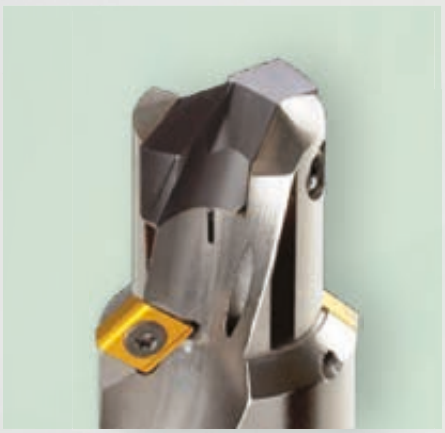
HARTNER

Precision Cutting Tools

TOOL MANAGEMENT

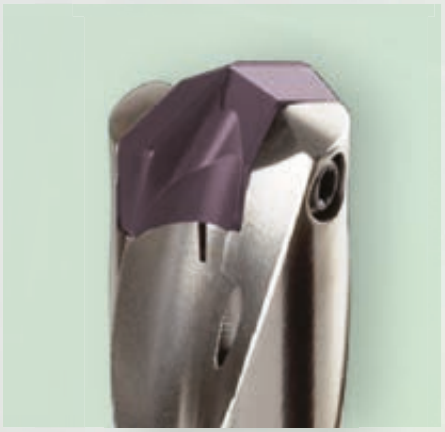


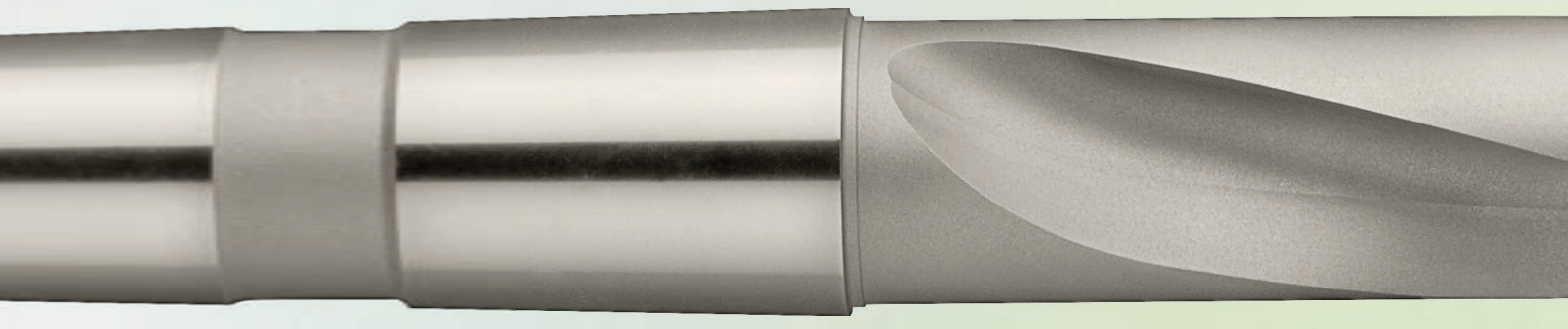












HARTNER

Precision Cutting Tools

复合钻系统

麻花钻系统 带可换式刀片和内冷却
HSS-E，HSS-E-PM及硬质合金涂层可换式刀片



P	M	K	N	S	H	标准	型号	刀具材料	表面处理	切削方向	内冷	钻深	d1/mm	产品代号	页码

带直柄复合钻刀杆



						哈特纳标准			Ni	右手		<3xD		86612	349



						哈特纳标准			Ni	右手		<5xD		86622	350



						哈特纳标准			Ni	右手		<7xD		86624	351

带莫氏锥柄复合钻刀杆



						哈特纳标准			Ni	右手				86630	352



						哈特纳标准			Ni	右手				86650	354



						哈特纳标准			Ni	右手				86670	353



						哈特纳标准			Ni	右手				86680	355

P	M	K	N	S	H	标准	型号	刀具材料	表面处理	切削方向	内冷	钻深	d1/mm	产品代号	页码

非标直柄复合钻刀杆



						哈特纳标准			Ni	右手				86628	356

非标锥柄复合钻刀杆



						哈特纳标准			Ni	右手				86678	358

可换刀片



●	○	●	○			哈特纳标准		HSS-E-PM	T	右手				86602	361



●	○	●	○			哈特纳标准		HSS-E-PM	F	右手				86608	362



●	○	●	○			哈特纳标准		HSS-E-PM	A	右手				86609	363



●	○	●	○			哈特纳标准		整硬	F	右手				86701	367



●	○	●	○			哈特纳标准		整硬	F	右手				86702	365

P	M	K	N	S	H	标准	型号	刀具材料	表面处理	切削方向	内冷	钻深	d1/mm	产品代号	页码

可换刀片



						哈特纳标准		整硬	T	右手				86708	364



						哈特纳标准		整硬	T	右手				86709	366

内冷接口



						哈特纳标准								86690	368

冷却剂供给管道



						哈特纳标准								82571	369

快速释放冷却管单元



						哈特纳标准								82578	370

梅花螺丝起子



						哈特纳标准								86842	371

P	M	K	N	S	H	标准	型号	刀具材料	表面处理	切削方向	内冷	钻深	d1/mm	产品代号	页码

多用型带内冷刀柄



哈特纳标准		Ⓑ		86691	372



哈特纳标准		Ⓑ		86692	373

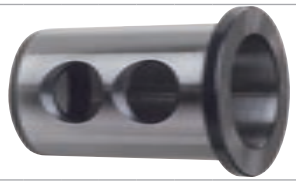


哈特纳标准		Ⓑ		86693	374



哈特纳标准		Ⓑ		86694	375

用于刀柄出水的夹持直柄的变径套



哈特纳标准		Ⓑ		86699	376

复合 HPC 刀柄

P	M	K	N	S	H	标准	型号	刀具材料	表面处理	切削方向	内冷	钻深	d1/mm	产品代号	页码
						哈特纳标准	HPC		Ni	右手		1xD		86681	378
						哈特纳标准	HPC		Ni	右手		1,5xD		86682	379
						哈特纳标准	HPC		Ni	右手		3xD		86683	381
						哈特纳标准	HPC		Ni	右手		5xD		86684	383
						哈特纳标准	HPC		Ni	右手		7xD		86685	385
						哈特纳标准	HPC		Ni	右手		10xD		86686	387

复合HPC可换刀片

P	M	K	N	S	H	标准	型号	刀具材料	表面处理	切削方向	内冷	钻深	d1/mm	产品代号	页码
○	○	○	○	○	○	哈特纳标准	HPC	整硬	a	右手			11,000 - 40,000	86721	389
•	○	○				哈特纳标准	HPC	整硬	F	右手			11,000 - 40,000	86722	392

复合HPC可换刀片

P	M	K	N	S	H	标准	型号	刀具材料	表面处理	切削方向	内冷	钻深	d1/mm	产品代号	页码
○		●				哈特纳标准	HPC	整硬	F	右手			11,000 - 40,000	86723	395
			●			哈特纳标准	HPC	整硬	◯	右手			11,000 - 40,000	86724	398
○	●			○	○	哈特纳标准	HPC	整硬	a	右手			11,000 - 40,000	86725	401

复合HPC镗刀刀片

○		●				哈特纳标准		整硬	A					86726	404
			●			哈特纳标准		整硬	◯	右手				86727	404
●	○	○		○	○	哈特纳标准		整硬	T	右手				86728	405

复合HPC刀柄压紧螺钉 1.5-10xD

						哈特纳标准								86843	406

P	M	K	N	S	H	标准	型号	刀具材料	表面处理	切削方向	内冷	钻深	d1/mm	产品代号	页码

扭力扳手



	哈特纳标准	86844	407

Torx扳手头



	哈特纳标准	86845	408

复合HPC锪刀刀柄压紧螺钉



	哈特纳标准	86846	409

HARTNER

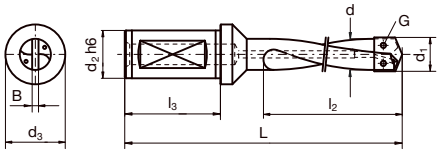
带直柄复合钻刀杆

产品代号 86612





镀镍 • 可换刀片的刀体。圆柱形刀体提供内冷，较宽的排屑槽提供良好的排屑。通过锁紧螺钉可以便捷的更换刀片，不需要调节刀片，用这样的可换刀片的螺旋槽钻头原则上加工非预铸孔，不适合加工预铸孔或者已用引导钻加工过的孔。锁紧螺钉：86807



d1 mm	d mm	d2 h6 mm	d3 mm	L mm	l2 mm	l3 mm	B mm	G	代号
10,00-11,7	9,500	20,000	25,000	108,000	50,000	40,000	2,500	86807 2.000	9,500
11,71-13,4	11,500	20,000	25,000	109,000	53,000	40,000	2,500	86807 2.000	11,500
13,41-16,4	13,000	20,000	25,000	116,000	60,000	40,000	3,500	86807 2.500	13,000
16,41-18,9	16,000	20,000	25,000	118,000	65,000	40,000	3,500	86807 2.501	16,000
18,91-22,4	18,500	20,000	25,000	124,000	73,000	40,000	4,000	86807 3.000	18,500
22,41-25,4	22,000	20,000	25,000	127,000	78,000	40,000	4,000	86807 3.001	22,000
25,41-29,0	24,000	32,000	40,000	178,000	105,000	60,000	5,000	86807 3.500	24,000
29,01-35,0	28,000	32,000	40,000	178,000	108,000	60,000	5,000	86807 3.500	28,000
35,01-45,0	34,000	32,000	40,000	223,000	152,000	60,000	7,000	86807 4.001	34,000
45,01-55,0	44,000	40,000	50,000	233,000	152,000	70,000	7,000	86807 4.001	44,000
55,01-65,0	54,000	40,000	50,000	233,000	152,000	70,000	7,000	86807 4.001	54,000

HARTNER

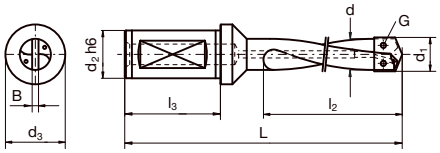
带直柄复合钻刀杆

产品代号 86622





镀镍 • 可换刀片的刀体。圆柱形刀体提供内冷，较宽的排屑槽提供良好的排屑。通过锁紧螺钉可以便捷的更换刀片，不需要调节刀片，用这样的可换刀片的螺旋槽钻头原则上加工非预铸孔，不适合加工预铸孔或者已用引导钻加工过的孔。锁紧螺钉：86807



d1 mm	d mm	d2 h6 mm	d3 mm	L mm	l2 mm	l3 mm	B mm	G	代号
10,00-11,7	9,500	20,000	25,000	140,000	83,000	40,000	2,500	86807 2.000	9,500
11,71-13,4	11,500	20,000	25,000	150,000	94,000	40,000	2,500	86807 2.000	11,500
13,41-16,4	13,000	20,000	25,000	160,000	104,000	40,000	3,500	86807 2.500	13,000
16,41-18,9	16,000	20,000	25,000	170,000	117,000	40,000	3,500	86807 2.501	16,000
18,91-22,4	18,500	20,000	25,000	180,000	129,000	40,000	4,000	86807 3.000	18,500
22,41-25,4	22,000	20,000	25,000	180,000	131,000	40,000	4,000	86807 3.001	22,000
25,41-29,0	24,000	32,000	40,000	240,000	166,000	60,000	5,000	86807 3.500	24,000
29,01-35,0	28,000	32,000	40,000	240,000	170,000	60,000	5,000	86807 3.500	28,000
35,01-45,0	34,000	32,000	40,000	280,000	210,000	60,000	7,000	86807 4.001	34,000
45,01-55,0	44,000	40,000	50,000	290,000	210,000	70,000	7,000	86807 4.001	44,000
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HARTNER

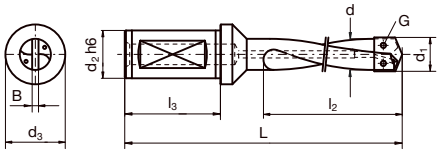
带直柄复合钻刀杆

产品代号 86624





镀镍 • 可换刀片的刀体。圆柱形刀体提供内冷，较宽的排屑槽提供良好的排屑。通过锁紧螺钉可以便捷的更换刀片，不需要调节刀片，用这样的可换刀片的螺旋槽钻头原则上加工非预铸孔，不适合加工预铸孔或者已用引导钻加工过的孔。锁紧螺钉：86807



d1 mm	d mm	d2 h6 mm	d3 mm	L mm	l2 mm	l3 mm	B mm	G	代号
10,00-11,7	9,500	20,000	25,000	180,000	123,000	40,000	2,500	86807 2.000	9,500
11,71-13,4	11,500	20,000	25,000	190,000	134,000	40,000	2,500	86807 2.000	11,500
13,41-16,4	13,000	20,000	25,000	210,000	155,000	40,000	3,500	86807 2.500	13,000
16,41-18,9	16,000	20,000	25,000	220,000	168,000	40,000	3,500	86807 2.501	16,000
18,91-22,4	18,500	20,000	25,000	250,000	199,000	40,000	4,000	86807 3.000	18,500
22,41-25,4	22,000	20,000	25,000	250,000	201,000	40,000	4,000	86807 3.001	22,000
25,41-29,0	24,000	32,000	40,000	320,000	246,000	60,000	5,000	86807 3.500	24,000
29,01-35,0	28,000	32,000	40,000	320,000	250,000	60,000	5,000	86807 3.500	28,000
35,01-45,0	34,000	32,000	40,000	380,000	310,000	60,000	7,000	86807 4.001	34,000
45,01-55,0	44,000	40,000	50,000	390,000	310,000	70,000	7,000	86807 4.001	44,000
55,01-65,0	54,000	40,000	50,000	390,000	310,000	70,000	7,000	86807 4.001	54,000

HARTNER

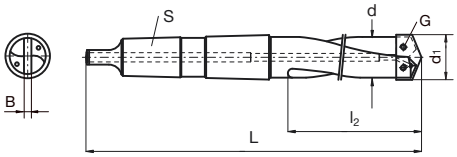
带莫氏锥柄复合钻刀杆

产品代号 86630





镀镍 • 可换刀片的短款刀体。锥柄式的刀体提供内冷，较宽的排屑槽提供良好的排屑。通过锁紧螺钉可以便捷的更换刀片，不需要调节刀片，用这样的可换刀片的螺旋槽钻头原则上加工非预铸孔，不适合加工预铸孔或者已用引导钻加工过的孔。冷却方式：轴向（径向根据需求）锁紧螺钉：86807



d1 mm	d mm	S	L mm	l2 mm	B mm	G	代号
10,00-11,7	9,500	MK-2	139,000	56,000	2,500	86807 2.000	9,500
11,71-13,4	11,500	MK-2	141,000	58,000	2,500	86807 2.000	11,500
13,41-16,4	13,000	MK-2	148,000	63,000	3,500	86807 2.500	13,000
16,41-18,9	16,000	MK-2	150,000	67,000	3,500	86807 2.501	16,000
18,91-22,4	18,500	MK-3	178,000	76,000	4,000	86807 3.000	18,500
22,41-25,4	22,000	MK-3	181,000	80,000	4,000	86807 3.001	22,000

HARTNER

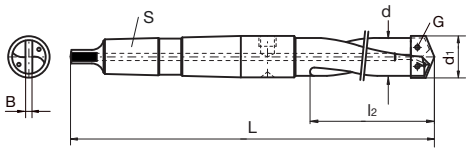
带莫氏锥柄复合钻刀杆

产品代号 86670





≤ Ø 28 mm:镀镍 Ø 28 mm: 抛光 • 可更换刀片的短款刀柄.锥面刀柄带内冷。宽的排屑槽保证较好的排屑。通过压紧螺钉更换刀片。无需调节刀片。带刀片的麻花钻应加工非预铸孔。这样的刀不适合加工预铸孔或者有引导孔的孔。冷却方式：轴向（径向根据需求）刀柄从Ø 63.0 mm开始；直槽；柄身尺寸MK5;十字槽；压紧螺钉型号：86807



d1 mm	d mm	S	L mm	l2 mm	B mm	G	代号
25,01-29,0	24,000	MK-4	279,000	108,000	5,000	86807 3.500	24,000
29,01-35,0	28,000	MK-4	279,000	108,000	5,000	86807 3.500	28,000
35,01-45,0	34,000	MK-4	324,000	152,000	7,000	86807 4.001	34,000
45,01-55,0	44,000	MK-4	324,000	152,000	7,000	86807 4.001	44,000
55,01-65,0	54,000	MK-4	324,000	152,000	7,000	86807 4.001	54,000
65,01-78,0	63,000	MK-5	436,000	216,000	9,000	86807 5.000	63,000
78,01-90,0	77,000	MK-5	436,000	216,000	9,000	86807 5.000	77,000
90,01-102,0	89,000	MK-5	436,000	216,000	9,000	86807 5.000	89,000

HARTNER

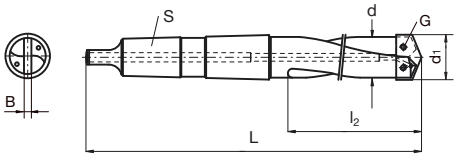
带莫氏锥柄复合钻刀杆

产品代号 86650





镀镍 • 可更换刀片的长款刀柄。锥面刀柄带内冷。宽的排屑槽保证较好的排屑。通过压紧螺钉更换刀片。无需调节刀片。带刀片的麻花钻应加工非预铸孔。这样的刀不适合加工预铸孔或者有引导孔的孔。冷却方式：轴向（径向根据需求）压紧螺钉型号：86807



d1 mm	d mm	S	L mm	l2 mm	B mm	G	代号
10,00-11,7	9,500	MK-2	186,000	103,000	2,500	86807 2.000	9,500
11,71-13,4	11,500	MK-2	191,000	108,000	2,500	86807 2.000	11,500
13,41-16,4	13,000	MK-2	210,000	125,000	3,500	86807 2.500	13,000
16,41-18,9	16,000	MK-2	218,000	135,000	3,500	86807 2.501	16,000
18,91-22,4	18,500	MK-3	258,000	156,000	4,000	86807 3.000	18,500
22,41-25,4	22,000	MK-3	266,000	166,000	4,000	86807 3.001	22,000

HARTNER

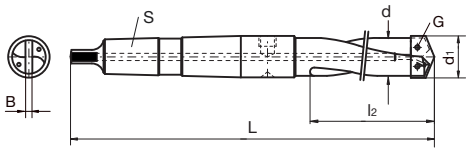
带莫氏锥柄复合钻刀杆

产品代号 86680



Ni WN 130° R MK

≤ Ø 28 mm:镀镍 Ø 28 mm: 抛光 • 可换刀片的长款设计的环形面提供冷却的刀体。锥形柄的刀体提供内冷，较宽的排屑槽提供良好的排屑。通过锁紧螺钉可以便捷的更换刀片，不需要调节刀片，用这样的可换刀片的螺旋槽钻头原则上加工非预铸孔，不适合加工预铸孔或者已用引导钻加工过的孔。冷却方式：轴向（径向根据需求）刀柄直径Ø 63,0 mm 直槽 柄的型号 莫氏锥柄 5 锁紧螺钉：86807



d1 mm	d mm	S	L mm	l2 mm	B mm	G	代号
25,01-29,0	24,000	MK-4	379,000	208,000	5,000	86807 3.500	24,000
29,01-35,0	28,000	MK-4	379,000	208,000	5,000	86807 3.500	28,000
35,01-45,0	34,000	MK-4	429,000	257,000	7,000	86807 4.001	34,000
45,01-55,0	44,000	MK-4	429,000	257,000	7,000	86807 4.001	44,000
55,01-65,0	54,000	MK-4	429,000	257,000	7,000	86807 4.001	54,000
65,01-78,0	63,000	MK-5	536,000	316,000	9,000	86807 5.000	63,000
78,01-90,0	77,000	MK-5	536,000	316,000	9,000	86807 5.000	77,000
90,01-102,0	89,000	MK-5	536,000	316,000	9,000	86807 5.000	89,000

HARTNER

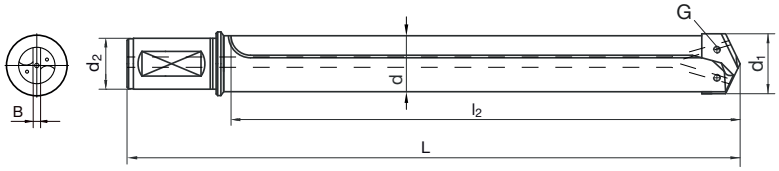
非标直柄复合钻刀杆

产品代号 86628





镀镍 • 可换刀片的刀体。特别长的圆柱形刀体提供内冷，较宽的排屑槽提供良好的排屑。通过锁紧螺钉可以便捷的更换刀片，不需要调节刀片，用这样的可换刀片的螺旋槽钻头原则上加工非预铸孔，不适合加工预铸孔或者已用引导钻加工过的孔。锁紧螺钉：86807



d1 mm	d mm	d2 h6 mm	L mm	l2 mm	B mm	G	代号
13,41-16,4	13,000	20,000	198,500	156,500	3,500	86807 2.500	13,157
13,41-16,4	13,000	20,000	238,500	196,500	3,500	86807 2.500	13,197
13,41-16,4	13,000	20,000	318,500	276,500	3,500	86807 2.500	13,277
15,00-16,4	14,500	20,000	95,000	52,000	3,500	86807 2.500	14,052
15,00-16,4	14,500	20,000	125,000	82,000	3,500	86807 2.500	14,082
15,00-16,4	14,500	20,000	178,500	136,500	3,500	86807 2.500	14,137
15,00-16,4	14,500	20,000	198,500	156,500	3,500	86807 2.500	14,157
15,00-16,4	14,500	20,000	238,500	196,500	3,500	86807 2.500	14,197
15,00-16,4	14,500	20,000	268,500	226,500	3,500	86807 2.500	14,227
15,00-16,4	14,500	20,000	398,500	356,500	3,500	86807 2.500	14,357
16,41-18,9	16,000	20,000	260,500	218,500	3,500	86807 2.500	16,219
16,41-18,9	16,000	20,000	295,500	253,500	3,500	86807 2.500	16,254
16,41-18,9	16,000	20,000	410,500	368,500	3,500	86807 2.501	16,369
18,91-22,4	18,500	20,000	304,000	262,000	4,000	86807 3.000	18,262
18,91-22,4	18,500	20,000	344,000	302,000	4,000	86807 3.000	18,302
18,91-22,4	18,500	20,000	464,000	422,000	4,000	86807 3.000	18,422
22,41-25,4	22,000	20,000	285,000	243,000	4,000	86807 3.001	22,243
22,41-25,4	22,000	20,000	345,000	303,000	4,000	86807 3.001	22,303
22,41-25,4	22,000	20,000	385,000	343,000	4,000	86807 3.001	22,343
22,41-25,4	22,000	20,000	535,000	493,000	4,000	86807 3.001	22,493
25,41-29,0	23,000	32,000	138,000	63,000	5,000	86807 3.001	23,063
25,41-29,0	23,000	32,000	173,000	98,000	5,000	86807 3.001	23,098
25,41-29,0	23,000	32,000	225,000	150,000	5,000	86807 3.001	23,150
25,41-29,0	23,000	32,000	273,000	198,000	5,000	86807 3.001	23,198
25,41-29,0	23,000	32,000	343,000	268,000	5,000	86807 3.001	23,268
25,41-29,0	23,000	32,000	433,000	358,000	5,000	86807 3.001	23,358
25,41-29,0	23,000	32,000	503,000	428,000	5,000	86807 3.001	23,428
25,41-29,0	23,000	32,000	683,000	608,000	5,000	86807 3.001	23,608
29,01-35,0	28,000	32,000	393,000	321,500	5,000	86807 3.500	28,322
29,01-35,0	28,000	32,000	473,000	401,500	5,000	86807 3.500	28,402
29,01-35,0	28,000	32,000	553,000	481,500	5,000	86807 3.500	28,482
29,01-35,0	28,000	32,000	763,000	691,500	5,000	86807 3.500	28,692
33,20-36,0	33,000	32,000	148,000	80,500	5,000	86807 3.500	33,081
33,20-36,0	33,000	32,000	173,000	105,500	5,000	86807 3.500	33,106
33,20-36,0	33,000	32,000	223,000	155,500	5,000	86807 3.500	33,156
33,20-36,0	33,000	32,000	273,000	205,500	5,000	86807 3.500	33,206
33,20-36,0	33,000	32,000	393,000	325,500	5,000	86807 3.500	33,326
33,20-36,0	33,000	32,000	503,000	435,500	5,000	86807 3.500	33,436
33,20-36,0	33,000	32,000	603,000	535,500	5,000	86807 3.500	33,536
33,20-36,0	33,000	32,000	823,000	755,500	5,000	86807 3.500	33,756
35,01-45,0	34,000	32,000	457,000	388,000	7,000	86807 4.001	34,388
35,01-45,0	34,000	32,000	607,000	538,000	7,000	86807 4.001	34,538

非标直柄复合钻刀杆

d1 mm	d mm	d2 h6 mm	L mm	l2 mm	B mm	G	代号
35,01-45,0	34,000	32,000	907,000	838,000	7,000	86807 4.001	34,838
45,01-55,0	44,000	40,000	467,000	394,000	7,000	86807 4.001	44,394
45,01-55,0	44,000	40,000	617,000	544,000	7,000	86807 4.001	44,544
45,01-55,0	44,000	40,000	917,000	844,000	7,000	86807 4.001	44,844
55,01-65,0	54,000	40,000	467,000	393,000	7,000	86807 4.001	54,393
55,01-65,0	54,000	40,000	617,000	543,000	7,000	86807 4.001	54,543
55,01-65,0	54,000	40,000	917,000	843,000	7,000	86807 4.001	54,843
65,01-78,0	63,000	40,000	230,000	155,000	9,000	86807 5.000	63,155
65,01-78,0	63,000	40,000	340,000	265,000	9,000	86807 5.000	63,265
65,01-78,0	63,000	40,000	470,000	395,000	9,000	86807 5.000	63,395
65,01-78,0	63,000	40,000	620,000	545,000	9,000	86807 5.000	63,545
65,01-78,0	63,000	40,000	920,000	845,000	9,000	86807 5.000	63,845
78,01-90,0	77,000	50,000	240,000	155,000	9,000	86807 5.000	77,155
78,01-90,0	77,000	50,000	350,000	265,000	9,000	86807 5.000	77,265
78,01-90,0	77,000	50,000	480,000	395,000	9,000	86807 5.000	77,395
78,01-90,0	77,000	50,000	630,000	545,000	9,000	86807 5.000	77,545
78,01-90,0	77,000	50,000	930,000	845,000	9,000	86807 5.000	77,845
90,01-102,0	89,000	50,000	240,000	155,000	9,000	86807 5.000	89,155
90,01-102,0	89,000	50,000	350,000	265,000	9,000	86807 5.000	89,265
90,01-102,0	89,000	50,000	480,000	395,000	9,000	86807 5.000	89,395
90,01-102,0	89,000	50,000	630,000	545,000	9,000	86807 5.000	89,545
90,01-102,0	89,000	50,000	930,000	845,000	9,000	86807 5.000	89,845

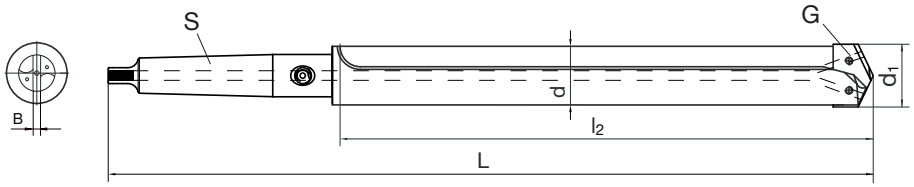
HARTNER

非标锥柄复合钻刀杆

产品代号 86678



镀镍面总长 ≤ 1000 mm，最大抛光长度为1000 mm • 可换刀片的加长设计的刀体。锥形柄的刀体提供内冷，较宽的排屑槽提供良好的排屑。通过锁紧螺钉可以便捷的更换刀片，不需要调节刀片，用这样的可换刀片的螺旋槽钻头原则上加工非预铸孔，不适合加工预铸孔或者已用引导钻加工过的孔。冷却方式：轴向（径向根据需求）锁紧螺钉：86807



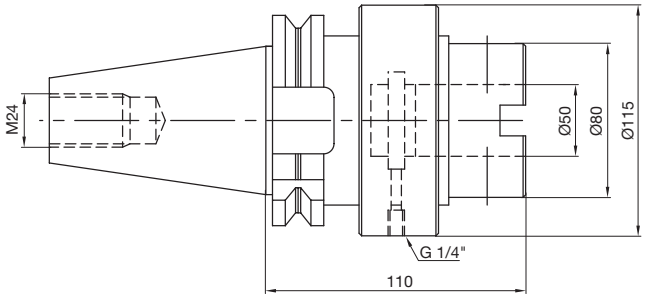
d1 mm	d mm	S	L mm	l2 mm	B mm	G	代号
35,01-45,0	34,000	MK-4	566,000	393,000	7,000	86807 4.001	34,393
35,01-45,0	34,000	MK-4	716,000	543,000	7,000	86807 4.001	34,543
35,01-45,0	34,000	MK-4	1016,000	843,000	7,000	86807 4.001	34,843
45,01-55,0	44,000	MK-4	716,000	544,500	7,000	86807 4.001	44,545
45,01-55,0	44,000	MK-4	1016,000	844,500	7,000	86807 4.001	44,845
55,01-65,0	54,000	MK-4	560,000	387,000	7,000	86807 4.001	54,387
55,01-65,0	54,000	MK-4	716,000	543,000	7,000	86807 4.001	54,543
55,01-65,0	54,000	MK-4	1016,000	843,000	7,000	86807 4.001	54,843
65,01-78,0	63,000	MK-5	766,000	547,000	9,000	86807 5.000	63,547
65,01-78,0	63,000	MK-5	1066,000	847,000	9,000	86807 5.000	63,847
78,01-90,0	77,000	MK-5	766,000	544,000	9,000	86807 5.000	77,544
78,01-90,0	77,000	MK-5	1066,000	844,000	9,000	86807 5.000	77,844
90,01-102,0	89,000	MK-5	766,000	544,000	9,000	86807 5.000	89,544
90,01-102,0	89,000	MK-5	1066,000	844,000	9,000	86807 5.000	89,844



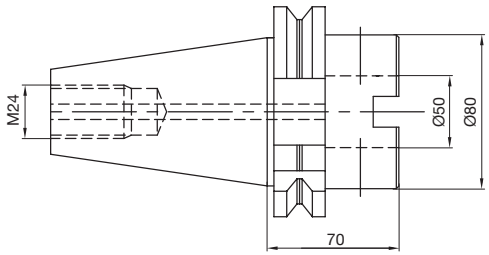
主轴刀柄

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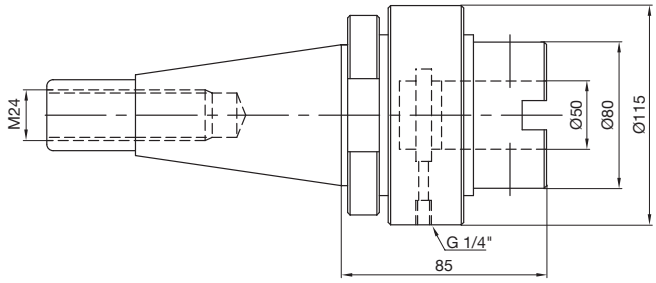
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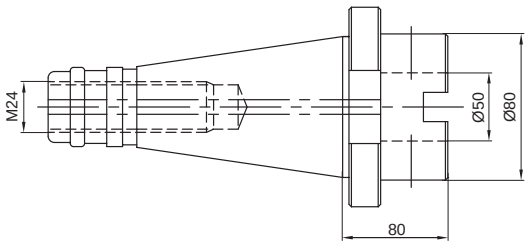
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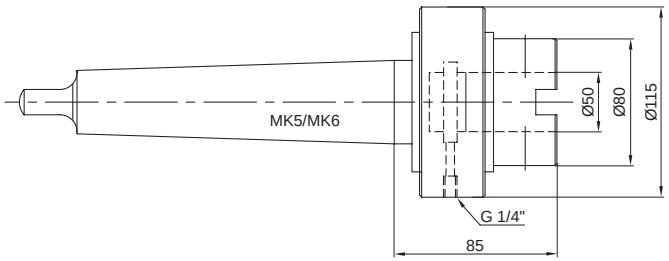
SK50 DIN 2080 带冷却供给接口



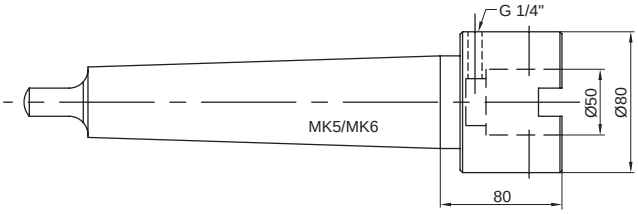
SK50 DIN 2080 无冷却供给接口



MT 5/MT 6 带冷却供给接口



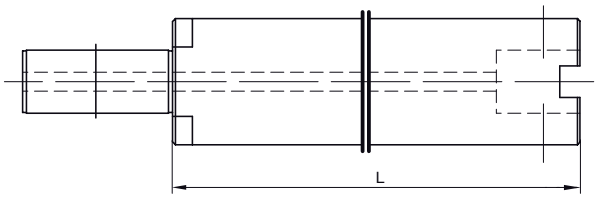
MT 5/MT 6 无冷却供给接口



延长杆



延长杆
97 mm 至 130 mm
L = 186 mm
L = 300 mm



延长杆
131 mm 至 165 mm, 164 mm 至 210 mm
L = 204 mm
L = 300 mm

连接环

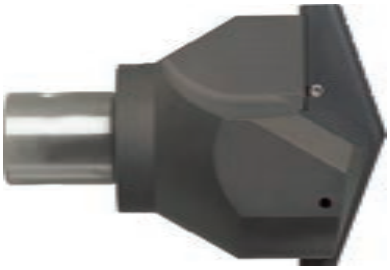


small, for drill heads 97 mm 至 130 mm,
width 14 mm

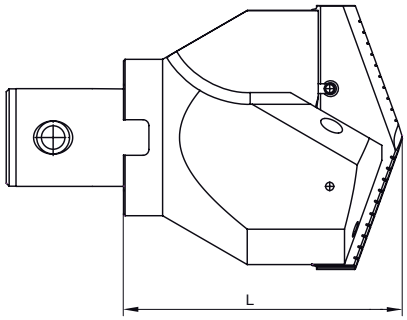


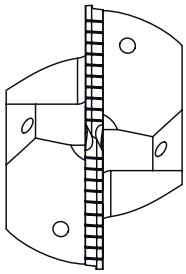
large, for drill heads 131 mm 至165 mm
and 164 mm 至 210 mm, width 16 mm

钻头头部



以下规格可按需提供:
- Ø 97 mm 至 Ø 130 mm, L2 = 118.5 mm
- Ø 131 mm 至 Ø 165 mm, L2 = 142.5 mm
- Ø 164 mm 至 Ø 210 mm, L2 = 142.5 mm





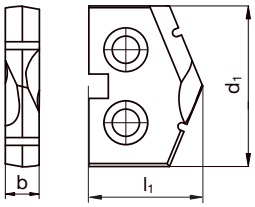
产品代号 86602



P	M	K	N	S	H
●	○	●	○		

HSS-E-PM | T | WN | 135° | R

芯厚 ⩾ Ø 9,800 • 带断屑槽的可换式刀片。 顶角135度， 通用型



d1 mm	l1 mm	b mm	代号
10,000	8,700	2,500	10,000
10,200	8,700	2,500	10,200
10,500	8,700	2,500	10,500
11,000	8,700	2,500	11,000
11,110	8,700	2,500	11,110
11,500	8,700	2,500	11,500
11,750	8,700	2,500	11,750
12,000	8,700	2,500	12,000
12,300	8,700	2,500	12,300
12,500	8,700	2,500	12,500
12,750	8,700	2,500	12,750
13,000	8,700	2,500	13,000
13,250	8,700	2,500	13,250
13,500	11,700	3,500	13,500
13,750	11,700	3,500	13,750
14,000	11,700	3,500	14,000
14,250	11,700	3,500	14,250
14,500	11,700	3,500	14,500
14,750	11,700	3,500	14,750
15,000	11,700	3,500	15,000
15,250	11,700	3,500	15,250
15,500	11,700	3,500	15,500
15,750	11,700	3,500	15,750
16,000	11,700	3,500	16,000
16,500	11,700	3,500	16,500
16,750	11,700	3,500	16,750
17,000	11,700	3,500	17,000
17,250	11,700	3,500	17,250
17,500	11,700	3,500	17,500
17,750	11,700	3,500	17,750

d1 mm	l1 mm	b mm	代号
18,000	11,700	3,500	18,000
18,250	11,700	3,500	18,250
18,500	11,700	3,500	18,500
18,750	11,700	3,500	18,750
19,000	13,700	4,000	19,000
19,500	13,700	4,000	19,500
19,750	13,700	4,000	19,750
20,000	13,700	4,000	20,000
20,250	13,700	4,000	20,250
20,500	13,700	4,000	20,500
21,000	13,700	4,000	21,000
21,250	13,700	4,000	21,250
21,500	13,700	4,000	21,500
21,750	13,700	4,000	21,750
22,000	13,700	4,000	22,000
22,500	13,700	4,000	22,500
23,000	13,700	4,000	23,000
23,500	13,700	4,000	23,500
24,000	13,700	4,000	24,000
24,500	13,700	4,000	24,500
24,750	13,700	4,000	24,750
25,000	13,700	4,000	25,000

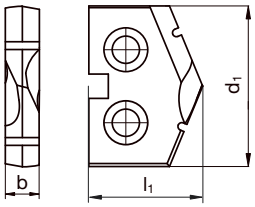
产品代号 86608



P	M	K	N	S	H
●	○	●	○		

HSS-E-PM | F | WN | 135° | R

芯厚 ⩾ Ø 10,000 • 带断屑槽的可换式刀片。 顶角135度， 通用型



d1 mm	l1 mm	b mm	代号
10,000	8,700	2,500	10,000
10,500	8,700	2,500	10,500
11,000	8,700	2,500	11,000
11,500	8,700	2,500	11,500
11,750	8,700	2,500	11,750
12,000	8,700	2,500	12,000
12,500	8,700	2,500	12,500
12,750	8,700	2,500	12,750
13,000	8,700	2,500	13,000
13,250	8,700	2,500	13,250
13,500	11,700	3,500	13,500
13,750	11,700	3,500	13,750
14,000	11,700	3,500	14,000
14,250	11,700	3,500	14,250
14,500	11,700	3,500	14,500
14,750	11,700	3,500	14,750
15,000	11,700	3,500	15,000
15,250	11,700	3,500	15,250
15,500	11,700	3,500	15,500
15,750	11,700	3,500	15,750
16,000	11,700	3,500	16,000
16,500	11,700	3,500	16,500
17,000	11,700	3,500	17,000
17,500	11,700	3,500	17,500

d1 mm	l1 mm	b mm	代号
17,750	11,700	3,500	17,750
18,000	11,700	3,500	18,000
18,250	11,700	3,500	18,250
18,500	11,700	3,500	18,500
18,750	11,700	3,500	18,750
19,000	13,700	4,000	19,000
19,500	13,700	4,000	19,500
19,750	13,700	4,000	19,750
20,000	13,700	4,000	20,000
20,250	13,700	4,000	20,250
20,500	13,700	4,000	20,500
21,000	13,700	4,000	21,000
21,250	13,700	4,000	21,250
21,500	13,700	4,000	21,500
21,750	13,700	4,000	21,750
22,000	13,700	4,000	22,000
22,500	13,700	4,000	22,500
23,000	13,700	4,000	23,000
23,500	13,700	4,000	23,500
24,000	13,700	4,000	24,000
24,500	13,700	4,000	24,500
24,750	13,700	4,000	24,750
25,000	13,700	4,000	25,000

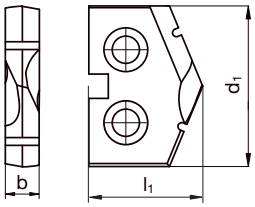
产品代号 86609



P	M	K	N	S	H
●	○	●	○		

HSS-E-PM | A | WN | 132° | R

芯厚 ⩾ Ø 25,000 • 带分屑槽刀片。通用型。
顶角:
⩾ Ø 25,0 mm = 132°
> Ø 66,0 mm = 140°
切削刃材料:
⩽ Ø 66,0 mm HSS-E-PM
> Ø 66,0 mm HSS-E



d1 mm	inch	l1 mm	b mm	代号
25,000		18,000	5,000	25,000
25,500		18,000	5,000	25,500
26,000		18,000	5,000	26,000
26,500		18,000	5,000	26,500
27,000		18,000	5,000	27,000
28,000		18,000	5,000	28,000
29,000		18,000	5,000	29,000
29,500		18,000	5,000	29,500
30,000		18,000	5,000	30,000
31,000		18,000	5,000	31,000
32,000		18,000	5,000	32,000
33,000		18,000	5,000	33,000
34,000		18,000	5,000	34,000
35,000		18,000	5,000	35,000
36,000		25,000	7,000	36,000
37,000		25,000	7,000	37,000
38,000		25,000	7,000	38,000
39,000		25,000	7,000	39,000
40,000		25,000	7,000	40,000
41,000		25,000	7,000	41,000
42,000		25,000	7,000	42,000
43,000		25,000	7,000	43,000
44,000		25,000	7,000	44,000
45,000		25,000	7,000	45,000
46,000		25,000	7,000	46,000
47,000		25,000	7,000	47,000
48,000		25,000	7,000	48,000
49,000		25,000	7,000	49,000
50,000		25,000	7,000	50,000
51,000		25,000	7,000	51,000
52,000		25,000	7,000	52,000
53,000		25,000	7,000	53,000
54,000		25,000	7,000	54,000
55,000		25,000	7,000	55,000
56,000		25,000	7,000	56,000
57,000		25,000	7,000	57,000
58,000		25,000	7,000	58,000
59,000		25,000	7,000	59,000
60,000		25,000	7,000	60,000
62,000		25,000	7,000	62,000
64,000		25,000	7,000	64,000
65,000		25,000	7,000	65,000

d1 mm	inch	l1 mm	b mm	代号
66,000		37,000	9,000	66,000
68,000		37,000	9,000	68,000
70,000		37,000	9,000	70,000
74,000		37,000	9,000	74,000
75,000		37,000	9,000	75,000
78,000		37,000	9,000	78,000
80,000		37,000	9,000	80,000
82,000		37,000	9,000	82,000
84,000		37,000	9,000	84,000
85,000		37,000	9,000	85,000
88,000		37,000	9,000	88,000
90,000		37,000	9,000	90,000
93,000		37,000	9,000	93,000
95,000		37,000	9,000	95,000
96,000		37,000	9,000	96,000
98,000		37,000	9,000	98,000
100,000		37,000	9,000	100,000
102,000		37,000	9,000	102,000
103,000		37,000	9,000	103,000
105,000		37,000	9,000	105,000
110,000		37,000	9,000	110,000
115,000		37,000	9,000	115,000
120,000		37,000	9,000	120,000
125,000		37,000	9,000	125,000
130,000		37,000	9,000	130,000
135,000		47,000	9,000	135,000
140,000		47,000	9,000	140,000
145,000		47,000	9,000	145,000
150,000		47,000	9,000	150,000
155,000		47,000	9,000	155,000
160,000		47,000	9,000	160,000
165,000		47,000	9,000	165,000
170,000		47,000	9,000	170,000
175,000		47,000	9,000	175,000
180,000		47,000	9,000	180,000
185,000		47,000	9,000	185,000
190,000		47,000	9,000	190,000
195,000		47,000	9,000	195,000
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205,000		47,000	9,000	205,000
210,000		47,000	9,000	210,000

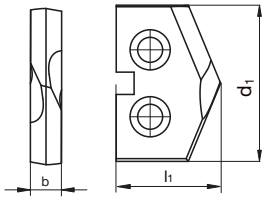
产品代号 86708



P	M	K	N	S	H
●	○	●	○		

VHM | T | WN | 135° | R

芯厚 ⩾ Ø 9,800 • 没有断屑槽的可更换试刀片，用于抗拉强度最大为600N/mm²的材料，可普遍使用
顶角⩽ Ø 25.4 mm = 135°，>Ø 25.4 mm = 132°
(见应用推荐/技术类)



d1 mm	l1 mm	b mm	代号
10,000	8,700	2,500	10,000
10,200	8,700	2,500	10,200
10,500	8,700	2,500	10,500
11,000	8,700	2,500	11,000
11,500	8,700	2,500	11,500
12,000	8,700	2,500	12,000
12,250	8,700	2,500	12,250
12,500	8,700	2,500	12,500
12,750	8,700	2,500	12,750
13,000	8,700	2,500	13,000
13,500	11,700	3,500	13,500
13,750	11,700	3,500	13,750
14,000	11,700	3,500	14,000
14,250	11,700	3,500	14,250
14,500	11,700	3,500	14,500
14,750	11,700	3,500	14,750
15,000	11,700	3,500	15,000
15,500	11,700	3,500	15,500
15,750	11,700	3,500	15,750
16,000	11,700	3,500	16,000
16,250	11,700	3,500	16,250
16,500	11,700	3,500	16,500
16,750	11,700	3,500	16,750
17,000	11,700	3,500	17,000
17,500	11,700	3,500	17,500
17,750	11,700	3,500	17,750
18,000	11,700	3,500	18,000
18,250	11,700	3,500	18,250
18,500	11,700	3,500	18,500
19,000	13,700	4,000	19,000

d1 mm	l1 mm	b mm	代号
19,500	13,700	4,000	19,500
19,750	13,700	4,000	19,750
20,000	13,700	4,000	20,000
20,500	13,700	4,000	20,500
21,000	13,700	4,000	21,000
21,500	13,700	4,000	21,500
22,000	13,700	4,000	22,000
22,500	13,700	4,000	22,500
22,750	13,700	4,000	22,750
23,000	13,700	4,000	23,000
23,500	13,700	4,000	23,500
24,000	13,700	4,000	24,000
24,250	13,700	4,000	24,250
24,500	13,700	4,000	24,500
25,000	13,700	4,000	25,000
26,000	17,300	5,000	26,000
27,000	17,300	5,000	27,000
28,000	17,300	5,000	28,000
29,000	17,300	5,000	29,000
30,000	17,300	5,000	30,000
31,000	17,300	5,000	31,000
32,000	17,300	5,000	32,000
34,000	17,300	5,000	34,000
35,000	17,300	5,000	35,000

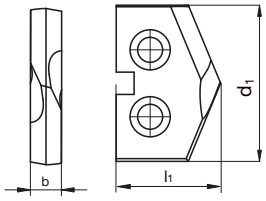
产品代号 86702



P	M	K	N	S	H
●	○	●	○		

VHM | F | WN | 135° | R

芯厚 ⩾ Ø 10,000 • 没有断屑槽的可更换试刀片，用于抗拉强度最大为600N/mm²的材料，可普遍使用
顶角⩽ Ø 25.4 mm = 135°，>Ø 25.4 mm = 132°
(见应用推荐/技术类)



d1 mm	l1 mm	b mm	代号
10,000	8,700	2,500	10,000
10,200	8,700	2,500	10,200
10,500	8,700	2,500	10,500
11,000	8,700	2,500	11,000
12,000	8,700	2,500	12,000
12,500	8,700	2,500	12,500
12,750	8,700	2,500	12,750
13,000	8,700	2,500	13,000
13,500	11,700	3,500	13,500
13,750	11,700	3,500	13,750
14,000	11,700	3,500	14,000
14,100	11,700	3,500	14,100
14,500	11,700	3,500	14,500
14,750	11,700	3,500	14,750
15,000	11,700	3,500	15,000
15,500	11,700	3,500	15,500
16,000	11,700	3,500	16,000
16,250	11,700	3,500	16,250
16,500	11,700	3,500	16,500
16,750	11,700	3,500	16,750
17,000	11,700	3,500	17,000
17,500	11,700	3,500	17,500
17,750	11,700	3,500	17,750
18,000	11,700	3,500	18,000
18,250	11,700	3,500	18,250
18,500	11,700	3,500	18,500
19,000	13,700	4,000	19,000
19,500	13,700	4,000	19,500
19,750	13,700	4,000	19,750
20,000	13,700	4,000	20,000

d1 mm	l1 mm	b mm	代号
20,500	13,700	4,000	20,500
21,000	13,700	4,000	21,000
21,500	13,700	4,000	21,500
22,000	13,700	4,000	22,000
22,300	13,700	4,000	22,300
22,750	13,700	4,000	22,750
23,000	13,700	4,000	23,000
24,250	13,700	4,000	24,250
24,500	13,700	4,000	24,500
25,000	13,700	4,000	25,000
26,000	17,300	5,000	26,000
26,500	17,300	5,000	26,500
27,000	17,300	5,000	27,000
28,000	17,300	5,000	28,000
29,000	17,300	5,000	29,000
29,800	17,300	5,000	29,800
30,000	17,300	5,000	30,000
32,000	17,300	5,000	32,000
33,000	17,300	5,000	33,000
34,000	17,300	5,000	34,000
35,000	17,300	5,000	35,000

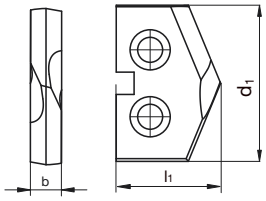
产品代号 86709



P	M	K	N	S	H
●	○	●	○		

VHM | T | WN | 135° | R

芯厚 ⩾ Ø 9,800 • 没有断屑槽的可更换试刀片，用于抗拉强度最大为600N/mm²的材料，可普遍使用
顶角⩽ Ø 25.4 mm = 135°，>Ø 25.4 mm = 132°
没有倒角（见应用推荐/技术类）



d1 mm	l1 mm	b mm	代号
10,000	8,700	2,500	10,000
10,200	8,700	2,500	10,200
10,500	8,700	2,500	10,500
11,000	8,700	2,500	11,000
11,110	8,700	2,500	11,110
12,000	8,700	2,500	12,000
12,500	8,700	2,500	12,500
12,700	8,700	2,500	12,700
12,750	8,700	2,500	12,750
13,000	8,700	2,500	13,000
13,500	11,700	3,500	13,500
14,000	11,700	3,500	14,000
14,500	11,700	3,500	14,500
14,750	11,700	3,500	14,750
15,000	11,700	3,500	15,000
15,880	11,700	3,500	15,880
16,250	11,700	3,500	16,250
16,500	11,700	3,500	16,500
16,670	11,700	3,500	16,670
16,750	11,700	3,500	16,750
17,000	11,700	3,500	17,000
17,500	11,700	3,500	17,500
17,750	11,700	3,500	17,750
18,000	11,700	3,500	18,000

d1 mm	l1 mm	b mm	代号
18,250	11,700	3,500	18,250
18,500	11,700	3,500	18,500
19,000	13,700	4,000	19,000
19,500	13,700	4,000	19,500
20,000	13,700	4,000	20,000
20,500	13,700	4,000	20,500
20,640	13,700	4,000	20,640
21,000	13,700	4,000	21,000
21,500	13,700	4,000	21,500
22,000	13,700	4,000	22,000
23,000	13,700	4,000	23,000
23,250	13,700	4,000	23,250
24,500	13,700	4,000	24,500
25,000	13,700	4,000	25,000
26,000	17,300	5,000	26,000
27,000	17,300	5,000	27,000
28,000	17,300	5,000	28,000
29,000	17,300	5,000	29,000
30,000	17,300	5,000	30,000
33,000	17,300	5,000	33,000
34,000	17,300	5,000	34,000
35,000	17,300	5,000	35,000

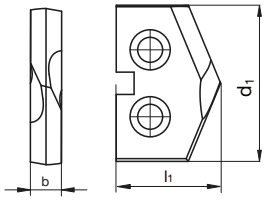
产品代号 86701



P	M	K	N	S	H
●	○	●	○		

VHM | F | WN | 135° | R

芯厚 ⩾ Ø 10,000 • 没有断屑槽的可更换试刀片，用于抗拉强度最大为600N/mm²的材料，可普遍使用
顶角⩽ Ø 25.4 mm = 135°，>Ø 25.4 mm = 132°
没有倒角（见应用推荐/技术类）



d1 mm	l1 mm	b mm	代号
10,000	8,700	2,500	10,000
10,200	8,700	2,500	10,200
10,500	8,700	2,500	10,500
11,000	8,700	2,500	11,000
11,500	8,700	2,500	11,500
12,000	8,700	2,500	12,000
12,500	8,700	2,500	12,500
12,750	8,700	2,500	12,750
13,000	8,700	2,500	13,000
13,500	11,700	3,500	13,500
13,750	11,700	3,500	13,750
14,000	11,700	3,500	14,000
14,250	11,700	3,500	14,250
14,500	11,700	3,500	14,500
14,750	11,700	3,500	14,750
15,000	11,700	3,500	15,000
15,500	11,700	3,500	15,500
15,750	11,700	3,500	15,750
16,000	11,700	3,500	16,000
16,250	11,700	3,500	16,250
16,500	11,700	3,500	16,500
16,750	11,700	3,500	16,750
17,000	11,700	3,500	17,000
17,500	11,700	3,500	17,500

d1 mm	l1 mm	b mm	代号
17,750	11,700	3,500	17,750
18,000	11,700	3,500	18,000
18,500	11,700	3,500	18,500
19,000	13,700	4,000	19,000
19,500	13,700	4,000	19,500
20,000	13,700	4,000	20,000
20,500	13,700	4,000	20,500
21,000	13,700	4,000	21,000
21,500	13,700	4,000	21,500
22,000	13,700	4,000	22,000
23,000	13,700	4,000	23,000
24,000	13,700	4,000	24,000
24,500	13,700	4,000	24,500
25,000	13,700	4,000	25,000
26,000	17,300	5,000	26,000
27,000	17,300	5,000	27,000
28,000	17,300	5,000	28,000
29,000	17,300	5,000	29,000
30,000	17,300	5,000	30,000
31,000	17,300	5,000	31,000
32,000	17,300	5,000	32,000
33,000	17,300	5,000	33,000
34,000	17,300	5,000	34,000
35,000	17,300	5,000	35,000

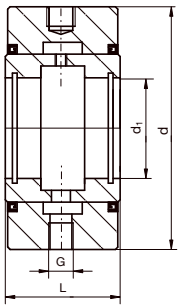
内冷接口

产品代号 86690



WN

用于夹持莫氏锥柄及带有86670、86680环槽的刀柄的冷却液供给管（不含螺钉）



给	d1 mm	d mm	G	L mm	代号
MK 4	31,750	80,000	G 1/4	45,000	31,750
MK 5	63,500	127,000	G 1/2	60,000	63,500

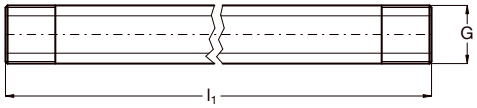
冷却剂供给管道

产品代号 82571





用于冷却液供给环（型号86690）的冷却液注水管



G	l1 mm	代号
G 1/4	200,000	13,160
G 1/2	200,000	20,960

G	l1 mm	代号

快速释放冷却管单元

产品代号 82578



WN

G	d mm	l1 mm	代号
G 1/4	9,000	118,000	9,000
G 1/2	13,000	118,000	13,000

G	d mm	l1 mm	代号

HARTNER

梅花螺丝起子

产品代号 86842



WN

Torx	l1 mm	代号	Torx	l1 mm	代号
T6	150,000	6,001	T20	205,000	20,001
T7	150,000	7,001	T25	207,000	25,001
T8	150,000	8,001			
T9	150,000	9,001			
T10	170,000	10,001			
T15	190,000	15,001			

HARTNER

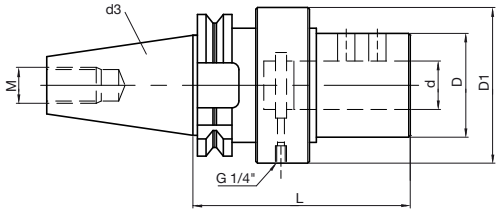
多用型带内冷刀柄

产品代号 86691



B WN SK

带SK（基于 DIN ISO 7388-1）与圆柱孔， 小柄径变径套的应用



d3	d mm	D mm	D1 mm	L mm	M	 kg	代号
SK 40	32,000	65,000	88,000	130,000	M16	0,909	32,040
SK 50	40,000	65,000	98,000	135,000	M24	1,694	40,050
SK 50	50,000	90,000	123,000	165,000	M24	2,981	50,050

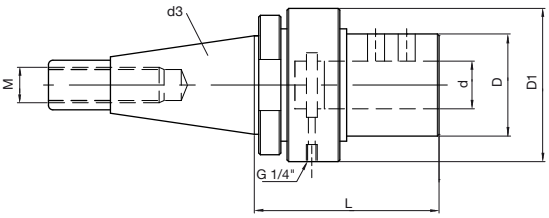
多用型带内冷刀柄

产品代号 86692



B WN SK

带SK（基于 DIN 2080）与圆柱孔， 小柄径变径套的应用



d3	d mm	D mm	D1 mm	L mm	M	 kg	代号
SK 40	32,000	65,000	88,000	110,000	M16	0,931	32,040
SK 50	40,000	65,000	98,000	120,000	M24	5,825	40,050
SK 50	50,000	90,000	123,000	145,000	M24	3,037	50,050

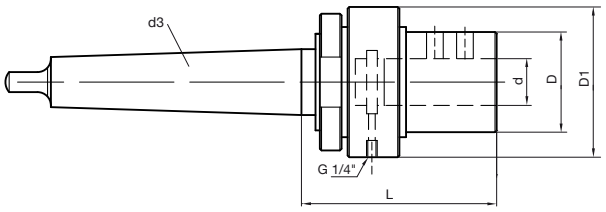
多用型带内冷刀柄

产品代号 86693



B WN MK

带MK（基于 DIN 228 B）与圆柱孔， 小柄径变径套的应用



d3	d mm	D mm	D1 mm	L mm	M	 kg	代号
MK-4	32,000	65,000	88,000	100,000	M14	1,019	32,400
MK-5	40,000	75,000	98,000	110,000	M16	1,899	40,500
MK-6	40,000	75,000	98,000	120,000	M16	2,427	40,600
MK-5	50,000	90,000	123,000	140,000	M20	3,293	50,500
MK-6	50,000	90,000	123,000	140,000	M20	3,997	50,600

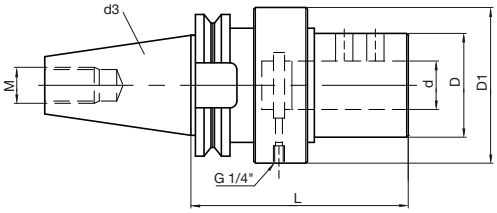
多用型带内冷刀柄

产品代号 86694



B WN MAS-BT

带MAS BT（基于 DIN ISO 7388-2）与圆柱孔， 小柄径变径套的应用



d3	d mm	D mm	D1 mm	L mm	M	 kg	代号
BT 40	32,000	65,000	88,000	125,000	M16	0,872	32,040
BT 50	40,000	65,000	98,000	145,000	M24	1,766	40,050
BT 50	50,000	90,000	123,000	170,000	M24	3,037	50,050

HARTNER

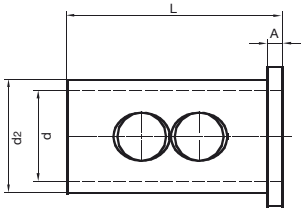
用于刀柄出水的夹持直柄的变径套

产品代号 86699



B WN Cyl

带圆柱定位孔的带内冷刀柄的变径套



d mm	d2 mm	L mm	A mm	代号
20,000	32,000	65,000	5,000	20,032
20,000	40,000	75,000	5,000	20,040
25,000	32,000	65,000	5,000	25,032
25,000	40,000	75,000	5,000	25,040
32,000	40,000	75,000	5,000	32,040

HARTNER

Precision Cutting Tools

MULTIPLEX HPC



HARTNER

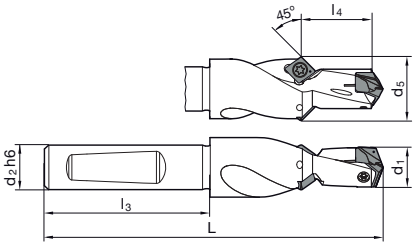
复合 HPC 刀柄

产品代号 86681



Ni HPC 1xD WN R HE

出色的耐磨性 • 优化槽型设计 • 优化内冷孔出水 • 压紧螺钉 物料号86843和86846 • 扳手 物料号86842
预钻和45° 锪孔



规格	d1 mm	d2 h6 mm	d5 mm	L mm	l3 mm	l4 mm	代号
110	11,00-11,99	12,000	17,000	81,000	45,000	12,000	11,000
110	11,00-11,99	12,700	17,000	81,000	45,000	12,000	11,005
120	12,00-12,99	12,000	18,000	84,000	45,000	13,000	12,000
120	12,00-12,99	12,700	18,000	84,000	45,000	13,000	12,005
130	13,00-13,99	14,000	18,000	86,000	45,000	14,000	13,000
130	13,00-13,99	15,875	18,000	86,000	45,000	14,000	13,005
140	14,00-15,99	16,000	18,000	93,000	48,000	16,000	14,000
140	14,00-15,99	15,875	18,000	93,000	48,000	16,000	14,005
160	16,00-17,99	18,000	20,000	99,000	48,000	18,000	16,000
160	16,00-17,99	19,050	20,000	99,000	48,000	18,000	16,005
180	18,00-19,99	20,000	22,000	106,000	50,000	20,000	18,000
180	18,00-19,99	19,050	22,000	106,000	50,000	20,000	18,005
200	20,00-21,99	25,000	25,000	117,000	56,000	22,000	20,000
200	20,00-21,99	25,400	25,400	117,000	56,000	22,000	20,005
220	22,00-23,99	25,000	26,000	122,000	56,000	24,000	22,000
220	22,00-23,99	25,400	26,000	122,000	56,000	24,000	22,005
240	24,00-25,99	25,000	28,000	128,000	56,000	26,000	24,000
240	24,00-25,99	25,400	28,000	128,000	56,000	26,000	24,005
260	26,00-27,99	32,000	32,000	142,000	60,000	28,000	26,000
260	26,00-27,99	31,750	32,000	142,000	60,000	28,000	26,005
280	28,00-29,99	32,000	34,000	147,000	60,000	30,000	28,000
280	28,00-29,99	31,750	34,000	147,000	60,000	30,000	28,005
300	30,00-31,99	32,000	38,000	152,000	60,000	32,000	30,000
300	30,00-31,99	31,750	38,000	152,000	60,000	32,000	30,005
320	32,00-35,99	32,000	42,000	163,000	60,000	36,000	32,000
320	32,00-35,99	31,750	42,000	163,000	60,000	36,000	32,005
360	36,00-40,00	32,000	46,000	173,000	60,000	40,000	36,000
360	36,00-40,00	31,750	46,000	173,000	60,000	40,000	36,005

HARTNER

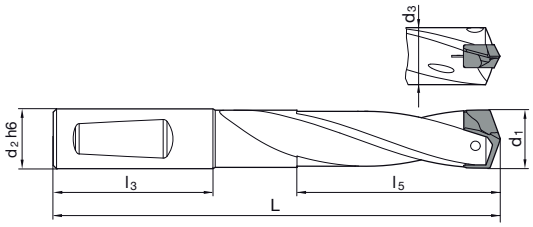
复合 HPC 刀柄

产品代号 86682



Ni HPC 1,5xD WN R HE

出色的耐磨性 • 优化槽型设计 • 优化内冷孔出水 • 扳手 物料号86843 • 扳手 物料号86842



规格	d1 mm	d2 h6 mm	d3 mm	L mm	l3 mm	l5 mm	代号
110	11,00-11,49	12,000	10,700	84,000	45,000	19,300	11,000
110	11,00-11,49	12,700	10,700	84,000	45,000	19,300	11,005
115	11,50-11,99	12,000	11,200	85,000	45,000	20,100	11,500
115	11,50-11,99	12,700	11,200	85,000	45,000	20,100	11,505
120	12,00-12,49	12,000	11,700	87,000	45,000	21,000	12,000
120	12,00-12,49	12,700	11,700	87,000	45,000	21,000	12,005
125	12,50-12,99	14,000	12,200	89,000	45,000	21,900	12,500
125	12,50-12,99	15,875	12,200	89,000	45,000	21,900	12,505
130	13,00-13,49	14,000	12,700	90,000	45,000	22,600	13,000
130	13,00-13,49	15,875	12,700	90,000	45,000	22,600	13,005
135	13,50-13,99	14,000	13,200	92,000	45,000	23,600	13,500
135	13,50-13,99	15,875	13,200	92,000	45,000	23,600	13,505
140	14,00-14,49	14,000	13,700	93,000	45,000	24,500	14,000
140	14,00-14,49	15,875	13,700	93,000	45,000	24,500	14,005
145	14,50-14,99	16,000	14,200	98,000	48,000	25,300	14,500
145	14,50-14,99	15,875	14,200	98,000	48,000	25,300	14,505
150	15,00-15,49	16,000	14,700	100,000	48,000	26,100	15,000
150	15,00-15,49	15,875	14,700	100,000	48,000	26,100	15,005
155	15,50-15,99	16,000	15,200	101,000	48,000	27,000	15,500
155	15,50-15,99	15,875	15,200	101,000	48,000	27,000	15,505
160	16,00-16,49	16,000	15,700	102,000	48,000	27,800	16,000
160	16,00-16,49	15,875	15,700	102,000	48,000	27,800	16,005
165	16,50-16,99	18,000	16,200	105,000	48,000	28,700	16,500
165	16,50-16,99	19,050	16,200	105,000	48,000	28,700	16,505
170	17,00-17,49	18,000	16,700	106,000	48,000	29,600	17,000
170	17,00-17,49	19,050	16,700	106,000	48,000	29,600	17,005
175	17,50-17,99	18,000	17,200	107,000	48,000	30,400	17,500
175	17,50-17,99	19,050	17,200	107,000	48,000	30,400	17,505
180	18,00-18,49	18,000	17,700	109,000	48,000	31,200	18,000
180	18,00-18,49	19,050	17,700	109,000	48,000	31,200	18,005
185	18,50-18,99	20,000	18,200	113,000	50,000	32,100	18,500
185	18,50-18,99	19,050	18,200	113,000	50,000	32,100	18,505
190	19,00-19,49	20,000	18,700	114,000	50,000	32,900	19,000
190	19,00-19,49	19,050	18,700	114,000	50,000	32,900	19,005
195	19,50-19,99	20,000	19,200	116,000	50,000	33,700	19,500
195	19,50-19,99	19,050	19,200	116,000	50,000	33,700	19,505
200	20,00-20,49	20,000	19,700	117,000	50,000	34,600	20,000
200	20,00-20,49	19,050	19,700	117,000	50,000	34,600	20,005
205	20,50-20,99	25,000	20,200	128,000	56,000	35,500	20,500
205	20,50-20,99	25,400	20,200	128,000	56,000	35,500	20,505
210	21,00-21,49	25,000	20,700	129,000	56,000	36,400	21,000
210	21,00-21,49	25,400	20,700	129,000	56,000	36,400	21,005

复合 HPC 刀柄

规格	d1 mm	d2 h6 mm	d3 mm	L mm	l3 mm	l5 mm	代号
215	21,50-21,99	25,000	21,200	130,000	56,000	37,200	21,500
215	21,50-21,99	25,400	21,200	130,000	56,000	37,200	21,505
220	22,00-22,49	25,000	21,700	131,000	56,000	38,000	22,000
220	22,00-22,49	25,400	21,700	131,000	56,000	38,000	22,005
225	22,50-22,99	25,000	22,200	134,000	56,000	38,900	22,500
225	22,50-22,99	25,400	22,200	134,000	56,000	38,900	22,505
230	23,00-23,49	25,000	22,700	135,000	56,000	39,800	23,000
230	23,00-23,49	25,400	22,700	135,000	56,000	39,800	23,005
235	23,50-23,99	25,000	23,200	137,000	56,000	40,600	23,500
235	23,50-23,99	25,400	23,200	137,000	56,000	40,600	23,505
240	24,00-24,49	25,000	23,700	138,000	56,000	41,500	24,000
240	24,00-24,49	25,400	23,700	138,000	56,000	41,500	24,005
245	24,50-24,99	25,000	24,200	140,000	56,000	42,300	24,500
245	24,50-24,99	25,400	24,200	140,000	56,000	42,300	24,505
250	25,00-25,49	25,000	24,700	142,000	56,000	43,200	25,000
250	25,00-25,49	25,400	24,700	142,000	56,000	43,200	25,005
255	25,50-25,99	32,000	25,200	148,000	60,000	44,000	25,500
255	25,50-25,99	31,750	25,200	148,000	60,000	44,000	25,505
260	26,00-26,49	32,000	25,700	151,000	60,000	44,300	26,000
260	26,00-26,49	31,750	25,700	151,000	60,000	44,300	26,005
265	26,50-26,99	32,000	26,200	153,000	60,000	45,100	26,500
265	26,50-26,99	31,750	26,200	153,000	60,000	45,100	26,505
270	27,00-27,49	32,000	26,700	155,000	60,000	46,000	27,000
270	27,00-27,49	31,750	26,700	155,000	60,000	46,000	27,005
275	27,50-27,99	32,000	27,200	156,000	60,000	46,800	27,500
275	27,50-27,99	31,750	27,200	156,000	60,000	46,800	27,505
280	28,00-28,49	32,000	27,700	157,000	60,000	47,700	28,000
280	28,00-28,49	31,750	27,700	157,000	60,000	47,700	28,005
285	28,50-28,99	32,000	28,200	159,000	60,000	48,500	28,500
285	28,50-28,99	31,750	28,200	159,000	60,000	48,500	28,505
290	29,00-29,49	32,000	28,700	161,000	60,000	49,400	29,000
290	29,00-29,49	31,750	28,700	161,000	60,000	49,400	29,005
295	29,50-29,99	32,000	29,200	162,000	60,000	50,200	29,500
295	29,50-29,99	31,750	29,200	162,000	60,000	50,200	29,505
300	30,00-30,49	32,000	29,700	164,000	60,000	50,900	30,000
300	30,00-30,49	31,750	29,700	164,000	60,000	50,900	30,005
305	30,50-30,99	32,000	30,200	166,000	60,000	51,700	30,500
305	30,50-30,99	31,750	30,200	166,000	60,000	51,700	30,505
310	31,00-31,49	32,000	30,700	167,000	60,000	52,600	31,000
310	31,00-31,49	31,750	30,700	167,000	60,000	52,600	31,005
315	31,50-31,99	32,000	31,200	168,000	60,000	53,400	31,500
315	31,50-31,99	31,750	31,200	168,000	60,000	53,400	31,505
320	32,00-32,99	32,000	31,700	172,000	60,000	55,100	32,000
320	32,00-32,99	31,750	31,700	172,000	60,000	55,100	32,005
330	33,00-33,99	32,000	32,700	175,000	60,000	56,800	33,000
330	33,00-33,99	31,750	32,700	175,000	60,000	56,800	33,005
340	34,00-34,99	32,000	33,700	178,000	60,000	58,500	34,000
340	34,00-34,99	31,750	33,700	178,000	60,000	58,500	34,005
350	35,00-35,99	32,000	34,700	181,000	60,000	60,200	35,000
350	35,00-35,99	31,750	34,700	181,000	60,000	60,200	35,005
360	36,00-36,99	32,000	35,700	184,000	60,000	61,800	36,000
360	36,00-36,99	31,750	35,700	184,000	60,000	61,800	36,005
370	37,00-37,99	32,000	36,700	188,000	60,000	63,500	37,000
370	37,00-37,99	31,750	36,700	188,000	60,000	63,500	37,005
380	38,00-38,99	32,000	37,700	191,000	60,000	65,200	38,000
380	38,00-38,99	31,750	37,700	191,000	60,000	65,200	38,005
390	39,00-40,00	32,000	38,700	194,000	60,000	66,900	39,000
390	39,00-40,00	31,750	38,700	194,000	60,000	66,900	39,005

HARTNER

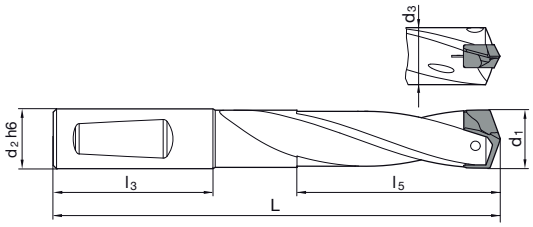
复合 HPC 刀柄

产品代号 86683



Ni HPC 3xD WN R HE

出色的耐磨性 • 优化槽型设计 • 刚性好 • 扳手 物料号86843 • 扳手 物料号86842



规格	d1 mm	d2 h6 mm	d3 mm	L mm	l3 mm	l5 mm	代号
110	11,00-11,49	12,000	10,700	101,000	45,000	36,600	11,000
110	11,00-11,49	12,700	10,700	101,000	45,000	36,600	11,005
115	11,50-11,99	12,000	11,200	103,000	45,000	38,100	11,500
115	11,50-11,99	12,700	11,200	103,000	45,000	38,100	11,505
120	12,00-12,49	12,000	11,700	106,000	45,000	39,700	12,000
120	12,00-12,49	12,700	11,700	106,000	45,000	39,700	12,005
125	12,50-12,99	14,000	12,200	108,000	45,000	41,300	12,500
125	12,50-12,99	15,875	12,200	108,000	45,000	41,300	12,505
130	13,00-13,49	14,000	12,700	110,000	45,000	42,900	13,000
130	13,00-13,49	15,875	12,700	110,000	45,000	42,900	13,005
135	13,50-13,99	14,000	13,200	113,000	45,000	44,600	13,500
135	13,50-13,99	15,875	13,200	113,000	45,000	44,600	13,505
140	14,00-14,49	14,000	13,700	115,000	45,000	46,200	14,000
140	14,00-14,49	15,875	13,700	115,000	45,000	46,200	14,005
145	14,50-14,99	16,000	14,200	120,000	48,000	47,800	14,500
145	14,50-14,99	15,875	14,200	120,000	48,000	47,800	14,505
150	15,00-15,49	16,000	14,700	123,000	48,000	49,300	15,000
150	15,00-15,49	15,875	14,700	123,000	48,000	49,300	15,005
155	15,50-15,99	16,000	15,200	125,000	48,000	50,900	15,500
155	15,50-15,99	15,875	15,200	125,000	48,000	50,900	15,505
160	16,00-16,49	16,000	15,700	127,000	48,000	52,900	16,000
160	16,00-16,49	15,875	15,700	127,000	48,000	52,900	16,005
165	16,50-16,99	18,000	16,200	130,000	48,000	54,100	16,500
165	16,50-16,99	19,050	16,200	130,000	48,000	54,100	16,505
170	17,00-17,49	18,000	16,700	132,000	48,000	55,800	17,000
170	17,00-17,49	19,050	16,700	132,000	48,000	55,800	17,005
175	17,50-17,99	18,000	17,200	134,000	48,000	57,400	17,500
175	17,50-17,99	19,050	17,200	134,000	48,000	57,400	17,505
180	18,00-18,49	18,000	17,700	137,000	48,000	58,900	18,000
180	18,00-18,49	19,050	17,700	137,000	48,000	58,900	18,005
185	18,50-18,99	20,000	18,200	141,000	50,000	60,500	18,500
185	18,50-18,99	19,050	18,200	141,000	50,000	60,500	18,505
190	19,00-19,49	20,000	18,700	143,000	50,000	62,100	19,000
190	19,00-19,49	19,050	18,700	143,000	50,000	62,100	19,005
195	19,50-19,99	20,000	19,200	146,000	50,000	63,700	19,500
195	19,50-19,99	19,050	19,200	146,000	50,000	63,700	19,505
200	20,00-20,49	20,000	19,700	148,000	50,000	65,300	20,000
200	20,00-20,49	19,050	19,700	148,000	50,000	65,300	20,005
205	20,50-20,99	25,000	20,200	159,000	56,000	67,000	20,500
205	20,50-20,99	25,400	20,200	159,000	56,000	67,000	20,505
210	21,00-21,49	25,000	20,700	161,000	56,000	68,600	21,000
210	21,00-21,49	25,400	20,700	161,000	56,000	68,600	21,005

复合 HPC 刀柄

规格	d1 mm	d2 h6 mm	d3 mm	L mm	l3 mm	l5 mm	代号
215	21,50-21,99	25,000	21,200	163,000	56,000	70,100	21,500
215	21,50-21,99	25,400	21,200	163,000	56,000	70,100	21,505
220	22,00-22,49	25,000	21,700	165,000	56,000	71,700	22,000
220	22,00-22,49	25,400	21,700	165,000	56,000	71,700	22,005
225	22,50-22,99	25,000	22,200	168,000	56,000	73,300	22,500
225	22,50-22,99	25,400	22,200	168,000	56,000	73,300	22,505
230	23,00-23,49	25,000	22,700	170,000	56,000	74,900	23,000
230	23,00-23,49	25,400	22,700	170,000	56,000	74,900	23,005
235	23,50-23,99	25,000	23,200	173,000	56,000	76,500	23,500
235	23,50-23,99	25,400	23,200	173,000	56,000	76,500	23,505
240	24,00-24,49	25,000	23,700	175,000	56,000	78,100	24,000
240	24,00-24,49	25,400	23,700	175,000	56,000	78,100	24,005
245	24,50-24,99	25,000	24,200	177,000	56,000	79,700	24,500
245	24,50-24,99	25,400	24,200	177,000	56,000	79,700	24,505
250	25,00-25,49	25,000	24,700	180,000	56,000	81,300	25,000
250	25,00-25,49	25,400	24,700	180,000	56,000	81,300	25,005
255	25,50-25,99	32,000	25,200	187,000	60,000	82,900	25,500
255	25,50-25,99	31,750	25,200	187,000	60,000	82,900	25,505
260	26,00-26,49	32,000	25,700	191,000	60,000	84,000	26,000
260	26,00-26,49	31,750	25,700	191,000	60,000	84,000	26,005
265	26,50-26,99	32,000	26,200	193,000	60,000	86,100	26,500
265	26,50-26,99	31,750	26,200	193,000	60,000	86,100	26,505
270	27,00-27,49	32,000	26,700	196,000	60,000	87,200	27,000
270	27,00-27,49	31,750	26,700	196,000	60,000	87,200	27,005
275	27,50-27,99	32,000	27,200	198,000	60,000	88,900	27,500
275	27,50-27,99	31,750	27,200	198,000	60,000	88,900	27,505
280	28,00-28,49	32,000	27,700	200,000	60,000	90,400	28,000
280	28,00-28,49	31,750	27,700	200,000	60,000	90,400	28,005
285	28,50-28,99	32,000	28,200	202,000	60,000	92,500	28,500
285	28,50-28,99	31,750	28,200	202,000	60,000	92,500	28,505
290	29,00-29,49	32,000	28,700	205,000	60,000	94,600	29,000
290	29,00-29,49	31,750	28,700	205,000	60,000	94,600	29,005
295	29,50-29,99	32,000	29,200	207,000	60,000	95,100	29,500
295	29,50-29,99	31,750	29,200	207,000	60,000	95,100	29,505
300	30,00-30,49	32,000	29,700	210,000	60,000	96,700	30,000
300	30,00-30,49	31,750	29,700	210,000	60,000	96,700	30,005
305	30,50-30,99	32,000	30,200	212,000	60,000	98,300	30,500
305	30,50-30,99	31,750	30,200	212,000	60,000	98,300	30,505
310	31,00-31,49	32,000	30,700	214,000	60,000	99,800	31,000
310	31,00-31,49	31,750	30,700	214,000	60,000	99,800	31,005
315	31,50-31,99	32,000	31,200	216,000	60,000	101,400	31,500
315	31,50-31,99	31,750	31,200	216,000	60,000	101,400	31,505
320	32,00-32,99	32,000	31,700	221,000	60,000	104,600	32,000
320	32,00-32,99	31,750	31,700	221,000	60,000	104,600	32,005
330	33,00-33,99	32,000	32,700	226,000	60,000	107,800	33,000
330	33,00-33,99	31,750	32,700	226,000	60,000	107,800	33,005
340	34,00-34,99	32,000	33,700	230,000	60,000	111,000	34,000
340	34,00-34,99	31,750	33,700	230,000	60,000	111,000	34,005
350	35,00-35,99	32,000	34,700	235,000	60,000	114,200	35,000
350	35,00-35,99	31,750	34,700	235,000	60,000	114,200	35,005
360	36,00-36,99	32,000	35,700	240,000	60,000	117,300	36,000
360	36,00-36,99	31,750	35,700	240,000	60,000	117,300	36,005
370	37,00-37,99	32,000	36,700	245,000	60,000	120,500	37,000
370	37,00-37,99	31,750	36,700	245,000	60,000	120,500	37,005
380	38,00-38,99	32,000	37,700	249,000	60,000	123,700	38,000
380	38,00-38,99	31,750	37,700	249,000	60,000	123,700	38,005
390	39,00-40,00	32,000	38,700	254,000	60,000	126,900	39,000
390	39,00-40,00	31,750	38,700	254,000	60,000	126,900	39,005

HARTNER

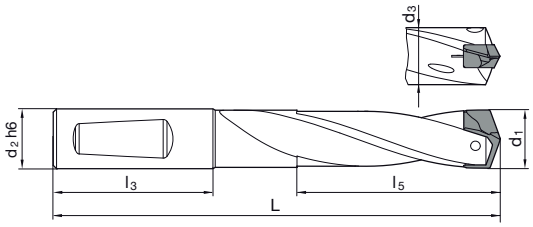
复合 HPC 刀柄

产品代号 86684



Ni HPC 5xD WN R HE

出色的耐磨性 • 优化槽型设计 • 刚性好 • 扳手 物料号86843 • 扳手 物料号86842



规格	d1 mm	d2 h6 mm	d3 mm	L mm	l3 mm	l5 mm	代号
110	11,00-11,49	12,000	10,700	124,000	45,000	59,600	11,000
110	11,00-11,49	12,700	10,700	124,000	45,000	59,600	11,005
115	11,50-11,99	12,000	11,200	127,000	45,000	62,100	11,500
115	11,50-11,99	12,700	11,200	127,000	45,000	62,100	11,505
120	12,00-12,49	12,000	11,700	131,000	45,000	64,700	12,000
120	12,00-12,49	12,700	11,700	131,000	45,000	64,700	12,005
125	12,50-12,99	14,000	12,200	134,000	45,000	67,300	12,500
125	12,50-12,99	15,875	12,200	134,000	45,000	67,300	12,505
130	13,00-13,49	14,000	12,700	137,000	45,000	69,900	13,000
130	13,00-13,49	15,875	12,700	137,000	45,000	69,900	13,005
135	13,50-13,99	14,000	13,200	141,000	45,000	72,600	13,500
135	13,50-13,99	15,875	13,200	141,000	45,000	72,600	13,505
140	14,00-14,49	14,000	13,700	144,000	45,000	75,200	14,000
140	14,00-14,49	15,875	13,700	144,000	45,000	75,200	14,005
145	14,50-14,99	16,000	14,200	150,000	48,000	77,800	14,500
145	14,50-14,99	15,875	14,200	150,000	48,000	77,800	14,505
150	15,00-15,49	16,000	14,700	154,000	48,000	80,300	15,000
150	15,00-15,49	15,875	14,700	154,000	48,000	80,300	15,005
155	15,50-15,99	16,000	15,200	157,000	48,000	82,900	15,500
155	15,50-15,99	15,875	15,200	157,000	48,000	82,900	15,505
160	16,00-16,49	16,000	15,700	160,000	48,000	85,900	16,000
160	16,00-16,49	15,875	15,700	160,000	48,000	85,900	16,005
165	16,50-16,99	18,000	16,200	164,000	48,000	88,100	16,500
165	16,50-16,99	19,050	16,200	164,000	48,000	88,100	16,505
170	17,00-17,49	18,000	16,700	167,000	48,000	90,800	17,000
170	17,00-17,49	19,050	16,700	167,000	48,000	90,800	17,005
175	17,50-17,99	18,000	17,200	170,000	48,000	93,400	17,500
175	17,50-17,99	19,050	17,200	170,000	48,000	93,400	17,505
180	18,00-18,49	18,000	17,700	174,000	48,000	95,900	18,000
180	18,00-18,49	19,050	17,700	174,000	48,000	95,900	18,005
185	18,50-18,99	20,000	18,200	179,000	50,000	98,500	18,500
185	18,50-18,99	19,050	18,200	179,000	50,000	98,500	18,505
190	19,00-19,49	20,000	18,700	182,000	50,000	101,100	19,000
190	19,00-19,49	19,050	18,700	182,000	50,000	101,100	19,005
195	19,50-19,99	20,000	19,200	186,000	50,000	103,700	19,500
195	19,50-19,99	19,050	19,200	186,000	50,000	103,700	19,505
200	20,00-20,49	20,000	19,700	189,000	50,000	106,300	20,000
200	20,00-20,49	19,050	19,700	189,000	50,000	106,300	20,005
205	20,50-20,99	25,000	20,200	201,000	56,000	109,000	20,500
205	20,50-20,99	25,400	20,200	201,000	56,000	109,000	20,505
210	21,00-21,49	25,000	20,700	204,000	56,000	111,600	21,000
210	21,00-21,49	25,400	20,700	204,000	56,000	111,600	21,005

复合 HPC 刀柄

规格	d1 mm	d2 h6 mm	d3 mm	L mm	l3 mm	l5 mm	代号
215	21,50-21,99	25,000	21,200	207,000	56,000	114,100	21,500
215	21,50-21,99	25,400	21,200	207,000	56,000	114,100	21,505
220	22,00-22,49	25,000	21,700	210,000	56,000	116,700	22,000
220	22,00-22,49	25,400	21,700	210,000	56,000	116,700	22,005
225	22,50-22,99	25,000	22,200	214,000	56,000	119,300	22,500
225	22,50-22,99	25,400	22,200	214,000	56,000	119,300	22,505
230	23,00-23,49	25,000	22,700	217,000	56,000	121,900	23,000
230	23,00-23,49	25,400	22,700	217,000	56,000	121,900	23,005
235	23,50-23,99	25,000	23,200	221,000	56,000	124,500	23,500
235	23,50-23,99	25,400	23,200	221,000	56,000	124,500	23,505
240	24,00-24,49	25,000	23,700	224,000	56,000	127,100	24,000
240	24,00-24,49	25,400	23,700	224,000	56,000	127,100	24,005
245	24,50-24,99	25,000	24,200	227,000	56,000	129,700	24,500
245	24,50-24,99	25,400	24,200	227,000	56,000	129,700	24,505
250	25,00-25,49	25,000	24,700	231,000	56,000	132,300	25,000
250	25,00-25,49	25,400	24,700	231,000	56,000	132,300	25,005
255	25,50-25,99	32,000	25,200	239,000	60,000	134,900	25,500
255	25,50-25,99	31,750	25,200	239,000	60,000	134,900	25,505
260	26,00-26,49	32,000	25,700	244,000	60,000	137,000	26,000
265	26,50-26,99	32,000	26,200	247,000	60,000	140,000	26,500
270	27,00-27,49	32,000	26,700	251,000	60,000	142,200	27,000
275	27,50-27,99	32,000	27,200	254,000	60,000	144,800	27,500
280	28,00-28,49	32,000	27,700	257,000	60,000	147,400	28,000
285	28,50-28,99	32,000	28,200	260,000	60,000	150,400	28,500
290	29,00-29,49	32,000	28,700	264,000	60,000	153,500	29,000
295	29,50-29,99	32,000	29,200	267,000	60,000	155,100	29,500
300	30,00-30,49	32,000	29,700	271,000	60,000	157,600	30,000
305	30,50-30,99	32,000	30,200	274,000	60,000	160,200	30,500
310	31,00-31,49	32,000	30,700	277,000	60,000	162,800	31,000
315	31,50-31,99	32,000	31,200	280,000	60,000	165,400	31,500
320	32,00-32,99	32,000	31,700	287,000	60,000	170,600	32,000
330	33,00-33,99	32,000	32,700	294,000	60,000	175,800	33,000
340	34,00-34,99	32,000	33,700	300,000	60,000	181,000	34,000
350	35,00-35,99	32,000	34,700	307,000	60,000	186,200	35,000
360	36,00-36,99	32,000	35,700	314,000	60,000	191,300	36,000
370	37,00-37,99	32,000	36,700	321,000	60,000	196,500	37,000
380	38,00-38,99	32,000	37,700	327,000	60,000	201,700	38,000
390	39,00-40,00	32,000	38,700	334,000	60,000	206,900	39,000

HARTNER

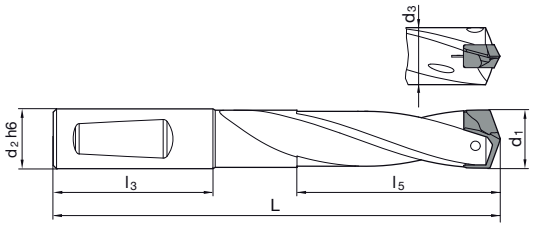
复合 HPC 刀柄

产品代号 86685



Ni HPC 7xD WN R HE

出色的耐磨性 • 优化槽型设计 • 刚性好 • 扳手 物料号86843 • 扳手 物料号86842



规格	d1 mm	d2 h6 mm	d3 mm	L mm	l3 mm	l5 mm	代号
110	11,00-11,49	12,000	10,700	147,000	45,000	82,600	11,000
110	11,00-11,49	12,700	10,700	147,000	45,000	82,600	11,005
115	11,50-11,99	12,000	11,200	151,000	45,000	86,100	11,500
115	11,50-11,99	12,700	11,200	151,000	45,000	86,100	11,505
120	12,00-12,49	12,000	11,700	156,000	45,000	89,700	12,000
120	12,00-12,49	12,700	11,700	156,000	45,000	89,700	12,005
125	12,50-12,99	14,000	12,200	160,000	45,000	93,300	12,500
125	12,50-12,99	15,875	12,200	160,000	45,000	93,300	12,505
130	13,00-13,49	14,000	12,700	164,000	45,000	96,900	13,000
130	13,00-13,49	15,875	12,700	164,000	45,000	96,900	13,005
135	13,50-13,99	14,000	13,200	169,000	45,000	100,600	13,500
135	13,50-13,99	15,875	13,200	169,000	45,000	100,600	13,505
140	14,00-14,49	14,000	13,700	173,000	45,000	104,200	14,000
140	14,00-14,49	15,875	13,700	173,000	45,000	104,200	14,005
145	14,50-14,99	16,000	14,200	180,000	48,000	107,800	14,500
145	14,50-14,99	15,875	14,200	180,000	48,000	107,800	14,505
150	15,00-15,49	16,000	14,700	185,000	48,000	111,300	15,000
150	15,00-15,49	15,875	14,700	185,000	48,000	111,300	15,005
155	15,50-15,99	16,000	15,200	189,000	48,000	114,900	15,500
155	15,50-15,99	15,875	15,200	189,000	48,000	114,900	15,505
160	16,00-16,49	16,000	15,700	193,000	48,000	118,900	16,000
160	16,00-16,49	15,875	15,700	193,000	48,000	118,900	16,005
165	16,50-16,99	18,000	16,200	198,000	48,000	122,100	16,500
165	16,50-16,99	19,050	16,200	198,000	48,000	122,100	16,505
170	17,00-17,49	18,000	16,700	202,000	48,000	125,800	17,000
170	17,00-17,49	19,050	16,700	202,000	48,000	125,800	17,005
175	17,50-17,99	18,000	17,200	206,000	48,000	129,400	17,500
175	17,50-17,99	19,050	17,200	206,000	48,000	129,400	17,505
180	18,00-18,49	18,000	17,700	211,000	48,000	132,900	18,000
180	18,00-18,49	19,050	17,700	211,000	48,000	132,900	18,005
185	18,50-18,99	20,000	18,200	217,000	50,000	136,500	18,500
185	18,50-18,99	19,050	18,200	217,000	50,000	136,500	18,505
190	19,00-19,49	20,000	18,700	221,000	50,000	140,100	19,000
190	19,00-19,49	19,050	18,700	221,000	50,000	140,100	19,005
195	19,50-19,99	20,000	19,200	226,000	50,000	143,700	19,500
195	19,50-19,99	19,050	19,200	226,000	50,000	143,700	19,505
200	20,00-20,49	20,000	19,700	230,000	50,000	147,300	20,000
200	20,00-20,49	19,050	19,700	230,000	50,000	147,300	20,005
205	20,50-20,99	25,000	20,200	243,000	56,000	151,000	20,500
205	20,50-20,99	25,400	20,200	243,000	56,000	151,000	20,505
210	21,00-21,49	25,000	20,700	247,000	56,000	154,600	21,000
210	21,00-21,49	25,400	20,700	247,000	56,000	154,600	21,005

复合 HPC 刀柄

规格	d1 mm	d2 h6 mm	d3 mm	L mm	l3 mm	l5 mm	代号
215	21,50-21,99	25,000	21,200	251,000	56,000	158,100	21,500
215	21,50-21,99	25,400	21,200	251,000	56,000	158,100	21,505
220	22,00-22,49	25,000	21,700	255,000	56,000	161,700	22,000
220	22,00-22,49	25,400	21,700	255,000	56,000	161,700	22,005
225	22,50-22,99	25,000	22,200	260,000	56,000	165,300	22,500
225	22,50-22,99	25,400	22,200	260,000	56,000	165,300	22,505
230	23,00-23,49	25,000	22,700	264,000	56,000	168,900	23,000
230	23,00-23,49	25,400	22,700	264,000	56,000	168,900	23,005
235	23,50-23,99	25,000	23,200	269,000	56,000	172,500	23,500
235	23,50-23,99	25,400	23,200	269,000	56,000	172,500	23,505
240	24,00-24,49	25,000	23,700	273,000	56,000	176,100	24,000
240	24,00-24,49	25,400	23,700	273,000	56,000	176,100	24,005
245	24,50-24,99	25,000	24,200	277,000	56,000	179,700	24,500
245	24,50-24,99	25,400	24,200	277,000	56,000	179,700	24,505
250	25,00-25,49	25,000	24,700	282,000	56,000	183,300	25,000
250	25,00-25,49	25,400	24,700	282,000	56,000	183,300	25,005
255	25,50-25,99	32,000	25,200	291,000	60,000	186,900	25,500
255	25,50-25,99	31,750	25,200	291,000	60,000	186,900	25,505
260	26,00-26,49	32,000	25,700	297,000	60,000	190,000	26,000
260	26,00-26,49	31,750	25,700	297,000	60,000	190,000	26,005
265	26,50-26,99	32,000	26,200	301,000	60,000	194,000	26,500
265	26,50-26,99	31,750	26,200	301,000	60,000	194,000	26,505
270	27,00-27,49	32,000	26,700	306,000	60,000	197,200	27,000
270	27,00-27,49	31,750	26,700	306,000	60,000	197,200	27,005
275	27,50-27,99	32,000	27,200	310,000	60,000	200,800	27,500
275	27,50-27,99	31,750	27,200	310,000	60,000	200,800	27,505
280	28,00-28,49	32,000	27,700	314,000	60,000	204,400	28,000
280	28,00-28,49	31,750	27,700	314,000	60,000	204,400	28,005
285	28,50-28,99	32,000	28,200	318,000	60,000	208,400	28,500
285	28,50-28,99	31,750	28,200	318,000	60,000	208,400	28,505
290	29,00-29,49	32,000	28,700	323,000	60,000	212,500	29,000
290	29,00-29,49	31,750	28,700	323,000	60,000	212,500	29,005
295	29,50-29,99	32,000	29,200	327,000	60,000	215,100	29,500
295	29,50-29,99	31,750	29,200	327,000	60,000	215,100	29,505
300	30,00-30,49	32,000	29,700	332,000	60,000	218,600	30,000
300	30,00-30,49	31,750	29,700	332,000	60,000	218,600	30,005
305	30,50-30,99	32,000	30,200	336,000	60,000	222,200	30,500
305	30,50-30,99	31,750	30,200	336,000	60,000	222,200	30,505
310	31,00-31,49	32,000	30,700	340,000	60,000	225,800	31,000
310	31,00-31,49	31,750	30,700	340,000	60,000	225,800	31,005
315	31,50-31,99	32,000	31,200	344,000	60,000	229,400	31,500
315	31,50-31,99	31,750	31,200	344,000	60,000	229,400	31,505

HARTNER

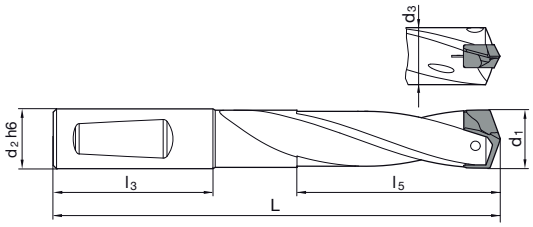
复合 HPC 刀柄

产品代号 86686



Ni HPC 10xD WN R HE

出色的耐磨性 • 优化槽型设计 • 刚性好 • 扳手 物料号86843 • 扳手 物料号86842



规格	d1 mm	d2 h6 mm	d3 mm	L mm	l3 mm	l5 mm	代号
110	11,00-11,49	12,000	10,700	182,000	45,000	117,100	11,000
110	11,00-11,49	12,700	10,700	182,000	45,000	117,100	11,005
115	11,50-11,99	12,000	11,200	187,000	45,000	122,100	11,500
115	11,50-11,99	12,700	11,200	187,000	45,000	122,100	11,505
120	12,00-12,49	12,000	11,700	194,000	45,000	127,200	12,000
120	12,00-12,49	12,700	11,700	194,000	45,000	127,200	12,005
125	12,50-12,99	14,000	12,200	199,000	45,000	132,300	12,500
125	12,50-12,99	15,875	12,200	199,000	45,000	132,300	12,505
130	13,00-13,49	14,000	12,700	205,000	45,000	137,500	13,000
130	13,00-13,49	15,875	12,700	205,000	45,000	137,500	13,005
135	13,50-13,99	14,000	13,200	211,000	45,000	142,500	13,500
135	13,50-13,99	15,875	13,200	211,000	45,000	142,500	13,505
140	14,00-14,49	14,000	13,700	217,000	45,000	147,700	14,000
140	14,00-14,49	15,875	13,700	217,000	45,000	147,700	14,005
145	14,50-14,99	16,000	14,200	225,000	48,000	152,800	14,500
145	14,50-14,99	15,875	14,200	225,000	48,000	152,800	14,505
150	15,00-15,49	16,000	14,700	232,000	48,000	157,800	15,000
150	15,00-15,49	15,875	14,700	232,000	48,000	157,800	15,005
155	15,50-15,99	16,000	15,200	237,000	48,000	162,900	15,500
155	15,50-15,99	15,875	15,200	237,000	48,000	162,900	15,505
160	16,00-16,49	16,000	15,700	243,000	48,000	168,000	16,000
160	16,00-16,49	15,875	15,700	243,000	48,000	168,000	16,005
165	16,50-16,99	18,000	16,200	249,000	48,000	170,000	16,500
165	16,50-16,99	19,050	16,200	249,000	48,000	170,000	16,505
170	17,00-17,49	18,000	16,700	255,000	48,000	178,300	17,000
170	17,00-17,49	19,050	16,700	255,000	48,000	178,300	17,005
175	17,50-17,99	18,000	17,200	260,000	48,000	183,500	17,500
175	17,50-17,99	19,050	17,200	260,000	48,000	183,500	17,505
180	18,00-18,49	18,000	17,700	267,000	48,000	188,400	18,000
180	18,00-18,49	19,050	17,700	267,000	48,000	188,400	18,005
185	18,50-18,99	20,000	18,200	274,000	50,000	193,500	18,500
185	18,50-18,99	19,050	18,200	274,000	50,000	193,500	18,505
190	19,00-19,49	20,000	18,700	280,000	50,000	198,700	19,000
190	19,00-19,49	19,050	18,700	280,000	50,000	198,700	19,005
195	19,50-19,99	20,000	19,200	286,000	50,000	203,700	19,500
195	19,50-19,99	19,050	19,200	286,000	50,000	203,700	19,505
200	20,00-20,49	20,000	19,700	292,000	50,000	208,900	20,000
200	20,00-20,49	19,050	19,700	292,000	50,000	208,900	20,005
205	20,50-20,99	25,000	20,200	306,000	56,000	214,000	20,500
205	20,50-20,99	25,400	20,200	306,000	56,000	214,000	20,505
210	21,00-21,49	25,000	20,700	312,000	56,000	219,100	21,000
210	21,00-21,49	25,400	20,700	312,000	56,000	219,100	21,005

复合 HPC 刀柄

规格	d1 mm	d2 h6 mm	d3 mm	L mm	l3 mm	l5 mm	代号
215	21,50-21,99	25,000	21,200	317,000	56,000	224,200	21,500
215	21,50-21,99	25,400	21,200	317,000	56,000	224,200	21,505
220	22,00-22,49	25,000	21,700	323,000	56,000	229,300	22,000
220	22,00-22,49	25,400	21,700	323,000	56,000	229,300	22,005
225	22,50-22,99	25,000	22,200	329,000	56,000	234,400	22,500
225	22,50-22,99	25,400	22,200	329,000	56,000	234,400	22,505
230	23,00-23,49	25,000	22,700	335,000	56,000	239,500	23,000
230	23,00-23,49	25,400	22,700	335,000	56,000	239,500	23,005
235	23,50-23,99	25,000	23,200	341,000	56,000	244,600	23,500
235	23,50-23,99	25,400	23,200	341,000	56,000	244,600	23,505
240	24,00-24,49	25,000	23,700	347,000	56,000	249,700	24,000
240	24,00-24,49	25,400	23,700	347,000	56,000	249,700	24,005
245	24,50-24,99	25,000	24,200	352,000	56,000	254,800	24,500
245	24,50-24,99	25,400	24,200	352,000	56,000	254,800	24,505
250	25,00-25,49	25,000	24,700	359,000	56,000	259,900	25,000
250	25,00-25,49	25,400	24,700	359,000	56,000	259,900	25,005
255	25,50-25,99	32,000	25,200	369,000	60,000	265,000	25,500
255	25,50-25,99	31,750	25,200	369,000	60,000	265,000	25,505
260	26,00-26,49	32,000	25,700	377,000	60,000	270,000	26,000
260	26,00-26,49	31,750	25,700	377,000	60,000	270,000	26,005
265	26,50-26,99	32,000	26,200	382,000	60,000	275,000	26,500
265	26,50-26,99	31,750	26,200	382,000	60,000	275,000	26,505
270	27,00-27,49	32,000	26,700	388,000	60,000	280,100	27,000
270	27,00-27,49	31,750	26,700	388,000	60,000	280,100	27,005
275	27,50-27,99	32,000	27,200	394,000	60,000	285,200	27,500
275	27,50-27,99	31,750	27,200	394,000	60,000	285,200	27,505
280	28,00-28,49	32,000	27,700	400,000	60,000	290,300	28,000
280	28,00-28,49	31,750	27,700	400,000	60,000	290,300	28,005
285	28,50-28,99	32,000	28,200	405,000	60,000	295,400	28,500
285	28,50-28,99	31,750	28,200	405,000	60,000	295,400	28,505
290	29,00-29,49	32,000	28,700	412,000	60,000	300,500	29,000
290	29,00-29,49	31,750	28,700	412,000	60,000	300,500	29,005
295	29,50-29,99	32,000	29,200	418,000	60,000	305,600	29,500
295	29,50-29,99	31,750	29,200	418,000	60,000	305,600	29,505
300	30,00-30,49	32,000	29,700	424,000	60,000	310,600	30,000
300	30,00-30,49	31,750	29,700	424,000	60,000	310,600	30,005
305	30,50-30,99	32,000	30,200	429,000	60,000	315,700	30,500
305	30,50-30,99	31,750	30,200	429,000	60,000	315,700	30,505
310	31,00-31,49	32,000	30,700	435,000	60,000	320,800	31,000
310	31,00-31,49	31,750	30,700	435,000	60,000	320,800	31,005
315	31,50-31,99	32,000	31,200	441,000	60,000	325,900	31,500
315	31,50-31,99	31,750	31,200	441,000	60,000	325,900	31,505

复合HPC可换刀片

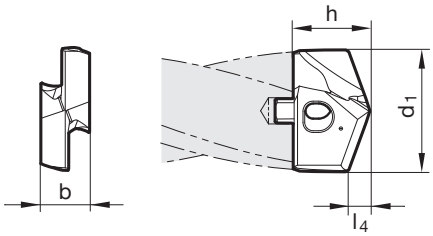
产品代号 86721



P	M	K	N	S	H
○	○	○	○	○	○

VHM | a | HPC | WN | 145° | m7 | R

芯厚 ⩾ Ø 11,000 • 双后刀面 • 直的主切削刃（带修正） • 扳手 物料号86843
所有材料的引导加工



规格	d1 mm	inch	l4 mm	b mm	h mm	代号
110	11,000		1,800	4,500	7,200	11,000
110	11,200		1,800	4,500	7,200	11,200
110	11,500		1,900	4,500	7,200	11,500
110	11,510	29/64	1,900	4,500	7,200	11,510
110	11,700		1,900	4,500	7,200	11,700
110	11,800		1,900	4,500	7,200	11,800
110	11,910	15/32	1,900	4,500	7,200	11,910
120	12,000		1,900	5,000	7,400	12,000
120	12,100		2,000	5,000	7,400	12,100
120	12,200		2,000	5,000	7,400	12,200
120	12,300	31/64	2,000	5,000	7,400	12,300
120	12,500		2,000	5,000	7,400	12,500
120	12,600		2,000	5,000	7,400	12,600
120	12,700	1/2	2,100	5,000	7,400	12,700
120	12,800		2,100	5,000	7,400	12,800
120	12,900		2,100	5,000	7,400	12,900
130	13,000		2,100	5,500	8,200	13,000
130	13,100	33/64	2,100	5,500	8,200	13,100
130	13,490	17/32	2,200	5,500	8,200	13,490
130	13,500		2,200	5,500	8,200	13,500
130	13,600		2,200	5,500	8,200	13,600
130	13,700		2,200	5,500	8,200	13,700
130	13,800		2,200	5,500	8,200	13,800
130	13,890	35/64	2,200	5,500	8,200	13,890
140	14,000		2,300	6,000	9,400	14,000
140	14,100		2,300	6,000	9,400	14,100
140	14,290	9/16	2,300	6,000	9,400	14,290
140	14,400		2,300	6,000	9,400	14,400
140	14,500		2,300	6,000	9,400	14,500
140	14,600		2,400	6,000	9,400	14,600
140	14,680	37/64	2,400	6,000	9,400	14,680
140	14,700		2,400	6,000	9,400	14,700
140	14,800		2,400	6,000	9,400	14,800
140	15,000		2,400	6,000	9,400	15,000
140	15,080	19/32	2,400	6,000	9,400	15,080
140	15,100		2,400	6,000	9,400	15,100
140	15,200		2,400	6,000	9,400	15,200
140	15,300		2,500	6,000	9,400	15,300
140	15,480	39/64	2,500	6,000	9,400	15,480
140	15,500		2,500	6,000	9,400	15,500
140	15,600		2,500	6,000	9,400	15,600
140	15,700		2,500	6,000	9,400	15,700

复合HPC可换刀片

规格	d1 mm	inch	l4 mm	b mm	h mm	代号
140	15,800		2,500	6,000	9,400	15,800
140	15,870	5/8	2,600	6,000	9,400	15,870
160	16,000		2,600	7,000	10,600	16,000
160	16,270	41/64	2,600	7,000	10,600	16,270
160	16,500		2,700	7,000	10,600	16,500
160	16,670	21/32	2,700	7,000	10,600	16,670
160	17,000		2,700	7,000	10,600	17,000
160	17,070	43/64	2,700	7,000	10,600	17,070
160	17,460	11/16	2,800	7,000	10,600	17,460
160	17,500		2,800	7,000	10,600	17,500
160	17,600		2,800	7,000	10,600	17,600
160	17,860	45/64	2,900	7,000	10,600	17,860
180	18,000		2,900	8,000	12,100	18,000
180	18,260	23/32	2,900	8,000	12,100	18,260
180	18,500		3,000	8,000	12,100	18,500
180	18,650	47/64	3,000	8,000	12,100	18,650
180	19,000		3,000	8,000	12,100	19,000
180	19,050	3/4	3,100	8,000	12,100	19,050
180	19,450	49/64	3,100	8,000	12,100	19,450
180	19,500		3,100	8,000	12,100	19,500
180	19,600		3,100	8,000	12,100	19,600
180	19,840	25/32	3,200	8,000	12,100	19,840
200	20,000		3,200	9,000	13,300	20,000
200	20,240	51/64	3,200	9,000	13,300	20,240
200	20,500		3,300	9,000	13,300	20,500
200	20,640	13/16	3,300	9,000	13,300	20,640
200	21,000		3,400	9,000	13,300	21,000
200	21,030	53/64	3,400	9,000	13,300	21,030
200	21,100		3,400	9,000	13,300	21,100
200	21,430	27/32	3,400	9,000	13,300	21,430
200	21,500		3,400	9,000	13,300	21,500
200	21,830	55/64	3,500	9,000	13,300	21,830
220	22,000		3,500	10,000	14,800	22,000
220	22,220	7/8	3,600	10,000	14,800	22,220
220	22,500		3,600	10,000	14,800	22,500
220	22,620	57/64	3,600	10,000	14,800	22,620
220	23,000		3,700	10,000	14,800	23,000
220	23,020	29/32	3,700	10,000	14,800	23,020
220	23,420	59/64	3,700	10,000	14,800	23,420
220	23,500		3,800	10,000	14,800	23,500
220	23,810	15/16	3,800	10,000	14,800	23,810
240	24,000		3,800	11,000	15,300	24,000
240	24,100		3,800	11,000	15,300	24,100
240	24,210	61/64	3,900	11,000	15,300	24,210
240	24,500		3,900	11,000	15,300	24,500
240	24,610	31/32	3,900	11,000	15,300	24,610
240	25,000	63/64	4,000	11,000	15,300	25,000
240	25,400	1	4,100	11,000	15,300	25,400
240	25,500		4,100	11,000	15,300	25,500
240	25,700		4,100	11,000	15,300	25,700
260	26,000		4,100	12,000	19,400	26,000
260	26,190	1 1/32	4,200	12,000	19,400	26,190
260	26,500		4,200	12,000	19,400	26,500
260	26,590	1 3/64	4,200	12,000	19,400	26,590
260	27,000		4,300	12,000	19,400	27,000
260	27,500		4,400	12,000	19,400	27,500
260	27,700		4,400	12,000	19,400	27,700
260	27,780	1 3/32	4,400	12,000	19,400	27,780
280	28,000		4,500	13,000	20,100	28,000
280	28,180	1 7/64	4,500	13,000	20,100	28,180
280	28,500		4,500	13,000	20,100	28,500
280	28,580		4,600	13,000	20,100	28,580
280	29,000		4,600	13,000	20,100	29,000
280	29,370	1 5/32	4,700	13,000	20,100	29,370
280	29,500		4,700	13,000	20,100	29,500
300	30,000		4,800	14,000	21,700	30,000
300	30,160	1 3/16	4,800	14,000	21,700	30,160
300	30,500		4,900	14,000	21,700	30,500
300	30,960	1 7/32	4,900	14,000	21,700	30,960
300	31,000		4,900	14,000	21,700	31,000
300	31,500		5,000	14,000	21,700	31,500
300	31,750	1 1/4	5,100	14,000	21,700	31,750

复合HPC可换刀片

规格	d1 mm	inch	l4 mm	b mm	h mm	代号
320	32,000		5,100	15,000	22,400	32,000
320	32,500		5,200	15,000	22,400	32,500
320	32,540	1 9/32	5,200	15,000	22,400	32,540
320	33,000		5,300	15,000	22,400	33,000
320	33,340	1 5/16	5,300	15,000	22,400	33,340
320	33,500		5,300	15,000	22,400	33,500
320	34,000		5,400	15,000	22,400	34,000
320	34,130	1 11/32	5,400	15,000	22,400	34,130
320	34,500		5,500	15,000	22,400	34,500
320	34,930		5,600	15,000	22,400	34,930
320	35,000		5,600	15,000	22,400	35,000
320	35,500		5,600	15,000	22,400	35,500
320	35,720	1 13/32	5,700	15,000	22,400	35,720
360	36,000		5,700	16,000	23,200	36,000
360	36,500		5,800	16,000	23,200	36,500
360	36,510	1 7/16	5,800	16,000	23,200	36,510
360	37,000		5,900	16,000	23,200	37,000
360	37,310	1 15/32	5,900	16,000	23,200	37,310
360	37,500		6,000	16,000	23,200	37,500
360	38,000		6,000	16,000	23,200	38,000
360	38,100	1 1/2	6,100	16,000	23,200	38,100
360	38,500	1 33/64	6,100	16,000	23,200	38,500
360	39,000		6,200	16,000	23,200	39,000
360	39,500		6,300	16,000	23,200	39,500
360	40,000		6,400	16,000	23,200	40,000

HARTNER

复合HPC可换刀片

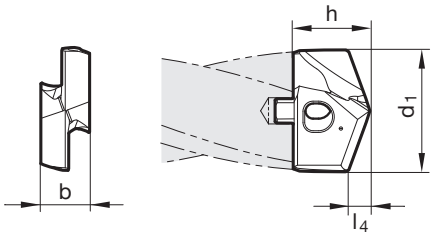
产品代号 86722



P	M	K	N	S	H
●	○	○			

VHM | F | HPC | WN | 140° | h7 | R

芯厚 ⩾ Ø 11,000 • 双后刀面 • 直的主切削刃（带修正） • 扳手 物料号86843
适合加工：结构钢和淬硬钢 • 易切削钢和热处理钢 • 强度小于1200N/mm²的合金钢



规格	d1 mm	inch	l4 mm	b mm	h mm	代号
110	11,000		2,100	4,500	7,500	11,000
110	11,200		2,100	4,500	7,500	11,200
115	11,500		2,100	4,500	7,500	11,500
115	11,510	29/64	2,100	4,500	7,500	11,510
115	11,700		2,200	4,500	7,500	11,700
115	11,800		2,200	4,500	7,500	11,800
115	11,910	15/32	2,200	4,500	7,500	11,910
120	12,000		2,200	5,000	7,700	12,000
120	12,100		2,300	5,000	7,700	12,100
120	12,200		2,300	5,000	7,700	12,200
120	12,300	31/64	2,300	5,000	7,700	12,300
125	12,500		2,300	5,000	7,700	12,500
125	12,600		2,300	5,000	7,700	12,600
125	12,700	1/2	2,400	5,000	7,700	12,700
125	12,800		2,400	5,000	7,700	12,800
125	12,900		2,400	5,000	7,700	12,900
130	13,000		2,400	5,500	8,500	13,000
130	13,100	33/64	2,400	5,500	8,500	13,100
130	13,490	17/32	2,500	5,500	8,500	13,490
135	13,500		2,500	5,500	8,500	13,500
135	13,600		2,500	5,500	8,500	13,600
135	13,700		2,500	5,500	8,500	13,700
135	13,800		2,600	5,500	8,500	13,800
135	13,890	35/64	2,600	5,500	8,500	13,890
140	14,000		2,600	6,000	9,600	14,000
140	14,100		2,600	6,000	9,600	14,100
140	14,290	9/16	2,700	6,000	9,600	14,290
140	14,400		2,700	6,000	9,600	14,400
145	14,500		2,700	6,000	9,600	14,500
145	14,600		2,700	6,000	9,600	14,600
145	14,680	37/64	2,700	6,000	9,600	14,680
145	14,700		2,700	6,000	9,600	14,700
145	14,800		2,700	6,000	9,600	14,800
150	15,000		2,800	6,000	9,800	15,000
150	15,080	19/32	2,800	6,000	9,800	15,080
150	15,100		2,800	6,000	9,800	15,100
150	15,200		2,800	6,000	9,800	15,200
150	15,300		2,800	6,000	9,800	15,300
150	15,480	39/64	2,900	6,000	9,800	15,480
155	15,500		2,900	6,000	9,800	15,500
155	15,600		2,900	6,000	9,800	15,600
155	15,700		2,900	6,000	9,800	15,700

HARTNER

复合HPC可换刀片

规格	d1 mm	inch	l4 mm	b mm	h mm	代号
155	15,800		2,900	6,000	9,800	15,800
155	15,870	5/8	2,900	6,000	9,800	15,870
160	16,000		3,000	7,000	11,000	16,000
160	16,270	41/64	3,000	7,000	11,000	16,270
165	16,500		3,100	7,000	11,000	16,500
165	16,670	21/32	3,100	7,000	11,000	16,670
170	17,000		3,100	7,000	11,000	17,000
170	17,070	43/64	3,200	7,000	11,000	17,070
170	17,460	11/16	3,200	7,000	11,000	17,460
175	17,500		3,200	7,000	11,000	17,500
175	17,600		3,300	7,000	11,000	17,600
175	17,860	45/64	3,300	7,000	11,000	17,860
180	18,000		3,300	8,000	12,600	18,000
180	18,260	23/32	3,400	8,000	12,600	18,260
185	18,500		3,400	8,000	12,600	18,500
185	18,650	47/64	3,400	8,000	12,600	18,650
190	19,000		3,500	8,000	12,600	19,000
190	19,050	3/4	3,500	8,000	12,600	19,050
190	19,250		3,600	8,000	12,600	19,250
190	19,450	49/64	3,600	8,000	12,600	19,450
195	19,500		3,600	8,000	12,600	19,500
195	19,600		3,600	8,000	12,600	19,600
195	19,840	25/32	3,700	8,000	12,600	19,840
200	20,000		3,700	9,000	13,900	20,000
200	20,240	51/64	3,700	9,000	13,900	20,240
205	20,500		3,800	9,000	13,900	20,500
205	20,640	13/16	3,800	9,000	13,900	20,640
210	21,000		3,900	9,000	13,900	21,000
210	21,030	53/64	3,900	9,000	13,900	21,030
210	21,100		3,900	9,000	13,900	21,100
210	21,430	27/32	3,900	9,000	13,900	21,430
215	21,500		4,000	9,000	13,900	21,500
215	21,830	55/64	4,000	9,000	13,900	21,830
220	22,000		4,100	10,000	15,300	22,000
220	22,220	7/8	4,100	10,000	15,300	22,220
225	22,500		4,100	10,000	15,300	22,500
225	22,620	57/64	4,200	10,000	15,300	22,620
230	23,000		4,200	10,000	15,300	23,000
230	23,020	29/32	4,200	10,000	15,300	23,020
230	23,420	59/64	4,300	10,000	15,300	23,420
235	23,500		4,300	10,000	15,300	23,500
235	23,810	15/16	4,400	10,000	15,300	23,810
240	24,000		4,400	11,000	15,800	24,000
240	24,100		4,400	11,000	15,800	24,100
240	24,210	61/64	4,500	11,000	15,800	24,210
245	24,500		4,500	11,000	15,800	24,500
245	24,610	31/32	4,500	11,000	15,800	24,610
250	25,000	63/64	4,600	11,000	15,800	25,000
250	25,400	1	4,700	11,000	15,800	25,400
255	25,500		4,700	11,000	15,800	25,500
255	25,670		4,700	11,000	15,800	25,670
255	25,700		4,700	11,000	15,800	25,700
255	25,810		4,700	11,000	15,800	25,810
260	26,000		4,800	12,000	20,000	26,000
260	26,190	1 1/32	4,800	12,000	20,000	26,190
265	26,500		4,900	12,000	20,000	26,500
265	26,590	1 3/64	4,900	12,000	20,000	26,590
270	27,000		5,000	12,000	20,000	27,000
275	27,500		5,100	12,000	20,000	27,500
275	27,700		5,100	12,000	20,000	27,700
275	27,780	1 3/32	5,100	12,000	20,000	27,780
280	28,000		5,100	13,000	20,700	28,000
280	28,180	1 7/64	5,200	13,000	20,700	28,180
285	28,500		5,200	13,000	20,700	28,500
285	28,580		5,300	13,000	20,700	28,580
290	29,000		5,300	13,000	20,700	29,000
290	29,370	1 5/32	5,400	13,000	20,700	29,370
295	29,500		5,400	13,000	20,700	29,500
295	29,770	1 11/64	5,500	13,000	20,700	29,770
300	30,000		5,500	14,000	22,300	30,000
300	30,160	1 3/16	5,500	14,000	22,300	30,160
305	30,500		5,600	14,000	22,300	30,500

复合HPC可换刀片

规格	d1 mm	 inch	l4 mm	b mm	h mm	代号
305	30,960	1 7/32	5,700	14,000	22,300	30,960
310	31,000		5,700	14,000	22,300	31,000
315	31,500		5,800	14,000	22,300	31,500
315	31,750	1 1/4	5,800	14,000	22,300	31,750
320	32,000		5,900	15,000	23,100	32,000
320	32,500		6,000	15,000	23,100	32,500
320	32,540	1 9/32	6,000	15,000	23,100	32,540
320	32,940	1 19/64	6,000	15,000	23,100	32,940
330	33,000		6,100	15,000	23,100	33,000
330	33,340	1 5/16	6,100	15,000	23,100	33,340
330	33,500		6,100	15,000	23,100	33,500
340	34,000		6,200	15,000	23,100	34,000
340	34,130	1 11/32	6,300	15,000	23,100	34,130
340	34,500		6,300	15,000	23,100	34,500
340	34,930		6,400	15,000	23,100	34,930
350	35,000		6,400	15,000	23,100	35,000
350	35,500		6,500	15,000	23,100	35,500
350	35,720	1 13/32	6,600	15,000	23,100	35,720
360	36,000		6,600	16,000	23,900	36,000
360	36,500		6,700	16,000	23,900	36,500
360	36,510	1 7/16	6,700	16,000	23,900	36,510
370	37,000		6,800	16,000	23,900	37,000
370	37,310	1 15/32	6,800	16,000	23,900	37,310
370	37,500		6,900	16,000	23,900	37,500
380	38,000		7,000	16,000	23,900	38,000
380	38,100	1 1/2	7,000	16,000	23,900	38,100
380	38,500	1 33/64	7,100	16,000	23,900	38,500
390	39,000		7,100	16,000	23,900	39,000
390	39,500		7,200	16,000	23,900	39,500
400	40,000		7,300	16,000	23,900	40,000

HARTNER

复合HPC可换刀片

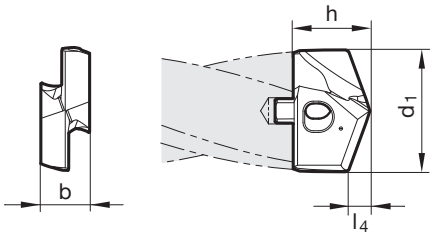
产品代号 86723



P	M	K	N	S	H
○		●			

VHM | F | HPC | WN | 140° | m7 | R

芯厚 ⩾ Ø 11,000 • 双后刀面 • 直的主切削刃（带修正） • 扳手 物料号86843
蠕墨铸铁GGV • 灰铸铁,可锻铸铁和球墨铸铁



规格	d1 mm	inch	l4 mm	b mm	h mm	代号
110	11,000		2,700	4,500	7,500	11,000
110	11,200		2,700	4,500	7,500	11,200
115	11,500		2,800	4,500	7,500	11,500
115	11,510	29/64	2,800	4,500	7,500	11,510
115	11,700		2,800	4,500	7,500	11,700
115	11,800		2,800	4,500	7,500	11,800
115	11,910	15/32	2,800	4,500	7,500	11,910
120	12,000		2,900	5,000	7,700	12,000
120	12,100		2,900	5,000	7,700	12,100
120	12,200		2,900	5,000	7,700	12,200
120	12,300	31/64	2,900	5,000	7,700	12,300
125	12,500		3,100	5,000	7,700	12,500
125	12,600		3,100	5,000	7,700	12,600
125	12,700	1/2	3,100	5,000	7,700	12,700
125	12,800		3,100	5,000	7,700	12,800
125	12,900		3,100	5,000	7,700	12,900
130	13,000		3,200	5,500	8,500	13,000
130	13,100	33/64	3,200	5,500	8,500	13,100
130	13,490	17/32	3,200	5,500	8,500	13,490
135	13,500		3,300	5,500	8,500	13,500
135	13,600		3,300	5,500	8,500	13,600
135	13,700		3,300	5,500	8,500	13,700
135	13,800		3,300	5,500	8,500	13,800
135	13,890	35/64	3,300	5,500	8,500	13,890
140	14,000		3,400	6,000	9,600	14,000
140	14,100		3,400	6,000	9,600	14,100
140	14,290	9/16	3,400	6,000	9,600	14,290
140	14,400		3,400	6,000	9,600	14,400
145	14,500		3,600	6,000	9,600	14,500
145	14,600		3,600	6,000	9,600	14,600
145	14,680	37/64	3,600	6,000	9,600	14,680
145	14,700		3,600	6,000	9,600	14,700
145	14,800		3,600	6,000	9,600	14,800
150	15,000		3,700	6,000	9,800	15,000
150	15,080	19/32	3,700	6,000	9,800	15,080
150	15,100		3,700	6,000	9,800	15,100
150	15,200		3,700	6,000	9,800	15,200
150	15,300		3,700	6,000	9,800	15,300
150	15,480	39/64	3,700	6,000	9,800	15,480
155	15,500		3,800	6,000	9,800	15,500
155	15,600		3,800	6,000	9,800	15,600
155	15,700		3,800	6,000	9,800	15,700

HARTNER

复合HPC可换刀片

规格	d1 mm	inch	l4 mm	b mm	h mm	代号
155	15,800		3,800	6,000	9,800	15,800
155	15,870	5/8	3,800	6,000	9,800	15,870
160	16,000		3,900	7,000	11,000	16,000
160	16,270	41/64	3,900	7,000	11,000	16,270
165	16,500		4,100	7,000	11,000	16,500
165	16,670	21/32	4,100	7,000	11,000	16,670
170	17,000		4,200	7,000	11,000	17,000
170	17,070	43/64	4,200	7,000	11,000	17,070
170	17,460	11/16	4,200	7,000	11,000	17,460
175	17,500		4,300	7,000	11,000	17,500
175	17,600		4,300	7,000	11,000	17,600
175	17,860	45/64	4,300	7,000	11,000	17,860
180	18,000		4,400	8,000	12,600	18,000
180	18,260	23/32	4,400	8,000	12,600	18,260
185	18,500		4,500	8,000	12,600	18,500
185	18,650	47/64	4,500	8,000	12,600	18,650
190	19,000		4,700	8,000	12,600	19,000
190	19,050	3/4	4,700	8,000	12,600	19,050
190	19,250		4,700	8,000	12,600	19,250
190	19,450	49/64	4,700	8,000	12,600	19,450
195	19,500		4,800	8,000	12,600	19,500
195	19,600		4,800	8,000	12,600	19,600
195	19,840	25/32	4,800	8,000	12,600	19,840
200	20,000		4,900	9,000	13,900	20,000
200	20,240	51/64	4,900	9,000	13,900	20,240
205	20,500		5,100	9,000	13,900	20,500
205	20,640	13/16	5,100	9,000	13,900	20,640
210	21,000		5,200	9,000	13,900	21,000
210	21,030	53/64	5,200	9,000	13,900	21,030
210	21,100		5,200	9,000	13,900	21,100
210	21,430	27/32	5,200	9,000	13,900	21,430
215	21,500		5,300	9,000	13,900	21,500
215	21,830	55/64	5,300	9,000	13,900	21,830
220	22,000		5,400	10,000	15,300	22,000
220	22,220	7/8	5,400	10,000	15,300	22,220
225	22,500		5,600	10,000	15,300	22,500
225	22,620	57/64	5,600	10,000	15,300	22,620
230	23,000		5,700	10,000	15,300	23,000
230	23,020	29/32	5,700	10,000	15,300	23,020
230	23,420	59/64	5,700	10,000	15,300	23,420
235	23,500		5,800	10,000	15,300	23,500
235	23,810	15/16	5,800	10,000	15,300	23,810
240	24,000		6,000	11,000	15,800	24,000
240	24,100		6,000	11,000	15,800	24,100
240	24,210	61/64	6,000	11,000	15,800	24,210
245	24,500		6,100	11,000	15,800	24,500
245	24,610	31/32	6,100	11,000	15,800	24,610
250	25,000	63/64	6,200	11,000	15,800	25,000
250	25,400	1	6,200	11,000	15,800	25,400
255	25,500		6,300	11,000	15,800	25,500
255	25,670		6,300	11,000	15,800	25,670
255	25,700		6,300	11,000	15,800	25,700
255	25,810		6,300	11,000	15,800	25,810
260	26,000		6,400	12,000	20,000	26,000
260	26,190	1 1/32	6,400	12,000	20,000	26,190
265	26,500		6,500	12,000	20,000	26,500
265	26,590	1 3/64	6,500	12,000	20,000	26,590
270	27,000		6,600	12,000	20,000	27,000
275	27,500		6,700	12,000	20,000	27,500
275	27,700		6,700	12,000	20,000	27,700
275	27,780	1 3/32	6,700	12,000	20,000	27,780
280	28,000		6,800	13,000	20,700	28,000
280	28,180	1 7/64	6,800	13,000	20,700	28,180
285	28,500		6,900	13,000	20,700	28,500
285	28,580		6,900	13,000	20,700	28,580
290	29,000		7,100	13,000	20,700	29,000
290	29,370	1 5/32	7,100	13,000	20,700	29,370
295	29,500		7,200	13,000	20,700	29,500
295	29,770	1 11/64	7,200	13,000	20,700	29,770
300	30,000		7,300	14,000	22,300	30,000
300	30,160	1 3/16	7,300	14,000	22,300	30,160
305	30,500		7,400	14,000	22,300	30,500

复合HPC可换刀片

规格	d1 mm	 inch	l4 mm	b mm	h mm	代号
305	30,960	1 7/32	7,400	14,000	22,300	30,960
310	31,000		7,500	14,000	22,300	31,000
315	31,500		7,600	14,000	22,300	31,500
315	31,750	1 1/4	7,600	14,000	22,300	31,750
320	32,000		7,700	15,000	23,100	32,000
320	32,500		7,800	15,000	23,100	32,500
320	32,540	1 9/32	7,800	15,000	23,100	32,540
320	32,940	1 19/64	7,800	15,000	23,100	32,940
330	33,000		7,900	15,000	23,100	33,000
330	33,340	1 5/16	7,900	15,000	23,100	33,340
330	33,500		8,100	15,000	23,100	33,500
340	34,000		8,200	15,000	23,100	34,000
340	34,130	1 11/32	8,200	15,000	23,100	34,130
340	34,500		8,400	15,000	23,100	34,500
340	34,930		8,400	15,000	23,100	34,930
350	35,000		8,500	15,000	23,100	35,000
350	35,500		8,600	15,000	23,100	35,500
350	35,720	1 13/32	8,600	15,000	23,100	35,720
360	36,000		8,700	16,000	23,900	36,000
360	36,500		8,800	16,000	23,900	36,500
360	36,510	1 7/16	8,800	16,000	23,900	36,510
370	37,000		9,000	16,000	23,900	37,000
370	37,310	1 15/32	9,000	16,000	23,900	37,310
370	37,500		9,100	16,000	23,900	37,500
380	38,000		9,200	16,000	23,900	38,000
380	38,100	1 1/2	9,200	16,000	23,900	38,100
380	38,500	1 33/64	9,400	16,000	23,900	38,500
390	39,000		9,500	16,000	23,900	39,000
390	39,500		9,700	16,000	23,900	39,500
400	40,000		9,700	16,000	23,900	40,000

HARTNER

复合HPC可换刀片

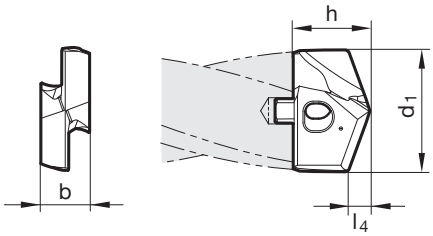
产品代号 86724



P	M	K	N	S	H
			•		

VHM | ◯ | HPC | WN | 140° | h7 | R | 

芯厚 ⩾ Ø 11,000 • 圆弧后刀面 • 扳手 物料号86843 • 凹形主切屑刃形状
铝和的铝合金 • 有色金属



规格	d1 mm	inch	l4 mm	b mm	h mm	代号
110	11,000		2,100	4,500	7,500	11,000
110	11,200		2,100	4,500	7,500	11,200
115	11,500		2,100	4,500	7,500	11,500
115	11,510	29/64	2,100	4,500	7,500	11,510
115	11,700		2,200	4,500	7,500	11,700
115	11,800		2,200	4,500	7,500	11,800
115	11,910	15/32	2,200	4,500	7,500	11,910
120	12,000		2,200	5,000	7,700	12,000
120	12,100		2,300	5,000	7,700	12,100
120	12,200		2,300	5,000	7,700	12,200
120	12,300	31/64	2,300	5,000	7,700	12,300
125	12,500		2,300	5,000	7,700	12,500
125	12,600		2,300	5,000	7,700	12,600
125	12,700	1/2	2,400	5,000	7,700	12,700
125	12,800		2,400	5,000	7,700	12,800
125	12,900		2,400	5,000	7,700	12,900
130	13,000		2,400	5,500	8,500	13,000
130	13,100	33/64	2,400	5,500	8,500	13,100
130	13,490	17/32	2,500	5,500	8,500	13,490
135	13,500		2,500	5,500	8,500	13,500
135	13,600		2,500	5,500	8,500	13,600
135	13,700		2,500	5,500	8,500	13,700
135	13,800		2,600	5,500	8,500	13,800
135	13,890	35/64	2,600	5,500	8,500	13,890
140	14,000		2,600	6,000	9,600	14,000
140	14,100		2,600	6,000	9,600	14,100
140	14,290	9/16	2,700	6,000	9,600	14,290
140	14,400		2,700	6,000	9,600	14,400
145	14,500		2,700	6,000	9,600	14,500
145	14,600		2,700	6,000	9,600	14,600
145	14,680	37/64	2,700	6,000	9,600	14,680
145	14,700		2,700	6,000	9,600	14,700
145	14,800		2,700	6,000	9,600	14,800
150	15,000		2,800	6,000	9,800	15,000
150	15,080	19/32	2,800	6,000	9,800	15,080
150	15,100		2,800	6,000	9,800	15,100
150	15,200		2,800	6,000	9,800	15,200
150	15,300		2,800	6,000	9,800	15,300
150	15,480	39/64	2,900	6,000	9,800	15,480
155	15,500		2,900	6,000	9,800	15,500
155	15,600		2,900	6,000	9,800	15,600
155	15,700		2,900	6,000	9,800	15,700

HARTNER

复合HPC可换刀片

规格	d1 mm	inch	l4 mm	b mm	h mm	代号
155	15,800		2,900	6,000	9,800	15,800
155	15,870	5/8	2,900	6,000	9,800	15,870
160	16,000		3,000	7,000	11,000	16,000
160	16,270	41/64	3,000	7,000	11,000	16,270
165	16,500		3,100	7,000	11,000	16,500
165	16,670	21/32	3,100	7,000	11,000	16,670
170	17,000		3,100	7,000	11,000	17,000
170	17,070	43/64	3,200	7,000	11,000	17,070
170	17,460	11/16	3,200	7,000	11,000	17,460
175	17,500		3,200	7,000	11,000	17,500
175	17,600		3,300	7,000	11,000	17,600
175	17,860	45/64	3,300	7,000	11,000	17,860
180	18,000		3,300	8,000	12,600	18,000
180	18,260	23/32	3,400	8,000	12,600	18,260
185	18,500		3,400	8,000	12,600	18,500
185	18,650	47/64	3,400	8,000	12,600	18,650
190	19,000		3,500	8,000	12,600	19,000
190	19,050	3/4	3,500	8,000	12,600	19,050
190	19,250		3,600	8,000	12,600	19,250
190	19,450	49/64	3,600	8,000	12,600	19,450
195	19,500		3,600	8,000	12,600	19,500
195	19,600		3,600	8,000	12,600	19,600
195	19,840	25/32	3,700	8,000	12,600	19,840
200	20,000		3,700	9,000	13,900	20,000
200	20,240	51/64	3,700	9,000	13,900	20,240
205	20,500		3,800	9,000	13,900	20,500
205	20,640	13/16	3,800	9,000	13,900	20,640
210	21,000		3,900	9,000	13,900	21,000
210	21,030	53/64	3,900	9,000	13,900	21,030
210	21,100		3,900	9,000	13,900	21,100
210	21,430	27/32	3,900	9,000	13,900	21,430
215	21,500		4,000	9,000	13,900	21,500
215	21,830	55/64	4,000	9,000	13,900	21,830
220	22,000		4,100	10,000	15,300	22,000
220	22,220	7/8	4,100	10,000	15,300	22,220
225	22,500		4,100	10,000	15,300	22,500
225	22,620	57/64	4,200	10,000	15,300	22,620
230	23,000		4,200	10,000	15,300	23,000
230	23,020	29/32	4,200	10,000	15,300	23,020
230	23,420	59/64	4,300	10,000	15,300	23,420
235	23,500		4,300	10,000	15,300	23,500
235	23,810	15/16	4,400	10,000	15,300	23,810
240	24,000		4,400	11,000	15,800	24,000
240	24,100		4,400	11,000	15,800	24,100
240	24,210	61/64	4,500	11,000	15,800	24,210
245	24,500		4,500	11,000	15,800	24,500
245	24,610	31/32	4,500	11,000	15,800	24,610
250	25,000	63/64	4,600	11,000	15,800	25,000
250	25,400	1	4,700	11,000	15,800	25,400
255	25,500		4,700	11,000	15,800	25,500
255	25,670		4,700	11,000	15,800	25,670
255	25,700		4,700	11,000	15,800	25,700
255	25,810		4,700	11,000	15,800	25,810
260	26,000		4,800	12,000	20,000	26,000
260	26,190	1 1/32	4,800	12,000	20,000	26,190
265	26,500		4,900	12,000	20,000	26,500
265	26,590	1 3/64	4,900	12,000	20,000	26,590
270	27,000		5,000	12,000	20,000	27,000
275	27,500		5,100	12,000	20,000	27,500
275	27,700		5,100	12,000	20,000	27,700
275	27,780	1 3/32	5,100	12,000	20,000	27,780
280	28,000		5,100	13,000	20,700	28,000
280	28,180	1 7/64	5,200	13,000	20,700	28,180
285	28,500		5,200	13,000	20,700	28,500
285	28,580		5,300	13,000	20,700	28,580
290	29,000		5,300	13,000	20,700	29,000
290	29,370	1 5/32	5,400	13,000	20,700	29,370
295	29,500		5,400	13,000	20,700	29,500
295	29,770	1 11/64	5,500	13,000	20,700	29,770
300	30,000		5,500	14,000	22,300	30,000
300	30,160	1 3/16	5,500	14,000	22,300	30,160
305	30,500		5,600	14,000	22,300	30,500

复合HPC可换刀片

规格	d1 mm	 inch	l4 mm	b mm	h mm	代号
305	30,960	1 7/32	5,700	14,000	22,300	30,960
310	31,000		5,700	14,000	22,300	31,000
315	31,500		5,800	14,000	22,300	31,500
315	31,750	1 1/4	5,800	14,000	22,300	31,750
320	32,000		5,900	15,000	23,100	32,000
320	32,500		6,000	15,000	23,100	32,500
320	32,540	1 9/32	6,000	15,000	23,100	32,540
320	32,940	1 19/64	6,000	15,000	23,100	32,940
330	33,000		6,100	15,000	23,100	33,000
330	33,340	1 5/16	6,100	15,000	23,100	33,340
330	33,500		6,100	15,000	23,100	33,500
340	34,000		6,200	15,000	23,100	34,000
340	34,130	1 11/32	6,300	15,000	23,100	34,130
340	34,500		6,300	15,000	23,100	34,500
340	34,930		6,400	15,000	23,100	34,930
350	35,000		6,400	15,000	23,100	35,000
350	35,500		6,500	15,000	23,100	35,500
350	35,720	1 13/32	6,600	15,000	23,100	35,720
360	36,000		6,600	16,000	23,900	36,000
360	36,500		6,700	16,000	23,900	36,500
360	36,510	1 7/16	6,700	16,000	23,900	36,510
370	37,000		6,800	16,000	23,900	37,000
370	37,310	1 15/32	6,800	16,000	23,900	37,310
370	37,500		6,900	16,000	23,900	37,500
380	38,000		7,000	16,000	23,900	38,000
380	38,100	1 1/2	7,000	16,000	23,900	38,100
380	38,500	1 33/64	7,100	16,000	23,900	38,500
390	39,000		7,100	16,000	23,900	39,000
390	39,500		7,200	16,000	23,900	39,500
400	40,000		7,300	16,000	23,900	40,000

HARTNER

复合HPC可换刀片

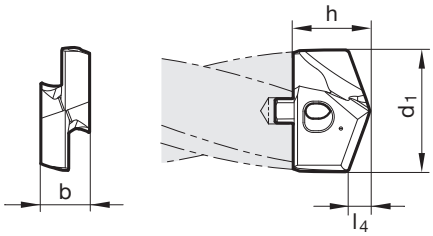
产品代号 86725



P	M	K	N	S	H
○	●			○	○

VHM | a | HPC | WN | 140° | h7 | R

芯厚 ⩾ Ø 11,000 • 圆弧后刀面 • 直的主切削刃（带修正） • 扳手 物料号86843
不锈钢



规格	d1 mm	inch	l4 mm	b mm	h mm	代号
110	11,000		2,100	4,500	7,500	11,000
110	11,200		2,100	4,500	7,500	11,200
115	11,500		2,100	4,500	7,500	11,500
115	11,510	29/64	2,100	4,500	7,500	11,510
115	11,700		2,200	4,500	7,500	11,700
115	11,800		2,200	4,500	7,500	11,800
115	11,910	15/32	2,200	4,500	7,500	11,910
120	12,000		2,200	5,000	7,700	12,000
120	12,100		2,300	5,000	7,700	12,100
120	12,200		2,300	5,000	7,700	12,200
120	12,300	31/64	2,300	5,000	7,700	12,300
125	12,500		2,300	5,000	7,700	12,500
125	12,600		2,300	5,000	7,700	12,600
125	12,700	1/2	2,400	5,000	7,700	12,700
125	12,800		2,400	5,000	7,700	12,800
125	12,900		2,400	5,000	7,700	12,900
130	13,000		2,400	5,500	8,500	13,000
130	13,100	33/64	2,400	5,500	8,500	13,100
130	13,490	17/32	2,500	5,500	8,500	13,490
135	13,500		2,500	5,500	8,500	13,500
135	13,600		2,500	5,500	8,500	13,600
135	13,700		2,500	5,500	8,500	13,700
135	13,800		2,600	5,500	8,500	13,800
135	13,890	35/64	2,600	5,500	8,500	13,890
140	14,000		2,600	6,000	9,600	14,000
140	14,100		2,600	6,000	9,600	14,100
140	14,290	9/16	2,700	6,000	9,600	14,290
140	14,400		2,700	6,000	9,600	14,400
145	14,500		2,700	6,000	9,600	14,500
145	14,600		2,700	6,000	9,600	14,600
145	14,700		2,700	6,000	9,600	14,700
145	14,800		2,700	6,000	9,600	14,800
150	15,000		2,800	6,000	9,800	15,000
150	15,080	19/32	2,800	6,000	9,800	15,080
150	15,100		2,800	6,000	9,800	15,100
150	15,200		2,800	6,000	9,800	15,200
150	15,300		2,800	6,000	9,800	15,300
155	15,500		2,900	6,000	9,800	15,500
155	15,600		2,900	6,000	9,800	15,600
155	15,700		2,900	6,000	9,800	15,700
155	15,800		2,900	6,000	9,800	15,800
155	15,870	5/8	2,900	6,000	9,800	15,870

HARTNER

复合HPC可换刀片

规格	d1 mm	inch	l4 mm	b mm	h mm	代号
160	16,000		3,000	7,000	11,000	16,000
160	16,270	41/64	3,000	7,000	11,000	16,270
165	16,500		3,100	7,000	11,000	16,500
165	16,670	21/32	3,100	7,000	11,000	16,670
170	17,000		3,100	7,000	11,000	17,000
170	17,070	43/64	3,200	7,000	11,000	17,070
170	17,460	11/16	3,200	7,000	11,000	17,460
175	17,500		3,200	7,000	11,000	17,500
175	17,600		3,300	7,000	11,000	17,600
175	17,860	45/64	3,300	7,000	11,000	17,860
180	18,000		3,300	8,000	12,600	18,000
180	18,260	23/32	3,400	8,000	12,600	18,260
185	18,500		3,400	8,000	12,600	18,500
185	18,650	47/64	3,400	8,000	12,600	18,650
190	19,000		3,500	8,000	12,600	19,000
190	19,050	3/4	3,500	8,000	12,600	19,050
190	19,450	49/64	3,600	8,000	12,600	19,450
195	19,500		3,600	8,000	12,600	19,500
195	19,600		3,600	8,000	12,600	19,600
195	19,840	25/32	3,700	8,000	12,600	19,840
200	20,000		3,700	9,000	13,900	20,000
200	20,240	51/64	3,700	9,000	13,900	20,240
205	20,500		3,800	9,000	13,900	20,500
205	20,640	13/16	3,800	9,000	13,900	20,640
210	21,000		3,900	9,000	13,900	21,000
210	21,030	53/64	3,900	9,000	13,900	21,030
210	21,100		3,900	9,000	13,900	21,100
210	21,430	27/32	3,900	9,000	13,900	21,430
215	21,500		4,000	9,000	13,900	21,500
215	21,830	55/64	4,000	9,000	13,900	21,830
220	22,000		4,100	10,000	15,300	22,000
220	22,220	7/8	4,100	10,000	15,300	22,220
225	22,500		4,100	10,000	15,300	22,500
225	22,620	57/64	4,200	10,000	15,300	22,620
230	23,000		4,200	10,000	15,300	23,000
230	23,020	29/32	4,200	10,000	15,300	23,020
230	23,420	59/64	4,300	10,000	15,300	23,420
235	23,500		4,300	10,000	15,300	23,500
235	23,810	15/16	4,400	10,000	15,300	23,810
240	24,000		4,400	11,000	15,800	24,000
240	24,100		4,400	11,000	15,800	24,100
240	24,210	61/64	4,500	11,000	15,800	24,210
245	24,500		4,500	11,000	15,800	24,500
245	24,610	31/32	4,500	11,000	15,800	24,610
250	25,000	63/64	4,600	11,000	15,800	25,000
250	25,400	1	4,700	11,000	15,800	25,400
255	25,500		4,700	11,000	15,800	25,500
255	25,670		4,700	11,000	15,800	25,670
255	25,700		4,700	11,000	15,800	25,700
260	26,000		4,800	12,000	20,000	26,000
260	26,190	1 1/32	4,800	12,000	20,000	26,190
265	26,500		4,900	12,000	20,000	26,500
265	26,590	1 3/64	4,900	12,000	20,000	26,590
270	27,000		5,000	12,000	20,000	27,000
275	27,500		5,100	12,000	20,000	27,500
275	27,700		5,100	12,000	20,000	27,700
275	27,780	1 3/32	5,100	12,000	20,000	27,780
280	28,000		5,100	13,000	20,700	28,000
280	28,180	1 7/64	5,200	13,000	20,700	28,180
285	28,500		5,200	13,000	20,700	28,500
285	28,580		5,300	13,000	20,700	28,580
290	29,000		5,300	13,000	20,700	29,000
290	29,370	1 5/32	5,400	13,000	20,700	29,370
295	29,500		5,400	13,000	20,700	29,500
295	29,600		5,400	13,000	20,700	29,600
295	29,770	1 11/64	5,500	13,000	20,700	29,770
300	30,000		5,500	14,000	22,300	30,000
300	30,160	1 3/16	5,500	14,000	22,300	30,160
305	30,500		5,600	14,000	22,300	30,500
305	30,960	1 7/32	5,700	14,000	22,300	30,960
310	31,000		5,700	14,000	22,300	31,000
315	31,500		5,800	14,000	22,300	31,500

复合HPC可换刀片

规格	d1 mm	 inch	l4 mm	b mm	h mm	代号
315	31,750	1 1/4	5,800	14,000	22,300	31,750
320	32,000		5,900	15,000	23,100	32,000
320	32,500		6,000	15,000	23,100	32,500
320	32,540	1 9/32	6,000	15,000	23,100	32,540
320	32,940	1 19/64	6,000	15,000	23,100	32,940
330	33,000		6,100	15,000	23,100	33,000
330	33,340	1 5/16	6,100	15,000	23,100	33,340
330	33,500		6,100	15,000	23,100	33,500
340	34,000		6,200	15,000	23,100	34,000
340	34,130	1 11/32	6,300	15,000	23,100	34,130
340	34,500		6,300	15,000	23,100	34,500
340	34,930		6,400	15,000	23,100	34,930
350	35,000		6,400	15,000	23,100	35,000
350	35,500		6,500	15,000	23,100	35,500
350	35,720	1 13/32	6,600	15,000	23,100	35,720
360	36,000		6,600	16,000	23,900	36,000
360	36,500		6,700	16,000	23,900	36,500
360	36,510	1 7/16	6,700	16,000	23,900	36,510
370	37,000		6,800	16,000	23,900	37,000
370	37,310	1 15/32	6,800	16,000	23,900	37,310
370	37,500		6,900	16,000	23,900	37,500
380	38,000		7,000	16,000	23,900	38,000
380	38,100	1 1/2	7,000	16,000	23,900	38,100
380	38,500	1 33/64	7,100	16,000	23,900	38,500
390	39,000		7,100	16,000	23,900	39,000
390	39,500		7,200	16,000	23,900	39,500
400	40,000		7,300	16,000	23,900	40,000

复合HPC镗刀刀片

产品代号 86726



P	M	K	N	S	H
○		●			

VHM A WN N

灰铸铁,可锻铸铁和球墨铸铁

ISO	刀柄规格	代号	ISO	刀柄规格	代号
CPGW050202FN-K	110-140	52,020			
CPGW050204FN-K	110-140	52,040			
CPGW060202FN-K	160-180	62,020			
CPGW060204FN-K	160-180	62,040			
CPGW09T308FN-K	300-360	93,080			

产品代号 86727



P	M	K	N	S	H
			●		

VHM ○ WN R

铝和的铝合金 • 有色金属

ISO	刀柄规格	代号	ISO	刀柄规格	代号
CPGT050202FR-AL	110-140	52,020			
CPGT050204FR-AL	110-140	52,040			
CPGT060202FR-AL	160-180	62,020			
CPGT060204FR-AL	160-180	62,040			
CPGT09T308FR-AL	300-360	93,080			

HARTNER

复合HPC镗刀刀片

产品代号 86728



P	M	K	N	S	H
●	○	○		○	○

VHM | T | WN | R

适于加工：合金/非合金钢和铸钢

ISO	刀柄规格	代号	ISO	刀柄规格	代号
CPGT050202FR-P	110-140	52,020			
CPGT050204FR-P	110-140	52,040			
CPGT060202FR-P	160-180	62,020			
CPGT060204FR-P	160-180	62,040			
CPGT09T308FR-P	300-360	93,080			

HARTNER

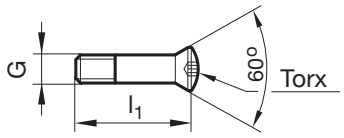
复合HPC刀柄压紧螺钉 1.5-10xD

产品代号 86843



WN

匹配紧固螺钉与刀柄， "Multiplex HPC -技术及优势"



G	l1 mm	Torx	代号	G	l1 mm	Torx	代号
M 2,2	9,500	T7	2,200	M 6	28,500	T25	6,001
M 2,2	10,500	T7	2,201	M 6	32,500	T25	6,002
M 2,5	11,400	T8	2,500				
M 3	12,100	T9	3,000				
M 3	13,100	T9	3,001				
M 3,5	14,250	T10	3,500				
M 4	16,000	T15	4,000				
M 4,5	18,000	T15	4,500				
M 5	19,750	T20	5,000				
M 5	21,750	T20	5,001				
M 5	23,400	T20	5,003				
M 6	27,000	T25	6,000				

扭力扳手

产品代号 86844



WN

六角刀柄

驱动头	扭矩 Nm	L mm	型号	代号
1/4"	0,8...2	160,000	A	2,000
1/4"	2...8	200,000	A	8,000
1/4"	0,4...14	200,000	A	14,000

HARTNER

Torx扳手头

产品代号 86845



WN

驱动头		Torx	L mm	代号
1/4	六角形	T7	25,000	7,000
1/4	六角形	T8	25,000	8,000
1/4	六角形	T9	25,000	9,000
1/4	六角形	T10	25,000	10,000
1/4	六角形	T15	25,000	15,000
1/4	六角形	T20	25,000	20,000
1/4	六角形	T25	25,000	25,001

HARTNER

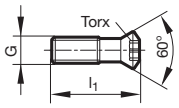
复合HPC镗刀刀柄压紧螺钉

产品代号 86846



WN

匹配紧固螺钉与刀柄， "Multiplex HPC -技术及优势"



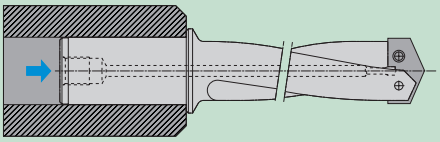
G	l1 mm	Torx	代号
M 2,0X5,50	5,500	T6	2,000
M 2,0X5,30	5,300	T7	2,500
M 4 X9,50	9,500	T15	4,006

G	l1 mm	Torx	代号

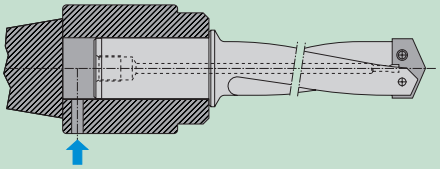
复合钻 -冷却液的要求

每一个复合钻刀把都配有一个内部冷却系统，它保证了冷却剂的最佳输送。
冷却液通过内冷孔直接到达工作中的切削刃，它可以有效改进刀具寿命。此外，冷却液确切削屑从孔中顺利冲走。冷却液输送方式取决于夹持刀柄的设计。

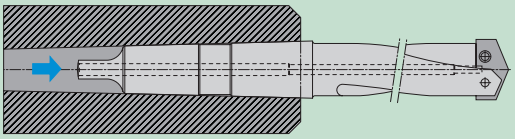
采用内冷刀柄的冷却液输送方式
对于静态和旋转状态下的刀具：
冷却液输送通过内冷刀柄直接输送。
直接刀把直径Ø10到Ø102毫米。
适合我司产品编号为86612 / 86622 / 86624 / 86730 / 86740 / 86750
和额外长度的刀把



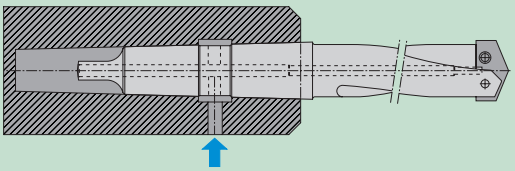
采用油路刀柄的冷却液输送方式
对于旋转刀具：
径向冷却液通过冷却孔输送。
支持夹持直径Ø10mm到Ø102mm。
适合我司编号为86612 / 86622 / 86624 / 86730 / 86740 / 86750
和额外长度的刀杆
适用于SK40 / 50和莫式 MT4 / 5 / 6等刀柄



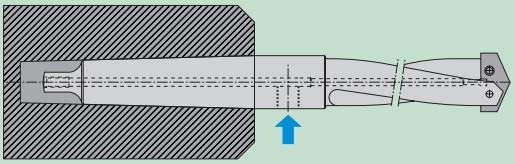
采用内冷锥柄刀柄的冷却液输送方式
对于静态和旋转状态下的刀具：
轴向冷却液输送通过内冷锥度刀柄直接输送。
适于夹持莫式柄直径Ø10mm到Ø25mm的刀把。
适合我司产品编号86630 / 86650的刀把



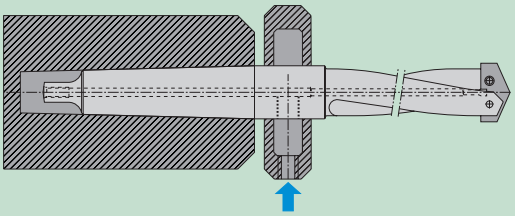
采用侧冷却的锥度刀柄的冷却液输送方式
对于静止状态下的刀具：
冷却液通过刀柄的径向冷却孔液输送。
适于夹持莫式柄直径Ø10mm到Ø25mm的刀把。
这种刀把按客户的需求来非标定制



采用直接通过刀把的横向冷却孔来输送冷却液的方式
对于静止状态的刀具：
可以通过软管/管道连接来进行的冷却液输送
支持螺纹R1 / 4“和R1 / 2”。
通常莫氏锥度刀柄支持Ø10mm到Ø25mm的刀把
适用于我司产品编号86670 / 86680和额外长度的刀把



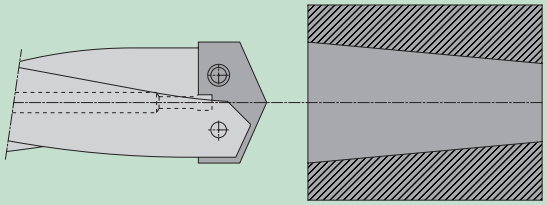
通过油路环和刀把的横向冷却孔来液输送冷却液的方式
对于旋转状态的刀具：
冷却液通过油路环来进行冷却液的输送。
支持莫氏锥度直径Ø超过25mm的刀把。
适用于我司产品编号86670 / 86680和额外长度的刀把



复合钻 - 常见问题和使用技巧

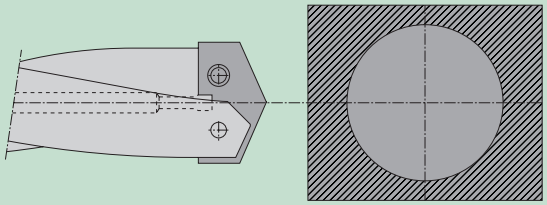
用来钻预钻孔

由于复合钻主要设计用来钻深孔，它的前端刃部较宽，它不适合预铸孔或者预钻孔。然而，如果复合钻被应用在上述情况，切削参数应该降低。



断续切削

复合钻不适合断续切削（即通过大于钻头直径的横向孔）。



定心

复合钻的切削刀片是相当薄的，因此，如果可以，请选择更大的钻头。如果因为技术原因中心钻是必须的，那么中心点的角度要求必须大于或等于复合钻的刀片的角度。

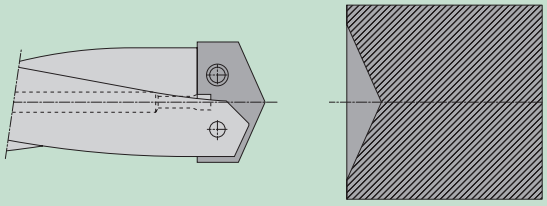
下面是应用建议：

直径最大到25.4mm= 135°

直径最大到 66mm= 132°

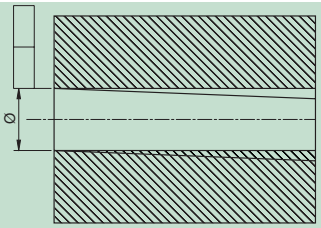
直径大于 66mm = 140°

建议用，短刀把（3xD）用于定心。



钻后的孔直线度超公差要求

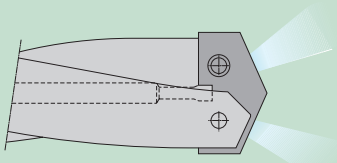
一个钻后的孔的直线度受多个因素的影响。通常对于一个深度在7xd的孔来说，0.1mm-0.16mm的偏差是可以接受的。在满足孔深要求的前提下，最短的刀把有最佳的刚性，因为，应该选择尽可能短的刀把。



冷却液压力

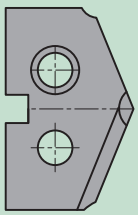
复合钻的冷却液是非常重要的，它可以冲走切屑，带走热量。我司的刀把适用于最小5bar的压力。通常，冷却液压力越大，流量越多，越好。

通过使用油路环或者内冷刀柄，可以与现有的贵司冷却液连通，我司的复合钻还可以应用于较旧的机器上。如果您有特殊的应用方式，请联系我们，我们的技术工程师会很乐意为你服务。



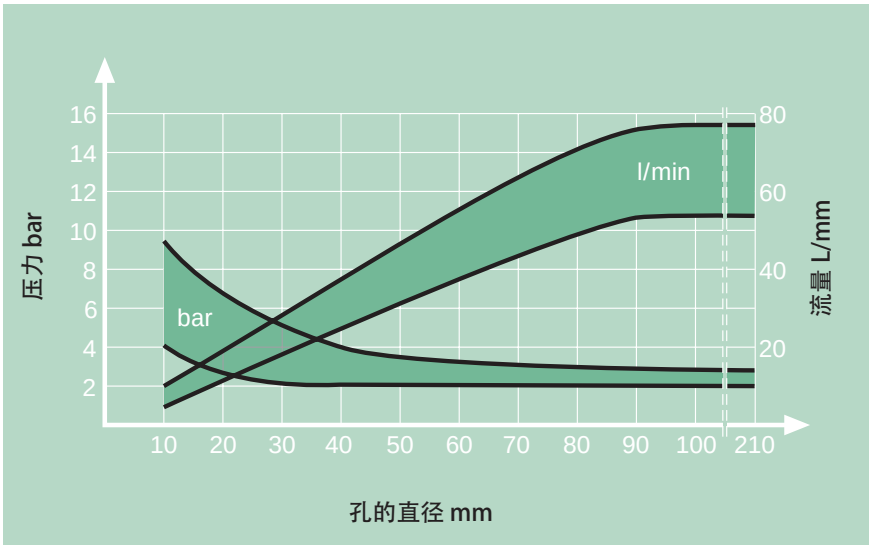
重型切削导致切削刃磨损

如果切削产生的热量已经侵蚀了切削刃，导致切削刃磨损，通常是因为切削速度太高。我们必须降低切削速度。通过测量未受影响的切削刃的直径和根据这个新的直径来计算出切削速度。从得到的速度中减去10%，并将其输入到机床设备中。



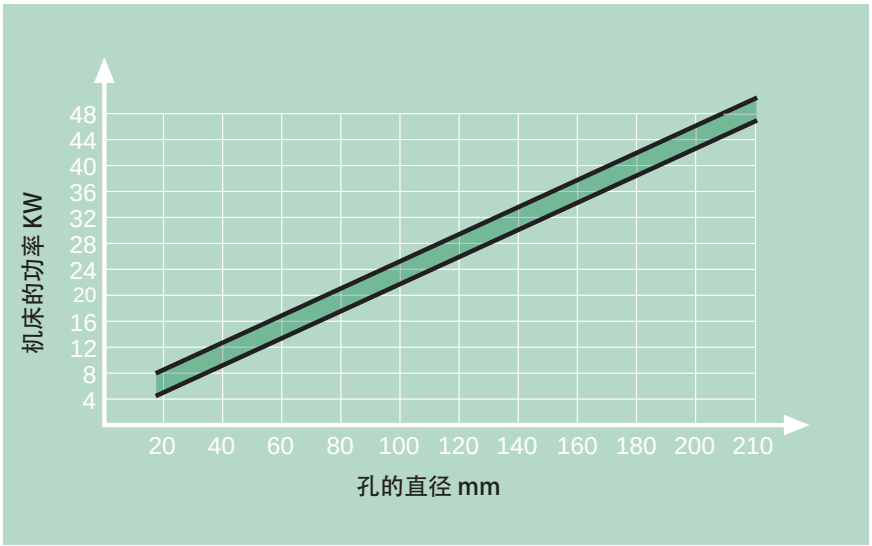
复合钻 - 冷却液的要求

有效的冷却液是非常重要的。冷却液压力不足或流量不够，可能会导致孔的表面光洁度变差，或者刀具的意外损坏。
如果可能的话，冷却液中固体颗粒的大小不应超过50 μm。
对于应用高速钢或硬质合金刀片的复合钻，我们建议使用可溶性油作为冷却液来使用。
标准的混合比例：1:20
冷却液的压力和流量比可溶性油的成分更重要。所以使用复合钻有，一个重要的先决条件，足够的冷却和润滑。



机床和工件

一个刚性好的机床和主轴，以及良好夹持的刀具、工件，才能获得一个良好的应用。在孔加工中，刚性不足容易导致钻头在孔加工过程中，刀具容易振动，容易磨损，从而导致切削刃寿命缩短或者意外破损。

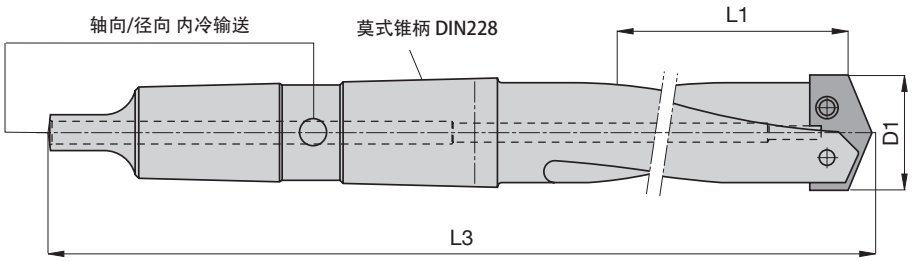


HARTNER

复合钻 - 我们提供贵司需要的非标解决方案

请根据你的需求来标注

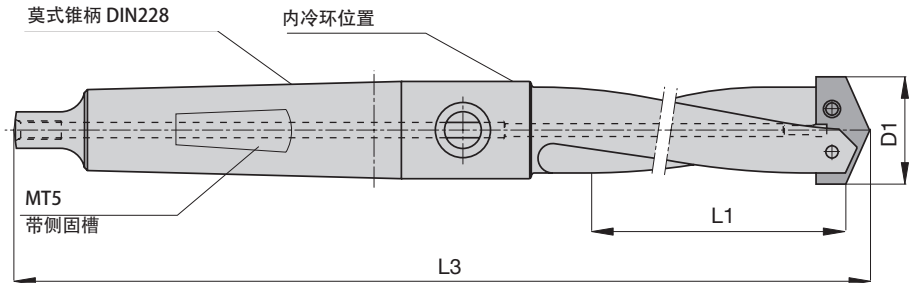
莫式锥柄刀柄



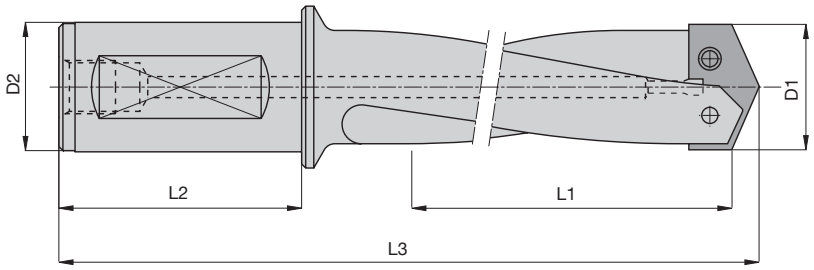
莫式锥柄刀柄，带油路环输送内冷液，类似产品：No.86690

带侧固

无侧固



夹持直柄刀把的刀柄



为了给你报价，我司还需要下列信息：

孔的直径
（我司最大直径D210mm) .....

孔深 L1 .....

刀把的螺旋槽长 .....

总长
（我司最长为1000mm） .....

柄部直径
（威尔顿柄） .....

被加工材料.....

冷却液压力 .....

数量
（我司要求最小数量2pcs) .....

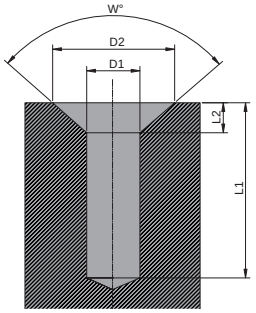
横向开槽位置
（莫式锥柄） .....

如果你需要更多信息，请联系我们的技术部门 Tel: 0086 13917459110

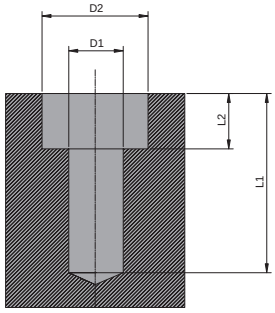
HARTNER

复合钻 - 对特殊的阶梯孔，请提供下列信息

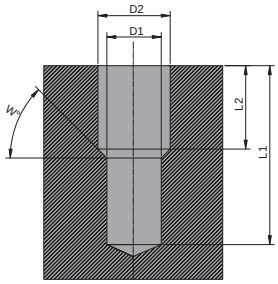
带90°倒角的阶梯钻



带180°的阶梯钻



特殊角度要求的阶梯钻



为方便报价，请提供下列信息

孔的形状 .....

请按照上面的图形选择

角度 W° .....

直径 D1 .....

被加工材料 .....

直径 D2 .....

长度 L1 .....

长度 L2 .....

您也可以发包含以上信息的图纸给我司

复合钻 - 特殊的几何形状



按照客户图纸要求的刀片
（材质：HSS-E/PM HSS-E ,或 硬纸盒）



NC 90° 或120° 中心钻用刀片（材质：HEE-E/PM HSS-E 或 硬质合金）（上面的图片是基于90°）



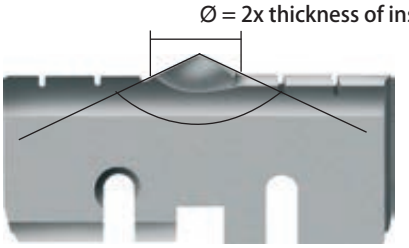
带圆弧R角的刀片 （材质：HEE-E/PM HSS-E 或 硬质合金）



阶梯钻用刀片（材质：HEE-E/PM HSS-E 或 硬质合金）



非铁金属、塑料用的非标刀片（材质：硬质合金）



带中心点的盲孔用刀片（材质：HEE-E/PM HSS-E）



黄铜用非标刀片（材质：硬质合金）



不带中心点的盲孔用刀片（材质：HEE-E/PM HSS-E）



纤维、塑料用非标刀片（材质：硬质合金）

* 请注意，当贵司使用盲孔用非标刀片时：

- 仅适用于较短的刀把。
- 请先用标准刀把做预加工孔（标准刀片的直径 ≤ 盲孔用刀片直径）
- 在整体材料下使用需要推荐下特殊加工参数。
- 请向我们提供工件图纸，确认孔的几何角度。如果可能，请联系我们的技术人员。

我司可以根据贵司的需求提供非标的刀片，以及特殊的涂层。
请联系我们。 非标品的交期为3周左右。

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复合钻 - 技术特点

哈特纳新设计的 可换刀尖的复合钻 HPC 系列，为我们的客户带来了可高性能和高的性价比的心产品。
它适用的孔的直径范围从11mm到40mm，它具有以下优点：

- 刀具寿命更长
  可替换的切削刃经过了精密磨削过，它的表面有很高的光洁度，并且有复合涂层，使得此刀尖非常耐磨。
  刀杆也有很高的耐磨性，它的材料经过特别的处理，表面镀镍。刀杆直径从11mm到31.99mm,它间隔0.5mm；刀杆直径从32mm开始，他间隔1mm.这使得刀杆在使用中，受到更少的磨损

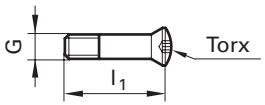
- 优化的切屑流动
  最优的螺旋槽设计，复合钻 HPC 系列确保切屑能顺畅的流出，甚至加工比较深的孔的时候。

- 完美冷却润滑
  特殊设计的刀杆的内冷管，可以给予一个完美的冷却润滑。
  它确保切屑从螺旋槽中顺利流出，并带走切削产生的热量。

- 高精度和高刚性的切削刃
  更换可换式的切削刃，只需要简单的几步，外加一个标准的梅花扳手，就可以准确的将切削刃和刀杆相互配合。复合钻HPC的刀杆材料经过了最佳的优化，可以支撑更频繁的更换切削刃，而不会带来刀杆的磨损。
  使用螺钉锁紧，使得切削刃和刀杆成为一个整体，即使加工时，机床有较大的振动，也可以保持切削的稳定。

- 高刚性的刀杆
  刀杆的直径和切削刃的直径类似，它有效减少了磨损。在孔内的导向性更好。它增强了 复合钻 HPC 系统的刚性，使得刀具的寿命延长，改善了孔的表面质量。

切削刃固定在刀杆 螺钉 1.5 - 10x D 868433

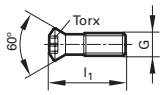




刀杆尺寸	螺丝刀	螺钉型号
110/115	T7	2,200
120/125	T7	2,201
130/135	T8	2,500
140/145	T9	3,000
150/155	T9	3,001
160 - 175	T10	3,500
180 - 195	T15	4,000
200 - 215	T15	4,500

刀杆尺寸	螺丝刀	螺钉型号
220 - 235	T20	5,000
240 - 255	T20	5,001
260 - 295	T20	5,003
300 - 315	T25	6,000
320 - 350	T25	6,001
360 - 390	T25	6,002

倒角刀片固定于刀杆上 螺钉 86846



for holder size	Torx	Code No.
110 - 140	T6	2,000
160 - 280	T7	2,500
300 - 360	T15	4,006

我们建议更换切削刃时也更换夹紧螺钉!
每个刀杆都随配一个螺钉，型号No.86643,以及一个螺丝刀，型号No.86642.每个切削刃都随配一个螺钉，型号No.86643

拧紧螺钉所需的力矩

直径范围	11.0 - 12.99	13.0 - 13.99	14.0 - 15.99	16.0 - 17.99	18.0 - 19.99	20.0 - 21.99	22.0 - 29.99	30.0 - 40.00
螺纹	M2.2	M2.5	M3	M3.5	M4	M4.5	M5	M6
螺丝刀	T7	T8	T9	T10	T15	T15	T20	T25
力矩 [Nm]	0.8	1.0	1.7	2.7	4.0	6.0	8.0	14.0

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复合钻 - 特殊的刀具需求表

☐ 订购 ☐ 询价

Contact for queries

客户名 /客户代码 新客户

订货号码

地址

邮编

电话

传真

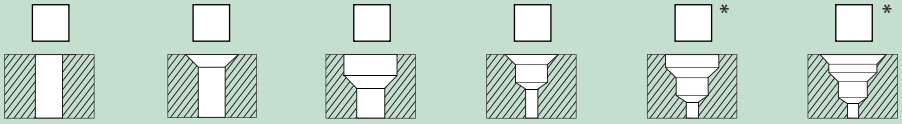
日期

签名

数量 ☐ 刀杆 ☐ 切削刃

被加工材料 ☐

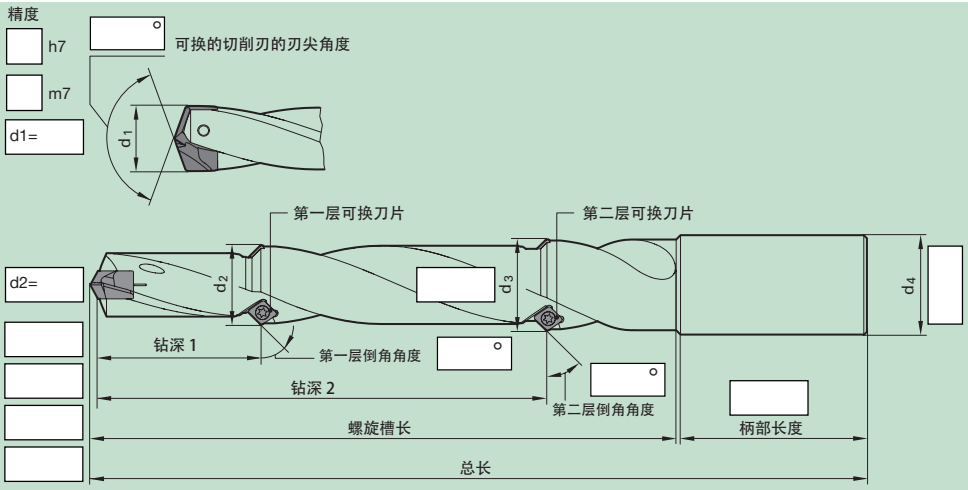
钻孔类型



*请给我司图纸

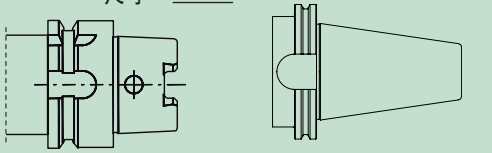
槽型 ☐ 螺旋 ☐ 部分螺旋 ☐ 直槽

尺寸描述
对于螺旋或直槽钻杆



柄部形式

☐ HA ☐ HE ☐ HSK, 形式 ☐ 尺寸 ☐ SK, 尺寸 ☐



内冷却 ☐ yes ☐ no

切削刃涂层 ☐ FIRE ☐ TiAlN SuperA ☐ TiAlN ☐ TiCN ☐ TiN ☐ bright ☐ nano FIRE ☐ AlTiN nano

d
D

HARTNER

Precision Cutting Tools

技术章节

定义及应用推荐

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内容
尺寸及定义

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尺寸
直柄麻花钻

Φmm 直径 从...到		DIN 1897		DIN 338		DIN 339		DIN 340		DIN 1869		DIN 1869		DIN 1869	
		全长 mm	槽长 mm	全长 mm	槽长 mm	全长 mm	槽长 mm	全长 mm	槽长 mm	全长 mm	槽长 mm	全长 mm	槽长 mm	全长 mm	槽长 mm
0.19	0.24			19	2.5					系列1		系列2		系列3	
0.24	0.30			19	3										
0.30	0.38			19	4										
0.38	0.48			20	5										
0.48	0.53	20	3	22	6	28	12	32	12						
0.53	0.60	21	3.5	24	7	32	15	35	15						
0.60	0.67	22	4	26	8	36	18	38	18						
0.67	0.75	23	4.5	28	9	39	20	42	21						
0.75	0.85	24	5	30	10	42	22	46	25						
0.85	0.95	25	5.5	32	11	45	24	51	29						
0.95	1.06	26	6	34	12	48	26	56	33						
1.06	1.18	28	7	36	14	50	28	60	37						
1.18	1.32	30	8	38	16	52	30	65	41						
1.32	1.50	32	9	40	18	55	33	70	45						
1.50	1.70	34	10	43	20	58	35	76	50						
1.70	1.90	36	11	46	22	62	38	80	53						
1.90	2.12	38	12	49	24	66	41	85	56	125	85				
2.12	2.36	40	13	53	27	70	44	90	59	135	90				
2.36	2.65	43	14	57	30	74	47	95	62	140	95				
2.65	3.00	46	16	61	33	79	51	100	66	150	100	190	130		
3.00	3.35	49	18	65	36	84	55	106	69	155	105	200	135		
3.35	3.75	52	20	70	39	91	60	112	73	165	115	210	145	265	180
3.75	4.25	55	22	75	43	96	64	119	78	175	120	220	150	280	190
4.25	4.75	58	24	80	47	102	69	126	82	185	125	235	160	295	200
4.75	5.30	62	26	86	52	108	74	132	87	195	135	245	170	315	210
5.30	6.00	66	28	93	57	116	80	139	91	205	140	260	180	330	225
6.00	6.70	70	31	101	63	124	86	148	97	215	150	275	190	350	235
6.70	7.50	74	34	109	69	133	93	156	102	225	155	290	200	370	250
7.50	8.50	79	37	117	75	142	100	165	109	240	165	305	210	390	265
8.50	9.50	84	40	125	81	151	107	175	115	250	175	320	220	410	280
9.50	10.60	89	43	133	87	162	116	184	121	265	185	340	235	430	295
10.60	11.80	95	47	142	94	173	125	195	128						
11.80	13.20	102	51	151	101	184	134	205	134						
13.20	14.00	107	54	160	108	194	142	214	140						
14.00	15.00	111	56	169	114	202	147	220	144						
15.00	16.00	115	58	178	120	211	153	227	149						
16.00	17.00	119	60	184	125	218	159	235	154						
17.00	18.00	123	62	191	130	226	165	241	158						
18.00	19.00	127	64	198	135	234	171	247	162						
19.00	20.00	131	66	205	140	242	177	254	166						
20.00	21.20	136	68					261	171						
21.20	22.40	141	70					268	176						
22.40	23.60	146	72					275	180						
23.60	25.00	151	75					282	185						
25.00	26.50	156	78												
26.50	28.00	162	81												
28.00	30.00	168	84												
30.00	31.50	174	87												
31.50	33.50	180	90												
33.50	35.50	186	93												
35.50	37.50	193	96												
37.50	40.00	200	100												

尺寸
锥柄麻花钻

Φmm 直径 从...到		DIN 345			DIN 346			DIN 341			DIN 1870			DIN 1870		
		全长 mm	槽长 mm	莫氏锥度	全长 mm	槽长 mm	莫氏锥度	全长 mm	槽长 mm	莫氏锥度	全长 mm	槽长 mm	莫氏锥度	全长 mm	槽长 mm	莫氏锥度
											系列1			系列2		
2.65	3.00	114	33	1												
3.00	3.35	117	36	1												
3.35	3.75	120	39	1												
3.75	4.25	124	43	1				145	64	1						
4.25	4.75	128	47	1				150	69	1						
4.75	5.30	133	52	1				155	74	1						
5.30	6.00	138	57	1				161	80	1						
6.00	6.70	144	63	1				167	86	1						
6.70	7.50	150	69	1				174	93	1						
7.50	8.50	156	75	1				181	100	1	265	165	1	330	210	1
8.50	9.50	162	81	1				188	107	1	275	175	1	345	220	1
9.50	10.60	168	87	1	185	87	2	197	116	1	285	185	1	360	235	1
10.60	11.80	175	94	1	192	94	2	206	125	1	300	195	1	375	250	1
11.80	13.20	182	101	1	199	101	2	215	134	1	310	205	1	395	260	1
13.20	14.00	189	108	1	206	108	2	223	142	1	325	220	1	410	275	1
14.00	15.00	212	114	2	235	114	3	245	147	2	340	220	2	425	275	2
15.00	16.00	218	120	2	241	120	3	251	153	2	355	230	2	445	295	2
16.00	17.00	223	125	2	246	125	3	257	159	2	355	230	2	445	295	2
17.00	18.00	228	130	2	251	130	3	263	165	2	370	245	2	465	310	2
18.00	19.00	233	135	2	256	135	3	269	171	2	370	245	2	465	310	2
19.00	20.00	238	140	2	261	140	3	275	177	2	385	260	2	490	325	2
20.00	21.20	243	145	2	266	145	3	282	184	2	385	260	2	490	325	2
21.20	22.40	248	150	2	271	150	3	289	191	2	405	270	2	515	345	2
22.40	23.02	253	155	2	276	155	3	296	198	2	405	270	2	515	345	2
23.02	23.60	276	155	3	276	155	3	319	198	3	425	270	3	535	345	3
23.60	25.00	281	160	3	309	160	4	327	206	3	440	290	3	555	365	3
25.00	26.50	286	165	3	314	165	4	335	214	3	440	290	3	555	365	3
26.50	28.00	291	170	3	319	170	4	343	222	3	460	305	3	580	385	3
28.00	30.00	296	175	3	324	175	4	351	230	3	460	305	3	580	385	3
30.00	31.50	301	180	3	329	180	4	360	239	3	480	320	3	610	410	3
31.50	31.75	306	185	3	334	185	4	369	248	3	480	320	3	610	410	3
31.75	33.50	334	185	4	372	185	5	397	248	4	505	320	4	635	410	4
33.50	35.50	339	190	4	377	190	5	406	257	4	530	340	4	665	430	4
35.50	37.50	344	195	4	382	195	5	416	267	4	530	340	4	665	430	4
37.50	40.00	349	200	4	387	200	5	426	277	4	555	360	4	695	460	4
40.00	42.50	354	205	4	392	205	5	436	287	4	555	360	4	695	460	4
42.50	45.00	359	210	4	397	210	5	447	298	4	585	385	4	735	490	4
45.00	47.50	364	215	4	402	215	5	459	310	4	585	385	4	735	490	4
47.50	50.00	369	220	4	407	220	5	470	321	4	605	405	4	765	510	4
50.00	50.80	374	225	4	412	225	5									
50.80	53.00	412	225	5												
53.00	56.00	417	230	5												
56.00	60.00	422	235	5												
60.00	63.00	427	240	5												
63.00	67.00	432	245	5												
67.00	71.00	437	250	5												
71.00	75.00	442	255	5												
75.00	76.20	447	260	5												
76.20	80.00	514	260	6												
80.00	85.00	519	265	6												
85.00	90.00	524	270	6												
90.00	95.00	529	275	6												
95.00	100.00	534	280	6												

高速钢

简写 描述	钢牌号 描述	材料代号	应用	各个描述形式			
				美国	法国	意大利	英国
HSS	S-6-5-2 (DMO5)	1.3343	标准刀具材料，最常见的应用	M 2	Z 90 WDCV 06-05-04-02	HS 6-5-2	BM 2
HSCO HSS-E	S-6-5-2-5 (EMO5CO5)	1.3243	高耐热性，适合粗加工或冷却不充分时	M 35	Z 90 WDKCV 06-05-05-04-02	HS 6-5-2-5	BM 35
HSS-E	S-6-5-3 (EMO5V3)	1.3344	高摩擦阻力和切削的稳定性，刃口稳定 尤其适合于铰孔，搞耐热性	M 3	Z 120 WDCV 06-05-04-03	HS 6-5-3	-
M42 HSS-E	S-2-10-1-8	1.3247	适合于难加工材料	M 42	Z 110 DKCWV 09-08-04-02-01	HS 2-9-1-8	BM 42
HSS-E-PM	S-6-5-3-9 ASP 30	-	高硬度，高热应性 刃口稳定性 以及高密度结构	-	-	-	-

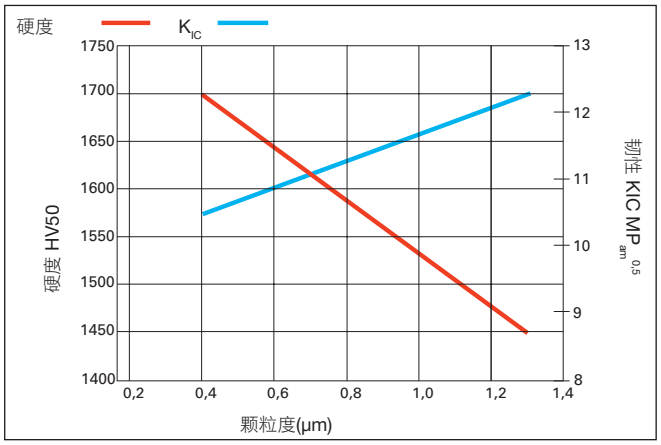
硬质合金

类型	刀具材料 及涂层		ISO- 组别	应用
复合钻 刀片	硬质合金 H22	FIRE TiN	fine grain K20-K40	适用于灰铁，有色金属 塑料，钢件及铸钢
硬质合金 麻花钻	硬质合金		K10-K20	适合于灰铁，钢件 铝合金，Duro塑料，CFK，GFK
整体硬质合金 TS钻头 U	硬质合金	FIRE TiN	fine grain K/P	适合于加工强度不超过1200N/mm²的钢件。
整体硬质合金 TS钻头 U	硬质合金	FIRE TiN	fine grain K/P	适用于灰铁，低、高合金钢 非合金钢，黄铜，青铜，塑料。
整体硬质合金 TS钻头 U	硬质合金	FIRE TiN	fine grain K/P	适用于加工短屑材料，如灰铁 球铁，AlSi铸件。
整体硬质合金 TS钻头 R	硬质合金	FIRE	fine grain K/P	适合于蠕墨铸铁CGI、GGV和ADI
整体硬质合金 TS-150 GG	硬质合金		fine grain K	适用于短屑材料，如铸铁，灰铁 淬火灰铁，球铁
整体硬质合金 TS 100 T	硬质合金	TiAlN	fine grain K/P	钢和铸铁
整体硬质合金 TS 100 INOX	硬质合金	AlTiN nano	fine grain K/P	不锈钢
整体硬质合金 TS 100 H	硬质合金	TiAlSiN	fine grain K/P	适合加工高拉伸强度钢，硬化钢，特殊合金

由于我们新的K级硬质合金具有较广的应用范围
我们仅对K级别组（无涂层刀具）和K/P级别组（涂层刀具）作出区分。

硬质合金

硬质合金类似于钢，密度低，在整个材料组中又很常见的术语。通过至少两种成分的配比可有各种不同特性的硬质合金。



硬质合金制造

硬质合金主要由碳化钨（WC）或者其他碳化物组成-还加了粘结剂：钴元素（Co）。 Co作为粘结剂把分撒的碳化物分子粘结在一起。
为满足不同场合的需求，对硬质合金的需要也多样化。Hartner为您提供超过20种不同的标准硬质合金类型。有些特别硬，有些具有很高的韧性，有些是超精细颗粒，有些是粗颗粒，而且，根据客户的要求，研发并生产了所谓的非标硬质合金。

我们的硬质合金部门拥有现代一流的实验室，确保我们的硬质合金满足客户的需求。从原料到成品，为证明硬质合金的高品质和加工的可靠性，会对样品进行连续地检测。

硬质合金基本特性

孔加工场合，硬质合金需具备下述特性：

刚性

刚性指工件抗变形能力。钴含量决定硬质合金的刚性。钴含量越高，刚性越低。

常规硬质合金的刚性是钢的两倍多。 相对来说，硬质合金钻头加工后的孔直线度比高速钢加工的要高。然而，由于刀具受到挤压变形，其刚性的优点就变得很局限-比如偏移或受力不平衡-导致刀刃上的载荷加剧。所以，越硬的材料更易于崩刃。

硬度

硬度是描述材料对另外一种材料抗渗透能力。很显然，为了不被过度磨损，刀具材料相对来说比工件材料要更硬。

有几种调节硬质合金硬度的方案：一方面通过调整钴的含量，另一方面通过改变硬质合金的颗粒。如果保持相同大小的力度，但提高钴含量，则硬度会降低。然而，如果降低颗粒的大小，保持相同的钴含量，则硬度提高。

韧性

韧度是指材料的延展性。高抗裂变能力是高性能硬质合金特征，具有高的抗冲击能力。然而，硬度和韧性刚好成反比。

高钴含量或较粗的材质微粒，就意味着硬质合金的韧性。在加工过程中，当有突发的高切削负载出现时就需要较高的韧性。在刀具和工件之间摩擦系数较大时，高的切削负载就有可能出现。摩擦系数由刀具表面粗糙度及刀具表面和工件的化学关系所决定。
请注意，韧性与弯曲强度不是同一概念。决定弯曲强度的一个重要及特定特性是切削刃的稳定性。

切削刃的稳定性

切削刃的稳定性指刀具加工硬材料或大颗粒材质的时候，切削刃抗崩刃能力。 弯曲强度表示切削刃稳定性。除韧度外，材质的颗粒也对弯曲强度起重要影响 。韧度越高，强度越高，然而，大颗粒（粗颗粒）材质越大，强度越低。

化学反应

尽管现在大多数硬质合金刀具可以涂层，但必须考虑到硬质合金和工件之间的化学反应。因为随着切削刃的快速磨损，刀具和工件间很有可能会发生反应。

类似于腐蚀过程中的凹坑，这个地方相对来说比任何个破坏因素影响加工更大。由于在加工过程中，切削刃上产生极高的温度，特别是钴元素极易和铁元素发生化学反应。其他的金属，如钛或硅元素也易于与钨碳化物（WC）发生反应。基于这些情况，要考虑到与刀具的化学反应来定钴的含量。

硬质合金

材料组的选择
根据各个加工要求，仔细考虑硬质合金所需具有的特征。接着，我们会有不同牌号的硬质合金供您选择。为了找到满足特定加工任务的正确牌号的硬质合金，多个分类系统作为标准被使用和引进，简化了选择程序。当前广泛采用的是根据 DIN ISO 513标准的DIN ISO分类体系。

分类表秒素了硬质合金的应用范围和涂层成分，类别号描述了硬度和韧性的平衡关系。小的类别号表示显示高硬度的应用，较大的号码表示韧性。

材料组P级
该材料组加工材料包括除了长屑有色金属，不锈钢和奥氏体钢，根据切削载荷，可分为应用场合组别01-50。

材料组M级
M级加工材料包括奥氏体不锈钢，奥氏体钢/铁素体钢。根据切削载荷，可分为组别01-40。在Hartner，P级和M级与涂层的K级合硬质合金一样使用。

材料组K级
K级加工材料合并所有的灰铸铁和可锻铸铁。　根据切削载荷，可分为组别01-40。

材料组S级
铁基，镍基或钴基超耐热合金也包含在材料组S级加工材料里。根据切削载荷，可分为组别01-30。

材料组N级
该材料组加工材料包括有色金属，尤其铝合金和非金属材料。根据切削载荷，可分为组别01-40。

材料组H级

该材料组可加工材料包括难加工的硬化钢。根据切削载荷，可分为组别01-30。

硬质合金涵盖了大部分的材料组，尤其涂层刀具的应用。例如，Hartner大部分的FIRE涂层的硬质合金钻头，都采用硬质合金K级和P级。

个别Hartner等级
下列表格例举在常规场合Hartner有库存的重要硬质合金。更多的硬质合金等级可以询价。　超过80%的应用场合都知道Hartner，经证明DK460UF加上合适的涂层，其性能比其他的硬质合金包括涂层刀具都具有优越性。我们的棒料都备有库存，简化了选刀过程。如果想咨询更多关于其他牌号的硬质合金，请联系我们的技术工程师。

描述	Co含量 [M-%]	碳化钨颗粒大小 [µm]	硬度 [HV]	ISO类别 [ISO 513]	特性
DK460UF	10	0.5	1620	K20-K40 涂层: P, M20-M40, H, S, N25	可能是使用最广泛的硬质合金。大多数是带涂层的，用于加工钢，软铝合金，铸铁还有超耐热不锈钢，如Inconel 718。该牌号的硬质合金是HARTNER公司的主导产品。
DK255F	8	0.7	1720	K20 涂层: P, M, H, S, N20	该牌号的硬质合金推荐使用在硬切削加工上，加工高拉伸强度的灰铸铁和硬硅铝合金。干切削也可以，涂层应用更佳。
DK120	6	1.3	1620	K15 涂层: N15	该牌号的硬质合金刀具尤其适合加金刚石涂层使用。
DK120UF	7	0.5	1850	K05	超细颗粒的硬质合金，极高的耐磨性，极其适合用在刚性机床上使用，优选铰刀。
DK400N	10	0.7	1580	K35M 涂层: P, M, S, N35M	该牌号的硬质合金韧性极好，适用于加工高耐热金属。

简要描述

	Ⓣ	Ⓐ	Ⓐ	Ⓒ	DLC	Ⓕ	Diamond
	TiN-涂层	TiAlN-涂层	AlTiN-涂层	TiCN-涂层	DLC-涂层	FIRE-涂层	金刚石涂层
工艺	PVD	PVD	PVD	PVD	PVD	PVD	CVD
涂层 温度 max. (°C)	400° – 500°	400° – 500°	400° – 500°	400° – 500°	< 150°	400° – 500°	> 700°
基体	高速钢,陶瓷 硬质合金	高速钢,陶瓷 硬质合金	高速钢 硬质合金	高速钢,陶瓷 硬质合金	高速钢,陶瓷 硬质合金	高速钢,陶瓷 硬质合金	硬质合金,陶瓷
层数	1	1	1	1	single-layer	6	single-layer
颜色	金黄	紫黑	紫黑	灰紫	黑色	紫黑	烟灰色
硬度 (HV 0,05)	2200	3300	3400	3000	> 6000	3000	> 8000
应用 温度(°C)	< 600°	< 800°	< 900°	< 450°	< 500°	< 800°	< 600°
热传导率 (kW/mK)	0,07	0,05	0,05	0,1	0,01	0,05	> 0,1
加工 类型	通用型	车削，钻削	通用型	铣削，钻削 螺纹切削	钻削，铰削 螺纹切削	通用型	车削，钻削 铣削
适合 加工材料	通用型	铸铁，灰铁，AlSi 合金	不锈钢，硬钢 镍基合金	钢，高强度钢 镍合金，锰合金	Si含量小于12%的 锻铝，铸铝 非铁材料	通用型	金刚石 C 涂层 石墨 金刚石 F 涂层 加强型塑料 金刚石 M 涂层 AlSi合金，难加工 材料
特性	性价比高	干切削	硬加工(>52 HRC, 仅硬质合金) HSC高速加工	干切削 MMS 断续加工	最低的摩擦阻力	应用范围广	针对高研磨性的 材料

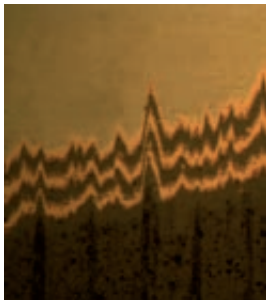
层型结构比较

单层



如
TiAlN 涂层

多层



如
FIRE 涂层

简要描述

	Ⓜ	TiAlZrN	AlTiZrN	Ⓨ	TiSiN	ZrN
	MolyGlide-涂层	TiAlZrN-涂层	AlTiZrN-涂层	TiAlSiN-涂层	TiSiN-涂层	ZrN-涂层
工艺	PVD	PVD	PVD	PVD	PVD	PVD
涂层 温度 max. (°C)	100° – 150°	400° – 500°	400° – 500°	400° – 500°	450° – 500°	400° – 500°
基体	高速钢,陶瓷 硬质合金	高速钢,陶瓷 硬质合金	高速钢,陶瓷 硬质合金	高速钢,陶瓷 硬质合金	高速钢（丝锥用）, 陶瓷 硬质合金	高速钢,陶瓷 硬质合金
层数	1	多层	超细涂层	超细多层	超细多层	多层
颜色	灰色	白金色	白金色	古铜色	铜色	白金色
硬度 (HV 0,05)	20 – 50	3300	3400	5500	4000	2500
应用 温度(°C)	< 800°	< 800°	< 800°	< 800°	< 800°	< 700°
热传导率 (kW/mK)	< 0,1	0,05	0,05	0,03	0,03	0,04
加工 类型	钻削 螺纹切削 铰孔，铣削	钻削 铣削 螺纹切削	钻削 螺纹切削	铣削，钻削	钻削 铣削 铰孔	钻削 铣削 锯削
适合 加工材料	Al, AlSi 合金，钢 特殊合金	通用	不锈钢 镍基合金	铸铁 硬化钢 高强度钢 碳素纤维	通用型，特别适 用于结构钢，易 切削钢，锰钢，热 处理钢	钛合金，铝合金， 镍基合金，不锈钢
特性	干切削 MMS	改善排屑	低摩擦力	应用范围广	低粘合性	低粘合性

表面处理

光亮处理

由于高速钢和硬质合金拥有良好的性能，可不进行表面处理，即直接光亮处理。

表面处理
对于特殊应用场合，通过特殊的表面处理可提高刀具的耐用度，降低滑动阻力，冷焊现象。下列表面处理在加工过程中起到较少的重要性。通常，硬涂层或软涂层刀具可获得比较好的加工效果。

氮化处理

刃带氮化处理

刃带处理是提高刀具耐用度的更深一步的处理方法。该处理方式适用于加工灰铸铁，高含量硅铝合金，塑料，珠光体钢等。氮化处理的刀具针对不同工艺可使用在不同场合。

蒸汽处理

蒸汽处理的刀具滑动阻力有所降低。因此，加工低碳钢过程中，可最经济地避免产生冷焊。蒸汽处理的刀具仅适合加工铁基材料。

Hartner涂层

A-涂层 或者 **TiAlN-**涂层 (Titanaluminiumnitrid)

涂层颜色：紫色
硬质合金刀具的单层TiAlN涂层适合加工耐磨材料，因为该涂层具有高硬度和耐腐蚀性，比如，可应用在干切削和高速切削(HSC)状况。

超**A**涂层或者**AlTiN**涂层 （Aluminiumtitannitrid）

nanoA-coat or AlTiN nano-coat (Aluminiumtitannitrid)

涂层颜色：灰紫色
Hartner的A涂层已经取得了长足的进步。通过优化超A涂层的结构形式，化学和机械性能，故具有极高的红硬性，抗氧化力极佳，以及出色的涂层黏附力。该涂层专门在硬质合金刀具上使用，适合用于加工难加工航空材料，如：钛合金，镍和硬化钢以及硬切削加工（>52HRC）和HSC加工。

C涂层或**TiCN**涂层(Titancarbonnitrid)

涂层颜色：灰色
立铣刀和丝锥需在较高的机械载荷下使用，采用TiCN涂层。TiCN涂层具有很高的硬度和韧度，采用该涂层的刀具在断续加工时可获得很好的切削效果。

F涂层或者**FIRE/nanoFIRE**

涂层颜色：紫色
该TiAlN/TiN复合涂层应用在HSS和硬质合金刀具上　　。在钻削加工时，具有出色的耐磨性和耐热性。除了在普通湿式加工上使用，该涂层也适合使用在微润滑或者干切削状况下，经常结合软涂层一起使用，可优化加工过程中的磨损，提高抗滑性能。

S涂层或者**TiN**涂层**(Titannitrid)**

涂层颜色:金黄色
对于HSS和硬质合金刀具，使用标准涂层是单层TiN涂层。用于钻削，丝攻和铣削场合。然而，使用最多的是在加工钢件场合。

M涂层或者**MolyGlide®**涂层**auf MoS2-Basis**

涂层颜色：浅灰
MolyGlide是种薄且摩擦最小的涂层，使用在要求摩擦系数最小的场合，如：干式切削或者微润滑加工（MQL）。而且，当微润滑效果不理想的情况下，该涂层还可起到抗滑的作用。

表面处理

Y涂层或者 **TiAlSiN**

颜色：红铜色
高硬度，耐热的多层涂层适用于高强度淬火处理的钢件以及铸铁

AlTiZrN-涂层

颜色：淡金色
专用于排屑要求较高的不锈钢加工

TiSiN-涂层

颜色：紫铜色
高耐热性的纳米级复合涂层用于加工碳钢、易削钢、和硬质锰钢。减小月牙洼磨损。另外比较适合加工高耐热性刚。硬质合金刀具钻铣这一方面受到限制。

ZrN-涂层

颜色： 淡金色
涂层适用于加工钛，软质镍基合金和固态锻造铝合金，这样的多层涂层也适用于加工含硅量12%的铸铝合金。减少积屑瘤的形成，保证较好的排屑

DLC-涂层

颜色：黑色
高硬度碳涂层（DLC-diamond-like-carbon）减少了加工粘性锻铝-/铸铝合金时积屑瘤的形成，保证了尺寸调节的精度和工件上较好的表面质量。

金刚石涂层

颜色：灰黑色
高硬度金刚石涂层用于加工石墨，纤维强化的合成材料和含硅量超过12%的铸铝合金。高耐磨性减少了机械流的形成

TiAlZrN-涂层

颜色：淡金色
火涂层的进一步改进用于普通钢加工。应用领域是替代因排屑问题而受限制的火涂层。

换算表：英寸-毫米

从1/64到11 63/64

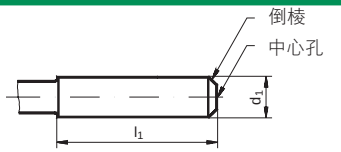
英寸的小数部分		英寸的整数部分											
		0	1	2	3	4	5	6	7	8	9	10	11
		mm											
0	0	0	25.400 0	50.800 0	76.200	101.600 0	127.000 0	152.400 0	177.800 0	203.200 0	228.600 0	254.000 0	279.400 0
1/ 64	0.015 625	0.396 9	25.796 9	51.196 9	76.596	101.996 9	127.396 9	152.796 9	178.196 9	203.596 9	228.996 9	254.396 9	279.796 9
1/ 32	0.031 25	0.793 8	26.193 8	51.593 8	76.993	102.393 8	127.793 8	153.193 8	178.593 8	203.393 8	229.393 8	254.793 8	280.193 8
3/ 64	0.046 875	1.190 6	26.590 6	51.990 6	77.390	102.790 6	128.190 6	153.590 6	178.990 6	204.390 6	229.790 6	255.190 6	280.590 6
1/ 16	0.062 5	1.587 5	26.987 5	52.387 5	77.787	103.187 5	128.587 5	153.987 5	179.387 5	204.787 5	230.187 5	255.587 5	280.987 5
5/ 64	0.078 125	1.984 4	27.384 4	52.784 4	78.181	103.584 4	128.984 4	154.384 4	179.784 4	205.184 4	230.584 4	255.984 4	281.384 4
3/ 32	0.093 75	2.381 2	27.781 2	53.181 2	78.581	103.981 2	129.381 2	154.781 2	180.181 2	205.581 2	230.981 2	256.381 2	281.781 2
7/ 64	0.109 375	2.778 1	28.178 1	53.578 1	78.978	104.378 1	129.778 1	155.178 1	180.578 1	205.978 1	231.378 1	256.778 1	282.178 1
1/ 8	0.125	3.175 0	28.575 0	53.975 0	79.375	104.775 0	130.175 0	155.575 0	180.975 0	206.375 0	231.775 0	257.175 0	282.575 0
9/ 64	0.140 625	3.571 9	28.971 9	54.371 9	79.771	105.171 9	130.571 9	155.971 9	181.371 9	206.771 9	232.171 9	257.571 9	282.971 9
5/ 32	0.156 25	3.968 8	29.368 8	54.768 8	80.168	105.568 8	130.968 8	156.368 8	181.768 8	207.168 8	232.568 8	257.968 8	283.368 8
11/ 64	0.171 875	4.365 6	29.765 6	55.165 6	80.565	105.965 6	131.365 6	156.765 6	182.165 6	207.565 6	232.965 6	258.365 6	283.765 6
3/ 16	0.187 5	4.762 5	30.162 5	55.562 5	80.962	106.362 5	131.762 5	157.162 5	182.562 5	207.962 5	233.362 5	258.762 5	284.162 5
13/ 64	0.203 125	5.159 4	30.559 4	55.959 4	81.359	106.759 4	132.159 4	157.559 4	182.959 4	208.359 4	233.759 4	259.159 4	284.559 4
7/ 32	0.218 75	5.556 2	30.956 2	56.356 2	81.756	107.156 2	132.556 2	157.956 2	183.356 2	208.756 2	234.156 2	259.556 2	284.956 2
15/ 64	0.234 375	5.953 1	31.353 1	56.753 1	82.153	107.553 1	132.953 1	158.353 1	183.753 1	209.153 1	234.553 1	259.953 1	285.353 1
1/ 4	0.25	6.350 0	31.750 0	57.150 0	82.550	107.950 0	133.350 0	158.750 0	184.150 0	209.550 0	234.950 0	260.350 0	285.750 0
17/ 64	0.265 625	6.746 9	32.146 9	57.546 9	82.946	108.346 9	133.746 9	159.146 9	184.546 9	209.946 9	235.346 9	260.746 9	286.146 9
9/ 32	0.281 25	7.143 8	32.543 8	57.943 8	83.343	108.743 8	134.143 8	159.543 8	184.943 8	210.343 8	235.743 8	261.143 8	286.543 8
19/ 64	0.296 875	7.540 6	32.940 6	58.340 6	83.740	109.140 6	134.540 6	159940 6	185.340 6	210.740 6	236.140 6	261.540 6	286.940 6
5/ 16	0.312 5	7.937 5	33.337 5	58.737 5	84.137	109.537 5	134.937 5	160.337 5	185.737 5	211.137 5	236.537 5	261.937 5	287.337 5
21/ 64	0.328 125	8.334 4	33.743 4	59.134 4	84.534	109.934 4	135.334 4	160.743 4	186.134 4	211.534 4	236.934 4	262.334 4	287.734 4
11/ 32	0.343 75	8.731 2	34.131 2	59.531 2	84.931	110.331 2	135.731 2	161.131 2	186.531 2	211.931 2	237.331 2	262.731 2	288.131 2
23/ 64	0.359 375	9.128 1	34.528 1	59.928 1	85.328	110.728 1	136.128 1	161.528 1	186.928 1	212.328 1	237.728 1	263.128 1	288.528 1
3/ 8	0.375	9.525 0	34.925 0	60.325 0	85.725	111.125 0	136.525 0	161.925 0	187.325 0	212.725 0	238.125 0	263.525 0	288.925 0
25/ 64	0.390 625	9.921 9	35.321 9	60.721 9	86.121	111.521 9	136.921 9	162.321 9	187.721 9	213.121 9	238.521 9	263.921 9	289.321 9
13/ 32	0.406 25	10.318 8	35.718 8	61.118 8	86.518	111.918 8	137.318 8	162.718 8	188.118 8	213.518 8	238.918 8	264.318 8	289.718 8
27/ 64	0.421 875	10.715 6	36.115 6	61.515 6	86.915	112.315 6	137.715 6	163.115 6	188.515 6	213.915 6	239.315 6	264.715 6	290.115 6
7/ 16	0.437 5	11.112 5	36.512 5	61.912 5	87.312	112.712 5	138.112 5	163.512 5	188.912 5	214.312 5	239.712 5	265.112 5	290.512 5
29/ 64	0.453 125	11.509 4	36.909 4	62.309 4	87.709	113.109 4	138.509 4	163.909 4	189.309 4	214.709 4	240.109 4	265.509 4	290.909 4
15/ 32	0.468 75	11.906 2	37.306 2	62.706 2	88.106	113.506 2	138.906 2	164.306 2	189.706 2	215.106 2	240.506 2	265.906 2	291.306 2
31/ 64	0.484 375	12.303 1	37.703 1	63.103 1	88.503	113.903 1	139.303 1	164.703 1	190.103 1	215.503 1	240.903 1	266.303 1	291.703 1
1/ 2	0.5	12.700 0	38.100 0	63.500 0	88.900	114.300 0	139.700 0	165.100 0	190.500 0	215.900 0	241.300 0	266.700 0	292.100 0
33/ 64	0.515 625	13.096 9	38.496 9	63.896 9	89.296	114.696 9	140.096 9	165.496 9	190.896 9	216.296 9	241.696 9	267.096 9	292.496 9
17/ 32	0.531 25	13.493 8	38.893 8	64.293 8	89.693	115.093 8	140.493 8	165.893 8	191.293 8	216.693 8	242.093 8	267.493 8	292.893 8
35/ 64	0.546 875	13.890 6	39.290 6	64.690 6	90.090	115.490 6	140.890 6	166.290 6	191.690 6	217.090 6	242.490 6	267.890 6	293.290 6
9/ 16	0.562 5	14.287 5	39.687 5	65.087 5	90.487	115.887 5	141.287 5	166.687 5	192.087 5	217.487 5	242.887 5	268.287 5	293.687 5
37/ 64	0.578 125	14.684 4	40.084 4	65.484 4	90.884	116.284 4	141.684 4	167.084 4	192.484 4	217.884 4	243.284 4	268.684 4	294.084 4
19/ 32	0.593 75	15.081 2	40.481 2	65.881 2	91.281	116.681 2	142.081 2	167.481 2	192.881 2	218.281 2	243.681 2	269.081 2	294.481 2
39/ 64	0.609 375	15.478 1	40.878 1	66.278 1	91.678	117.078 1	142.478 1	167.878 1	193.278 1	218.678 1	244.078 1	269.478 1	294.878 1
5/ 8	0.625	15.875 0	41.275 0	66.675 0	92.075	117.475 0	142.875 0	168.275 0	193.675 0	219.075 0	244.475 0	269.875 0	295.275 0
41/ 64	0.640 625	16.271 9	41.671 9	67.071 9	92.471	117.871 9	143.271 9	168.671 9	194.071 9	219.471 9	244.871 9	270.271 9	295.671 9
21/ 32	0.656 25	16.668 8	42.068 8	67.468 8	92.868	118.268 8	143.668 8	169.068 8	194.468 8	219.868 8	245.268 8	270.668 8	296.068 8
43/ 64	0.671 875	17.065 6	42.465 6	67.865 6	93.265	118.665 6	144.065 6	169.465 6	194.865 6	220.265 6	245.665 6	271.065 6	296.465 6
11/ 16	0.687 5	17.462 5	42.862 5	68.262 5	93.662	119.062 5	144.462 5	169.862 5	195.262 5	220.662 5	246.062 5	271.462 5	296.862 5
45/ 64	0.703 125	17.859 4	43.259 4	68.659 4	94.059	119.459 4	144.859 4	170.259 4	195.659 4	221.059 4	246.459 4	271.859 4	297.259 4
23/ 32	0.718 75	18.256 2	43.656 2	69.056 2	94.456	119.856 2	145.256 2	170.656 2	196.056 2	221.456 2	246.856 2	272.256 2	297.656 2
47/ 64	0.734 375	18.653 1	44.053 1	69.453 1	94.853	120.253 1	145.653 1	171.053 1	196.453 1	221.853 1	247.253 1	272.653 1	298.053 1
3/ 4	0.75	19.050 0	44.450 0	69.850 0	95.250	120.650 0	146.050 0	171.450 0	196.850 0	222.250 0	247.650 0	273.050 0	298.450 0
49/ 64	0.765 625	19.446 9	44.846 9	70.246 9	95.646	121.046 9	146.446 9	171.846 9	197.246 9	222.646 9	248.046 9	273.446 9	298.846 9
25/ 32	0.781 25	19.843 8	45.243 8	70.643 8	96.043	121.443 8	146.843 8	172.243 8	197.643 8	223.043 8	248.443 8	273.843 8	299.243 8
51/ 64	0.796 875	20.240 6	45.640 6	70.040 6	96.440	121.840 6	147.240 6	172.640 6	198.040 6	223.440 6	248.840 6	274.240 6	299.640 6
13/ 16	0.812 5	20.637 5	46.037 5	71.437 5	96.837	122.237 5	147.637 5	173.037 5	198.437 5	223.837 5	249.237 5	274.637 5	300.037 5
53/ 64	0.828 125	21.034 4	46.434 4	71.834 4	97.234	122.634 4	148.034 4	173.434 4	198.834 4	224.234 4	249.634 4	275.034 4	300.434 4
27/ 32	0.843 75	21.431 2	46.831 2	72.231 2	97.631	123.031 2	148.431 2	173.831 2	199.231 2	224.631 2	250.031 2	275.431 2	300.831 2
55/ 64	0.859 375	21.828 1	47.228 1	72.628 1	98.028	123.428 1	148.828 1	174.228 1	199.628 1	225.028 1	250.428 1	275.828 1	301.228 1
7/ 8	0.875	22.225 0	47.625 0	73.025 0	98.425	123.825 0	149.225 0	174.625 0	200.025 0	225.425 0	250.825 0	276.225 0	301.625 0
57/ 64	0.890 625	22.621 9	48.021 9	73.421 9	98.821	124.221 9	149.621 9	175.021 9	200.421 9	225.821 9	251.221 9	276.621 9	302.021 9
29/ 32	0.906 25	23.018 8	48.418 8	73.818 8	99.218	124.618 8	150.018 8	175.418 8	200.818 8	226.218 8	251.618 8	277.018 8	302.418 8
59/ 64	0.921 875	23.415 6	48.815 6	74.215 6	99.615	125.015 6	150.415 6	175.815 6	201.215 6	226.615 6	252.015 6	277.415 6	302.815 6
15/ 16	0.937 5	23.812 5	49.212 5	74.612 5	100.012	125.412 5	150.812 5	176.212 5	201.612 5	227.012 5	252.412 5	277.812 5	303.212 5
61/ 64	0.953 125	24.209 4	49.609 4	75.009 4	100.409	125.809 4	151.209 4	176.609 4	202.009 4	227.409 4	252.809 4	278.209 4	303.609 4
31/ 32	0.968 75	24.606 2	50.006 2	75.406 2	100.806	126.206 2	151.606 2	177.006 2	202.406 2	227.806 2	253.206 2	278.606 2	304.006 2
63/ 64	0.984 375	25.003 1	50.403 1	75.803 1	101.203	126.603 1	152.003 1	177.403 1	202.803 1	228.203 1	253.603 1	279.003 1	304.403 1

1英寸=25.4000mm，参见DIN4890标准（版本2/75）

高速钢直柄柄部设计
根据DIN 1835(摘录)

A型，圆柱柄

尺寸 单位mm

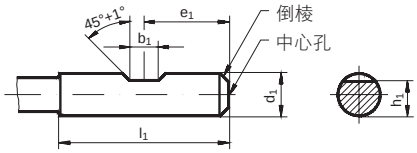


d_1 h8	l_1 +2 0	d_1 h8	l_1 +2 0	d_1 h8	l_1 +2 0
3	28	10	40	32	60
4	28	12	45	40	70
5	28	16	48	50	80
6	36	20	50	63	90
8	36	25	56		

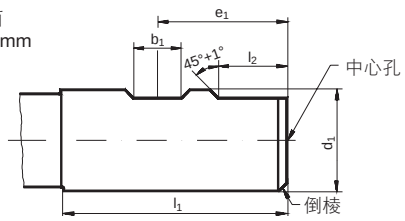
B型，带驱动侧面

尺寸 单位mm

带一个驱动平面
对于d1=6...20mm



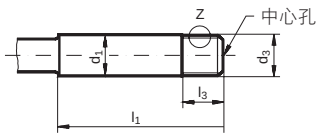
带两个驱动平面
对于d1=25...63mm



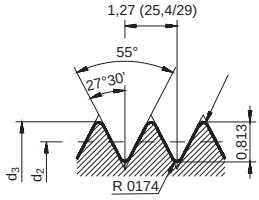
d_1 h6	b_1 +0.05 0	e_1 0 -1	h_1 h13	l_1 +2 0	l_2 +1 0	中心孔 R型 DIN 332 1
6	4.2	18	4.8	36	-	1.6x2.5
8	5.5	18	6.6	36	-	1.6x3.35
10	7	20	8.4	40	-	1.6x3.35
12	8	22.5	10.4	45	-	1.6x3.35
16	10	24	14.2	48	-	2.0x4.25
20	11	25	18.2	50	-	2.5x5.3
25	12	32	23	56	17	2.5x5.3
32	14	36	30	60	19	3.15x6.7
40	14	40	38	70	19	3.15x6.7
50	18	45	47.8	80	23	3.15x6.7
63	18	50	60.8	90	23	3.15x6.7

D型，螺纹柄

尺寸 单位mm



Z局部图
(截面)
螺纹外形
依据DIN 228 1

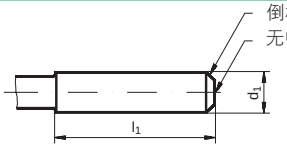


d_1 h8	d_3	tol. zone	d_2	tol. zone	l_1 +2 0	l_3 +2 0	中心孔 R型 DIN 332 1
6	5.9	0 -0.1	5.087	0 -0.1	36	10	1.6 x 2.5
10	9.9	0 -0.1	9.087	0 -0.1	40	10	1.6 x 3.35
12	11.9	0 -0.1	11.087	0 -0.1	45	10	1.6 x 3.35
16	15.9	0 -0.1	15.087	0 -0.1	48	10	2.0 x 4.25
20	19.9	0 -0.15	19.087	0 -0.15	50	15	2.5 x 5.3
25	24.9	0 -0.15	24.087	0 -0.15	56	15	2.5 x 5.3
32	31.9	0 -0.15	31.087	0 -0.15	60	15	3.15 x 6.7

硬质合金直柄柄部设计
依据DIN 6535(摘录)

HA型，圆柱柄

尺寸 单位mm

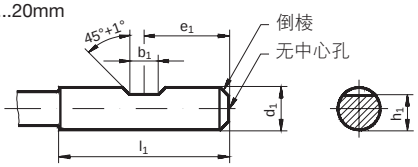


d_1 h6	l_1 +2 0	d_1 h6	l_1 +2 0	d_1 h6	l_1 +2 0
2	28	8	36	18	48
3	28	10	40	20	50
4	28	12	45	25	56
5	28	14	45	32	60
6	36	16	48		

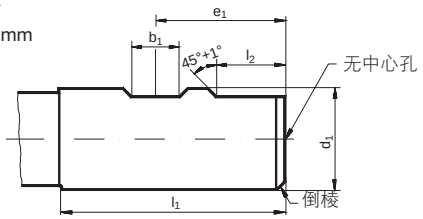
HB型，带驱动侧面

尺寸 单位mm

带一个驱动平面
对于d1=6...20mm



有两个驱动平面
对于d1=25和32mm

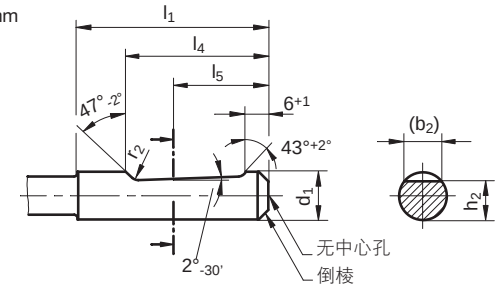


d_1 h6	b_1 +0.05 0	e_1 0 -1	h_1 h11	l_1 +2 0	l_2 +1 0
6	4.2	18	5.1	36	-
8	5.5	18	6.9	36	-
10	7	20	8.5	40	-
12	8	22.5	10.4	45	-
14	8	22.5	12.7	45	-
16	10	24	14.2	48	-
18	10	24	16.2	48	-
20	11	25	18.2	50	-
25	12	32	23	56	17
32	14	36	30	60	19

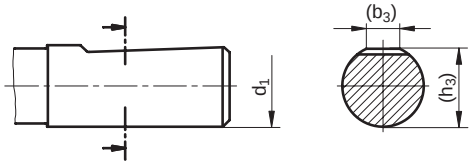
HE型,不带冷却槽，侧固式*

* 设计：根据DIN6335标准的直柄，可以带或不带内冷。各种刀具，尺寸规格和不同冷却形式在标准品范围内均有描述和应用。

对于d1=6...20mm



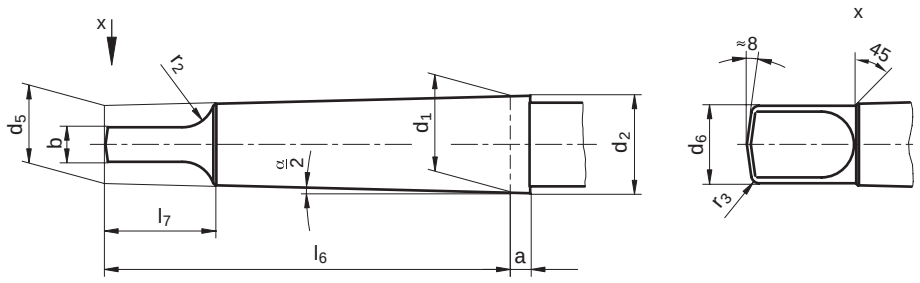
对于d1=25和32mm



d_1 h6	(b_2) ≈	(b_3)	h_2 h13	(h_3)	l_1 +2 0	l_4 0 -1	l_5 nom. size	r_2 min.
6	4.3		5.1		36	25	18	1.2
8	5.5		6.9		36	25	18	1.2
10	7.1		8.5		40	28	20	1.2
12	8.2		10.4		45	33	22.5	1.2
14	8.1		12.7		45	33	22.5	1.2
16	10.1		14.2		48	36	24	1.6
18	10.8		16.2		48	36	24	1.6
20	11.4		18.2		50	38	25	1.6
25	13.6	9.3	23.0	24.1	56	44	32	1.6
32	15.5	9.9	30.0	31.2	60	48	35	1.6

莫氏锥柄带扁尾柄部设计
依据DIN 228 B型

柄部 DIN 228 B型 大小	+ 0		b h13	d1	d2 ≈	d5 ≈	d6 max.	l6 0 -1	l7 max.	r2 max.	r3 ≈	α/2
MT 0	3.0	+1.2 0	3.9	9.045	9.2	6.1	6	56.5	10.5	4	1	1° 29 27
MT 1	3.5	+1.4 0	5.2	12.065	12.2	9.0	8.7	62	13.5	5	1.2	1° 25 43
MT 2	5.0	+1.4 0	6.3	17.780	18.0	14.0	13.5	75	16	6	1.6	1° 25 50
MT 3	5.0	+1.7 0	7.9	23.825	24.1	19.1	18.5	94	20	7	2	1° 26 16
MT 4	6.5	+1.9 0	11.9	31.267	31.6	25.2	24.5	117.5	24	8	2.5	1° 29 15
MT 5	6.5	+1.9 0	15.9	44.399	44.7	36.5	35.7	149.5	29	10	3	1° 30 26
MT 6	8.0	+2.3 0	19.0	63.348	63.8	52.4	51.0	210.0	40	13	4	1° 29 36



HARTNER

切削螺纹的底孔

ISO公制螺纹 DIN 13

公称直径 Ø	螺距 P	底孔直径Ø	中径尺寸（内螺纹6H*）	
	mm	DIN 336 mm	最小值 mm	最大值 mm
M 1	0.25	**0.75**	0.729	0.785
M 1.1	0.25	**0.85**	0.829	0.885
M 1.2	0.25	**0.95**	0.929	0.985
M 1.4	0.30	**1.10**	1.075	1.142
M 1.6	0.35	**1.25**	1.221	1.321
M 1.8	0.35	**1.45**	1.421	1.521
M 2	0.40	**1.60**	1.567	1.679
M 2.2	0.45	**1.75**	1.713	1.838
M 2.5	0.45	**2.05**	2.013	2.138
M 3	0.50	**2.50**	2.459	2.599
M 3.5	0.60	**2.90**	2.850	3.010
M 4	0.70	**3.30**	3.242	3.422
M 4.5	0.75	**3.70**	3.688	3.878
M 5	0.80	**4.20**	4.134	4.334
M 6	1.00	**5.00**	4.917	5.153
M 7	1.00	**6.00**	5.917	6.153
M 8	1.25	**6.80**	6.647	6.912
M 9	1.25	**7.80**	7.647	7.912
M 10	1.50	**8.50**	8.376	8.676
M 11	1.50	**9.50**	9.376	9.676
M 12	1.75	**10.20**	10.106	10.441
M 14	2.00	**12.00**	11.835	12.210
M 16	2.00	**14.00**	13.835	14.210
M 18	2.50	**15.50**	15.294	15.744
M 20	2.50	**17.50**	17.294	17.744
M 22	2.50	**19.50**	19.294	19.744
M 24	3.00	**21.00**	20.752	21.252
M 27	3.00	**24.00**	23.752	24.252
M 30	3.50	**26.50**	26.211	26.771
M 33	3.50	**29.50**	29.211	29.771
M 36	4.00	**32.00**	31.670	32.270
M 39	4.00	**35.00**	34.670	35.270
M 42	4.50	**37.50**	37.129	37.799
M 45	4.50	**40.50**	40.129	40.799
M 48	5.00	**43.00**	42.587	43.297
M 52	5.00	**47.00**	46.587	47.297
M 56	5.50	**50.50**	50.046	50.796

*M1.1~M1.4,内螺纹公差为5H

ISO公制细牙 DIN 13

公称直径 Ø	x 螺距 P	底孔直径Ø	中径尺寸（内螺纹6H）	
	mm	DIN 336 mm	最小值 mm	最大值 mm
M 2.5	x 0.35	**2.15**	2.121	2.221
M 3.0	x 0.35	**2.65**	2.621	2.721
M 3.5	x 0.35	**3.15**	3.121	3.221
M 4.0	x 0.50	**3.50**	3.459	3.599
M 4.5	x 0.50	**4.00**	3.959	4.099
M 5.0	x 0.50	**4.50**	4.459	4.599
M 5.5	x 0.50	**5.00**	4.959	5.099
M 6.0	x 0.75	**5.20**	5.188	5.378
M 7.0	x 0.75	**6.20**	6.188	6.378
M 8.0	x 0.50	**7.50**	7.459	7.599
M 8.0	x 0.75	**7.20**	7.188	7.378
M 8.0	x 1.00	**7.00**	6.917	7.153
M 9.0	x 0.75	**8.20**	8.188	8.378
M 9.0	x 1.00	**8.00**	7.917	8.153
M 10	x 0.75	**9.20**	9.188	9.378
M 10	x 1.00	**9.00**	8.917	9.153
M 10	x 1.25	**8.80**	8.647	8.912
M 11	x 0.75	**10.20**	10.188	10.378
M 11	x 1.00	**10.00**	9.917	10.153
M 12	x 1.00	**11.00**	10.917	11.153
M 12	x 1.25	**10.80**	10.647	10.912
M 12	x 1.50	**10.50**	10.376	10.676
M 14	x 1.00	**13.00**	12.917	13.153
M 14	x 1.25	**12.80**	12.647	12.912
M 14	x 1.50	**12.50**	12.376	12.676
M 15	x 1.00	**14.00**	13.917	14.153
M 15	x 1.50	**13.50**	13.376	13.676
M 16	x 1.00	**15.00**	14.917	15.153
M 16	x 1.25	**14.80**	14.647	14.912
M 16	x 1.50	**14.50**	14.376	14.676
M 17	x 1.00	**16.00**	15.917	16.153
M 17	x 1.50	**15.50**	15.376	15.676
M 18	x 1.00	**17.00**	16.917	17.153
M 18	x 1.50	**16.50**	16.376	16.676
M 20	x 1.00	**19.00**	18.917	19.153
M 20	x 1.50	**18.50**	18.376	18.676
M 20	x 2.00	**18.00**	17.835	18.210
M 22	x 1.00	**21.00**	20.917	21.153

公称直径 Ø	x 螺距 P	底孔直径Ø	中径尺寸（内螺纹6H）	
	mm	DIN 336 mm	最小值 mm	最大值 mm
M 22	x 1.50	**20.50**	20.376	20.676
M 22	x 2.00	**20.00**	19.835	20.210
M 24	x 1.00	**23.00**	22.917	23.153
M 24	x 1.50	**22.50**	22.376	22.676
M 24	x 2.00	**22.00**	21.835	22.210
M 25	x 1.00	**24.00**	23.917	24.153
M 25	x 1.50	**23.50**	23.376	23.676
M 25	x 2.00	**23.00**	22.835	23.210
M 27	x 1.00	**26.00**	25.917	26.153
M 27	x 1.50	**25.50**	25.376	25.676
M 27	x 2.00	**25.00**	24.835	25.210
M 28	x 1.00	**27.00**	26.917	27.153
M 28	x 1.50	**26.50**	26.376	26.676
M 28	x 2.00	**26.00**	25.835	26.210
M 30	x 1.00	**29.00**	28.917	29.153
M 30	x 1.50	**28.50**	28.376	28.676
M 30	x 2.00	**28.00**	27.835	28.210
M 30	x 3.00	**27.00**	26.752	27.252
M 32	x 1.50	**30.50**	30.376	30.676
M 32	x 2.00	**30.00**	29.835	30.210
M 33	x 1.50	**31.50**	31.376	31.676
M 33	x 2.00	**31.00**	30.835	31.210
M 33	x 3.00	**30.00**	29.752	30.252
M 35	x 1.50	**33.50**	33.376	33.676
M 36	x 1.50	**34.50**	34.376	34.676

UNC 螺距 ASME B1.1

公称直径 Ø	螺距 每英寸	底孔直径Ø DIN 336 mm	中径尺寸（内螺纹6H） 最小值 mm	最大值 mm
Nr. 1 -	64	**1.55**	1.425	1.580
Nr. 2 -	56	**1.85**	1.694	1.872
Nr. 3 -	48	**2.10**	1.941	2.146
Nr. 4 -	40	**2.35**	2.157	2.385
Nr. 5 -	40	**2.65**	2.487	2.698
Nr. 6 -	32	**2.85**	2.642	2.896
Nr. 8 -	32	**3.50**	3.302	3.531
Nr. 10 -	24	**3.90**	3.683	3.937
Nr. 12 -	24	**4.50**	4.343	4.597
1/4 -	20	**5.10**	4.978	5.258
5/16 -	18	**6.60**	6.401	6.731
3/8 -	16	**8.00**	7.798	8.153
7/16 -	14	**9.40**	9.144	9.550
1/2 -	13	**10.80**	10.592	11.024
9/16 -	12	**12.20**	11.989	12.446
5/8 -	11	**13.50**	13.386	13.868
3/4 -	10	**16.50**	16.307	16.840
7/8 -	9	**19.50**	19.177	19.761
1 -	8	**22.25**	21.971	22.606
1 1/8 -	7	**25.00**	24.638	25.349
1 1/4 -	7	**28.00**	27.813	28.524
1 3/8 -	6	**30.75**	30.353	31.115
1 1/2 -	6	**34.00**	33.528	34.290
1 3/4 -	5	**39.50**	38.938	39.802
2 -	4.5	**45.00**	44.679	45.593

MJ 螺距 DIN ISO 5855

公称直径 Ø	x	螺距 P	底孔直径Ø DIN 336 mm	扩孔刀Ø（内螺纹5H*） 最小值 mm	最大值 mm
		mm			
MJ 3	x	0.50	**2.60**	2.513	2.653
MJ 4	x	0.70	**3.40**	3.318	3.498
MJ 5	x	0.80	**4.30**	4.221	4.421
MJ 6	x	0.50	**5.55**	5.513	5.625
MJ 6	x	0.75	**5.35**	5.269	5.419
MJ 6	x	1.00	**5.10**	5.026	5.216
MJ 8	x	0.50	**7.55**	7.513	7.625
MJ 8	x	0.75	**7.35**	7.269	7.419
MJ 8	x	1.00	**7.10**	7.026	7.216
MJ 8	x	1.25	**6.90**	6.782	6.994
MJ 10	x	1.00	**9.10**	9.026	9.216
MJ 10	x	1.25	**8.90**	8.782	8.994
MJ 10	x	1.50	**8.60**	8.539	8.775
MJ 12	x	1.75	**10.40**	10.295	10.560
MJ 16	x	2.00	**14.20**	14.051	14.351

UNC 螺距 ISO 3161

公称直径 Ø	螺距 每英寸	底孔直径Ø DIN 336 mm	扩孔刀Ø（内螺纹3B） 最小值 mm	最大值 mm
Nr. 6 -	32	**2.85**	2.733	2.939
Nr. 8 -	32	**3.55**	3.393	3.599
Nr. 10 -	24	**4.00**	3.795	4.064
Nr. 12 -	24	**4.60**	4.455	4.704
1/4 -	20	**5.30**	5.113	5.387
5/16 -	18	**6.75**	6.563	6.833
3/8 -	16	**8.20**	7.978	8.255
7/16 -	14	**9.60**	9.346	9.639
1/2 -	13	**11.00**	10.798	11.095
9/16 -	12	**12.40**	12.228	12.482
5/8 -	11	**13.80**	13.627	13.904

* MJ3X0.50~MJ5X0.80，内螺纹公差为6H

UNF 螺距 ISO 3161

公称直径 Ø	螺距 每英寸	底孔直径Ø DIN 336 mm	扩孔刀Ø（内螺纹3B） 最小值 mm	最大值 mm
Nr. 6 -	40	**3.00**	2.888	3.053
Nr. 8 -	36	**3.60**	3.480	3.663
Nr. 10 -	32	**4.20**	4.054	4.255
Nr. 12 -	28	**4.75**	4.602	4.816
1/4 -	28	**5.60**	5.466	5.662
5/16 -	24	**7.00**	6.906	7.109
3/8 -	24	**8.60**	8.494	8.679
7/16 -	20	**10.00**	9.876	10.084
1/2 -	20	**11.60**	11.463	11.661
9/16 -	18	**13.00**	12.913	13.122
5/8 -	18	**14.60**	14.501	14.702

HARTNER

切削螺纹的底孔

UNF 螺距 ASME B1.1

公称直径 Ø	螺距 每英寸	底孔直径Ø DIN 336 mm	中径尺寸（内螺纹2B） min. mm	max. mm
Nr. 1	72	**1.55**	1.473	1.610
Nr. 2	64	**1.85**	1.755	1.910
Nr. 3	56	**2.15**	2.024	2.197
Nr. 4	48	**2.40**	2.271	2.459
Nr. 5	44	**2.70**	2.550	2.741
Nr. 6	40	**2.95**	2.819	3.023
Nr. 8	36	**3.50**	3.404	3.607
Nr. 10	32	**4.10**	3.962	4.166
Nr. 12	28	**4.60**	4.496	4.724
1/4	28	**5.50**	5.359	5.588
5/16	24	**6.90**	6.782	7.036
3/8	24	**8.50**	8.382	8.636
7/16	20	**9.90**	9.728	10.033
1/2	20	**11.50**	11.328	11.608
9/16	18	**12.90**	12.751	13.081
5/8	18	**14.50**	14.351	14.681
3/4	16	**17.50**	17.323	17.678
7/8	14	**20.40**	20.269	20.650
1	12	**23.25**	23.114	23.571
1 1/8	12	**26.50**	26.289	26.746
1 1/4	12	**29.50**	29.464	29.921
1 3/8	12	**32.75**	32.639	33.096
1 1/2	12	**36.00**	35.814	36.271

BSW （惠氏） 螺距

公称直径 Ø 英寸	螺距 每英寸	底孔直径Ø DIN 336 mm	中径尺寸（内螺纹） 最小值 mm	最大值 mm
W 1/16	60	**1.20**	1.045	1.230
W 3/32	48	**1.80**	1.704	1.912
W 1/8	40	**2.50**	2.362	2.591
W 5/32	32	**3.20**	2.952	3.214
W 3/16	24	**3.60**	3.407	3.745
W 7/32	24	**4.50**	4.201	4.539
W 1/4	20	**5.10**	4.724	5.156
W 5/16	18	**6.50**	6.130	6.590
W 3/8	16	**7.90**	7.492	7.987
W 7/16	14	**9.20**	8.789	9.330
W 1/2	12	**10.50**	9.989	10.591
W 9/16	12	**12.00**	11.577	12.179
W 5/8	11	**13.50**	12.918	13.558
W 3/4	10	**16.25**	15.797	16.483
W 7/8	9	**19.25**	18.611	19.353
W 1	8	**22.00**	21.334	22.147
W 1 1/8	7	**24.50**	23.928	24.832
W 1 1/4	7	**27.75**	27.103	28.007
W 1 3/8	6	**30.50**	29.504	30.528
W 1 1/2	6	**33.50**	32.679	33.703
W 1 5/8	5	**35.50**	34.769	35.963
W 1 3/4	5	**39.00**	37.944	39.138
W 2	4.5	**44.50**	43.571	44.877

（惠氏）螺距 (DIN-ISO 228-1)

公称直径 Ø 英寸	螺距 每英寸	底孔直径Ø DIN 336 mm	中径尺寸（内螺纹） 最小值 mm	最大值 mm
G 1/16	28	**6.80**	6.561	6.843
G 1/8	28	**8.80**	8.566	8.848
G 1/4	19	**11.80**	11.445	11.890
G 3/8	19	**15.25**	14.950	15.395
G 1/2	14	**19.00**	18.631	19.172
G 5/8	14	**21.00**	20.587	21.128
G 3/4	14	**24.50**	24.117	24.658
G 7/8	14	**28.25**	27.877	28.418
G 1	11	**30.75**	30.291	30.931
G 1 1/8	11	**35.50**	34.939	35.579
G 1 1/4	11	**39.50**	38.952	39.592
G 1 1/2	11	**45.25**	44.845	45.485
G 1 3/4	11	**51.00**	50.788	51.428
G 2	11	**57.00**	56.656	57.296

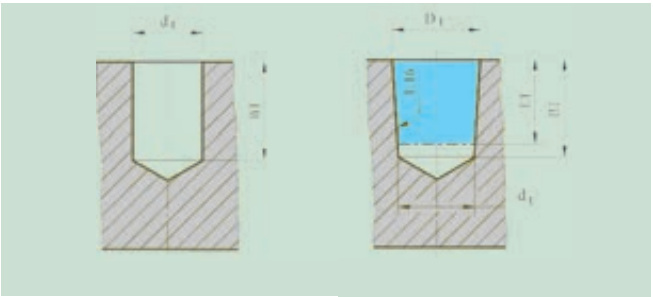
钢导线管螺纹 DIN 40430

公称直径 Ø	螺距 每英寸	底孔直径Ø DIN 336 mm	中径尺寸（内螺纹） 最小值 mm	最大值 mm
Pg 7	20	**11.40**	11.280	11.430
Pg 9	18	**14.00**	13.860	14.010
Pg 11	18	**17.30**	17.260	17.410
Pg 13.5	18	**19.00**	19.060	19.210
Pg 16	18	**21.30**	21.160	21.310
Pg 21	16	**26.90**	26.780	27.030
Pg 29	16	**35.50**	35.480	35.730
Pg 36	16	**45.50**	45.480	45.730
Pg 42	16	**52.50**	52.480	52.730
Pg 48	16	**57.80**	57.780	58.030

NPT ANSI B 2.1 美制锥管螺纹1:16

A型 （如果可能尽量不选）

B型



公称直径 Ø	螺距 每英寸	底孔直径Ø 圆柱（A） d 1	底孔直径Ø 圆锥（B） D 1	有效钻深 ET mm	有效钻深 BT (min) mm
1/16	27	**6.15**	6.39	9.29	10.7
1/8	27	**8.40**	8.74	9.32	10.8
1/4	18	**11.10**	**11.36**	13.52	15.6
3/8	18	**14.30**	**14.80**	13.83	16.0
1/2	14	**17.90**	**18.32**	18.07	20.8
3/4	14	**23.30**	**23.67**	18.55	21.3
1	11.5	**29.00**	**29.69**	22.29	25.6
1 1/4	11.5	**37.70**	**38.45**	22.80	26.1
1 1/2	11.5	**43.70**	**44.52**	22.80	26.1
2	11.5	**55.60**	**56.56**	23.20	26.5
2 1/2	8	**66.30**	**67.62**	31.75	36.3
3	8	**82.30**	**83.52**	33.74	38.5

EG-螺纹粗牙/细牙（EG M14X1.25） DIN 8140 丝套

公称直径 Ø	x 螺距 P mm	底孔直径Ø DIN 336 mm	扩孔刀Ø 内螺纹的尺寸 最小值 mm	最大值 mm
EG M 4	0.70	**4.20**	4.152	4.292
EG M 5	0.80	**5.25**	5.174	5.334
EG M 6	1.00	**6.30**	6.217	6.407
EG M 8	1.25	**8.40**	8.271	8.483
EG M10	1.50	**10.50**	10.324	10.560
EG M12	1.75	**12.50**	12.379	12.644
EG M14 x	1.25	**14.40**	14.271	14.483
EG M16	2.00	**16.50**	16.433	16.733

UNC(UNC-STI)EG-螺纹 ASME B18.29.1 丝套

公称直径 Ø	螺距 每英寸	底孔直径Ø DIN 336 mm	扩孔刀Ø 内螺纹的尺寸 最小值 mm	最大值 mm
EG Nr. 6	32	**3.80**	3.678	3.879
EG Nr. 8	32	**4.40**	4.338	4.524
EG Nr. 10	24	**5.20**	5.055	5.283
EG Nr. 12	24	**5.80**	5.715	5.944
EG 1/4	20	**6.70**	6.624	6.868
EG 5/16	18	**8.40**	8.242	8.489
EG 3/8	16	**10.00**	9.868	10.127
EG 7/16	14	**11.60**	11.506	11.783
EG 1/2	13	**13.30**	13.122	13.393
EG 9/16	12	**14.90**	14.747	15.032
EG 5/8	11	**16.50**	16.375	16.673

UNF (UNF-STI) EG-螺纹 ASME B18.29.1 丝套

公称直径 Ø	螺距 每英寸	底孔直径Ø DIN 336 mm	扩孔刀Ø 内螺纹的尺寸 最小值 mm	最大值 mm
EG Nr. 6	40	**3.70**	3.644	3.818
EG Nr. 8	36	**4.40**	4.321	4.498
EG Nr. 10	32	**5.10**	4.999	5.184
EG Nr. 12	28	**5.70**	5.682	5.809
EG 1/4	28	**6.60**	6.546	6.721
EG 5/16	24	**8.25**	8.166	8.352
EG 3/8	24	**9.80**	9.754	9.931
EG 7/16	20	**11.50**	11.389	11.585
EG 1/2	20	**13.10**	12.974	13.172
EG 9/16	18	**14.70**	14.592	14.798
EG 5/8	18	**16.25**	16.180	16.386

HARTNER

推荐的挤压丝锥的螺纹底孔

ISO公制螺纹 DIN 13

公称直径 Ø	螺距	底孔直径	底孔直径Ø		中径尺寸（内螺纹7H*）	
mm		mm	最小值 mm	最大值 mm	最小值 mm	最大值 mm
M 1	0,25	**0,75**	0,729	0,785		
M 1,1	0,25	**0,85**	0,829	0,885		
M 1,2	0,25	**0,95**	0,929	0,985		
M 1,4	0,30	**1,10**	1,075	1,142		
M 1,6	0,35	**1,25**	1,221	1,321		
M 1,8	0,35	**1,45**	1,421	1,521		
M 2	0,40	**1,85**	1,84	1,88	1,567	1,679
M 2,2	0,45	**2,00**	2,01	2,05	1,713	1,838
M 2,5	0,45	**2,30**	2,28	2,32	2,013	2,138
M 3	0,50	**2,80**	2,78	2,85	2,459	2,639
M 3,5	0,60	**3,25**	3,23	3,30	2,850	3,050
M 4	0,70	**3,70**	3,68	3,76	3,242	3,466
M 4,5	0,75	**4,20**				
M 5	0,80	**4,65**	4,62	4,71	4,134	4,384
M 6	1,00	**5,55**	5,52	5,62	4,917	5,217
M 7	1,00	**6,55**	6,52	6,62	5,917	6,217
M 8	1,25	**7,40**	7,36	7,47	6,647	6,982
M 9	1,25	**8,40**	8,36	8,47	7,647	7,982
M 10	1,50	**9,30**	9,26	9,38	8,376	8,751
M 11	1,50	**10,30**	10,26	10,38	9,376	9,751
M 12	1,75	**11,20**	11,15	11,29	10,106	10,531
M 14	2,00	**13,10**	13,05	13,20	11,835	12,310
M 16	2,00	**15,10**	15,05	15,20	13,835	14,310
M 18	2,50	**16,90**	16,83	17,02	15,294	15,854
M 20	2,50	**18,90**	18,83	19,02	17,294	17,854
M 22	2,50	**20,90**	20,83	21,02	19,294	19,854
M 24	3,00	**22,70**	22,62	22,80	20,752	21,382
M 27	3,00	**25,70**	25,62	25,80	23,752	24,382
M 30	3,50	**28,50**	28,40	28,60	26,211	26,921
M 33	3,50	**31,50**	31,40	31,60	29,211	29,921
M 36	4,00	**34,30**	34,17	34,40	31,670	32,420
M 39	4,00	**37,30**	37,17	37,40	34,670	35,420
M 42	4,50	**40,10**	39,95	40,20	37,129	37,979

* M2~M2.5,内螺纹公差为6H

ISO公制细牙 DIN 13

公称直径 Ø	x 螺距	底孔直径	底孔直径Ø		中径尺寸（内螺纹7H*）	
mm		mm	最小值 mm	最大值 mm	最小值 mm	最大值 mm
M 2,5	x 0,35	**2,35**	2,35	2,38	2,121	2,221
M 3	x 0,35	**2,85**	2,85	2,88	2,621	2,721
M 4	x 0,35	**3,85**	3,85	3,88	3,621	3,721
M 4	x 0,50	**3,80**	3,78	3,83	3,459	3,639
M 5	x 0,50	**4,80**	4,78	4,83	4,459	4,639
M 5,5	x 0,50	**5,30**	5,28	5,33	4,959	5,139
M 6	x 0,75	**5,65**	5,62	5,70	5,188	5,424
M 7	x 0,75	**6,65**	6,62	6,70	6,188	6,424
M 8	x 0,75	**7,65**	7,62	7,70	7,188	7,424
M 8	x 1,00	**7,55**	7,52	7,62	6,917	7,217
M 9	x 0,75	**8,65**	8,62	8,70	8,188	8,424
M 9	x 1,00	**8,55**	8,52	8,62	7,917	8,217
M 10	x 0,75	**9,65**	9,62	9,70	9,188	9,424
M 10	x 1,00	**9,55**	9,52	9,62	8,917	9,217
M 10	x 1,25	**9,40**	9,36	9,47	8,647	8,982
M 11	x 0,75	**10,65**	10,62	10,70	10,188	10,424
M 11	x 1,00	**10,55**	10,52	10,62	9,917	10,217
M 12	x 1,00	**11,55**	11,52	11,62	10,917	11,217
M 12	x 1,25	**11,40**	11,36	11,47	10,647	10,982
M 12	x 1,50	**11,30**	11,26	11,38	10,376	10,751
M 14	x 1,00	**13,55**	13,52	13,62	12,917	13,217
M 14	x 1,25	**13,40**	13,36	13,47	12,647	12,982
M 14	x 1,50	**13,30**	13,26	13,38	12,376	12,751
M 15	x 1,00	**14,55**	14,52	14,62	13,917	14,217
M 15	x 1,50	**14,30**	14,26	14,38	13,376	13,751
M 16	x 1,00	**15,55**	15,52	15,62	14,917	15,217
M 16	x 1,50	**15,30**	15,26	15,38	14,376	14,751
M 17	x 1,00	**16,55**	16,52	16,62	15,917	16,217
M 17	x 1,50	**16,30**	16,26	16,38	15,376	15,751
M 18	x 1,00	**17,55**	17,52	17,62	16,917	17,217
M 18	x 1,50	**17,30**	17,26	17,38	16,376	16,751
M 18	x 2,00	**17,10**	17,05	17,20	15,835	16,310
M 20	x 1,00	**19,55**	19,52	19,62	18,917	19,217

* M2.5x0.35~M4x0.35,内螺纹公差为6H

公称直径 Ø	x 螺距	底孔直径	底孔直径Ø		中径尺寸（内螺纹7H*）	
mm		mm	最小值 mm	最大值 mm	最小值 mm	最大值 mm
M 20	x 1,50	**19,30**	19,26	19,38	18,376	19,751
M 24	x 1,00	**23,55**	23,52	23,62	22,917	23,217
M 24	x 1,50	**23,30**	23,26	23,38	22,376	22,751
M 24	x 2,00	**23,10**	23,05	23,20	21,835	22,310
M 27	x 1,50	**26,30**	26,26	26,38	25,376	25,751
M 30	x 1,50	**29,30**	29,26	29,38	28,376	28,751
M 33	x 1,50	**32,30**	32,26	32,38	31,376	31,751
M 36	x 1,50	**35,30**	35,26	35,38	34,376	34,751
M 39	x 1,50	**38,30**	38,26	38,38	37,376	37,751
M 42	x 1,50	**41,30**	41,26	41,38	42,376	42,751

挤压螺纹底孔的直径公差 （根据DIN13,50节）

由于材料强度的改变，挤压螺纹底孔直径公差就不必一定要达到6H，7H
就可以满足有效牙型面 不小于0.32 x P.的要求
另外，挤压螺纹和切削螺纹 相比具有更高的强度，这主要归咎于
挤压过程中的冷作硬化和晶相纤维的连续性。

HARTNER

推荐的挤压丝锥的螺纹底孔

UNC 螺距 ASME B1.1

公称直径 Ø	螺距 每英寸	底孔直径 mm	底孔直径Ø 最小值 mm	底孔直径Ø 最大值 mm	中径尺寸（内螺纹7H*） 最小值 mm	中径尺寸（内螺纹7H*） 最大值 mm
Nr. 1	64	**1.68**	1.67	1.70	1.425	1.580
Nr. 2	56	**1.98**	1.97	2.01	1.694	1.872
Nr. 3	48	**2.28**	2.27	2.32	1.941	2.146
Nr. 4	40	**2.55**	2.54	2.59	2.157	2.385
Nr. 5	40	**2.90**	2.89	2.94	2.487	2.698
Nr. 6	32	**3.15**	3.14	3.19	2.642	2.896
Nr. 8	32	**3.80**	3.78	3.82	3.302	3.531
Nr. 10	24	**4.35**	4.33	4.39	3.683	3.937
Nr. 12	24	**5.00**	4.97	5.03	4.343	4.597
1/4	20	**5.75**	5.72	5.80	4.978	5.258
5/16	18	**7.30**	7.26	7.37	6.401	6.731
3/8	16	**8.80**	8.77	8.88	7.798	8.153
7/16	14	**10.30**	10.27	10.37	9.144	9.550
1/2	13	**11.80**	11.77	11.88	10.592	11.024
9/16	12	**13.30**	13.28	13.39	11.989	12.446
5/8	11	**14.80**	14.78	14.90	13.386	13.868
3/4	10	**17.90**	17.85	17.97	16.307	16.840
7/8	9	**21.00**	20.95	21.10	19.177	19.761
1	8	**24.00**	23.95	24.12	21.971	22.606

UNF 螺距 ASME B1.1

公称直径 Ø	螺距 每英寸	底孔直径 mm	底孔直径Ø 最小值 mm	底孔直径Ø 最大值 mm	中径尺寸（内螺纹7H*） 最小值 mm	中径尺寸（内螺纹7H*） 最大值 mm
Nr. 1	72	**1.70**	1.69	1.72	1.473	1.610
Nr. 2	64	**2.00**	1.99	2.03	1.755	1.910
Nr. 3	56	**2.30**	2.29	2.34	2.024	2.197
Nr. 4	48	**2.60**	2.59	2.63	2.271	2.459
Nr. 5	44	**2.90**	2.89	2.93	2.550	2.741
Nr. 6	40	**3.20**	3.19	3.24	2.819	3.023
Nr. 8	36	**3.85**	3.83	3.88	3.404	3.607
Nr. 10	32	**4.45**	3.43	4.49	3.962	4.166
Nr. 12	28	**5.10**	5.07	5.13	4.496	4.724
1/4	28	**5.95**	5.92	5.99	5.359	5.588
5/16	24	**7.45**	7.42	7.50	6.782	7.036
3/8	24	**9.05**	9.02	9.10	8.838	8.636
7/16	20	**10.55**	10.48	10.58	9.728	10.033
1/2	20	**12.10**	12.08	12.18	11.328	11.608
9/16	18	**13.65**	13.61	13.72	12.751	13.081
5/8	18	**15.25**	15.21	15.32	14.351	14.681
3/4	16	**18.35**	15.30	18.41	17.323	17.678
7/8	14	**21.40**	21.35	21.49	20.269	20.650
1	12	**24.45**	24.40	24.54	23.114	23.571

（惠氏）螺距 （根据DIN-ISO228 标准）

公称直径 Ø 英寸	螺距 每英寸	底孔直径 mm	底孔直径Ø 最小值 mm	底孔直径Ø 最大值 mm	中径尺寸（内螺纹7H*） 最小值 mm	中径尺寸（内螺纹7H*） 最大值 mm
G 1/16	28	**7.30**	7.28	7.35	6.561	6.843
G 1/8	28	**9.30**	9.28	9.35	8.566	8.848
G 1/4	19	**12.50**	12.48	12.55	11.445	11.890
G 3/8	19	**16.00**	15.98	16.05	14.950	15.395
G 1/2	14	**20.00**	19.98	20.12	18.631	19.172
G 5/8	14	**22.00**	21.98	22.12	20.587	21.128
G 3/4	14	**25.50**	25.48	25.62	24.117	24.658
G 7/8	14	**29.25**	29.23	29.37	27.877	28.418
G 1	11	**32.00**	31.98	32.15	30.291	30.931
G 1 1/4	11	**40.75**	40.70	40.85	38.952	39.592

新牌号材料缩写（节选）

材质代号	缩写 旧	缩写 新
0.6010	GG 10	EN-GJL-100
0.6020	GG20	EN-GJL-200
0.6025	GG25	EN-GJL-250
0.6035	GG35	EN-GJL-350
0.7050	GGG50	EN-GJS-500-7
0.7070	GGG70	EN-GJS-700-2
0.8035	GTW35	EN-GJMW-350-4
0.8155	GTS55	EN-GJMB-550-4
0.8170	GTS70	EN-GJMB-700-2
1.0022	St 01Z	–
1.0035	St 33	S185
1.0039	St 37-2	S235JRH
1.0044	St 44-2	S275JR
1.0050	ST 50-2	E295
1.0060	St 60-2	E335
1.0070	St 70-2	E360
1.0114	St 37-3U	S235J0
1.0226	St 02Z	DX51D
1.0242	StE 250-2Z	S250GD
1.0244	StE 280-2Z	S280GD
1.0250	StE 320-3Z	S320GD
1.0301	C 10	–
1.0302	C 10 Pb	–
1.0306	St 06 Z	DX54D
1.0312	St 15	DC05 [Fe P05]
1.0319	RRStE 210.7	L210GA
1.0322	–	DX56D
1.0330	St 12[St 2]	DC01 [Fe P01]
1.0333	USt 13	–
1.0338	St 14[St 4]	DC 04[Fe P04]
1.0345	HI	P235GH
1.0347	RRSt 13[RRSt 3]	DC03 [Fe 03]
1.0348	UHI	P195GH
1.0350	St 03Z	DX52D
1.0355	St 05Z	DX53D
1.0356	TTSt 35N	P215NL
1.0358	St 05Z	–
1.0401	C 15	–
1.0402	C 22	C22
1.0403	C 15Pb	–
1.0406	C 25	C25
1.0419	St 52.0	L355
1.0424	St 45.8(ersetzt)	P265
1.0424	St 42.8(ersetzt)	P265
1.0425	H2	P265GH
1.0429	StE 290.7 TM	L290MB
1.0457	StE 240.7	L245NB
1.0459	RRStE 240.7	L245GA
1.0461	StE 255	S255N
1.0473	19 Mn 6	P355GH
1.0481	17 Mn 4	P295GH
1.0484	StE 290.7	L290NB
1.0486	StE 285	P275N
1.0501	C 35	C35
1.0503	C 45	C45
1.0505	StE 315	P315N
1.0511	C 40	C40
1.0528	C 30	C30
1.0529	StE 350 -3Z	S350GD
1.0535	C 55	C55
1.0539	StE 355N	S355NH
1.0540	C 50	C50
1.0547	St 52 –3U	S355J0H
1.0582	StE 360.7	L360NB
1.0601	C 60	C60
1.0710	15 S 10	–
1.0715	9 SMn 28	11SMn30
1.0718	9 SMnPb 28	11SMnPb30
1.0721	10 S20	10S20
1.0722	10 S Pb 20	10SPb20
1.0726	35S20	35S20
1.0727	45 S 20	46S20
1.0728	60 S 20	–
1.0736	9 SMn 36	11SMn37
1.0737	9 SMnPb 36	11SMnPb37
1.0756	35 SPb 20	35SPb20
1.0757	45 SPb 20	46SPb20
1.0760	–	38SMn26
1.0761	–	38SMnPb26
1.0762	–	44SMn28
1.0763	–	44SMnPb28
1.0873	–	DC06 [Fe P06]
1.1103	EStE 255	S255NL1
1.1105	EStE 315	S315NL1
1.1121	Ck 10	C10E
1.1141	Ck 15	C15E
1.1151	Ck 22	C22E
1.1158	Ck 25	C25E
1.1170	28 Mn 6	28Mn6
1.1178	Ck 30	C30E
1.1181	Ck 35	C35E
1.1186	Ck 40	C40E
1.1191	Ck 45	C45E
1.1203	Ck 55	C55E
1.1206	Ck 50	C50E
1.1221	Ck 60	C60E
1.1241	Cm 50	C50R
1.1750	C 75 W	C75W
1.2067	102 Cr 6	102Cr6
1.2080	–	X20Cr12
1.2083	–	X42Cr13
1.2419	–	105WCr6
1.2767	–	X45NiCrMo4
1.3243	S6-5-2-5	S 6-5-2-5
1.3343	S6-5-2	S 6-5-2
1.3344	S6-5-3	S 6-5-3
1.4000	X6Cr 13	X6Cr13
1.4002	X6CrAl 13	X6CrAl13
1.4003	X2Cr 11	X2CrNi12
1.4005	–	X12CrS13
1.4006	X10Cr 13	X12Cr13
1.4016	X6Cr 17	X6Cr17
1.4021	X20Cr 13	X20Cr13
1.4028	X30Cr 13	X30Cr13
1.4031	X38Cr 13	X38Cr13
1.4034	X46Cr 13	X46Cr13
1.4037	X65Cr13	X65Cr13
1.4057	X20CrNi 17 2	X17CrNi16-2
1.4104	X12CrMoS 17	X14CrMoS17
1.4105	X4CrMoS 18	X6CrMoS17
1.4109	X65CrMo 14	X70CrMo15
1.4110	X55CrMo 14	X55CrMo14
1.4112	X90CrMoV 18	X90CrMoV18
1.4113	X6CrMo 17 1	X6CrMo17-1
1.4116	X45CrMoV 15	X50CrMoV15
1.4120	X20CrMo 13	X20CrMo13
1.4122	X35CrMo 17	X39CrMo17-1
1.4125	X105CrMo 17	X105CrMo17
1.4301	X5CrNi 18 10	X5CrNi18-10
1.4303	X5CrNi 18 12	X4CrNi18-12
1.4305	X10CrNiS 18 9	X8CrNiS18-9
1.4306	X2CrNi 19 11	X2CrNi19-11
1.4310	X12CrNi 17 7	X10CrNi18-8
1.4311	X2CrNiN 18 10	X2CrNiN18-10
1.4313	X4CrNi 13 4	X3CrNiMo13-4
1.4318	X2CrNiN 18 7	X2CrNiN18-7
1.4335	X1CrNi 25 21	X1CrNi25-21
1.4361	X1CrNiSi 18 15	X1CrNiSi18-15-4
1.4362	X2CrNiN 23 4	X2CrNiN23-4
1.4401	X5CrNiMo 17 12 2	X5CrNiMo17-12-2
1.4404	X2CrNiMo 17 13 2	X2CrNiMo17-12-2
1.4410	X10CrNiMo 18 9	X2CrNiMoN25-7-4
1.4418	X4CrNiMo 16 5	X4CrNiMo16-5-1
1.4435	X2CrNiMo 18 14 3	X2CrNiMo18-14-3
1.4436	X5CrNiMo 17 13 3	X3CrNiMo17-13-3
1.4438	X2CrNiMo 18 16 4	X2CrNiMo18-15-4
1.4460	X4CrNiMo 27 5 2	X3CrNiMoN27-5-2
1.4462	X2CrNiMoN 22 5 3	X2CrNiMoN22-5-3
1.4509	X6CrTiNb 18	X2CrTiNb18
1.451	X6CrTi 17	X3CrTi17
1.4511	X6CrNb 17	X3CrNb17
1.4512	X6CrTi 12	X2CrTi12
1.4520	X1CrTi 15	X2CrTi17
1.4521	X2CrMoTi 18 2	X2CrMoTi18-2
1.4522	X2CrMoNb 18 2	X2CrMoNb18-2
1.4532	X7CrNiMoAl 15 7	X8CrNiMoAl15-7-2
1.4541	X6CrNiTi18 10	X6CrNiTi18-10
1.4542	X5CrNiCuNb 17 4	X5CrNiCuNb16-4
1.455	X6CrNiNb 18 10	X6CrNiNb18-10
1.4558	X2NiCrAlTi 32 20	X2NiCrAlTi32-20
1.4567	X3CrNiCu 18 9 X	X3CrNiCu18-9-4
1.4568	X7CrNiAl 17 7	X7CrNiAl17-7
1.4571	–	X6CrNiMoTi17-12-2
1.4577	X3CrNiMoTi 25 25	X3CrNiMoTi25-25
1.4592	X1CrMoTi 29 4	X2CrMoTi29-4
1.4713	X10CrAl 7	X10CrAlSi7
1.4724	X10CrAl 13	X10CrAlSi13
1.4742	X10CrAl 18	X10CrAlSi18
1.4762	X10CrAl 24	X10CrAlSi25
1.4821	X20CrNiSi 25 4	X20CrNiSi25-4
1.4828	X15CrNiSi 20 12	X15CrNiSi20-12
1.4833	X7CrNi 23 14	X7CrNi23-12
1.4841	X15CrNiSi 25 20	X15CrNiSi25-21
1.4845	X12CrNi 25 21	X12CrNi25-21
1.4864	X12NiCrSi 36 16	X12NiCrSi35-16
1.4878	X12CrNiTi18 9	X10CrNiTi18-10
1.4903	–	X10CrMoVNb9-1
1.5026	55 Si 7	55Si7
1.5131	50 MnSi 4	50MnSi4
1.5415	15 Mo 3	16Mo3
1.5530	21 MnB 5	20MnB5
1.5531	30 MnB 5	30MnB5
1.5532	38 MnB 5	38MnB5
1.5637	10 Ni 14	12Ni14
1.5662	–	X11CrMo5+I
1.5680	–	X12Ni5
1.5710	36 NiCr 6	36NiCr6
1.5715	–	16NiCrS4
1.5752	14 NiCr 14	15NiCr13
1.6210	15 MnNi 6 3	15MnNi6-3
1.6211	16 MnNi 6 3	16MnNi6-3
1.6310	20 MnMoNi 5 5	20MnMoNi5-5
1.6311	20 MnMoNi 4 5	20MnMoNi4-5
1.6341	11 NiMoV 5 3	11NiMoV5-3
1.6368	15 NiCuMoNb 5	15NiCuMoNb5
1.6511	36 CrNiMo 4	36CrNiMo4
1.6523	21 NiCrMo 2	21NiCrMo2-2
1.6526	21 NiCrMoS 2	21NiCrMoS2-2
1.6580	30 CrNiMo 8	30CrNiMo8
1.6582	34 CrNiMo 6	34CrNiMo6
1.6587	17 CrNiMo 6	18CrNiMo7-6
1.7003	38 Cr 2	38Cr2
1.7006	46 Cr 2	46Cr2
1.7016	17 Cr 3	17Cr3
1.7023	38 CrS 2	38CrS2
1.7025	46 CrS 2	46CrS2
1.7030	28 Cr 4	28Cr4
1.7033	34 Cr 4	34Cr4
1.7034	37 Cr 4	37Cr4
1.7035	41 Cr 4	41Cr4
1.7036	28 CrS 4	28CrS4
1.7037	34 CrS 4	34CrS4
1.7038	37 CrS 4	37CrS4
1.7039	41 CrS 4	41CrS441CrS4
1.7131	16 MnCr 5	16MnCr5
1.7139	16 MnCrS 5	16MnCrS5
1.7043	–	38Cr4
1.7147	20 MnCr 5	20MnCr5
1.7149	20 MnCrS 5	20MnCrS5
1.7176	55 Cr 3	55Cr3
1.7182	27 MnCrB 5 2	27MnCrB5-2
1.7185	33 MnCrB 5 2	33MnCrB5-2
1.7189	39 MnCrB 6 2	39MnCrB6-2
1.7213	25 CrMoS 4	25CrMoS4
1.7218	25 CrMo 4	25CrMo4
1.7219	–	26CrMo4-2
1.7220	34 CrMo 4	34CrMo4
1.7225	42 CrMo 4	42CrMo4
1.7226	34 CrMoS 4	34CrMoS4
1.7227	42 CrMoS 4	42CrMoS4
1.7228	50 CrMo 4	50CrMo4
1.7264	20 CrMo 5	20CrMo5
1.7321	20 MoCr 4	20MoCr4
1.7323	20 MoCrS 4	20MoCrS4
1.7333	22 CrMoS 3 5	22CrMoS3-5
1.7335	13 CrMo 4 4	13CrMo4-5
1.7362	12 CrMo 19 5	12CrMo19-5
1.7380	10 CrMo 9 10	10CrMo9-10
1.7383	–	11CrMo9-10
1.7779	–	20CrMoV13-5-5
1.8159	50 CrV 4	51CrV4
1.8504	34 CrAl 6	34CrAl6
1.8519	31 CrMoV 9	31CrMoV9
1.8550	34 CrAlNi 7	34CrAlNi7
1.8807	13 MnNiMoV 5 4	13MnNiMoV5-4
1.8812	18 MnMoV 5 2	18MnMoV5-2
1.8815	18 MnMoV 6 3	18MnMoV6-3
1.8821	StE 355 TM	P355M
1.8824	StE 420 TM	P420M
1.8826	StE 460 TM	P460M
1.8828	EStE 420 TM	P420ML2
1.8831	EStE 460 TM	P460ML2
1.8832	TStE 355 TM	P355ML1
1.8835	TStE 420 TM	P420ML1
1.8837	TStE 460 TM	P460ML1
1.8879	StE ...	P690Q
1.8880	WStE ...	P690QH
1.8881	TStE ...	P690QL1
1.8882	10 MnTi 3	10MnTi3
1.8888	EStE ...	P690QL2
1.8900	StE 380	S380N
1.8901	StE 460	S460N
1.8902	StE 420	S420N
1.8903	TStE 460	S460NL
1.8905	StE 460	P460N
1.8907	StE 500	S500N
1.8910	TStE 380	S380NL
1.8911	EStE 380	S380NL1
1.8912	TStE 420	S420NL
1.8913	EStE 420	S420NL1
1.8915	TStE 460	P460NL1
1.8917	WStE 500	S500NL
1.8918	EStE 460	P460NL2
1.8919	EStE 500	S500NL1
1.8930	WStE 380	P380NH
1.8932	WStE 420	P420NH
1.8935	WStE 460	P460NH
1.8937	TStE 500	P500NH
1.8972	StE 415.7	L415NB
1.8973	StE 415.7 TM	L415MB
1.8975	StE 445.7 TM	L450MB
1.8977	StE 480.7 TM	L485MB
1.8978	StE 550.7 TM	L555MB

尺寸公差

ISO-公差
麻花钻标准公差依据DIN 1414生产，跟h8标准公差表相一致
对要求更小直径公差根据h7，h6，h5公差表。

直径范围 mm		数值 mm(通过前刀面，外周角测量) h8	h7	h6	h5	m7
从	1.0	0	0	0		
到	3.0	–0.014	–0.010	–0.006	–0.004	
从	3.0	0	0	0	0	+0.016
到	6.0	–0.018	–0.012	–0.008	–0.005	+0.004
从	6.0	0	0	0	0	+0.021
到	10.0	–0.022	–0.015	–0.009	–0.006	+0.006
从	10.0	0	0	0	0	+0.025
到	18.0	–0.027	–0.018	–0.011	–0.008	+0.007
从	18.0	0	0	0	0	+0.029
到	30.0	–0.033	–0.021	–0.013	–0.009	+0.008
从	30.0	0	0	0	0	
到	50.0	–0.039	–0.025	–0.016	–0.011	
从	50.0	0	0	0	0	
到	80.0	–0.046	–0.030	–0.019	–0.013	
从	80.0	0	0	0	0	
到	100.0	–0.054	–0.035	–0.022	–0.015	

微型钻公差 依据DIN 1899

微型钻最大生产直径到1.5mm
微型钻公差 依据DIN 1899

刀体直径公差 = 0 /– 0.004 mm
柄部直径公差h8 = 0 /– 0.014 mm

允许尺寸变动,无公差,根据DIN-ISO 2768

长度数值(单位：**mm)**

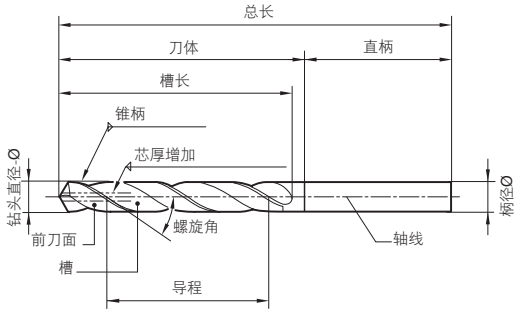
精度等级	名义尺寸范围 0.5~3	3~6	6~30	30~120	120~400	400~1000	1000~2000	2000~4000
精细	± 0.05	± 0.05	± 0.1	± 0.15	± 0.2	± 0.3	± 0.5	-
中等	± 0.1	± 0.1	± 0.2	± 0.3	± 0.5	± 0.8	± 1.2	± 2
粗	± 0.15	± 0.2	± 0.5	± 0.8	± 1.2	± 2	± 3	± 4
极粗	–	± 0.5	± 1	± 1.5	± 2.5	± 4	± 6	± 8

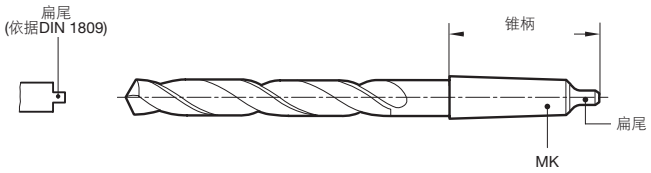
角度数值(单位：度,分)

精度等级	名义尺寸范围 ~10	10~50	50~120	120~400	400~
精细,中等	± 1°	± 0° 30'	± 0° 20'	± 0° 10'	± 0° 5'
粗	± 1°30'	± 1°	± 0° 30'	± 0° 15'	± 0° 10'
极粗	± 3°	± 2°	± 1°	± 0° 30'	± 0° 20'

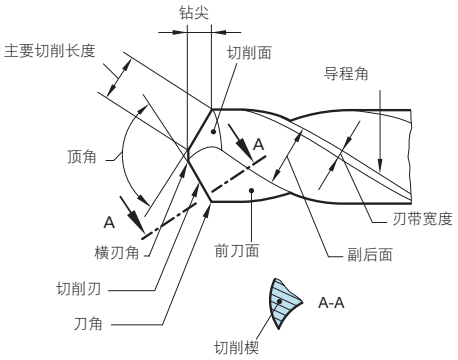
麻花钻定义
根据DIN ISO 5419(摘录于06/1998版)

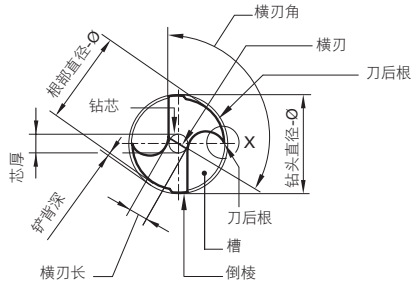
直柄麻花钻/锥柄麻花钻





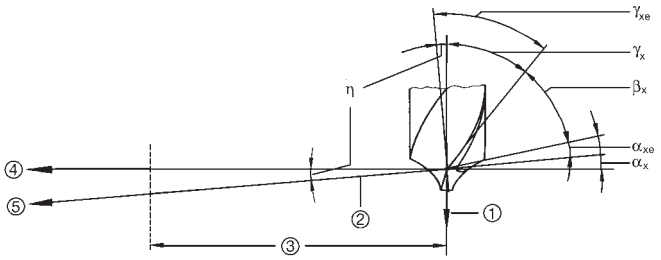
切削部分





在切削技术中，刃带宽度
b即后刀面刃带宽度，
记为bfan，请参见 DIN 6518。

切削刃角度



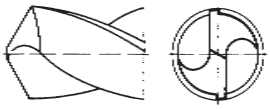
αx 侧隙角
αxe 有效侧隙角
βx 侧楔角
γx 前倾角
γxe 工作前倾角
η 合成切削速度角

定义:
1 = 进给方向
2 = 进给
3 = 每转切削距离(d.π)
4 = 切削方向
5 = 切削运动方向

*)后角α,楔角β及倾角γ
通过刀具直角平板测量而得。
更详细信息，请参见DIN 6581，
金属切削技术定义，
刀具刃部尺寸。

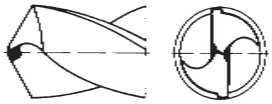
依据厂标标准

依据DIN 1412(摘录于03/01版)



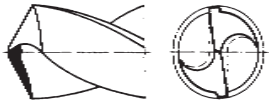
后锥角式标准钻尖设计

应用场合：用于钢件，非铁金属及塑料等常规钻削加工。
顶角角度取决于材料的加工性能。
优点：强力的切削刃耐冲击及侧面受力。重磨简单，甚至可以手动修磨。
缺点：较宽的横刃需要较高的进给压力。



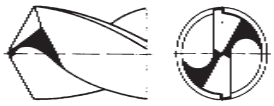
薄型横刃-依据DIN 1412 A

应用场合：同较厚芯厚钻头一样，用于所有的常规钻削加工，及用较大直径钻头钻削实体材料。
优点：由于横刃较钻头直径减少了1/10，因此具有较好的自定心能力及较小的进给压力。
缺点：重磨费用较高。



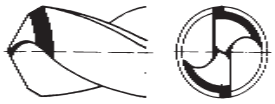
修改过切削刃的薄型横刃-依据DIN 1412 B

应用场合：用于高强度钢，Mn含量超过10%的锰钢，硬弹簧钢及扩孔。
优点：耐冲击，可单边受力及侧面受力。薄壁工件加工无颤痕。
缺点：高进给压力，易于偏离中心；重磨费用高。



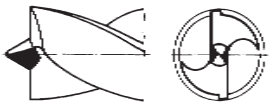
分裂钻尖-依据DIN 1412 C

应用场合：用于那些极硬材料，及深孔钻等具有较厚芯厚的钻头。
优点：较好的自定心能力，较低的进给。通过短屑槽，改进了切屑的排出。
缺点：仅通过机床才能正确修磨。



双角钻尖用于灰铁-依据DIN 1412 D

应用场合：用于钻削灰铁，可锻铸铁和锻造类工件。
缺点：由于切削刃加长，利于保护外周角，耐冲击，较好的热导性，因此增加了刀具寿命。
缺点：重磨费用较高。



中心钻尖-依据DIN 1412 E

应用场合：用于钻削金属片和软性材料，及平底盲孔加工。
优点：较好的自定心能力，减少通孔毛边，薄板及管类零件上精确的钻削，无颤痕。
可用规格大于2.5。
缺点：受撞击和单边受力影响敏感。仅可通过机床正确修磨。

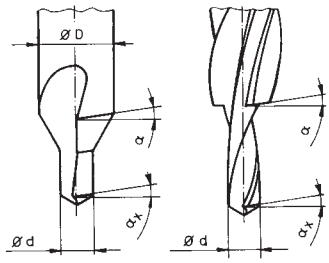
后角角度/切屑排出频率

后角角度：HSS，HSS-E麻花钻

直径范围	N型，H型Ø台阶钻 中心钻		W型，FN型 FW型，S型，IS型		V型	
钻头直径(mm)	后角 αx	顶角	后角 ax	顶角	后角 αx	顶角
0.14 – 0.24	28°	118°	28°	130°	28°	130°
0.24 –0 .48	25°	118°	25°	130°	25°	130°
0.48 – 0.95	23°	118°	23°	130°	23°	130°
0.95 – 2.36	20°	118°	20°	130°	20°	130°
2.36 – 6.00	15°	118°	15°	130°	15°	130°
6.00 – 15.00	13°	118°	13°	130°	13°	130°
15.00 – 37.50	10°	118°	10°	130°	10°	130°
37.50 – 100.00	8°	118°	8°	130°	8°	130°

沉孔后角角度：台阶钻，中心钻

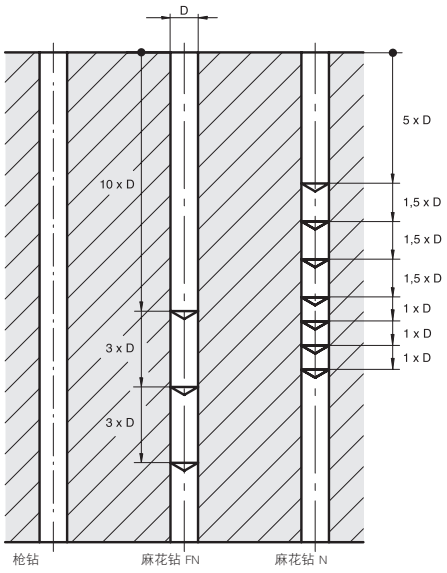
直径范围	N型，S型沉孔角度 20 - 160°	161 - 180°	W型，H型 沉孔角度 20-160°	161-180°	中心钻	
钻头直径(mm)	后角 αx	后角 αx	后角 αx	后角 αx	后角角度-通过柄径 ØD测量	
0.48 – 0.95	-	-	-	-	7°	
0.95 – 2.36	14.0°	8°	16°	9°	7°	
2.36 – 3.75	13.0°	7°	15°	8°	6°	
3.75 – 6.00	12.5°	6.5°	14°	7°	5°	
6.00 – 9.50	11.0°	6°	13°	7°	4°	
9.50 – 15.00	10.0°	5°	12°	6°	4°	
15.00 – 23.60	9.5°	5°	11°	6°	–	
23.60 – 37.50	9.0°	4.5°	11°	5°	–	
37.50 – 60.00	8.0°	4°	10°	5°	–	



深孔钻削加工的切屑排出频率

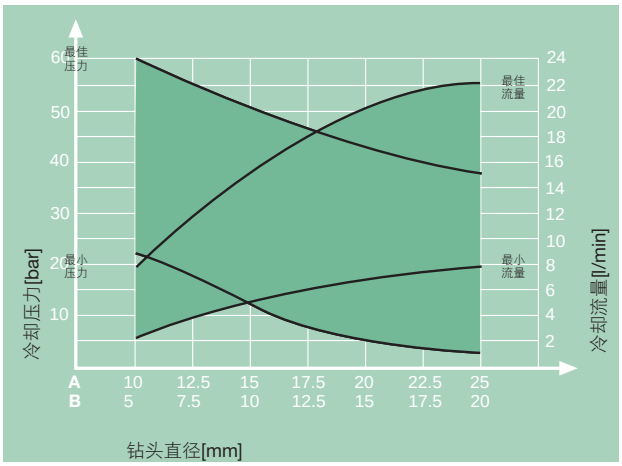
当深孔钻削加工时，需要特别注意至钻尖也要具有足够的冷却。钻尖需要通过一次或多次切屑的排出而被充分冷却。频繁的切屑排出主要取决于工件材料、钻深及钻头类型等因素。当在使用带直槽部分(FN)型深孔钻时，切屑的排出频率具有明显的减少。对有些材料，切屑的形态可以通过顶角的改变而影响。正确的切屑形态通过切屑排出和冷却进给同时得以改善。对些极端的深孔，推荐使用带内冷供给的钻头或卧式加工方式。

所列数据可以作为您的应用指导及代表平均值。



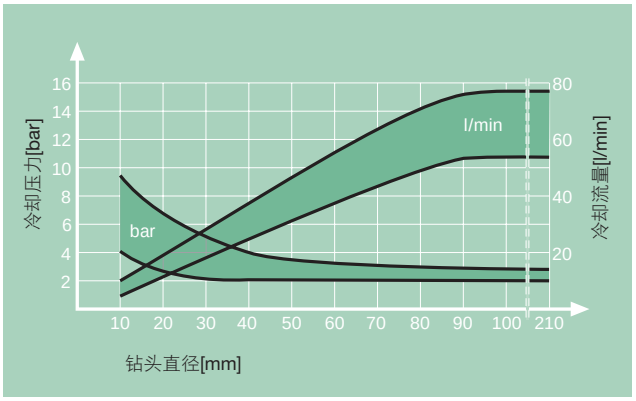
冷却图表
冷却压力和冷却流量

带内冷硬质合金麻花钻



A = 带中心冷却孔的刀具直径范围
B = 非常态内冷供给刀具直径范围

对带内冷复合钻



当使用HSS-Co和硬质合金材质的刀片式钻头加工时，也可以使用钻削乳化液作为冷却液使用。通常使用的稀释比为1:20.当你使用高性能的冷却液时，这也是绝对必须要遵循的。如果没有足够的冷却压力和流量，钻孔的表面质量也许会比较差，甚至刀具有可能损坏。如有可能,冷却剂里实体分子的尺寸不应超过50µm.

麻花钻应用推荐

进给代号为粗体的刀具是首选项

钻头直径 Ø mm	进给代号 1	2	3	4	5	6	7	8	9
	f (mm/rev.)								
0.50	0.004	0.006	0.007	0.008	0.010	0.012	0.014	0.016	0.019
1.00	0.006	0.008	0.012	0.014	0.016	0.018	0.020	0.023	0.025
2.00	0.020	0.025	0.032	0.040	0.050	0.063	0.080	0.100	0.125
2.50	0.025	0.032	0.040	0.050	0.063	0.080	0.100	0.125	0.160
3.15	0.032	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.160
4.00	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.200
5.00	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.250
6.30	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315
8.00	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.315
10.00	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.400
12.50	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500
16.00	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630
20.00	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.630
25.00	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	0.800
31.50	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	1.000
40.00	0.200	0.250	0.315	0.400	0.500	0.630	0.800	1.000	1.250
50.00	0.250	0.310	0.400	0.500	0.630	0.800	1.000	1.250	1.250
63.00	0.315	0.400	0.500	0.630	0.800	1.000	1.250	1.600	1.600
80.00	0.400	0.500	0.630	0.800	1.000	1.250	1.600	1.600	2.000

冷却方式:
○ 气冷
● 纯油
● 乳化液

切削方向:
® 右切削
↺ 左切削

材料组	材料例举,最新牌号(括弧内为旧牌号) 粗体数字=材料代号依据DIN EN	拉伸强度_ MPa (N/mm²)	硬度	冷却方式
普通结构钢	**1.0035** S185(St33), **1.0486** P275N(StE285), **1.0345** P235GH(H1), **1.0425** P265GH(H2)	≤500		●
	1.0050 E295 (St50-2), **1.0070** E360 (St70-2), **1.8937** P500NH (WStE500)	≤1000		●
易切削钢	**1.0718** 11SMnPb30 (9SMnPb28), **1.0736** 11SMn37 (9SMn36)	≤850		●
	1.0727 46S20 (45S20), **1.0728** (60S20), **1.0757** 46SPb20 (45SPb20)	≤1000		●
非合金热处理钢	**1.0402** C22, **1.1178** C30E (Ck30)	≤700		●
	1.0503 C45, **1.1191** C45E (Ck45)	≤850		●
	1.0601 C60, **1.1221** C60E (Ck60)	≤1000		●
合金热处理钢	**1.5131** 50MnSi4, **1.7003** 38Cr2, **1.7030** 28Cr4	≤1000		●
	1.5710 36NiCr6, **1.7035** 41Cr4, **1.7225** 42CrMo4	≤1400		●
非合金表面硬化钢	**1.0301** (C10), **1.1121** C10E (Ck10)	≤850		●
合金表面硬化钢	**1.7276** 10CrMo11, **1.5125** 11MnSi6	≤1000		●
	1.5752 15NiCr13, **1.7131** 16MnCr5, **1.7264** 20CrMo5	≤1400		●
氮化钢	**1.8504** 34CrAl6	≤1000		●
	1.8519 31CrMoV9, **1.8550** 34CrAlNi7	≤1400		●
工具钢	**1.1750** C75W, **1.2067** 102Cr6, **1.2307** 29CrMoV9	≤850		●
	1.2080 X210Cr12, **1.2083** X42Cr13, **1.2419** 105WCr6, **1.2767** X45NiCrMo4	≤1400		●
高速钢	**1.3243** S 6-5-2-5, **1.3343** S 6-5-2, **1.3344** S 6-5-3	≤1400		●
弹簧钢	**1.5026** 55Si7, **1.7176** 55Cr3, **1.8159** 51CrV4 (51CrV4)		≤350 HB	●
硬化钢	–		≤48 HRC	●
			≤66 HRC	●
不锈钢,硫化	**1.4005** X12CrS13, **1.4104** X14CrMoS17, **1.4105** X6CrMoS17, **1.4305** X8CrNiS18-9	≤900		●
奥氏体	**1.4301** X5CrNi18-10 (V2A), **1.4541** X6CrNiTi18-10, **1.4571** X6CrNiMoTi 17-12-2 (V4A)	≤1100		●
马氏体	**1.4057** X20CrNi172 (X17CrNi16-2), **1.4122** X39CrMo17-1, **1.4521** X2CrMoTi18-2	≤1500		●
铸铁	**0.6010** EN-GJL-100 (GG10), **0.6020** EN-GJL-200 (GG20)		≤240 HB	○ ○
	0.6025 EN-GJL-250 (GG25), **0.6035** EN-GJL-350 (GG35)		≤350 HB	○ ○
球墨铁铸和	**0.7050** EN-GJS-500-7 (GGG50), **0.8035** EN-GJMW-350-4 (GTW35)		≤240 HB	●
可锻铸铁	**0.7070** EN-GJS-700-2 (GGG70), **0.8170** EN-GJMB-700-2 (GTS70)		≤350 HB	●
冷激铸铁	–		≤350 HB	●
蠕墨铸铁 GGV	**EN-GJV250** (GGV25), **EN-GJV350** (GGV35)		≤220 HB	○ ○
	EN-GJV400 (GGV40), **EN-GJV500** (GGV50), SiMo 6		≤300 HB	○ ○
蠕墨铸铁 ADI	**EN-GJS-800-8** (ADI800), **EN-GJS-1000-5** (ADI1000)	≤1000		○ ○
	EN-GJS-1200-2 (ADI1200), **EN-GJS-1400-1** (ADI1400)	≤1400		○ ○
特殊合金	Nimonic, Inconel, Monel, Hastelloy	≤2000		●
钛及钛合金	**3.7024** Ti99,5, **3.7114** TiAl5Sn2,5, **3.7124** TiCu2	≤850		●
	3.7154 TiAl6Zr5, **3.7165** TiAl6V4, **3.7184** TiAl4Mo4Sn2,5, - TiAl8Mo1V1	≤1400		●
铝及铝合金	**3.0255** Al99,5, **3.2315** AlMgSi1, **3.3515** AlMg1	≤400		●
锻铝合金	**3.0615** AlMgSiPb, **3.1325** AlCuMg1, **3.3245** AlMg3Si, **3.4365** AlZnMgCu1,5	≤650		●
铸铝 ⩽ 10 % Si	**3.2131** G-AlSi5Cu1, **3.2153** G-AlSi7Cu3, **3.2573** G-AlSi9	≤600		●
⩽ 24 % Si	**3.2581** G-AlSi12, **3.2583** G-AlSi12Cu, - G-AlSi12CuNiMg	≤600		●
镁合金	**3.5200** MgMn2, **3.5812.05** G-MgAl8Zn1, **3.5612.05** G-MgAl6Zn1	≤400		○
低合金铜	**2.0070** SE-Cu, **2.1020** CuSn6, **2.1096** G-CuSn5ZnPb	≤500		●
黄铜,短屑	**2.0380** CuZn39Pb2, **2.0401** CuZn39Pb3, **2.0410** CuZn43Pb2	≤600		●
长屑	**2.0250** CuZn20, **2.0280** CuZn33, **2.0332** CuZn37Pb0,5	≤600		●
青铜,短屑	**2.1090** CuSn7ZnPb, **2.1170** CuPb5Sn5, **2.1176** CuPb10Sn	≤600		● ●
	2.0790 CuNi18Zn19Pb	≤850		●
青铜,长屑	**2.0916** CuAl5, **2.0960** CuAl9Mn, **2.1050** CuSn10	≤850		●
	2.0980 CuAl11Ni, **2.1247** CuBe2	≤1000		●
热固塑料	环氧树脂, Resopal, Pertinax, Moltopren	≤150		○
热塑塑料	Plexiglass, Hostalen, Novodur, Makralon	≤100		● ○
Kevlar 合成纤维	Kevlar	≤1000		○
玻璃/碳纤维	GFK/CFK	≤1000		○

≤3xD

81110 81115	81120	81130	81140 81145	84400	84501	81171	82971	81173	82972	84803	84503
1897	1897	1897	1897	1897	1897	1897	Std.	1897	Std.	1897	1897
HSS				HSS	HSS	HSS-E				HSS-E	HSS-E
>Ø 2,36			>Ø 2,36	T	F	>Ø 2,36				T	F
N	H	W	FN	N	N	V	V	IS	IS	V	V
69/71	75	76	77/78	73	73	81	166	80	165	83	83



Vc m/min	进给代号				Vc m/min	进给代号	Vc m/min	进给代号	Vc m/min	进给代号			Vc m/min	进给代号	Vc m/min	进给代号
27	**6**			6	30	**6**	32	**7**	35	5	5	5	5	38	5	42	6
22	**5**			5	24	**5**	26	**6**	30	5	5	5	5	33	4	36	5
30	**6**			**6**	33	**6**	36	**7**	40	5	5	5	5	44	5	48	6
30	5			5	33	5	36	6	40	**5**	**5**	5	5	38	5	42	6
25	**5**			**5**	28	**5**	31	**6**	40	5	5	5	5	44	5	48	6
25	**5**			**5**	28	**5**	31	**6**	40	5	5			44	5	48	6
					25	4	28	5	35	**4**	**4**			38	**4**	42	**5**
					22	4	24	5	20	**4**	**4**			27	**4**	30	**5**
									16	**3**	**3**			22	**3**	24	**4**
30	**6**			6	33	**6**	36	**7**	36	6	6	6	6	44	4	48	5
					20	4	22	5	20	**4**	**4**			22	**4**	24	**5**
									15	**3**	**3**			18	**3**	20	**4**
					14	4	16	5	16	4	**4**			22	**4**	24	**5**
									12	3	**3**			18	**3**	20	**4**
16	4			4	18	4	20	5	15	**4**	**4**			19	**4**	21	**5**
									12	**3**	**3**			14	**3**	16	**4**
									15	3	**3**			14	**3**	17	**4**
									8	**2**	**2**			9	**2**	11	**3**
									45	**4**	**4**			4	1	5	2
									18	4	4	**4**	**4**	20	4	22	5
									14	3	3	**3**	**3**	15	**3**	17	**4**
									16	3	**3**	3	3	18	**3**	20	**4**
30	**6**			6	33	**6**	36	7	35	**6**	6			40	6	45	7
30	6			6	33	6	36	**7**	30	**6**	**6**			35	**6**	40	**7**
25	**6**			6	28	**6**	31	7	30	6	6			33	6	36	7
20	6			6	22	6	24	**7**	25	**6**	**6**			27	6	29	7
									10	3	3			12	3	14	4
									8	1	1			6	2	7	2
									10	2	2	2	2	11	2	12	3
									6	2	2	2	2	7	2	8	3
70			**7**	7			85	8	90			7	7				
70			**7**	7			85	8	90			7	7				
50	7		7	**7**			60	**8**	80			7	7				
50	6			**6**			60	**7**	70			6	6				
70	6	**6**		6	80	6	90	6	70			6	6				
60	5		5	**5**	65	**5**	70	**6**	40			5	5				
70		6			75	5	80	6	60			5	5				
40	5		5	**5**	45	**5**	50	**6**	40			5	5				
30	4	4		**4**	33	**4**	36	**5**	35	4	4	4	4	45	5	50	6
25	4			4	27	4	30	5	30	**4**	**4**	4	4	40	**4**	45	**5**
15	4			4	16	**4**	18	**5**	20	4	4	**4**	**4**	23	4	26	5
					15	4	18	5	15	4	4	**4**	**4**	17	4	20	**5**
18	4	4		**4**	22	**4**	29	**5**	20	4	4						
28	5	**5**	5	5	36	**5**	47	6	30			4	4				

麻花钻应用推荐

进给代号为粗体的刀具是首选项

钻头直径 Ø mm	进给代号								
	1	2	3	4	5	6	7	8	9
	f (mm/rev.)								
0.50	0.004	0.006	0.007	0.008	0.010	0.012	0.014	0.016	0.019
1.00	0.006	0.008	0.012	0.014	0.016	0.018	0.020	0.023	0.025
2.00	0.020	0.025	0.032	0.040	0.050	0.063	0.080	0.100	0.125
2.50	0.025	0.032	0.040	0.050	0.063	0.080	0.100	0.125	0.160
3.15	0.032	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.160
4.00	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.200
5.00	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.250
6.30	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315
8.00	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.315
10.00	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.400
12.50	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500
16.00	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630
20.00	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.630
25.00	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	0.800
31.50	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	1.000
40.00	0.200	0.250	0.315	0.400	0.500	0.630	0.800	1.000	1.250
50.00	0.250	0.310	0.400	0.500	0.630	0.800	1.000	1.250	1.250
63.00	0.315	0.400	0.500	0.630	0.800	1.000	1.250	1.600	1.600
80.00	0.400	0.500	0.630	0.800	1.000	1.250	1.600	1.600	2.000

冷却方式:
○ 气冷
● 纯油
● 乳化液

切削方向:
® 右切削
↺ 左切削

材料组	材料例举,最新牌号(括弧内为旧牌号) 粗体数字=材料代号依据DIN EN	拉伸强度_ MPa (N/mm²)	硬度	冷却方式
普通结构钢	**1.0035** S185(St33), **1.0486** P275N(StE285), **1.0345** P235GH(H1), **1.0425** P265GH(H2)	≤500		●
	1.0050 E295 (St50-2), **1.0070** E360 (St70-2), **1.8937** P500NH (WStE500)	≤1000		●
易切削钢	**1.0718** 11SMnPb30 (9SMnPb28), **1.0736** 11SMn37 (9SMn36)	≤850		●
	1.0727 46S20 (45S20), **1.0728** (60S20), **1.0757** 46SPb20 (45SPb20)	≤1000		●
非合金热处理钢	**1.0402** C22, **1.1178** C30E (Ck30)	≤700		●
	1.0503 C45, **1.1191** C45E (Ck45)	≤850		●
	1.0601 C60, **1.1221** C60E (Ck60)	≤1000		●
合金热处理钢	**1.5131** 50MnSi4, **1.7003** 38Cr2, **1.7030** 28Cr4	≤1000		●
	1.5710 36NiCr6, **1.7035** 41Cr4, **1.7225** 42CrMo4	≤1400		●
非合金表面硬化钢	**1.0301** (C10), **1.1121** C10E (Ck10)	≤850		●
合金表面硬化钢	**1.7276** 10CrMo11, **1.5125** 11MnSi6	≤1000		●
	1.5752 15NiCr13, **1.7131** 16MnCr5, **1.7264** 20CrMo5	≤1400		●
氮化钢	**1.8504** 34CrAl6	≤1000		●
	1.8519 31CrMoV9, **1.8550** 34CrAlNi7	≤1400		●
工具钢	**1.1750** C75W, **1.2067** 102Cr6, **1.2307** 29CrMoV9	≤850		●
	1.2080 X210Cr12, **1.2083** X42Cr13, **1.2419** 105WCr6, **1.2767** X45NiCrMo4	≤1400		●
高速钢	**1.3243** S 6-5-2-5, **1.3343** S 6-5-2, **1.3344** S 6-5-3	≤1400		●
弹簧钢	**1.5026** 55Si7, **1.7176** 55Cr3, **1.8159** 51CrV4 (51CrV4)		≤350 HB	●
硬化钢	–		≤48 HRC	●
			≤66 HRC	●
不锈钢,硫化	**1.4005** X12CrS13, **1.4104** X14CrMoS17, **1.4105** X6CrMoS17, **1.4305** X8CrNiS18-9	≤900		●
奥氏体	**1.4301** X5CrNi18-10 (V2A), **1.4541** X6CrNiTi18-10, **1.4571** X6CrNiMoTi 17-12-2 (V4A)	≤1100		●
马氏体	**1.4057** X20CrNi172 (X17CrNi16-2), **1.4122** X39CrMo17-1, **1.4521** X2CrMoTi18-2	≤1500		●
铸铁	**0.6010** EN-GJL-100 (GG10), **0.6020** EN-GJL-200 (GG20)		≤240 HB	○ ○
	0.6025 EN-GJL-250 (GG25), **0.6035** EN-GJL-350 (GG35)		≤350 HB	○ ○
球墨铁铸和	**0.7050** EN-GJS-500-7 (GGG50), **0.8035** EN-GJMW-350-4 (GTW35)		≤240 HB	●
可锻铸铁	**0.7070** EN-GJS-700-2 (GGG70), **0.8170** EN-GJMB-700-2 (GTS70)		≤350 HB	●
冷激铸铁	–		≤350 HB	●
蠕墨铸铁 GGV	**EN-GJV250** (GGV25), **EN-GJV350** (GGV35)		≤220 HB	○ ○
	EN-GJV400 (GGV40), **EN-GJV500** (GGV50), SiMo 6		≤300 HB	○ ○
蠕墨铸铁 ADI	**EN-GJS-800-8** (ADI800), **EN-GJS-1000-5** (ADI1000)	≤1000		○ ○
	EN-GJS-1200-2 (ADI1200), **EN-GJS-1400-1** (ADI1400)	≤1400		○ ○
特殊合金	Nimonic, Inconel, Monel, Hastelloy	≤2000		●
钛及钛合金	**3.7024** Ti99,5, **3.7114** TiAl5Sn2,5, **3.7124** TiCu2	≤850		●
	3.7154 TiAl6Zr5, **3.7165** TiAl6V4, **3.7184** TiAl4Mo4Sn2,5, - TiAl8Mo1V1	≤1400		●
铝及铝合金	**3.0255** Al99,5, **3.2315** AlMgSi1, **3.3515** AlMg1	≤400		●
锻铝合金	**3.0615** AlMgSiPb, **3.1325** AlCuMg1, **3.3245** AlMg3Si, **3.4365** AlZnMgCu1,5	≤650		●
铸铝 ⩽ 10 % Si	**3.2131** G-AlSi5Cu1, **3.2153** G-AlSi7Cu3, **3.2573** G-AlSi9	≤600		●
⩽ 24 % Si	**3.2581** G-AlSi12, **3.2583** G-AlSi12Cu, - G-AlSi12CuNiMg	≤600		●
镁合金	**3.5200** MgMn2, **3.5812.05** G-MgAl8Zn1, **3.5612.05** G-MgAl6Zn1	≤400		○
低合金铜	**2.0070** SE-Cu, **2.1020** CuSn6, **2.1096** G-CuSn5ZnPb	≤500		●
黄铜,短屑	**2.0380** CuZn39Pb2, **2.0401** CuZn39Pb3, **2.0410** CuZn43Pb2	≤600		●
长屑	**2.0250** CuZn20, **2.0280** CuZn33, **2.0332** CuZn37Pb0,5	≤600		●
青铜,短屑	**2.1090** CuSn7ZnPb, **2.1170** CuPb5Sn5, **2.1176** CuPb10Sn	≤600		● ●
	2.0790 CuNi18Zn19Pb	≤850		●
青铜,长屑	**2.0916** CuAl5, **2.0960** CuAl9Mn, **2.1050** CuSn10	≤850		●
	2.0980 CuAl11Ni, **2.1247** CuBe2	≤1000		●
热固塑料	环氧树脂, Resopal, Pertinax, Moltopren	≤150		○
热塑塑料	Plexiglass, Hostalen, Novodur, Makralon	≤100		● ○
Kevlar 合成纤维	Kevlar	≤1000		○
玻璃/碳纤维	GFK/CFK	≤1000		○

≤3xD

84805	84808	84806	84511	89235	89246	89301	89302	89303
Std.	1897	1897	1897	6539	Std.	8037	8041	8038
HSS-E	HSS-E	HSS-E	HSS-E-PM	Solid carbide				
T	○	T	F	○	○	○	○	○
FU 500	FU 500 DZ	FU 500 DZ	FN 500	N	N	N	N	N
92	85	85	87	89	91	150	183	149











v_c m/min	进给代号	v_c m/min	进给代号	v_c m/min	进给代号	v_c m/min	进给代号	v_c m/min	进给代号			
45	**6**	35	**6**	45	**6**	42	6	80	4			
35	**5**	30	**5**	35	**5**	37	5	70	4			
50	**6**	40	**6**	50	**6**	47	**7**	80	**5**		4	4
40	**6**	30	**6**	40	**6**	44	6	70	**4**		3	3
44	**6**	32	**6**	44	**6**	47	6	80	4			
44	**6**	28	**6**	44	**6**	47	6	70	4			
40	**5**	20	**5**	40	**5**	44	**5**	60	4			
27	4	15	4	27	4	30	4	60	4			
22	3	13	3	22	3	25	**3**					
44	**6**	30	**6**	44	**6**	47	4	80	5			
22	4	16	4	22	4	25	**5**	60	4			
18	3	12	3	18	3	20	**4**					
22	4	15	4	22	4	25	**5**	50	4			
16	3	10	3	16	3	18	**4**					
20	4	15	4	20	4	22	**5**	50	3			
15	3	10	3	15	3	17	**4**					
13	3	10	3	13	3	17	**4**					
9	2			9	2	12	**2**	25	2		**2**	**2**
								20	3		3	3
								10			2	2
20	**4**	14	**4**	20	**4**	22	**4**	25	**2**			
16	**3**	10	**4**	16	**4**	18	3	15	1			
18	**4**	12	**4**	18	**4**	20	3	25	2			
45	**6**	36	**6**	45	**6**	50	**7**	90	**4**		4	4
40	**6**	30	**6**	40	**6**	44	**7**	80	**4**		4	4
40	**6**	30	**6**	40	**6**	45	**7**	80	**4**		4	4
30	**6**	22	**6**	30	**6**	33	**7**	70	**4**		4	4
						16	4	10			**1**	**1**
						6	2	15	2			
								15	1			
								15	1			
70	7	50	**7**	70	7			200	**7**			
70	7	50	**7**	70	7			200	**7**			
85	7	65	**7**	85	7			150	**6**			
70	6	60	**6**	70	6			120	**6**			
80	6	60	6	80	6			180	**6**			
80	**5**	70	**5**	80	**5**	80	5	80	**5**			
77	**5**	45	**5**	77	**5**			180	**5**		5	5
44	**5**	30	**5**	44	**5**	60	5	180	**5**		5	5
50	**4**	36	**4**	50	**4**	50	5	120	**5**			
40	**4**	30	**4**	40	**4**	44	5	120	**5**			
32	**4**	30	**4**	32	**4**	33	5	70	4			
28	**4**	25	**4**	28	**4**	28	5	50	3			
25	**4**	20	**4**	25	**4**	25	**4**	50	4	**4**		
27	**4**	15	**4**	27	**4**			40	3	**3**		3
								80	3	**3**		2

麻花钻应用推荐

进给代号为粗体的刀具是首选项

钻头直径 Ø mm	进给代号								
	1	2	3	4	5	6	7	8	9
	f (mm/rev.)								
0.50	0.004	0.006	0.007	0.008	0.010	0.012	0.014	0.016	0.019
1.00	0.006	0.008	0.012	0.014	0.016	0.018	0.020	0.023	0.025
2.00	0.020	0.025	0.032	0.040	0.050	0.063	0.080	0.100	0.125
2.50	0.025	0.032	0.040	0.050	0.063	0.080	0.100	0.125	0.160
3.15	0.032	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.160
4.00	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.200
5.00	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.250
6.30	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315
8.00	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.315
10.00	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.400
12.50	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500
16.00	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630
20.00	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.630
25.00	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	0.800
31.50	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	1.000
40.00	0.200	0.250	0.315	0.400	0.500	0.630	0.800	1.000	1.250
50.00	0.250	0.310	0.400	0.500	0.630	0.800	1.000	1.250	1.250
63.00	0.315	0.400	0.500	0.630	0.800	1.000	1.250	1.600	1.600
80.00	0.400	0.500	0.630	0.800	1.000	1.250	1.600	1.600	2.000

冷却方式:
○ 气冷
● 纯油
● 乳化液

切削方向:
® 右切削
↺ 左切削

材料组	材料例举,最新牌号(括弧内为旧牌号) 粗体数字=材料代号依据DIN EN	拉伸强度_ MPa (N/mm²)	硬度	冷却方式
普通结构钢	**1.0035** S185(St33), **1.0486** P275N(StE285), **1.0345** P235GH(H1), **1.0425** P265GH(H2)	≤500		●
	1.0050 E295 (St50-2), **1.0070** E360 (St70-2), **1.8937** P500NH (WStE500)	≤1000		●
易切削钢	**1.0718** 11SMnPb30 (9SMnPb28), **1.0736** 11SMn37 (9SMn36)	≤850		●
	1.0727 46S20 (45S20), **1.0728** (60S20), **1.0757** 46SPb20 (45SPb20)	≤1000		●
非合金热处理钢	**1.0402** C22, **1.1178** C30E (Ck30)	≤700		●
	1.0503 C45, **1.1191** C45E (Ck45)	≤850		●
	1.0601 C60, **1.1221** C60E (Ck60)	≤1000		●
合金热处理钢	**1.5131** 50MnSi4, **1.7003** 38Cr2, **1.7030** 28Cr4	≤1000		●
	1.5710 36NiCr6, **1.7035** 41Cr4, **1.7225** 42CrMo4	≤1400		●
非合金表面硬化钢	**1.0301** (C10), **1.1121** C10E (Ck10)	≤850		●
合金表面硬化钢	**1.7276** 10CrMo11, **1.5125** 11MnSi6	≤1000		●
	1.5752 15NiCr13, **1.7131** 16MnCr5, **1.7264** 20CrMo5	≤1400		●
氮化钢	**1.8504** 34CrAl6	≤1000		●
	1.8519 31CrMoV9, **1.8550** 34CrAlNi7	≤1400		●
工具钢	**1.1750** C75W, **1.2067** 102Cr6, **1.2307** 29CrMoV9	≤850		●
	1.2080 X210Cr12, **1.2083** X42Cr13, **1.2419** 105WCr6, **1.2767** X45NiCrMo4	≤1400		●
高速钢	**1.3243** S 6-5-2-5, **1.3343** S 6-5-2, **1.3344** S 6-5-3	≤1400		●
弹簧钢	**1.5026** 55Si7, **1.7176** 55Cr3, **1.8159** 51CrV4 (51CrV4)		≤350 HB	●
硬化钢	–		≤48 HRC	●
			≤66 HRC	●
不锈钢,硫化	**1.4005** X12CrS13, **1.4104** X14CrMoS17, **1.4105** X6CrMoS17, **1.4305** X8CrNiS18-9	≤900		●
奥氏体	**1.4301** X5CrNi18-10 (V2A), **1.4541** X6CrNiTi18-10, **1.4571** X6CrNiMoTi 17-12-2 (V4A)	≤1100		●
马氏体	**1.4057** X20CrNi172 (X17CrNi16-2), **1.4122** X39CrMo17-1, **1.4521** X2CrMoTi18-2	≤1500		●
铸铁	**0.6010** EN-GJL-100 (GG10), **0.6020** EN-GJL-200 (GG20)		≤240 HB	○ ○
	0.6025 EN-GJL-250 (GG25), **0.6035** EN-GJL-350 (GG35)		≤350 HB	○ ○
球墨铁铸和	**0.7050** EN-GJS-500-7 (GGG50), **0.8035** EN-GJMW-350-4 (GTW35)		≤240 HB	●
可锻铸铁	**0.7070** EN-GJS-700-2 (GGG70), **0.8170** EN-GJMB-700-2 (GTS70)		≤350 HB	●
冷激铸铁	–		≤350 HB	●
蠕墨铸铁 GGV	**EN-GJV250** (GGV25), **EN-GJV350** (GGV35)		≤220 HB	○ ○
	EN-GJV400 (GGV40), **EN-GJV500** (GGV50), SiMo 6		≤300 HB	○ ○
蠕墨铸铁 ADI	**EN-GJS-800-8** (ADI800), **EN-GJS-1000-5** (ADI1000)	≤1000		○ ○
	EN-GJS-1200-2 (ADI1200), **EN-GJS-1400-1** (ADI1400)	≤1400		○ ○
特殊合金	Nimonic, Inconel, Monel, Hastelloy	≤2000		●
钛及钛合金	**3.7024** Ti99,5, **3.7114** TiAl5Sn2,5, **3.7124** TiCu2	≤850		●
	3.7154 TiAl6Zr5, **3.7165** TiAl6V4, **3.7184** TiAl4Mo4Sn2,5, - TiAl8Mo1V1	≤1400		●
铝及铝合金	**3.0255** Al99,5, **3.2315** AlMgSi1, **3.3515** AlMg1	≤400		●
锻铝合金	**3.0615** AlMgSiPb, **3.1325** AlCuMg1, **3.3245** AlMg3Si, **3.4365** AlZnMgCu1,5	≤650		●
铸铝 ⩽ 10 % Si	**3.2131** G-AlSi5Cu1, **3.2153** G-AlSi7Cu3, **3.2573** G-AlSi9	≤600		●
⩽ 24 % Si	**3.2581** G-AlSi12, **3.2583** G-AlSi12Cu, - G-AlSi12CuNiMg	≤600		●
镁合金	**3.5200** MgMn2, **3.5812.05** G-MgAl8Zn1, **3.5612.05** G-MgAl6Zn1	≤400		○
低合金铜	**2.0070** SE-Cu, **2.1020** CuSn6, **2.1096** G-CuSn5ZnPb	≤500		●
黄铜,短屑	**2.0380** CuZn39Pb2, **2.0401** CuZn39Pb3, **2.0410** CuZn43Pb2	≤600		●
长屑	**2.0250** CuZn20, **2.0280** CuZn33, **2.0332** CuZn37Pb0,5	≤600		●
青铜,短屑	**2.1090** CuSn7ZnPb, **2.1170** CuPb5Sn5, **2.1176** CuPb10Sn	≤600		● ●
	2.0790 CuNi18Zn19Pb	≤850		●
青铜,长屑	**2.0916** CuAl5, **2.0960** CuAl9Mn, **2.1050** CuSn10	≤850		●
	2.0980 CuAl11Ni, **2.1247** CuBe2	≤1000		●
热固塑料	环氧树脂, Resopal, Pertinax, Moltopren	≤150		○
热塑塑料	Plexiglass, Hostalen, Novodur, Makralon	≤100		● ○
Kevlar 合成纤维	Kevlar	≤1000		○
玻璃/碳纤维	GFK/CFK	≤1000		○

≤5xD

81010 81015	81017	82010	81020 81025	81030 81035	82030	81040 81045	84406	84405	84460	84415	84502
338	338	345	338	338	345	338	338	338	345	338	338
HSS							HSS	HSS			HSS
>Ø 2,36						>Ø 2,36	T	T	T	T	F
N	N	N	H	W	W	FN	N	N	N	FN	FN
23/27	29	158	32/34	36/38	157	39/41	43	30	160	45	45



Vc m/min	进给代号							Vc m/min	进给代号	Vc m/min	进给代号			Vc m/min	进给代号
27	**6**	**6**	**6**				6			30	**6**	**6**	6	32	7
22	**5**	**5**	**5**				5			24	**5**	**5**	5	26	6
30	**6**	**6**	**6**				**6**			33	**6**	**6**	**6**	36	**7**
30	5	5	5				5			33	5	5	5	36	6
25	**5**	**5**	**5**				5			28	**5**	**5**	5	31	6
25	**5**	**5**	**5**				5			28	**5**	**5**	5	31	6
										25	4	4	4	28	5
										22	4	4	4	24	5
30	6	6	6				6			33	**6**	**6**	6	36	7
										20	4	4	4	22	5
										14	4	4	4	16	5
16	4	4	4				4			18	4	4	4	20	5
30	**6**	**6**	**6**				6			33	6	6	6	36	7
30	6	6	6				6			33	6	6	6	36	7
25	6	6	6				6			28	**6**	**6**	6	31	7
25	6	6	6				6			22	6	6	6	24	7
80					**7**	**7**								85	8
80					**7**	**7**								85	8
70	7	7	7		7	7	**7**							60	8
70	6	6	6				**6**							60	7
50	6	6	6	6			6			80	6	6		90	7
50	5	5	5		**5**	**5**	**5**			65	5	5	**5**	70	6
70				**6**						75	5	5	5	80	6
40	5	5	5				**5**			45	5	5	**5**	50	**6**
30	4	4	4	4						33	**4**	**4**			
25	4	4	4							27	**4**	**4**			
15	4	4	4				4			16	**4**	**4**	4	18	5
										15	**4**	**4**	4	18	5
18	4	4	4	4			**4**			22	4	4	**4**	29	5
28	5	5	5	**5**	5	5				36	5	5			

麻花钻应用推荐

进给代号为粗体的刀具是首选项

钻头直径 Ø mm	进给代号								
	1	2	3	4	5	6	7	8	9
	f (mm/rev.)								
0.50	0.004	0.006	0.007	0.008	0.010	0.012	0.014	0.016	0.019
1.00	0.006	0.008	0.012	0.014	0.016	0.018	0.020	0.023	0.025
2.00	0.020	0.025	0.032	0.040	0.050	0.063	0.080	0.100	0.125
2.50	0.025	0.032	0.040	0.050	0.063	0.080	0.100	0.125	0.160
3.15	0.032	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.160
4.00	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.200
5.00	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.250
6.30	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315
8.00	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.315
10.00	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.400
12.50	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500
16.00	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630
20.00	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.630
25.00	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	0.800
31.50	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	1.000
40.00	0.200	0.250	0.315	0.400	0.500	0.630	0.800	1.000	1.250
50.00	0.250	0.310	0.400	0.500	0.630	0.800	1.000	1.250	1.250
63.00	0.315	0.400	0.500	0.630	0.800	1.000	1.250	1.600	1.600
80.00	0.400	0.500	0.630	0.800	1.000	1.250	1.600	1.600	2.000

冷却方式:
○ 气冷
● 纯油
● 乳化液

切削方向:
® 右切削
↺ 左切削

材料组	材料例举,最新牌号(括弧内为旧牌号) 粗体数字=材料代号依据DIN EN	拉伸强度_ MPa (N/mm²)	硬度	冷却方式
普通结构钢	**1.0035** S185(St33), **1.0486** P275N(StE285), **1.0345** P235GH(H1), **1.0425** P265GH(H2)	≤500		●
	1.0050 E295 (St50-2), **1.0070** E360 (St70-2), **1.8937** P500NH (WStE500)	≤1000		●
易切削钢	**1.0718** 11SMnPb30 (9SMnPb28), **1.0736** 11SMn37 (9SMn36)	≤850		●
	1.0727 46S20 (45S20), **1.0728** (60S20), **1.0757** 46SPb20 (45SPb20)	≤1000		●
非合金热处理钢	**1.0402** C22, **1.1178** C30E (Ck30)	≤700		●
	1.0503 C45, **1.1191** C45E (Ck45)	≤850		●
	1.0601 C60, **1.1221** C60E (Ck60)	≤1000		●
合金热处理钢	**1.5131** 50MnSi4, **1.7003** 38Cr2, **1.7030** 28Cr4	≤1000		●
	1.5710 36NiCr6, **1.7035** 41Cr4, **1.7225** 42CrMo4	≤1400		●
非合金表面硬化钢	**1.0301** (C10), **1.1121** C10E (Ck10)	≤850		●
合金表面硬化钢	**1.7276** 10CrMo11, **1.5125** 11MnSi6	≤1000		●
	1.5752 15NiCr13, **1.7131** 16MnCr5, **1.7264** 20CrMo5	≤1400		●
氮化钢	**1.8504** 34CrAl6	≤1000		●
	1.8519 31CrMoV9, **1.8550** 34CrAlNi7	≤1400		●
工具钢	**1.1750** C75W, **1.2067** 102Cr6, **1.2307** 29CrMoV9	≤850		●
	1.2080 X210Cr12, **1.2083** X42Cr13, **1.2419** 105WCr6, **1.2767** X45NiCrMo4	≤1400		●
高速钢	**1.3243** S 6-5-2-5, **1.3343** S 6-5-2, **1.3344** S 6-5-3	≤1400		●
弹簧钢	**1.5026** 55Si7, **1.7176** 55Cr3, **1.8159** 51CrV4 (51CrV4)		≤350 HB	●
硬化钢	–		≤48 HRC	●
			≤66 HRC	●
不锈钢,硫化	**1.4005** X12CrS13, **1.4104** X14CrMoS17, **1.4105** X6CrMoS17, **1.4305** X8CrNiS18-9	≤900		●
奥氏体	**1.4301** X5CrNi18-10 (V2A), **1.4541** X6CrNiTi18-10, **1.4571** X6CrNiMoTi 17-12-2 (V4A)	≤1100		●
马氏体	**1.4057** X20CrNi172 (X17CrNi16-2), **1.4122** X39CrMo17-1, **1.4521** X2CrMoTi18-2	≤1500		●
铸铁	**0.6010** EN-GJL-100 (GG10), **0.6020** EN-GJL-200 (GG20)		≤240 HB	○ ○
	0.6025 EN-GJL-250 (GG25), **0.6035** EN-GJL-350 (GG35)		≤350 HB	○ ○
球墨铁铸和	**0.7050** EN-GJS-500-7 (GGG50), **0.8035** EN-GJMW-350-4 (GTW35)		≤240 HB	●
可锻铸铁	**0.7070** EN-GJS-700-2 (GGG70), **0.8170** EN-GJMB-700-2 (GTS70)		≤350 HB	●
冷激铸铁	–		≤350 HB	●
蠕墨铸铁 GGV	**EN-GJV250** (GGV25), **EN-GJV350** (GGV35)		≤220 HB	○ ○
	EN-GJV400 (GGV40), **EN-GJV500** (GGV50), SiMo 6		≤300 HB	○ ○
蠕墨铸铁 ADI	**EN-GJS-800-8** (ADI800), **EN-GJS-1000-5** (ADI1000)	≤1000		○ ○
	EN-GJS-1200-2 (ADI1200), **EN-GJS-1400-1** (ADI1400)	≤1400		○ ○
特殊合金	Nimonic, Inconel, Monel, Hastelloy	≤2000		●
钛及钛合金	**3.7024** Ti99,5, **3.7114** TiAl5Sn2,5, **3.7124** TiCu2	≤850		●
	3.7154 TiAl6Zr5, **3.7165** TiAl6V4, **3.7184** TiAl4Mo4Sn2,5, - TiAl8Mo1V1	≤1400		●
铝及铝合金	**3.0255** Al99,5, **3.2315** AlMgSi1, **3.3515** AlMg1	≤400		●
锻铝合金	**3.0615** AlMgSiPb, **3.1325** AlCuMg1, **3.3245** AlMg3Si, **3.4365** AlZnMgCu1,5	≤650		●
铸铝 ⩽ 10 % Si	**3.2131** G-AlSi5Cu1, **3.2153** G-AlSi7Cu3, **3.2573** G-AlSi9	≤600		●
⩽ 24 % Si	**3.2581** G-AlSi12, **3.2583** G-AlSi12Cu, - G-AlSi12CuNiMg	≤600		●
镁合金	**3.5200** MgMn2, **3.5812.05** G-MgAl8Zn1, **3.5612.05** G-MgAl6Zn1	≤400		○
低合金铜	**2.0070** SE-Cu, **2.1020** CuSn6, **2.1096** G-CuSn5ZnPb	≤500		●
黄铜,短屑	**2.0380** CuZn39Pb2, **2.0401** CuZn39Pb3, **2.0410** CuZn43Pb2	≤600		●
长屑	**2.0250** CuZn20, **2.0280** CuZn33, **2.0332** CuZn37Pb0,5	≤600		●
青铜,短屑	**2.1090** CuSn7ZnPb, **2.1170** CuPb5Sn5, **2.1176** CuPb10Sn	≤600		● ●
	2.0790 CuNi18Zn19Pb	≤850		●
青铜,长屑	**2.0916** CuAl5, **2.0960** CuAl9Mn, **2.1050** CuSn10	≤850		●
	2.0980 CuAl11Ni, **2.1247** CuBe2	≤1000		●
热固塑料	环氧树脂, Resopal, Pertinax, Moltopren	≤150		○
热塑塑料	Plexiglass, Hostalen, Novodur, Makralon	≤100		● ○
Kevlar 合成纤维	Kevlar	≤1000		○
玻璃/碳纤维	GFK/CFK	≤1000		○

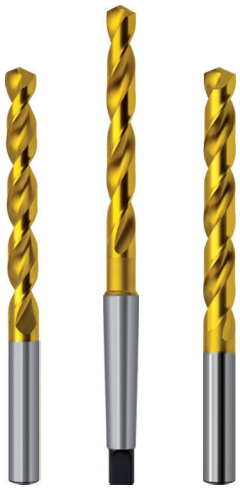
≤5xD

81011	82011	81041	81061	81013	82012	81012
338	345	338	338	338	345	338
HSS-E						M42
>Ø 2,36		>Ø 2,36				
N	N	FN	S	IS	IS	N
47	161	49	57	55	162	65

84800	84859	84807
338		338
HSS-E		
T	T	T
FN	N	S
51	164	61

84504	84505
338	338
HSS-E	
F	F
FN	S
51	61







Vc m/min	进给代号						
35	5	5	5		5	5	5
30	5	5	5		5	5	5
40	5	5	5		5	5	5
40	5	5	**5**		5	5	5
40	5	5	5		5	5	5
40	5	5	5				5
35	**4**	**4**	4				5
20	**4**	**4**	**4**				4
16	3	3	**3**	3			3
36	6	6	6	6	6	6	6
20	**4**	**4**	4				3
15	3	3	**3**	3			3
16	**4**	**4**	4				3
12	3	3	**3**	3			3
15	**4**	**4**	4				3
12	**3**	3	**3**	3			3
15	3	3	**3**	3			3
8	**2**	2		**2**			**2**
4							**1**
18	4	4	**4**	4	**4**	**4**	3
14	3	3	2	**3**	3	3	
16	3	3	3	**3**	3	3	3
35	6	6	6				5
30	**6**	**6**	6				5
30	6	6	6				5
28	**6**	**6**	6				5
10	3	3	3	3			**3**
8				1			**1**
10				**2**	2	2	2
6				**2**	2	2	2
90					**7**	**7**	7
90					**7**	**7**	7
80			7		7	7	7
70			6		6	6	6
70					6	6	6
40	**5**	5	5		5	5	5
60					5	5	5
40	5	5	4		5	5	5
35	**4**	4			4	4	4
33	**4**	4			4	4	4
20	4	4	4		**4**	**4**	4
15	4	4	**4**		**1**	**1**	4
20	4	4	4				

Vc m/min	进给代号		
38	6	6	
33	5	5	
44	5	5	
38	**5**	5	
44	5	5	
38	4	**4**	
27	4	**4**	
22	**3**	3	3
44	4	4	
22	4	**4**	
18	**3**	3	
22	4	**4**	
18	**3**	3	
19	**4**	**4**	
14	**3**	3	
14	**3**	3	3
9		2	**2**
20	**4**	4	4
15		3	**3**
18	3		**3**
40	6	6	
35	6	**6**	
33	6	6	
27	6	**6**	
12			**3**
6			2
11			**2**
7			**2**
88	5	5	
40		**4**	
22	4	**4**	
17	**4**	4	4
22	4	4	

Vc m/min	进给代号	
42	6	
36	5	
48	6	
42	**6**	
48	6	
42	5	
30	**5**	
34	**4**	4
48	6	
24	5	
20	**4**	
24	5	
20	**4**	
21	5	
16	**4**	
17	**4**	4
11	3	**2**
6	1	
22	**5**	5
17	4	**3**
20	4	**4**
45	7	
40	7	
36	7	
29	7	
14	4	**3**
7		2
12		**2**
8		**2**
85	8	
72	7	
96	6	
25	5	
20	**5**	4
24	5	

麻花钻应用推荐

进给代号为粗体的刀具是首选项

钻头直径 Ø mm	进给代号								
	1	2	3	4	5	6	7	8	9
	f (mm/rev.)								
0.50	0.004	0.006	0.007	0.008	0.010	0.012	0.014	0.016	0.019
1.00	0.006	0.008	0.012	0.014	0.016	0.018	0.020	0.023	0.025
2.00	0.020	0.025	0.032	0.040	0.050	0.063	0.080	0.100	0.125
2.50	0.025	0.032	0.040	0.050	0.063	0.080	0.100	0.125	0.160
3.15	0.032	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.160
4.00	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.200
5.00	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.250
6.30	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315
8.00	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.315
10.00	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.400
12.50	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500
16.00	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630
20.00	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.630
25.00	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	0.800
31.50	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	1.000
40.00	0.200	0.250	0.315	0.400	0.500	0.630	0.800	1.000	1.250
50.00	0.250	0.310	0.400	0.500	0.630	0.800	1.000	1.250	1.250
63.00	0.315	0.400	0.500	0.630	0.800	1.000	1.250	1.600	1.600
80.00	0.400	0.500	0.630	0.800	1.000	1.250	1.600	1.600	2.000

冷却方式:
○ 气冷
● 纯油
● 乳化液

切削方向:
® 右切削
↺ 左切削

材料组	材料例举,最新牌号(括弧内为旧牌号) 粗体数字=材料代号依据DIN EN	拉伸强度_ MPa (N/mm²)	硬度	冷却方式
普通结构钢	**1.0035** S185(St33), **1.0486** P275N(StE285), **1.0345** P235GH(H1), **1.0425** P265GH(H2)	≤500		●
	1.0050 E295 (St50-2), **1.0070** E360 (St70-2), **1.8937** P500NH (WStE500)	≤1000		●
易切削钢	**1.0718** 11SMnPb30 (9SMnPb28), **1.0736** 11SMn37 (9SMn36)	≤850		●
	1.0727 46S20 (45S20), **1.0728** (60S20), **1.0757** 46SPb20 (45SPb20)	≤1000		●
非合金热处理钢	**1.0402** C22, **1.1178** C30E (Ck30)	≤700		●
	1.0503 C45, **1.1191** C45E (Ck45)	≤850		●
	1.0601 C60, **1.1221** C60E (Ck60)	≤1000		●
合金热处理钢	**1.5131** 50MnSi4, **1.7003** 38Cr2, **1.7030** 28Cr4	≤1000		●
	1.5710 36NiCr6, **1.7035** 41Cr4, **1.7225** 42CrMo4	≤1400		●
非合金表面硬化钢	**1.0301** (C10), **1.1121** C10E (Ck10)	≤850		●
合金表面硬化钢	**1.7276** 10CrMo11, **1.5125** 11MnSi6	≤1000		●
	1.5752 15NiCr13, **1.7131** 16MnCr5, **1.7264** 20CrMo5	≤1400		●
氮化钢	**1.8504** 34CrAl6	≤1000		●
	1.8519 31CrMoV9, **1.8550** 34CrAlNi7	≤1400		●
工具钢	**1.1750** C75W, **1.2067** 102Cr6, **1.2307** 29CrMoV9	≤850		●
	1.2080 X210Cr12, **1.2083** X42Cr13, **1.2419** 105WCr6, **1.2767** X45NiCrMo4	≤1400		●
高速钢	**1.3243** S 6-5-2-5, **1.3343** S 6-5-2, **1.3344** S 6-5-3	≤1400		●
弹簧钢	**1.5026** 55Si7, **1.7176** 55Cr3, **1.8159** 51CrV4 (51CrV4)		≤350 HB	●
硬化钢	–		≤48 HRC	●
			≤66 HRC	●
不锈钢,硫化	**1.4005** X12CrS13, **1.4104** X14CrMoS17, **1.4105** X6CrMoS17, **1.4305** X8CrNiS18-9	≤900		●
奥氏体	**1.4301** X5CrNi18-10 (V2A), **1.4541** X6CrNiTi18-10, **1.4571** X6CrNiMoTi 17-12-2 (V4A)	≤1100		●
马氏体	**1.4057** X20CrNi172 (X17CrNi16-2), **1.4122** X39CrMo17-1, **1.4521** X2CrMoTi18-2	≤1500		●
铸铁	**0.6010** EN-GJL-100 (GG10), **0.6020** EN-GJL-200 (GG20)		≤240 HB	○ ○
	0.6025 EN-GJL-250 (GG25), **0.6035** EN-GJL-350 (GG35)		≤350 HB	○ ○
球墨铁铸和	**0.7050** EN-GJS-500-7 (GGG50), **0.8035** EN-GJMW-350-4 (GTW35)		≤240 HB	●
可锻铸铁	**0.7070** EN-GJS-700-2 (GGG70), **0.8170** EN-GJMB-700-2 (GTS70)		≤350 HB	●
冷激铸铁	–		≤350 HB	●
蠕墨铸铁 GGV	**EN-GJV250** (GGV25), **EN-GJV350** (GGV35)		≤220 HB	○ ○
	EN-GJV400 (GGV40), **EN-GJV500** (GGV50), SiMo 6		≤300 HB	○ ○
蠕墨铸铁 ADI	**EN-GJS-800-8** (ADI800), **EN-GJS-1000-5** (ADI1000)	≤1000		○ ○
	EN-GJS-1200-2 (ADI1200), **EN-GJS-1400-1** (ADI1400)	≤1400		○ ○
特殊合金	Nimonic, Inconel, Monel, Hastelloy	≤2000		●
钛及钛合金	**3.7024** Ti99,5, **3.7114** TiAl5Sn2,5, **3.7124** TiCu2	≤850		●
	3.7154 TiAl6Zr5, **3.7165** TiAl6V4, **3.7184** TiAl4Mo4Sn2,5, - TiAl8Mo1V1	≤1400		●
铝及铝合金	**3.0255** Al99,5, **3.2315** AlMgSi1, **3.3515** AlMg1	≤400		●
锻铝合金	**3.0615** AlMgSiPb, **3.1325** AlCuMg1, **3.3245** AlMg3Si, **3.4365** AlZnMgCu1,5	≤650		●
铸铝 ⩽ 10 % Si	**3.2131** G-AlSi5Cu1, **3.2153** G-AlSi7Cu3, **3.2573** G-AlSi9	≤600		●
⩽ 24 % Si	**3.2581** G-AlSi12, **3.2583** G-AlSi12Cu, - G-AlSi12CuNiMg	≤600		●
镁合金	**3.5200** MgMn2, **3.5812.05** G-MgAl8Zn1, **3.5612.05** G-MgAl6Zn1	≤400		○
低合金铜	**2.0070** SE-Cu, **2.1020** CuSn6, **2.1096** G-CuSn5ZnPb	≤500		●
黄铜,短屑	**2.0380** CuZn39Pb2, **2.0401** CuZn39Pb3, **2.0410** CuZn43Pb2	≤600		●
长屑	**2.0250** CuZn20, **2.0280** CuZn33, **2.0332** CuZn37Pb0,5	≤600		●
青铜,短屑	**2.1090** CuSn7ZnPb, **2.1170** CuPb5Sn5, **2.1176** CuPb10Sn	≤600		● ●
	2.0790 CuNi18Zn19Pb	≤850		●
青铜,长屑	**2.0916** CuAl5, **2.0960** CuAl9Mn, **2.1050** CuSn10	≤850		●
	2.0980 CuAl11Ni, **2.1247** CuBe2	≤1000		●
热固塑料	环氧树脂, Resopal, Pertinax, Moltopren	≤150		○
热塑塑料	Plexiglass, Hostalen, Novodur, Makralon	≤100		● ○
Kevlar 合成纤维	Kevlar	≤1000		○
玻璃/碳纤维	GFK/CFK	≤1000		○

≤5xD

84804	84802	84801	84660	81062
338	338	Std.	345	338
HSS-E	HSS-E	HSS-E	HSS-E	HSS-E
○	T	T	A	●
FU 500 DZ	FU 500 DZ	FU 500	FN	P2000
53	53	94	163	59







v_c m/min	进给代号	v_c m/min	进给代号	v_c m/min	进给代号	v_c m/min	进给代号	v_c m/min	进给代号
35	**6**	45	6	45	**6**			35	**6**
30	**5**	35	5	35	**5**			30	**5**
40	**6**	50	6	50	**6**			40	6
30	**6**	40	6	40	**5**	42	5	40	5
32	**6**	44	**6**	44	**6**			40	**5**
28	**6**	44	**6**	44	**6**			40	**5**
20	**5**	40	**5**	40	**5**			35	**4**
15	4	27	4	27	4			25	**4**
13	3	22	3	22	3			20	3
30	**6**	44	**6**	44	**6**			40	6
16	4	22	4	22	4			20	4
12	3	18	3	18	3			15	3
15	4	22	4	22	4			20	**4**
10	3	16	3	16	3			15	3
15	4	20	4	20	4			18	4
10	3	15	3	15	3			12	3
10	3	13	3	13	3			12	3
		9	2	9	2			8	2
14	**4**	20	**4**	20	**4**			14	4
10	**4**	16	**4**	16	**4**			10	3
12	**4**	18	**4**	18	**4**			12	3
36	**6**	45	**6**	45	**6**	45	**7**	38	6
30	**6**	40	**6**	40	**6**	40	**7**	30	6
30	**6**	40	**6**	40	**6**	36	**7**	30	6
22	**6**	30	**6**	30	**6**	29	**7**	25	6
								10	3
								5	2
50	**7**	70	7	70	7			90	7
50	**7**	70	7	70	7			90	7
65	**7**	85	7	85	7			80	7
60	**6**	70	6	70	6			70	6
60	6	80	6	80	6	85		85	6
70	**5**	80	**5**	88	**5**	96		80	5
45	**5**	77	**5**	77	**5**			70	5
30	**5**	44	**5**	44	**5**			40	5
36	**4**	50	**4**	50	**4**			40	4
30	**4**	40	**4**	40	**4**	25	5	30	4
30	**4**	32	**4**	32	**4**	20	5	25	4
25	**4**	28	**4**	28	**4**			15	4
20	**4**	25	**4**	25	**4**	24	5	20	4
15	**4**	27	**4**	27	**4**			25	5

麻花钻应用推荐

进给代号为粗体的刀具是首选项

钻头直径 Ø mm	进给代号								
	1	2	3	4	5	6	7	8	9
	f (mm/rev.)								
0.50	0.004	0.006	0.007	0.008	0.010	0.012	0.014	0.016	0.019
1.00	0.006	0.008	0.012	0.014	0.016	0.018	0.020	0.023	0.025
2.00	0.020	0.025	0.032	0.040	0.050	0.063	0.080	0.100	0.125
2.50	0.025	0.032	0.040	0.050	0.063	0.080	0.100	0.125	0.160
3.15	0.032	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.160
4.00	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.200
5.00	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.250
6.30	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315
8.00	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.315
10.00	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.400
12.50	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500
16.00	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630
20.00	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.630
25.00	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	0.800
31.50	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	1.000
40.00	0.200	0.250	0.315	0.400	0.500	0.630	0.800	1.000	1.250
50.00	0.250	0.310	0.400	0.500	0.630	0.800	1.000	1.250	1.250
63.00	0.315	0.400	0.500	0.630	0.800	1.000	1.250	1.600	1.600
80.00	0.400	0.500	0.630	0.800	1.000	1.250	1.600	1.600	2.000

冷却方式:
○ 气冷
● 纯油
● 乳化液

切削方向:
® 右切削
Ⓛ 左切削

材料组	材料例举,最新牌号(括弧内为旧牌号) 粗体数字=材料代号依据DIN EN	拉伸强度_ MPa (N/mm²)	硬度	冷却方式
普通结构钢	**1.0035** S185(St33), **1.0486** P275N(StE285), **1.0345** P235GH(H1), **1.0425** P265GH(H2)	≤500		●
	1.0050 E295 (St50-2), **1.0070** E360 (St70-2), **1.8937** P500NH (WStE500)	≤1000		●
易切削钢	**1.0718** 11SMnPb30 (9SMnPb28), **1.0736** 11SMn37 (9SMn36)	≤850		●
	1.0727 46S20 (45S20), **1.0728** (60S20), **1.0757** 46SPb20 (45SPb20)	≤1000		●
非合金热处理钢	**1.0402** C22, **1.1178** C30E (Ck30)	≤700		●
	1.0503 C45, **1.1191** C45E (Ck45)	≤850		●
	1.0601 C60, **1.1221** C60E (Ck60)	≤1000		●
合金热处理钢	**1.5131** 50MnSi4, **1.7003** 38Cr2, **1.7030** 28Cr4	≤1000		●
	1.5710 36NiCr6, **1.7035** 41Cr4, **1.7225** 42CrMo4	≤1400		●
非合金表面硬化钢	**1.0301** (C10), **1.1121** C10E (Ck10)	≤850		●
合金表面硬化钢	**1.7276** 10CrMo11, **1.5125** 11MnSi6	≤1000		●
	1.5752 15NiCr13, **1.7131** 16MnCr5, **1.7264** 20CrMo5	≤1400		●
氮化钢	**1.8504** 34CrAl6	≤1000		●
	1.8519 31CrMoV9, **1.8550** 34CrAlNi7	≤1400		●
工具钢	**1.1750** C75W, **1.2067** 102Cr6, **1.2307** 29CrMoV9	≤850		●
	1.2080 X210Cr12, **1.2083** X42Cr13, **1.2419** 105WCr6, **1.2767** X45NiCrMo4	≤1400		●
高速钢	**1.3243** S 6-5-2-5, **1.3343** S 6-5-2, **1.3344** S 6-5-3	≤1400		●
弹簧钢	**1.5026** 55Si7, **1.7176** 55Cr3, **1.8159** 51CrV4 (51CrV4)		≤350 HB	●
硬化钢	–		≤48 HRC	●
			≤66 HRC	●
不锈钢,硫化	**1.4005** X12CrS13, **1.4104** X14CrMoS17, **1.4105** X6CrMoS17, **1.4305** X8CrNiS18-9	≤900		●
奥氏体	**1.4301** X5CrNi18-10 (V2A), **1.4541** X6CrNiTi18-10, **1.4571** X6CrNiMoTi 17-12-2 (V4A)	≤1100		●
马氏体	**1.4057** X20CrNi172 (X17CrNi16-2), **1.4122** X39CrMo17-1, **1.4521** X2CrMoTi18-2	≤1500		●
铸铁	**0.6010** EN-GJL-100 (GG10), **0.6020** EN-GJL-200 (GG20)		≤240 HB	○ ○
	0.6025 EN-GJL-250 (GG25), **0.6035** EN-GJL-350 (GG35)		≤350 HB	○ ○
球墨铁铸和	**0.7050** EN-GJS-500-7 (GGG50), **0.8035** EN-GJMW-350-4 (GTW35)		≤240 HB	●
可锻铸铁	**0.7070** EN-GJS-700-2 (GGG70), **0.8170** EN-GJMB-700-2 (GTS70)		≤350 HB	●
冷激铸铁	–		≤350 HB	●
蠕墨铸铁 GGV	**EN-GJV250** (GGV25), **EN-GJV350** (GGV35)		≤220 HB	○ ○
	EN-GJV400 (GGV40), **EN-GJV500** (GGV50), SiMo 6		≤300 HB	○ ○
蠕墨铸铁 ADI	**EN-GJS-800-8** (ADI800), **EN-GJS-1000-5** (ADI1000)	≤1000		○ ○
	EN-GJS-1200-2 (ADI1200), **EN-GJS-1400-1** (ADI1400)	≤1400		○ ○
特殊合金	Nimonic, Inconel, Monel, Hastelloy	≤2000		●
钛及钛合金	**3.7024** Ti99,5, **3.7114** TiAl5Sn2,5, **3.7124** TiCu2	≤850		●
	3.7154 TiAl6Zr5, **3.7165** TiAl6V4, **3.7184** TiAl4Mo4Sn2,5, - TiAl8Mo1V1	≤1400		●
铝及铝合金	**3.0255** Al99,5, **3.2315** AlMgSi1, **3.3515** AlMg1	≤400		●
锻铝合金	**3.0615** AlMgSiPb, **3.1325** AlCuMg1, **3.3245** AlMg3Si, **3.4365** AlZnMgCu1,5	≤650		●
铸铝 ⩽ 10 % Si	**3.2131** G-AlSi5Cu1, **3.2153** G-AlSi7Cu3, **3.2573** G-AlSi9	≤600		●
⩽ 24 % Si	**3.2581** G-AlSi12, **3.2583** G-AlSi12Cu, - G-AlSi12CuNiMg	≤600		●
镁合金	**3.5200** MgMn2, **3.5812.05** G-MgAl8Zn1, **3.5612.05** G-MgAl6Zn1	≤400		○
低合金铜	**2.0070** SE-Cu, **2.1020** CuSn6, **2.1096** G-CuSn5ZnPb	≤500		●
黄铜,短屑	**2.0380** CuZn39Pb2, **2.0401** CuZn39Pb3, **2.0410** CuZn43Pb2	≤600		●
长屑	**2.0250** CuZn20, **2.0280** CuZn33, **2.0332** CuZn37Pb0,5	≤600		●
青铜,短屑	**2.1090** CuSn7ZnPb, **2.1170** CuPb5Sn5, **2.1176** CuPb10Sn	≤600		● ●
	2.0790 CuNi18Zn19Pb	≤850		●
青铜,长屑	**2.0916** CuAl5, **2.0960** CuAl9Mn, **2.1050** CuSn10	≤850		●
	2.0980 CuAl11Ni, **2.1247** CuBe2	≤1000		●
热固塑料	环氧树脂, Resopal, Pertinax, Moltopren	≤150		○
热塑塑料	Plexiglass, Hostalen, Novodur, Makralon	≤100		● ○
Kevlar 合成纤维	Kevlar	≤1000		○
玻璃/碳纤维	GFK/CFK	≤1000		○

HARTNER

≤5xD

84811	84507	82761	84461	89244
338	Std.	Std.	Std.	Std.
HSS-E-PM	HSS-E-PM	HSS-E	HSS-E	Solid carbide
T	F	○	T	○
FN 500 DZ	FN 500	FN	FN	N
		轴向	轴向	
64	96	108	108	67







Vc m/min	进给代号	Vc m/min	进给代号	Vc m/min	进给代号	Vc m/min	进给代号	Vc m/min	进给代号
40	6	42	6	48	7	60	7	80	4
32	5	37	5	38	6	48	6	70	4
45	6	47	6	48	7	60	7	80	**5**
40	5	44	6	38	6	48	6	70	**4**
42	6	47	6	48	6	60	6	80	4
40	5	47	6	48	6	60	6	70	4
28	**4**	44	**5**	45	**5**	50	**5**	60	4
25	4	30	4	30	**5**	33	**5**	60	4
20	**3**	25	**3**	28	**4**	31	**4**		
40	4	47	3	50	7	55	7	80	5
22	**4**	25	**4**	25	**5**	31	**5**	60	4
18	**3**	20	**3**	25	**4**	31	**4**		
20	**4**	25	**4**	25	**5**	30	**5**	50	4
15	**3**	18	**4**	20	**4**	24	**4**		
25	**4**	22	**5**	24	5	30	5	50	3
15	**3**	17	**4**	17	**4**	20	**4**		
15	**3**	14	**4**	14	**4**	18	**4**		
10	**2**	12	**2**	12	**3**	15	**3**	25	2
				4	**3**	5	**3**	20	2
15	4	22	4	20	**5**	25	**5**	25	**2**
10	3	18	3	14	**4**	18	**4**	15	1
12	3	20	3	16	**4**	20	**4**	25	2
50	**6**	50	**7**	48	7	60	7	90	**4**
40	**6**	40	**7**	38	**7**	48	**7**	80	**4**
45	**6**	44	**7**	42	7	52	7	70	**4**
32	**6**	33	**7**	35	**7**	40	**7**	80	**4**
8	3	16	4	12	**4**	15	**4**		
5	2	6	2	10	**2**	12	**2**	15	2
				14	3	18	3	15	**1**
				10	**3**	12	**3**	15	**1**
								200	**7**
								200	**7**
				95	7	120	7	150	**6**
				75	8	95	8	120	**6**
								180	**5**
50	5	50	5	90	6	100	6	80	**5**
								180	5
60	5	60	5	50	6	55	6	180	5
50	5	50	5					120	5
45	4	44	5	48	5	60	5	120	5
40	4	33	5	45	5	55	5	70	4
32	4	28	5	38	**5**	45	**5**	50	3
25	**4**	25	**4**					50	4
				38	6	48	6	40	3
								80	3

麻花钻应用推荐

进给代号为粗体的刀具是首选项

钻头直径 Ø mm	进给代号								
	1	2	3	4	5	6	7	8	9
	f (mm/rev.)								
0.50	0.004	0.006	0.007	0.008	0.010	0.012	0.014	0.016	0.019
1.00	0.006	0.008	0.012	0.014	0.016	0.018	0.020	0.023	0.025
2.00	0.020	0.025	0.032	0.040	0.050	0.063	0.080	0.100	0.125
2.50	0.025	0.032	0.040	0.050	0.063	0.080	0.100	0.125	0.160
3.15	0.032	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.160
4.00	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.200
5.00	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.250
6.30	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315
8.00	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.315
10.00	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.400
12.50	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500
16.00	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630
20.00	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.630
25.00	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	0.800
31.50	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	1.000
40.00	0.200	0.250	0.315	0.400	0.500	0.630	0.800	1.000	1.250
50.00	0.250	0.310	0.400	0.500	0.630	0.800	1.000	1.250	1.250
63.00	0.315	0.400	0.500	0.630	0.800	1.000	1.250	1.600	1.600
80.00	0.400	0.500	0.630	0.800	1.000	1.250	1.600	1.600	2.000

冷却方式:
○ 气冷
● 纯油
● 乳化液

切削方向:
® 右切削
↺ 左切削

材料组	材料例举,最新牌号(括弧内为旧牌号) 粗体数字=材料代号依据DIN EN	拉伸强度_ MPa (N/mm²)	硬度	冷却方式
普通结构钢	**1.0035** S185(St33), **1.0486** P275N(StE285), **1.0345** P235GH(H1), **1.0425** P265GH(H2)	≤500		●
	1.0050 E295 (St50-2), **1.0070** E360 (St70-2), **1.8937** P500NH (WStE500)	≤1000		●
易切削钢	**1.0718** 11SMnPb30 (9SMnPb28), **1.0736** 11SMn37 (9SMn36)	≤850		●
	1.0727 46S20 (45S20), **1.0728** (60S20), **1.0757** 46SPb20 (45SPb20)	≤1000		●
非合金热处理钢	**1.0402** C22, **1.1178** C30E (Ck30)	≤700		●
	1.0503 C45, **1.1191** C45E (Ck45)	≤850		●
	1.0601 C60, **1.1221** C60E (Ck60)	≤1000		●
合金热处理钢	**1.5131** 50MnSi4, **1.7003** 38Cr2, **1.7030** 28Cr4	≤1000		●
	1.5710 36NiCr6, **1.7035** 41Cr4, **1.7225** 42CrMo4	≤1400		●
非合金表面硬化钢	**1.0301** (C10), **1.1121** C10E (Ck10)	≤850		●
合金表面硬化钢	**1.7276** 10CrMo11, **1.5125** 11MnSi6	≤1000		●
	1.5752 15NiCr13, **1.7131** 16MnCr5, **1.7264** 20CrMo5	≤1400		●
氮化钢	**1.8504** 34CrAl6	≤1000		●
	1.8519 31CrMoV9, **1.8550** 34CrAlNi7	≤1400		●
工具钢	**1.1750** C75W, **1.2067** 102Cr6, **1.2307** 29CrMoV9	≤850		●
	1.2080 X210Cr12, **1.2083** X42Cr13, **1.2419** 105WCr6, **1.2767** X45NiCrMo4	≤1400		●
高速钢	**1.3243** S 6-5-2-5, **1.3343** S 6-5-2, **1.3344** S 6-5-3	≤1400		●
弹簧钢	**1.5026** 55Si7, **1.7176** 55Cr3, **1.8159** 51CrV4 (51CrV4)		≤350 HB	●
硬化钢	–		≤48 HRC	●
			≤66 HRC	●
不锈钢,硫化	**1.4005** X12CrS13, **1.4104** X14CrMoS17, **1.4105** X6CrMoS17, **1.4305** X8CrNiS18-9	≤900		●
奥氏体	**1.4301** X5CrNi18-10 (V2A), **1.4541** X6CrNiTi18-10, **1.4571** X6CrNiMoTi 17-12-2 (V4A)	≤1100		●
马氏体	**1.4057** X20CrNi172 (X17CrNi16-2), **1.4122** X39CrMo17-1, **1.4521** X2CrMoTi18-2	≤1500		●
铸铁	**0.6010** EN-GJL-100 (GG10), **0.6020** EN-GJL-200 (GG20)		≤240 HB	○ ○
	0.6025 EN-GJL-250 (GG25), **0.6035** EN-GJL-350 (GG35)		≤350 HB	○ ○
球墨铁铸和	**0.7050** EN-GJS-500-7 (GGG50), **0.8035** EN-GJMW-350-4 (GTW35)		≤240 HB	●
可锻铸铁	**0.7070** EN-GJS-700-2 (GGG70), **0.8170** EN-GJMB-700-2 (GTS70)		≤350 HB	●
冷激铸铁	–		≤350 HB	●
蠕墨铸铁 GGV	**EN-GJV250** (GGV25), **EN-GJV350** (GGV35)		≤220 HB	○ ○
	EN-GJV400 (GGV40), **EN-GJV500** (GGV50), SiMo 6		≤300 HB	○ ○
蠕墨铸铁 ADI	**EN-GJS-800-8** (ADI800), **EN-GJS-1000-5** (ADI1000)	≤1000		○ ○
	EN-GJS-1200-2 (ADI1200), **EN-GJS-1400-1** (ADI1400)	≤1400		○ ○
特殊合金	Nimonic, Inconel, Monel, Hastelloy	≤2000		●
钛及钛合金	**3.7024** Ti99,5, **3.7114** TiAl5Sn2,5, **3.7124** TiCu2	≤850		●
	3.7154 TiAl6Zr5, **3.7165** TiAl6V4, **3.7184** TiAl4Mo4Sn2,5, - TiAl8Mo1V1	≤1400		●
铝及铝合金	**3.0255** Al99,5, **3.2315** AlMgSi1, **3.3515** AlMg1	≤400		●
锻铝合金	**3.0615** AlMgSiPb, **3.1325** AlCuMg1, **3.3245** AlMg3Si, **3.4365** AlZnMgCu1,5	≤650		●
铸铝 ⩽ 10 % Si	**3.2131** G-AlSi5Cu1, **3.2153** G-AlSi7Cu3, **3.2573** G-AlSi9	≤600		●
⩽ 24 % Si	**3.2581** G-AlSi12, **3.2583** G-AlSi12Cu, - G-AlSi12CuNiMg	≤600		●
镁合金	**3.5200** MgMn2, **3.5812.05** G-MgAl8Zn1, **3.5612.05** G-MgAl6Zn1	≤400		○
低合金铜	**2.0070** SE-Cu, **2.1020** CuSn6, **2.1096** G-CuSn5ZnPb	≤500		●
黄铜,短屑	**2.0380** CuZn39Pb2, **2.0401** CuZn39Pb3, **2.0410** CuZn43Pb2	≤600		●
长屑	**2.0250** CuZn20, **2.0280** CuZn33, **2.0332** CuZn37Pb0,5	≤600		●
青铜,短屑	**2.1090** CuSn7ZnPb, **2.1170** CuPb5Sn5, **2.1176** CuPb10Sn	≤600		● ●
	2.0790 CuNi18Zn19Pb	≤850		●
青铜,长屑	**2.0916** CuAl5, **2.0960** CuAl9Mn, **2.1050** CuSn10	≤850		●
	2.0980 CuAl11Ni, **2.1247** CuBe2	≤1000		●
热固塑料	环氧树脂, Resopal, Pertinax, Moltopren	≤150		○
热塑塑料	Plexiglass, Hostalen, Novodur, Makralon	≤100		● ○
Kevlar 合成纤维	Kevlar	≤1000		○
玻璃/碳纤维	GFK/CFK	≤1000		○

≤10xD

81210	81317	81310	82210	81320	81330	81350	81340	84814	84812	84418	84423	84506
339	340	340	341	340	340	340	340	340	340	340	340	340
HSS								HSS-E	HSS-E	HSS		HSS
>Ø 2,36		>Ø 2,36					>Ø 2,36		T	T	T	F
N	N	N	N	H	W	FW	FN	FU500DZ	FU500DZ	N	FN	FN
109	114	111	168	117	118	124	120	131	131	115	122	122



vc m/min	进给代号								vc m/min	进给代号	vc m/min	进给代号	vc m/min	进给代号		vc m/min	进给代号
24	6	6	6	6				**6**	29	5	32	5	28	6	**6**	30	**7**
20	5	5	5	5				**5**	22	4	25	4	22	5	**5**	24	**6**
27	6	6	6	6				**6**	32	5	35	5	30	6	**6**	33	**7**
27	5	5	5	5				5	25	5	28	5	30	5	5	33	6
22	5	5	5	5				**5**	25	5	28	5	25	5	**5**	28	**6**
22	5	5	5	5				**5**	22	5	25	5	25	5	**5**	28	**6**
									13	4	15	4	22	4	4	24	5
									12	3	13	3	18	4	4	23	5
									11	2	12	2					
27	6	6	6	6				**6**	25	5	28	5	30	6	**6**	33	**7**
									12	3	14	3	14	4	4	18	5
									11	2	12	2					
									12	3	13	3	12	4	4	15	5
									7	2	8	2					
14	4	4	4	4				4	12	3	13	9	16	4	4	19	5
									9	2	10	2	10	3	3	13	4
									9	2	10	2					
									12	3	13	3					
									7	3	8	3					
									11	3	12	3					
27	6	6	6	6				**6**	29	6	32	6	30	6	**6**	33	**7**
27	6	6	6	6				6	23	6	26	6	30	6	6	33	7
22	6	6	6	6				**6**	25	6	28	6	24	6	**6**	26	**7**
18	6	6	6	6				6	18	6	20	6	20	6	6	22	7
65						7	7		45	7	50	7					
65						7	7		45	7	50	7					
45	7	7	7	7		7		**7**	54	7	60	7	50	7	**7**	55	**8**
45	6	6	6	6				**6**	45	6	50	6	50	6	**6**	55	**7**
63	6	6	6	6	6		**6**		45	6	50	6	70	6			
54	5	5	5	5		5		**5**	60	5	70	5	60	5	**5**	65	**6**
63					**6**				40	5	50	5					
36	5	5	5	5				**5**	25	5	28	5	40	5	**5**	44	**6**
28	4	4	4	4	**4**				31	4	35	4	30	**4**			
22	4	4	4	4					22	4	25	4	25	**4**			
22	4	4	4	4				**4**	22	4	24	4	14	4	**4**	16	**5**
									18	4	20	4	12	4	4	14	5
14	4	4	4	4	4			**4**	16	4	18	4	18	4	**4**	23	**5**
22	5	5	5	5	**5**	5	5		11	4	12	4	32	5			

麻花钻应用推荐

进给代号为粗体的刀具是首选项

钻头直径 Ø mm	进给代号								
	1	2	3	4	5	6	7	8	9
	f (mm/rev.)								
0.50	0.004	0.006	0.007	0.008	0.010	0.012	0.014	0.016	0.019
1.00	0.006	0.008	0.012	0.014	0.016	0.018	0.020	0.023	0.025
2.00	0.020	0.025	0.032	0.040	0.050	0.063	0.080	0.100	0.125
2.50	0.025	0.032	0.040	0.050	0.063	0.080	0.100	0.125	0.160
3.15	0.032	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.160
4.00	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.200
5.00	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.250
6.30	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315
8.00	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.315
10.00	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.400
12.50	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500
16.00	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630
20.00	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.630
25.00	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	0.800
31.50	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	1.000
40.00	0.200	0.250	0.315	0.400	0.500	0.630	0.800	1.000	1.250
50.00	0.250	0.310	0.400	0.500	0.630	0.800	1.000	1.250	1.250
63.00	0.315	0.400	0.500	0.630	0.800	1.000	1.250	1.600	1.600
80.00	0.400	0.500	0.630	0.800	1.000	1.250	1.600	1.600	2.000

冷却方式:
○ 气冷
● 纯油
● 乳化液

切削方向:
® 右切削
Ⓛ 左切削

材料组	材料例举,最新牌号(括弧内为旧牌号) 粗体数字=材料代号依据DIN EN	拉伸强度_ MPa (N/mm²)	硬度	冷却方式
普通结构钢	**1.0035** S185(St33), **1.0486** P275N(StE285), **1.0345** P235GH(H1), **1.0425** P265GH(H2)	≤500		●
	1.0050 E295 (St50-2), **1.0070** E360 (St70-2), **1.8937** P500NH (WStE500)	≤1000		●
易切削钢	**1.0718** 11SMnPb30 (9SMnPb28), **1.0736** 11SMn37 (9SMn36)	≤850		●
	1.0727 46S20 (45S20), **1.0728** (60S20), **1.0757** 46SPb20 (45SPb20)	≤1000		●
非合金热处理钢	**1.0402** C22, **1.1178** C30E (Ck30)	≤700		●
	1.0503 C45, **1.1191** C45E (Ck45)	≤850		●
	1.0601 C60, **1.1221** C60E (Ck60)	≤1000		●
合金热处理钢	**1.5131** 50MnSi4, **1.7003** 38Cr2, **1.7030** 28Cr4	≤1000		●
	1.5710 36NiCr6, **1.7035** 41Cr4, **1.7225** 42CrMo4	≤1400		●
非合金表面硬化钢	**1.0301** (C10), **1.1121** C10E (Ck10)	≤850		●
合金表面硬化钢	**1.7276** 10CrMo11, **1.5125** 11MnSi6	≤1000		●
	1.5752 15NiCr13, **1.7131** 16MnCr5, **1.7264** 20CrMo5	≤1400		●
氮化钢	**1.8504** 34CrAl6	≤1000		●
	1.8519 31CrMoV9, **1.8550** 34CrAlNi7	≤1400		●
工具钢	**1.1750** C75W, **1.2067** 102Cr6, **1.2307** 29CrMoV9	≤850		●
	1.2080 X210Cr12, **1.2083** X42Cr13, **1.2419** 105WCr6, **1.2767** X45NiCrMo4	≤1400		●
高速钢	**1.3243** S 6-5-2-5, **1.3343** S 6-5-2, **1.3344** S 6-5-3	≤1400		●
弹簧钢	**1.5026** 55Si7, **1.7176** 55Cr3, **1.8159** 51CrV4 (51CrV4)		≤350 HB	●
硬化钢	–		≤48 HRC	●
			≤66 HRC	●
不锈钢,硫化	**1.4005** X12CrS13, **1.4104** X14CrMoS17, **1.4105** X6CrMoS17, **1.4305** X8CrNiS18-9	≤900		●
奥氏体	**1.4301** X5CrNi18-10 (V2A), **1.4541** X6CrNiTi18-10, **1.4571** X6CrNiMoTi 17-12-2 (V4A)	≤1100		●
马氏体	**1.4057** X20CrNi172 (X17CrNi16-2), **1.4122** X39CrMo17-1, **1.4521** X2CrMoTi18-2	≤1500		●
铸铁	**0.6010** EN-GJL-100 (GG10), **0.6020** EN-GJL-200 (GG20)		≤240 HB	○ ○
	0.6025 EN-GJL-250 (GG25), **0.6035** EN-GJL-350 (GG35)		≤350 HB	○ ○
球墨铁铸和	**0.7050** EN-GJS-500-7 (GGG50), **0.8035** EN-GJMW-350-4 (GTW35)		≤240 HB	●
可锻铸铁	**0.7070** EN-GJS-700-2 (GGG70), **0.8170** EN-GJMB-700-2 (GTS70)		≤350 HB	●
冷激铸铁	–		≤350 HB	●
蠕墨铸铁 GGV	**EN-GJV250** (GGV25), **EN-GJV350** (GGV35)		≤220 HB	○ ○
	EN-GJV400 (GGV40), **EN-GJV500** (GGV50), SiMo 6		≤300 HB	○ ○
蠕墨铸铁 ADI	**EN-GJS-800-8** (ADI800), **EN-GJS-1000-5** (ADI1000)	≤1000		○ ○
	EN-GJS-1200-2 (ADI1200), **EN-GJS-1400-1** (ADI1400)	≤1400		○ ○
特殊合金	Nimonic, Inconel, Monel, Hastelloy	≤2000		●
钛及钛合金	**3.7024** Ti99,5, **3.7114** TiAl5Sn2,5, **3.7124** TiCu2	≤850		●
	3.7154 TiAl6Zr5, **3.7165** TiAl6V4, **3.7184** TiAl4Mo4Sn2,5, - TiAl8Mo1V1	≤1400		●
铝及铝合金	**3.0255** Al99,5, **3.2315** AlMgSi1, **3.3515** AlMg1	≤400		●
锻铝合金	**3.0615** AlMgSiPb, **3.1325** AlCuMg1, **3.3245** AlMg3Si, **3.4365** AlZnMgCu1,5	≤650		●
铸铝 ⩽ 10 % Si	**3.2131** G-AlSi5Cu1, **3.2153** G-AlSi7Cu3, **3.2573** G-AlSi9	≤600		●
⩽ 24 % Si	**3.2581** G-AlSi12, **3.2583** G-AlSi12Cu, - G-AlSi12CuNiMg	≤600		●
镁合金	**3.5200** MgMn2, **3.5812.05** G-MgAl8Zn1, **3.5612.05** G-MgAl6Zn1	≤400		○
低合金铜	**2.0070** SE-Cu, **2.1020** CuSn6, **2.1096** G-CuSn5ZnPb	≤500		●
黄铜,短屑	**2.0380** CuZn39Pb2, **2.0401** CuZn39Pb3, **2.0410** CuZn43Pb2	≤600		●
长屑	**2.0250** CuZn20, **2.0280** CuZn33, **2.0332** CuZn37Pb0,5	≤600		●
青铜,短屑	**2.1090** CuSn7ZnPb, **2.1170** CuPb5Sn5, **2.1176** CuPb10Sn	≤600		● ●
	2.0790 CuNi18Zn19Pb	≤850		●
青铜,长屑	**2.0916** CuAl5, **2.0960** CuAl9Mn, **2.1050** CuSn10	≤850		●
	2.0980 CuAl11Ni, **2.1247** CuBe2	≤1000		●
热固塑料	环氧树脂, Resopal, Pertinax, Moltopren	≤150		○
热塑塑料	Plexiglass, Hostalen, Novodur, Makralon	≤100		● ○
Kevlar 合成纤维	Kevlar	≤1000		○
玻璃/碳纤维	GFK/CFK	≤1000		○

≤10xD

81311	82211	81341	81361	81362	89286	82710	82521	82535	82525	82515
340	341	340	340	340	Std.	Std.	Std.	Std.	Std.	Std.
HSS-E				HSS-E	Solid carbide	HSS			HSS-E	HSS-E
>Ø 2,36		>Ø 2,36		T						
N	N	FN	S	S	N	FN	N	FN	FN	FN
						轴向	轴向	轴向	轴向	轴向
126	169	127	129	129	133	107	180	179	181	182



Vc m/min	进给代号				Vc m/min	进给代号	Vc m/min	进给代号	Vc m/min	进给代号			Vc m/min	进给代号	Vc m/min	进给代号
33	5	O5	5						26	6	6	6	35	6	30	**5**
27	5	5	5						22	5	5	5	30	5	25	**4**
36	5	5	5						30	6	6	6	30	6	30	**5**
32	5	5	**5**						30	**5**	**5**	**5**	30	5	25	**4**
36	5	5	5						24	**5**	**5**	**5**	35	5	30	**4**
36	5	5	5						24	**5**	**5**	**5**	29	5	25	**4**
22	4	4	**4**						22	4	4	4	22	**4**	18	**3**
18	4	4	**4**						20	4	4	4	18	**4**	16	**3**
14	3	3	**3**	3	15	3			14	3	3	3	14	**3**	12	**2**
32	5	5	5						30	**6**	**6**	**6**	35	6	30	**5**
18	4	4	**4**						17	4	4	4	18	**4**	16	**3**
13	3	3	**3**		13	3			12	3	3	3	14	**3**	12	**2**
14	4	4	**4**						14	4	4	4	14	**4**	12	**3**
10	3	3	**3**		10	3			10	3	3	3	12	**3**	10	**2**
13	4	4	**4**						15	**4**	**4**	**4**	15	4	13	**3**
10	3	3	**3**		10	3			10	3	3	3	11	**3**	9	**2**
12	3	3	**3**		10	3			10	3	3	3	11	**3**	9	**2**
6	2	2	2		8	**2**			7	2	2	2	8	**2**	6	**2**
4			1										4	2	4	**1**
12	4	4	**4**	4	15	4							14	**4**	12	**3**
8	3	3	2	**3**	10	**3**							10	3	8	**2**
10	3	3	**3**	**3**	13	**3**							12	**3**	12	**2**
32	6	6	6						30	**6**	**6**	**6**	30	6	28	**5**
27	6	6	**6**						30	6	6	6	24	**6**	22	**5**
26	6	6	6						24	**6**	**6**	**6**	24	6	22	**5**
24	6	6	**6**						20	6	6	6	20	**6**	18	**5**
6	3	3	3	3	6	**3**			7	3	3	3	8	3	6	**2**
5	1	1		1	6	1							8	**1**	6	**1**
8				**2**	10	**2**							10	**2**	8	**2**
5				**2**	6	**2**							8	**2**	6	**2**
									80	**6**						
70			7						50	**7**	**7**	**7**	60	7	55	**6**
60			6						50	**6**	**6**	**6**	50	6	44	**5**
60				5												
36	5	5	5						60	**5**	**5**	**5**	38	5	35	**4**
54			5										55	5	50	4
36	5	5	5						40	**5**	**5**	**5**	36	5	33	**4**
30	4	4	5													
24	4	4	5						24	**4**	**4**	**4**	24	4	22	**4**
18	4	4	4						24	**4**	**4**	**4**	20	**4**	18	**4**
13	4	4	**4**	4	25	4			22	4	4	4	14	**4**	12	**4**
16	4	4	4				50	**4**								
26				4			40	**3**	24	**5**	**5**	**5**	25	5	25	**4**
							80	**3**								

麻花钻应用推荐

订单号 ®

标准/DIN
刀具材质
表面处理
类型
页码

进给代号为粗体的刀具是首选项

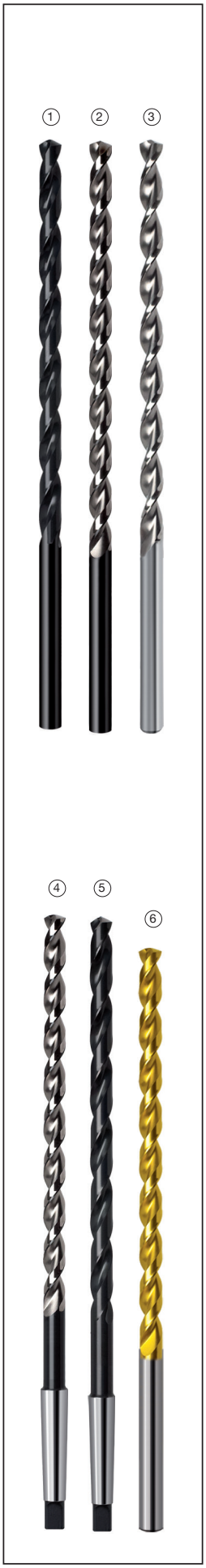
钻头直径 Ø mm	进给代号 1	2	3	4	5	6	7	8	9
	f (mm/rev.)								
0.50	0.004	0.006	0.007	0.008	0.010	0.012	0.014	0.016	0.019
1.00	0.006	0.008	0.012	0.014	0.016	0.018	0.020	0.023	0.025
2.00	0.020	0.025	0.032	0.040	0.050	0.063	0.080	0.100	0.125
2.50	0.025	0.032	0.040	0.050	0.063	0.080	0.100	0.125	0.160
3.15	0.032	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.160
4.00	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.200
5.00	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.250
6.30	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315
8.00	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.315
10.00	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.400
12.50	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500
16.00	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630
20.00	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.630
25.00	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	0.800
31.50	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	1.000
40.00	0.200	0.250	0.315	0.400	0.500	0.630	0.800	1.000	1.250
50.00	0.250	0.310	0.400	0.500	0.630	0.800	1.000	1.250	1.250
63.00	0.315	0.400	0.500	0.630	0.800	1.000	1.250	1.600	1.600
80.00	0.400	0.500	0.630	0.800	1.000	1.250	1.600	1.600	2.000

冷却方式:
○ 气冷
● 纯油
● 乳化液

切削方向:
® 右切削
Ⓛ 左切削

材料组	材料例举,最新牌号(括弧内为旧牌号) 粗体数字=材料代号依据DIN EN	拉伸强度_ MPa (N/mm²)	硬度	冷却方式
普通结构钢	**1.0035** S185(St33), **1.0486** P275N(StE285), **1.0345** P235GH(H1), **1.0425** P265GH(H2)	≤500		●
	1.0050 E295 (St50-2), **1.0070** E360 (St70-2), **1.8937** P500NH (WStE500)	≤1000		●
易切削钢	**1.0718** 11SMnPb30 (9SMnPb28), **1.0736** 11SMn37 (9SMn36)	≤850		●
	1.0727 46S20 (45S20), **1.0728** (60S20), **1.0757** 46SPb20 (45SPb20)	≤1000		●
非合金热处理钢	**1.0402** C22, **1.1178** C30E (Ck30)	≤700		●
	1.0503 C45, **1.1191** C45E (Ck45)	≤850		●
	1.0601 C60, **1.1221** C60E (Ck60)	≤1000		●
合金热处理钢	**1.5131** 50MnSi4, **1.7003** 38Cr2, **1.7030** 28Cr4	≤1000		●
	1.5710 36NiCr6, **1.7035** 41Cr4, **1.7225** 42CrMo4	≤1400		●
非合金表面硬化钢	**1.0301** (C10), **1.1121** C10E (Ck10)	≤850		●
合金表面硬化钢	**1.7276** 10CrMo11, **1.5125** 11MnSi6	≤1000		●
	1.5752 15NiCr13, **1.7131** 16MnCr5, **1.7264** 20CrMo5	≤1400		●
氮化钢	**1.8504** 34CrAl6	≤1000		●
	1.8519 31CrMoV9, **1.8550** 34CrAlNi7	≤1400		●
工具钢	**1.1750** C75W, **1.2067** 102Cr6, **1.2307** 29CrMoV9	≤850		●
	1.2080 X210Cr12, **1.2083** X42Cr13, **1.2419** 105WCr6, **1.2767** X45NiCrMo4	≤1400		●
高速钢	**1.3243** S 6-5-2-5, **1.3343** S 6-5-2, **1.3344** S 6-5-3	≤1400		●
弹簧钢	**1.5026** 55Si7, **1.7176** 55Cr3, **1.8159** 51CrV4 (51CrV4)		≤350 HB	●
硬化钢	–		≤48 HRC	●
			≤66 HRC	●
不锈钢,硫化	**1.4005** X12CrS13, **1.4104** X14CrMoS17, **1.4105** X6CrMoS17, **1.4305** X8CrNiS18-9	≤900		●
奥氏体	**1.4301** X5CrNi18-10 (V2A), **1.4541** X6CrNiTi18-10, **1.4571** X6CrNiMoTi 17-12-2 (V4A)	≤1100		●
马氏体	**1.4057** X20CrNi172 (X17CrNi16-2), **1.4122** X39CrMo17-1, **1.4521** X2CrMoTi18-2	≤1500		●
铸铁	**0.6010** EN-GJL-100 (GG10), **0.6020** EN-GJL-200 (GG20)		≤240 HB	○ ○
	0.6025 EN-GJL-250 (GG25), **0.6035** EN-GJL-350 (GG35)		≤350 HB	○ ○
球墨铁铸和	**0.7050** EN-GJS-500-7 (GGG50), **0.8035** EN-GJMW-350-4 (GTW35)		≤240 HB	●
可锻铸铁	**0.7070** EN-GJS-700-2 (GGG70), **0.8170** EN-GJMB-700-2 (GTS70)		≤350 HB	●
冷激铸铁	–		≤350 HB	●
蠕墨铸铁 GGV	**EN-GJV250** (GGV25), **EN-GJV350** (GGV35)		≤220 HB	○ ○
	EN-GJV400 (GGV40), **EN-GJV500** (GGV50), SiMo 6		≤300 HB	○ ○
蠕墨铸铁 ADI	**EN-GJS-800-8** (ADI800), **EN-GJS-1000-5** (ADI1000)	≤1000		○ ○
	EN-GJS-1200-2 (ADI1200), **EN-GJS-1400-1** (ADI1400)	≤1400		○ ○
特殊合金	Nimonic, Inconel, Monel, Hastelloy	≤2000		●
钛及钛合金	**3.7024** Ti99,5, **3.7114** TiAl5Sn2,5, **3.7124** TiCu2	≤850		●
	3.7154 TiAl6Zr5, **3.7165** TiAl6V4, **3.7184** TiAl4Mo4Sn2,5, - TiAl8Mo1V1	≤1400		●
铝及铝合金	**3.0255** Al99,5, **3.2315** AlMgSi1, **3.3515** AlMg1	≤400		●
锻铝合金	**3.0615** AlMgSiPb, **3.1325** AlCuMg1, **3.3245** AlMg3Si, **3.4365** AlZnMgCu1,5	≤650		●
铸铝 ⩽ 10 % Si	**3.2131** G-AlSi5Cu1, **3.2153** G-AlSi7Cu3, **3.2573** G-AlSi9	≤600		●
⩽ 24 % Si	**3.2581** G-AlSi12, **3.2583** G-AlSi12Cu, - G-AlSi12CuNiMg	≤600		●
镁合金	**3.5200** MgMn2, **3.5812.05** G-MgAl8Zn1, **3.5612.05** G-MgAl6Zn1	≤400		○
低合金铜	**2.0070** SE-Cu, **2.1020** CuSn6, **2.1096** G-CuSn5ZnPb	≤500		●
黄铜,短屑	**2.0380** CuZn39Pb2, **2.0401** CuZn39Pb3, **2.0410** CuZn43Pb2	≤600		●
长屑	**2.0250** CuZn20, **2.0280** CuZn33, **2.0332** CuZn37Pb0,5	≤600		●
青铜,短屑	**2.1090** CuSn7ZnPb, **2.1170** CuPb5Sn5, **2.1176** CuPb10Sn	≤600		● ●
	2.0790 CuNi18Zn19Pb	≤850		●
青铜,长屑	**2.0916** CuAl5, **2.0960** CuAl9Mn, **2.1050** CuSn10	≤850		●
	2.0980 CuAl11Ni, **2.1247** CuBe2	≤1000		●
热固塑料	环氧树脂, Resopal, Pertinax, Moltopren	≤150		○
热塑塑料	Plexiglass, Hostalen, Novodur, Makralon	≤100		● ○
Kevlar 合成纤维	Kevlar	≤1000		○
玻璃/碳纤维	GFK/CFK	≤1000		○

81410 81510 81610	82310 82410	81450	81440 81540 81640	81740 81750 81760	82340 82440	82466 82467 82468 82469	84425 84426	81441 81541	82341
1869	1870	1869	1869	Std.	1870	Std.	1869	1869	1870
HSS							HSS	HSS-E	HSS-E
>Ø 2,36			>Ø 2,36		>Ø 16,0	>Ø 16,0	T		
N	N	FW	FN	FN	FN	FN	GT 100	FN	FN
134/139/143	170/173	137	135/140/144	145-147	171/174	175-178	136/141	138/142	172
①	⑤	③	②	④	④	④	⑥	②	④



v_c m/min	进给代号							v_c m/min	进给代号	v_c m/min	进给代号	v_c m/min	进给代号
22	5	5		5	5	5	5	28	5	30	4	30	4
18	4	4		4	4	4	4	22	4	25	4	25	4
20 22	5	5		5	5	5	5	28	5	33	4	33	4
20 18	4	4		4	4	4	4	22	4	30	4	30	4
25 22	4	4		4	4	4	4	28	4	33	4	33	4
25 18	4	4		4	4	4	4	22	4	33	4	33	4
								16	3	20	3	20	3
12	3	3								14	3	14	3
										10	2	10	2
22	5	5		5	5	5	5	28	5	29	4	29	4
10	3	3								14	3	14	3
										10	2	10	2
8	3	3								10	3	10	3
										8	2	8	2
12	3	3		3	3	3	3	12	3	11	3	11	3
6	2	2		2	2	2	2	8	2	8	2	8	2
6	2	2								8	2	8	2
										5	1	5	1
										3	1	3	1
										10	3	10	3
										8	2	8	2
										10	2	10	2
22	5	5		5	5	5	5	28	5				
18	5	5		5	5	5	5	22	5	20	5	20	5
20	5	5		5	5	5	5	25	5				
14	5	5		5	5	5	5	18	5	16	5	16	5
										5	2	5	2
								6	1	5	1	5	1
										6	1	6	1
										5	1	5	1
55			6					70	6				
55			6					70	6				
45	6	6		6	6	6	6	55	6	50	6	50	6
36	5	5		5	5	5	5	45	5	40	5	70	5
55	5	5	5	5	5	5	5	70	5				
22	4	4		4	4	4	4	28	4	30	4	30	4
45	4	4								45	4	45	4
28	4	4		4	4	4	4	36	4	30	4	30	4
22	3	3		3	3	3	3	28	3	25	4	25	4
20	3	3		3	3	3	3	25	3	20	4	20	4
18	3	3		3	3	3	3	22	3	16	3	16	3
								18	3	10	3	10	3
12	3	3		3	3	3	3	15	3	14	3	14	3
18	4	4	4	4	4	4	4	22	4	20	3	20	3

微型钻 应用推荐

订单号 ®
订单号 ⓛ
标准/DIN
刀具材质
硬质合金等级
表面处理
Typ
冷却
页码

Drill Ø mm	进给代号								
	101	**102**	**103**	**104**	**105**	**106**	**107**	**108**	**109**
	f (mm/rev.)								
0.10	0.002	0.003	0.003	0.004	0.006	0.007	0.010	0.013	0.016
0.16	0.002	0.003	0.004	0.005	0.007	0.009	0.012	0.016	0.022
0.25	0.003	0.004	0.005	0.007	0.009	0.011	0.014	0.019	0.024
0.30	0.004	0.005	0.007	0.009	0.011	0.015	0.019	0.025	0.033
0.50	0.005	0.007	0.008	0.011	0.014	0.019	0.024	0.031	0.041
0.63	0.007	0.009	0.012	0.015	0.020	0.026	0.034	0.044	0.057
0.80	0.010	0.013	0.016	0.020	0.024	0.031	0.038	0.048	0.060
1.00	0.020	0.024	0.029	0.035	0.041	0.050	0.060	0.072	0.086
1.50	0.030	0.035	0.040	0.046	0.052	0.060	0.069	0.080	0.092
2.00	0.040	0.046	0.053	0.061	0.070	0.080	0.093	0.106	0.122

Drill Ø mm	进给代号 **order no. 6400/6401/6408/6412**												
	56	**57**	**58**	**59**	**60**	**61**	**62**	**63**	**64**	**65**	**66**	**67**	**68**
	f (mm/rev.)												
0.80	0.008	0.016	0.024	0.032	0.04	0.05	0.06	0.07	0.08	0.08	0.08	0.09	0.09
1.00	0.012	0.022	0.032	0.042	0.06	0.07	0.08	0.09	0.10	0.10	0.11	0.11	0.12
1.50	0.021	0.036	0.051	0.066	0.09	0.10	0.12	0.13	0.15	0.15	0.16	0.17	0.18
2.00	0.032	0.052	0.072	0.092	0.12	0.14	0.16	0.18	0.20	0.21	0.22	0.23	0.24
2.50	0.045	0.070	0.095	0.120	0.15	0.17	0.20	0.22	0.25	0.26	0.27	0.28	0.30
3.00	0.060	0.090	0.120	0.150	0.18	0.21	0.24	0.27	0.30	0.31	0.33	0.34	0.36

冷却方式:
○ 气冷
● 纯油
● 乳化液

切削方向:
® 右切削
ⓛ 左切削

材料组	材料例举,最新牌号(括弧内为旧牌号) 粗体数字=材料代号依据DIN EN	拉伸强度_ MPa (N/mm²)	硬度	冷却方式
普通结构钢	**1.0035** S185(St33), **1.0486** P275N(StE285), **1.0345** P235GH(H1), **1.0425** P265GH(H2)	≤500		●
	1.0050 E295 (St50-2), **1.0070** E360 (St70-2), **1.8937** P500NH (WStE500)	≤1000		●
易切削钢	**1.0718** 11SMnPb30 (9SMnPb28), **1.0736** 11SMn37 (9SMn36)	≤850		●
	1.0727 46S20 (45S20), **1.0728** (60S20), **1.0757** 46SPb20 (45SPb20)	≤1000		●
非合金热处理钢	**1.0402** C22, **1.1178** C30E (Ck30)	≤700		●
	1.0503 C45, **1.1191** C45E (Ck45)	≤850		●
	1.0601 C60, **1.1221** C60E (Ck60)	≤1000		●
合金热处理钢	**1.5131** 50MnSi4, **1.7003** 38Cr2, **1.7030** 28Cr4	≤1000		●
	1.5710 36NiCr6, **1.7035** 41Cr4, **1.7225** 42CrMo4	≤1400		●
非合金表面硬化钢	**1.0301** (C10), **1.1121** C10E (Ck10)	≤850		●
合金表面硬化钢	**1.7276** 10CrMo11, **1.5125** 11MnSi6	≤1000		●
	1.5752 15NiCr13, **1.7131** 16MnCr5, **1.7264** 20CrMo5	≤1400		●
氮化钢	**1.8504** 34CrAl6	≤1000		●
	1.8519 31CrMoV9, **1.8550** 34CrAlNi7	≤1400		●
工具钢	**1.1750** C75W, **1.2067** 102Cr6, **1.2307** 29CrMoV9	≤850		●
	1.2080 X210Cr12, **1.2083** X42Cr13, **1.2419** 105WCr6, **1.2767** X45NiCrMo4	≤1400		●
高速钢	**1.3243** S 6-5-2-5, **1.3343** S 6-5-2, **1.3344** S 6-5-3	≤1400		●
弹簧钢	**1.5026** 55Si7, **1.7176** 55Cr3, **1.8159** 51CrV4 (51CrV4)		≤350 HB	●
硬化钢	–		≤48 HRC	●
			≤66 HRC	●
不锈钢,硫化	**1.4005** X12CrS13, **1.4104** X14CrMoS17, **1.4105** X6CrMoS17, **1.4305** X8CrNiS18-9	≤900		●
奥氏体	**1.4301** X5CrNi18-10 (V2A), **1.4541** X6CrNiTi18-10, **1.4571** X6CrNiMoTi 17-12-2 (V4A)	≤1100		●
马氏体	**1.4057** X20CrNi172 (X17CrNi16-2), **1.4122** X39CrMo17-1, **1.4521** X2CrMoTi18-2	≤1500		●
铸铁	**0.6010** EN-GJL-100 (GG10), **0.6020** EN-GJL-200 (GG20)		≤240 HB	○ ○
	0.6025 EN-GJL-250 (GG25), **0.6035** EN-GJL-350 (GG35)		≤350 HB	○ ○
球墨铁铸和	**0.7050** EN-GJS-500-7 (GGG50), **0.8035** EN-GJMW-350-4 (GTW35)		≤240 HB	○
可锻铸铁	**0.7070** EN-GJS-700-2 (GGG70), **0.8170** EN-GJMB-700-2 (GTS70)		≤350 HB	○
冷激铸铁	–		≤350 HB	○
蠕墨铸铁 GGV	**EN-GJV250** (GGV25), **EN-GJV350** (GGV35)		≤220 HB	○ ○
	EN-GJV400 (GGV40), **EN-GJV500** (GGV50), SiMo 6		≤300 HB	○ ○
蠕墨铸铁 ADI	**EN-GJS-800-8** (ADI800), **EN-GJS-1000-5** (ADI1000)	≤1000		○ ○
	EN-GJS-1200-2 (ADI1200), **EN-GJS-1400-1** (ADI1400)	≤1400		○ ○
特殊合金	Nimonic, Inconel, Monel, Hastelloy	≤2000		●
钛及钛合金	**3.7024** Ti99,5, **3.7114** TiAl5Sn2,5, **3.7124** TiCu2	≤850		●
	3.7154 TiAl6Zr5, **3.7165** TiAl6V4, **3.7184** TiAl4Mo4Sn2,5, - TiAl8Mo1V1	≤1400		●
铝及铝合金	**3.0255** Al99,5, **3.2315** AlMgSi1, **3.3515** AlMg1	≤400		●
锻铝合金	**3.0615** AlMgSiPb, **3.1325** AlCuMg1, **3.3245** AlMg3Si, **3.4365** AlZnMgCu1,5	≤650		●
铸铝 ⩽ 10 % Si	**3.2131** G-AlSi5Cu1, **3.2153** G-AlSi7Cu3, **3.2573** G-AlSi9	≤600		●
⩽ 24 % Si	**3.2581** G-AlSi12, **3.2583** G-AlSi12Cu, - G-AlSi12CuNiMg	≤600		●
镁合金	**3.5200** MgMn2, **3.5812.05** G-MgAl8Zn1, **3.5612.05** G-MgAl6Zn1	≤400		○
低合金铜	**2.0070** SE-Cu, **2.1020** CuSn6, **2.1096** G-CuSn5ZnPb	≤500		●
黄铜,短屑	**2.0380** CuZn39Pb2, **2.0401** CuZn39Pb3, **2.0410** CuZn43Pb2	≤600		●
长屑	**2.0250** CuZn20, **2.0280** CuZn33, **2.0332** CuZn37Pb0,5	≤600		●
青铜,短屑	**2.1090** CuSn7ZnPb, **2.1170** CuPb5Sn5, **2.1176** CuPb10Sn	≤600		● ●
	2.0790 CuNi18Zn19Pb	≤850		●
青铜,长屑	**2.0916** CuAl5, **2.0960** CuAl9Mn, **2.1050** CuSn10	≤850		●
	2.0980 CuAl11Ni, **2.1247** CuBe2	≤1000		●
热固塑料	环氧树脂, Resopal, Pertinax, Moltopren	≤150		○
热塑塑料	Plexiglass, Hostalen, Novodur, Makralon	≤100		● ○
Kevlar 合成纤维	Kevlar	≤1000		○
玻璃/碳纤维	GFK/CFK	≤1000		○

HARTNER

≤4xD ≤7xD ≤5xD ≤8xD ≤15xD

87011 87016	84810	89281	86402	86400	86401	86405	86408	86412
1899	1899	Std.	Std.	Std.	Std.	Std.	Std.	Std.
HSS-E-PM	HSS-E-PM	Solid carb.	Solid carb.	Solid carb.	Solid carb.	Solid carb.	Solid carb.	Solid carb.
		K10/K20	K/P	K/P	K/P	K/P	K/P	K/P
○	T	○	A	A	A	A	A	A
N	N	N	N	N	N	N	N	N
						轴向	轴向	轴向
289/291	292	293	294	295	296	297	298	299











Vc m/min	进给代号	Vc m/min	进给代号	Vc m/min	进给代号	Vc m/min	进给代号	Vc m/min	进给代号		Vc m/min	进给代号		
21	106	27	106	50	105	100	62	100	64	62	105	62	58	58
18	105	23	105	35	104	100	62	100	64	62	100	62	58	58
18	106	23	106	50	**105**	100	62	100	64	62	105	62	59	59
16	105	21	105	45	**104**	90	61	90	63	61	90	61	59	59
20	105	26	105	45	104	90	62	90	64	62	95	62	58	58
18	105	23	105	35	104	90	62	90	64	62	95	62	58	58
14	**104**	18	**104**	30	103	90	61	90	63	61	90	61	58	58
14	**104**	18	**104**	30	103	90	61	90	63	61	90	61	58	58
12	103	16	103			70	60	70	62	60	70	60	58	58
18	106	23	106	50	103	100	61	100	63	61	100	61	57	57
14	**104**	18	**104**	40	103	85	61	85	63	61	85	61	58	58
12	103	16	103			70	60	70	62	60	70	60	58	58
14	**104**	18	**104**	25	103	70	60	70	62	60	70	60	57	57
12	103	16	103			60	60	60	62	60	60	60	57	57
16	**104**	20	**104**	25	103	50	60	50	62	60	50	60	58	58
14	103	18	103			60	60	60	62	60	50	60	58	58
14	103	18	103					60	57	57	50	57	57	57
8	102	10	102	20	102			60	57	57	50	57	57	57
				15	104									
18	104	20	104	25	**103**			30	57	57	70	**57**	**57**	**57**
14	103	16	103	25	**102**			15	56	56	60	**56**	**56**	**56**
16	103	18	103	25	**102**			30	57	57	70	**57**	**57**	**57**
26	106	33	106	80	**105**	130	66	130	68	66	150	60	60	60
22	**106**	28	**106**	60	**105**	130	66	130	68	66	140	60	60	60
18	106	23	106	60	105	130	66	130	68	66	140	60	60	60
22	**106**	28	**106**	50	**105**	120	65	120	67	65	130	60	60	60
				15	**103**			10	56	56	25	56	56	56
				45	**104**			15	56	56	35	56	56	56
				25	**104**			15	56	56	35	56	56	56
				160	**107**			70	68	68	70	68	68	68
				150	**106**			70	68	68	70	68	68	68
26	107			100	**106**			135	59	59	135	59	59	59
18	106			60	**106**			135	59	59	135	59	59	59
75	106	80	106	150	**105**									
42	105	53	105	50	**105**									
				67	106									
22	105	28	105	44	104									
22	104	28	104	68	103									
18	104	23	104	49	103									
13	104	16	104	53	103									
		14	104	36	103									
16	104	20	104	50	103									
18	104	23	104	36	103									
				60	104									

TS-Drills 应用推荐

进给代号为粗体的刀具是首选项

钻头直径 Ø mm	进给代号								
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
	f (mm/rev.)								
0.50	0.004	0.006	0.007	0.008	0.010	0.012	0.014	0.016	0.019
1.00	0.006	0.008	0.012	0.014	0.016	0.018	0.020	0.023	0.025
2.00	0.020	0.025	0.032	0.040	0.050	0.063	0.080	0.100	0.125
2.50	0.025	0.032	0.040	0.050	0.063	0.080	0.100	0.125	0.160
3.15	0.032	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.160
4.00	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.200
5.00	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.250
6.30	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315
8.00	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.315
10.00	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.400
12.50	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500
16.00	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630
20.00	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.630
25.00	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	0.800
31.50	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	1.000
40.00	0.200	0.250	0.315	0.400	0.500	0.630	0.800	1.000	1.250
50.00	0.250	0.310	0.400	0.500	0.630	0.800	1.000	1.250	1.250
63.00	0.315	0.400	0.500	0.630	0.800	1.000	1.250	1.600	1.600
80.00	0.400	0.500	0.630	0.800	1.000	1.250	1.600	1.600	2.000

冷却方式:
○ 气冷
● 纯油
● 乳化液

切削方向:
® 右切削
Ⓛ 左切削

材料组	材料例举,最新牌号(括弧内为旧牌号) 粗体数字=材料代号依据DIN EN	拉伸强度_ MPa (N/mm²)	硬度	冷却方式
普通结构钢	**1.0035** S185(St33), **1.0486** P275N(StE285), **1.0345** P235GH(H1), **1.0425** P265GH(H2)	≤500		●
	1.0050 E295 (St50-2), **1.0070** E360 (St70-2), **1.8937** P500NH (WStE500)	≤1000		●
易切削钢	**1.0718** 11SMnPb30 (9SMnPb28), **1.0736** 11SMn37 (9SMn36)	≤850		●
	1.0727 46S20 (45S20), **1.0728** (60S20), **1.0757** 46SPb20 (45SPb20)	≤1000		●
非合金热处理钢	**1.0402** C22, **1.1178** C30E (Ck30)	≤700		●
	1.0503 C45, **1.1191** C45E (Ck45)	≤850		●
	1.0601 C60, **1.1221** C60E (Ck60)	≤1000		●
合金热处理钢	**1.5131** 50MnSi4, **1.7003** 38Cr2, **1.7030** 28Cr4	≤1000		●
	1.5710 36NiCr6, **1.7035** 41Cr4, **1.7225** 42CrMo4	≤1400		●
非合金表面硬化钢	**1.0301** (C10), **1.1121** C10E (Ck10)	≤850		●
合金表面硬化钢	**1.7276** 10CrMo11, **1.5125** 11MnSi6	≤1000		●
	1.5752 15NiCr13, **1.7131** 16MnCr5, **1.7264** 20CrMo5	≤1400		●
氮化钢	**1.8504** 34CrAl6	≤1000		●
	1.8519 31CrMoV9, **1.8550** 34CrAlNi7	≤1400		●
工具钢	**1.1750** C75W, **1.2067** 102Cr6, **1.2307** 29CrMoV9	≤850		●
	1.2080 X210Cr12, **1.2083** X42Cr13, **1.2419** 105WCr6, **1.2767** X45NiCrMo4	≤1400		●
高速钢	**1.3243** S 6-5-2-5, **1.3343** S 6-5-2, **1.3344** S 6-5-3	≤1400		●
弹簧钢	**1.5026** 55Si7, **1.7176** 55Cr3, **1.8159** 51CrV4 (51CrV4)		≤350 HB	●
硬化钢	–		≤48 HRC	●
			≤66 HRC	●
不锈钢,硫化	**1.4005** X12CrS13, **1.4104** X14CrMoS17, **1.4105** X6CrMoS17, **1.4305** X8CrNiS18-9	≤900		●
奥氏体	**1.4301** X5CrNi18-10 (V2A), **1.4541** X6CrNiTi18-10, **1.4571** X6CrNiMoTi 17-12-2 (V4A)	≤1100		●
马氏体	**1.4057** X20CrNi172 (X17CrNi16-2), **1.4122** X39CrMo17-1, **1.4521** X2CrMoTi18-2	≤1500		●
铸铁	**0.6010** EN-GJL-100 (GG10), **0.6020** EN-GJL-200 (GG20)		≤240 HB	○ ○
	0.6025 EN-GJL-250 (GG25), **0.6035** EN-GJL-350 (GG35)		≤350 HB	○ ○
球墨铁铸和	**0.7050** EN-GJS-500-7 (GGG50), **0.8035** EN-GJMW-350-4 (GTW35)		≤240 HB	○
可锻铸铁	**0.7070** EN-GJS-700-2 (GGG70), **0.8170** EN-GJMB-700-2 (GTS70)		≤350 HB	○
冷激铸铁	–		≤350 HB	○
蠕墨铸铁 GGV	**EN-GJV250** (GGV25), **EN-GJV350** (GGV35)		≤220 HB	○ ○
	EN-GJV400 (GGV40), **EN-GJV500** (GGV50), SiMo 6		≤300 HB	○ ○
蠕墨铸铁 ADI	**EN-GJS-800-8** (ADI800), **EN-GJS-1000-5** (ADI1000)	≤1000		○ ○
	EN-GJS-1200-2 (ADI1200), **EN-GJS-1400-1** (ADI1400)	≤1400		○ ○
特殊合金	Nimonic, Inconel, Monel, Hastelloy	≤2000		●
钛及钛合金	**3.7024** Ti99,5, **3.7114** TiAl5Sn2,5, **3.7124** TiCu2	≤850		●
	3.7154 TiAl6Zr5, **3.7165** TiAl6V4, **3.7184** TiAl4Mo4Sn2,5, - TiAl8Mo1V1	≤1400		●
铝及铝合金	**3.0255** Al99,5, **3.2315** AlMgSi1, **3.3515** AlMg1	≤400		●
锻铝合金	**3.0615** AlMgSiPb, **3.1325** AlCuMg1, **3.3245** AlMg3Si, **3.4365** AlZnMgCu1,5	≤650		●
铸铝 ⩽ 10 % Si	**3.2131** G-AlSi5Cu1, **3.2153** G-AlSi7Cu3, **3.2573** G-AlSi9	≤600		●
⩽ 24 % Si	**3.2581** G-AlSi12, **3.2583** G-AlSi12Cu, - G-AlSi12CuNiMg	≤600		●
镁合金	**3.5200** MgMn2, **3.5812.05** G-MgAl8Zn1, **3.5612.05** G-MgAl6Zn1	≤400		○
低合金铜	**2.0070** SE-Cu, **2.1020** CuSn6, **2.1096** G-CuSn5ZnPb	≤500		●
黄铜,短屑	**2.0380** CuZn39Pb2, **2.0401** CuZn39Pb3, **2.0410** CuZn43Pb2	≤600		●
长屑	**2.0250** CuZn20, **2.0280** CuZn33, **2.0332** CuZn37Pb0,5	≤600		●
青铜,短屑	**2.1090** CuSn7ZnPb, **2.1170** CuPb5Sn5, **2.1176** CuPb10Sn	≤600		● ●
	2.0790 CuNi18Zn19Pb	≤850		●
青铜,长屑	**2.0916** CuAl5, **2.0960** CuAl9Mn, **2.1050** CuSn10	≤850		●
	2.0980 CuAl11Ni, **2.1247** CuBe2	≤1000		●
热固塑料	环氧树脂, Resopal, Pertinax, Moltopren	≤150		○
热塑塑料	Plexiglass, Hostalen, Novodur, Makralon	≤100		● ○
Kevlar 合成纤维	Kevlar	≤1000		○
玻璃/碳纤维	GFK/CFK	≤1000		○

≤3xD

89306	89264	89237	89422	89413	89402	89401	89450	89550	89266
6538K	6537K	6539	6537K	6537K	6537K	6539	6537K	6537K	6537K
整体硬质合金	整体硬质合金		整体硬质合	整体硬质合金			整体硬质合	整体硬质合	整体硬质合
	K/P	K/P		K/P	K/P	K/P	K/P	K/P	K/P
T	T	T	Y	F	F	F	a	a	T
80U	100U	100U	100H	100U	100U	100U	100INOX	100INOX	100U
HE	HE	DZ	HA	HA	HE	DZ	HA	HE	HE
							axial	axial	axial
208	196	200	198	194	194	200	209	209	207








Vc m/min	进给率代号	Vc m/min	进给率代号	Vc m/min	进给率代号	Vc m/min	进给率代号		Vc m/min	进给率代号		Vc m/min	进给率代号
95	6	100	6	130	7	130	7	7	7			110	6
80	5	85	5	110	6	110	6	6	6			90	5
95	7	110	7	145	8	145	8	8	8			130	7
75	6	85	6	110	7	110	7	7	7			110	7
80	6	90	6	120	7	120	7	7	7			100	7
75	6	85	6	110	7	110	7	7	7			95	6
70	6	80	6	105	7	105	7	7	7			90	6
75	6	80	6	105	7	105	7	7	7			90	6
60	5	75	5	100	6	100	6	6	6			80	6
90	7	100	7	130	8	130	8	8	8			110	7
75	6	90	6	120	7	120	7	7	7			90	6
60	5	65	4	85	5	85	5	5	5			65	4
75	6	75	5	100	6	100	6	6	6			85	6
60	5	70	4	90	5	90	5	5	5			80	5
45	5	50	5	65	6	65	6	6	6			60	5
35	5	40	4	55	5	55	5	5	5			50	4
40	4			55	4							45	3
		35	2	45	3	45	3	3	3			45	2
		35	1	40	1	40	1	1	1			40	2
		20	1	20	1	20	1	1	1			20	1
40	2	40	2	40	2	40	2	2	2	80	5	5	45	4
35	2	15	1	15	1	15	1	1	1	60	2-3	2-3	40	2
35	2	35	2	35	2	35	2	2	2	80	5	5	35	4
150	7	160	7			210	8	8	8				160	8
110	7	120	7			155	8	8	8				120	8
110	7	120	6			155	7	7	7				100	8
90	6	95	6			125	7	7	7				95	7
		25	2			35	3	3	3				30	2
		20	3	25	4	25	4	4	4	30	4	4	25	3
		15	1	15	1	15	1	1	1	45	4	4	35	3
		15	1	15	1	15	1	1	1	40	3	3	30	2
200	8	200	8			260	9	9	9				240	8
200	8	200	8			260	9	9	9				240	8
170	8	170	8			220	8	8	8				200	8
140	7	140	7			180	8	8	8				170	8
		200	7			260	8	8	8				230	7
		80	6			105	7	7	7				95	6
		210	7			270	8	8	8				250	7
		140	6			180	7	7	7				170	6
		80	5			105	6	6	6				95	6
		65	5			85	6	6	6				80	5
		60	4			80	5	5	5				70	5
		45	4			60	5	5	5				60	5

TS-Drills 应用推荐

订单号 ®
标准/DIN
刀具材质
硬质合金等级
表面处理
类型
柄部形式
冷却
页码

进给代号为粗体的刀具是首选项

钻头直径 Ø mm	进给代号								
	1	2	3	4	5	6	7	8	9
	f (mm/rev.)								
0.50	0.004	0.006	0.007	0.008	0.010	0.012	0.014	0.016	0.019
1.00	0.006	0.008	0.012	0.014	0.016	0.018	0.020	0.023	0.025
2.00	0.020	0.025	0.032	0.040	0.050	0.063	0.080	0.100	0.125
2.50	0.025	0.032	0.040	0.050	0.063	0.080	0.100	0.125	0.160
3.15	0.032	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.160
4.00	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.200
5.00	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.250
6.30	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315
8.00	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.315
10.00	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.400
12.50	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500
16.00	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630
20.00	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.630
25.00	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	0.800
31.50	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	1.000
40.00	0.200	0.250	0.315	0.400	0.500	0.630	0.800	1.000	1.250
50.00	0.250	0.310	0.400	0.500	0.630	0.800	1.000	1.250	1.250
63.00	0.315	0.400	0.500	0.630	0.800	1.000	1.250	1.600	1.600
80.00	0.400	0.500	0.630	0.800	1.000	1.250	1.600	1.600	2.000

冷却方式:
○ 气冷
● 纯油
● 乳化液

切削方向:
® 右切削
Ⓛ 左切削

材料组	材料例举,最新牌号(括弧内为旧牌号) 粗体数字=材料代号依据DIN EN	拉伸强度_ MPa (N/mm²)	硬度	冷却方式
普通结构钢	**1.0035** S185(St33), **1.0486** P275N(StE285), **1.0345** P235GH(H1), **1.0425** P265GH(H2)	≤500		●
	1.0050 E295 (St50-2), **1.0070** E360 (St70-2), **1.8937** P500NH (WStE500)	≤1000		●
易切削钢	**1.0718** 11SMnPb30 (9SMnPb28), **1.0736** 11SMn37 (9SMn36)	≤850		●
	1.0727 46S20 (45S20), **1.0728** (60S20), **1.0757** 46SPb20 (45SPb20)	≤1000		●
非合金热处理钢	**1.0402** C22, **1.1178** C30E (Ck30)	≤700		●
	1.0503 C45, **1.1191** C45E (Ck45)	≤850		●
	1.0601 C60, **1.1221** C60E (Ck60)	≤1000		●
合金热处理钢	**1.5131** 50MnSi4, **1.7003** 38Cr2, **1.7030** 28Cr4	≤1000		●
	1.5710 36NiCr6, **1.7035** 41Cr4, **1.7225** 42CrMo4	≤1400		●
非合金表面硬化钢	**1.0301** (C10), **1.1121** C10E (Ck10)	≤850		●
合金表面硬化钢	**1.7276** 10CrMo11, **1.5125** 11MnSi6	≤1000		●
	1.5752 15NiCr13, **1.7131** 16MnCr5, **1.7264** 20CrMo5	≤1400		●
氮化钢	**1.8504** 34CrAl6	≤1000		●
	1.8519 31CrMoV9, **1.8550** 34CrAlNi7	≤1400		●
工具钢	**1.1750** C75W, **1.2067** 102Cr6, **1.2307** 29CrMoV9	≤850		●
	1.2080 X210Cr12, **1.2083** X42Cr13, **1.2419** 105WCr6, **1.2767** X45NiCrMo4	≤1400		●
高速钢	**1.3243** S 6-5-2-5, **1.3343** S 6-5-2, **1.3344** S 6-5-3	≤1400		●
弹簧钢	**1.5026** 55Si7, **1.7176** 55Cr3, **1.8159** 51CrV4 (51CrV4)		≤350 HB	●
硬化钢	–		≤48 HRC	●
			≤66 HRC	●
不锈钢,硫化	**1.4005** X12CrS13, **1.4104** X14CrMoS17, **1.4105** X6CrMoS17, **1.4305** X8CrNiS18-9	≤900		●
奥氏体	**1.4301** X5CrNi18-10 (V2A), **1.4541** X6CrNiTi18-10, **1.4571** X6CrNiMoTi 17-12-2 (V4A)	≤1100		●
马氏体	**1.4057** X20CrNi172 (X17CrNi16-2), **1.4122** X39CrMo17-1, **1.4521** X2CrMoTi18-2	≤1500		●
铸铁	**0.6010** EN-GJL-100 (GG10), **0.6020** EN-GJL-200 (GG20)		≤240 HB	○ ○
	0.6025 EN-GJL-250 (GG25), **0.6035** EN-GJL-350 (GG35)		≤350 HB	○ ○
球墨铁铸和	**0.7050** EN-GJS-500-7 (GGG50), **0.8035** EN-GJMW-350-4 (GTW35)		≤240 HB	○
可锻铸铁	**0.7070** EN-GJS-700-2 (GGG70), **0.8170** EN-GJMB-700-2 (GTS70)		≤350 HB	○
冷激铸铁	–		≤350 HB	○
蠕墨铸铁 GGV	**EN-GJV250** (GGV25), **EN-GJV350** (GGV35)		≤220 HB	○ ○
	EN-GJV400 (GGV40), **EN-GJV500** (GGV50), SiMo 6		≤300 HB	○ ○
蠕墨铸铁 ADI	**EN-GJS-800-8** (ADI800), **EN-GJS-1000-5** (ADI1000)	≤1000		○ ○
	EN-GJS-1200-2 (ADI1200), **EN-GJS-1400-1** (ADI1400)	≤1400		○ ○
特殊合金	Nimonic, Inconel, Monel, Hastelloy	≤2000		●
钛及钛合金	**3.7024** Ti99,5, **3.7114** TiAl5Sn2,5, **3.7124** TiCu2	≤850		●
	3.7154 TiAl6Zr5, **3.7165** TiAl6V4, **3.7184** TiAl4Mo4Sn2,5, - TiAl8Mo1V1	≤1400		●
铝及铝合金	**3.0255** Al99,5, **3.2315** AlMgSi1, **3.3515** AlMg1	≤400		●
锻铝合金	**3.0615** AlMgSiPb, **3.1325** AlCuMg1, **3.3245** AlMg3Si, **3.4365** AlZnMgCu1,5	≤650		●
铸铝 ⩽ 10 % Si	**3.2131** G-AlSi5Cu1, **3.2153** G-AlSi7Cu3, **3.2573** G-AlSi9	≤600		●
⩽ 24 % Si	**3.2581** G-AlSi12, **3.2583** G-AlSi12Cu, - G-AlSi12CuNiMg	≤600		●
镁合金	**3.5200** MgMn2, **3.5812.05** G-MgAl8Zn1, **3.5612.05** G-MgAl6Zn1	≤400		○
低合金铜	**2.0070** SE-Cu, **2.1020** CuSn6, **2.1096** G-CuSn5ZnPb	≤500		●
黄铜,短屑	**2.0380** CuZn39Pb2, **2.0401** CuZn39Pb3, **2.0410** CuZn43Pb2	≤600		●
长屑	**2.0250** CuZn20, **2.0280** CuZn33, **2.0332** CuZn37Pb0,5	≤600		●
青铜,短屑	**2.1090** CuSn7ZnPb, **2.1170** CuPb5Sn5, **2.1176** CuPb10Sn	≤600		● ●
	2.0790 CuNi18Zn19Pb	≤850		●
青铜,长屑	**2.0916** CuAl5, **2.0960** CuAl9Mn, **2.1050** CuSn10	≤850		●
	2.0980 CuAl11Ni, **2.1247** CuBe2	≤1000		●
热固塑料	环氧树脂, Resopal, Pertinax, Moltopren	≤150		○
热塑塑料	Plexiglass, Hostalen, Novodur, Makralon	≤100		● ○
Kevlar 合成纤维	Kevlar	≤1000		○
玻璃/碳纤维	GFK/CFK	≤1000		○

HARTNER

≤3xD

89410	89415
6537K	6537K
整体硬质合金	
K/P	K/P
F	F
100U	100U
HA	HE
axial	axial
205	205

89423	89424
6537K	6537K
整体硬质合金	
Y	Y
100H	100H
HA	HE
axial	axial
211	211

≤4xD

89292
WN
整体硬质合
K
○
150GG
HA
axial
213

≤5xD

89307
6538M
整体硬质合
P
T
80U
HE
axial
217

89420
6537L
整体硬质合
K/P
F
100R
HA
axial
222

89451	89551
6537L	6537L
整体硬质合金	
K/P	K/P
a	a
100INOX	100INOX
HA	HE
axial	axial
218	218








Vc m/min	进给率代号		Vc m/min	进给率代号		Vc m/min	进给率代号	Vc m/min	进给率代号	Vc m/min	进给率代号		Vc m/min	进给率代号	
145	7	7	145	7	7			95	5						
120	6	6	120	6	6			80	4						
170	8	8	170	8	8			95	6						
145	8	8	145	8	8			75	5						
130	8	8	130	8	8			80	5						
125	7	7	125	7	7			75	5						
120	7	7	120	7	7			75	5						
120	7	7	120	7	7			75	5						
105	7	7	105	7	7			55	4						
145	8	8	145	8	8			90	6						
120	7	7	120	7	7			75	5						
85	5	5	85	5	5			55	4						
110	7	7	110	7	7			70	5						
105	5	5	105	5	5			55	4						
80	6	6	80	6	6			40	4						
65	5	5	65	5	5			35	4						
60	4	4	60	4	4			40	3						
60	3	3	60	3	3										
55	3	3	55	3	3										
35	2	2	35	2	2										
60	5	5						40	2				80	5	5
55	2	2						35	2				60	2-3	2-3
45	5	5						35	2				80	5	5
210	9	9				120	7	150	6	210	9				
160	9	9				100	7	110	6	160	9				
140	9	9				90	7	110	6	160	9				
130	8	8				80	7	90	5	130	8				
40	3	3				40	2								
										130	8				
										100	8				
										80	8				
										60	8				
35	4	4	35	4	4								30	4	4
45	4	4	45	4	4								45	4	4
40	3	3	40	3	3								40	3	3
310	9	9				410	9	200	7						
310	9	9				410	9	200	7						
260	9	9				380	9	170	7						
220	9	9				330	9	140	6						
280	8	8													
125	7	7													
325	8	8				280	9								
220	7	7													
125	7	7				110	6								
105	6	6				80	5								
90	6	6													
80	6	6													

TS-Drills 应用推荐

订单号 ®
标准/DIN
刀具材质
硬质合金等级
表面处理
类型
柄部形式
冷却
页码

进给代号为粗体的刀具是首选项

钻头直径 Ø mm	进给代号								
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
	f (mm/rev.)								
0.50	0.004	0.006	0.007	0.008	0.010	0.012	0.014	0.016	0.019
1.00	0.006	0.008	0.012	0.014	0.016	0.018	0.020	0.023	0.025
2.00	0.020	0.025	0.032	0.040	0.050	0.063	0.080	0.100	0.125
2.50	0.025	0.032	0.040	0.050	0.063	0.080	0.100	0.125	0.160
3.15	0.032	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.160
4.00	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.200
5.00	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.250
6.30	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315
8.00	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.315
10.00	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.400
12.50	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500
16.00	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630
20.00	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.630
25.00	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	0.800
31.50	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	1.000
40.00	0.200	0.250	0.315	0.400	0.500	0.630	0.800	1.000	1.250
50.00	0.250	0.310	0.400	0.500	0.630	0.800	1.000	1.250	1.250
63.00	0.315	0.400	0.500	0.630	0.800	1.000	1.250	1.600	1.600
80.00	0.400	0.500	0.630	0.800	1.000	1.250	1.600	1.600	2.000

冷却方式:
○ 气冷
● 纯油
● 乳化液

切削方向:
® 右切削
Ⓛ 左切削

材料组	材料例举,最新牌号(括弧内为旧牌号) 粗体数字=材料代号依据DIN EN	拉伸强度_ MPa (N/mm²)	硬度	冷却方式
普通结构钢	**1.0035** S185(St33), **1.0486** P275N(StE285), **1.0345** P235GH(H1), **1.0425** P265GH(H2)	≤500		●
	1.0050 E295 (St50-2), **1.0070** E360 (St70-2), **1.8937** P500NH (WStE500)	≤1000		●
易切削钢	**1.0718** 11SMnPb30 (9SMnPb28), **1.0736** 11SMn37 (9SMn36)	≤850		●
	1.0727 46S20 (45S20), **1.0728** (60S20), **1.0757** 46SPb20 (45SPb20)	≤1000		●
非合金热处理钢	**1.0402** C22, **1.1178** C30E (Ck30)	≤700		●
	1.0503 C45, **1.1191** C45E (Ck45)	≤850		●
	1.0601 C60, **1.1221** C60E (Ck60)	≤1000		●
合金热处理钢	**1.5131** 50MnSi4, **1.7003** 38Cr2, **1.7030** 28Cr4	≤1000		●
	1.5710 36NiCr6, **1.7035** 41Cr4, **1.7225** 42CrMo4	≤1400		●
非合金表面硬化钢	**1.0301** (C10), **1.1121** C10E (Ck10)	≤850		●
合金表面硬化钢	**1.7276** 10CrMo11, **1.5125** 11MnSi6	≤1000		●
	1.5752 15NiCr13, **1.7131** 16MnCr5, **1.7264** 20CrMo5	≤1400		●
氮化钢	**1.8504** 34CrAl6	≤1000		●
	1.8519 31CrMoV9, **1.8550** 34CrAlNi7	≤1400		●
工具钢	**1.1750** C75W, **1.2067** 102Cr6, **1.2307** 29CrMoV9	≤850		●
	1.2080 X210Cr12, **1.2083** X42Cr13, **1.2419** 105WCr6, **1.2767** X45NiCrMo4	≤1400		●
高速钢	**1.3243** S 6-5-2-5, **1.3343** S 6-5-2, **1.3344** S 6-5-3	≤1400		●
弹簧钢	**1.5026** 55Si7, **1.7176** 55Cr3, **1.8159** 51CrV4 (51CrV4)		≤350 HB	●
硬化钢	–		≤48 HRC	●
			≤66 HRC	●
不锈钢,硫化	**1.4005** X12CrS13, **1.4104** X14CrMoS17, **1.4105** X6CrMoS17, **1.4305** X8CrNiS18-9	≤900		●
奥氏体	**1.4301** X5CrNi18-10 (V2A), **1.4541** X6CrNiTi18-10, **1.4571** X6CrNiMoTi 17-12-2 (V4A)	≤1100		●
马氏体	**1.4057** X20CrNi172 (X17CrNi16-2), **1.4122** X39CrMo17-1, **1.4521** X2CrMoTi18-2	≤1500		●
铸铁	**0.6010** EN-GJL-100 (GG10), **0.6020** EN-GJL-200 (GG20)		≤240 HB	○ ○
	0.6025 EN-GJL-250 (GG25), **0.6035** EN-GJL-350 (GG35)		≤350 HB	○ ○
球墨铁铸和	**0.7050** EN-GJS-500-7 (GGG50), **0.8035** EN-GJMW-350-4 (GTW35)		≤240 HB	○
可锻铸铁	**0.7070** EN-GJS-700-2 (GGG70), **0.8170** EN-GJMB-700-2 (GTS70)		≤350 HB	○
冷激铸铁	–		≤350 HB	○
蠕墨铸铁 GGV	**EN-GJV250** (GGV25), **EN-GJV350** (GGV35)		≤220 HB	○ ○
	EN-GJV400 (GGV40), **EN-GJV500** (GGV50), SiMo 6		≤300 HB	○ ○
蠕墨铸铁 ADI	**EN-GJS-800-8** (ADI800), **EN-GJS-1000-5** (ADI1000)	≤1000		○ ○
	EN-GJS-1200-2 (ADI1200), **EN-GJS-1400-1** (ADI1400)	≤1400		○ ○
特殊合金	Nimonic, Inconel, Monel, Hastelloy	≤2000		●
钛及钛合金	**3.7024** Ti99,5, **3.7114** TiAl5Sn2,5, **3.7124** TiCu2	≤850		●
	3.7154 TiAl6Zr5, **3.7165** TiAl6V4, **3.7184** TiAl4Mo4Sn2,5, - TiAl8Mo1V1	≤1400		●
铝及铝合金	**3.0255** Al99,5, **3.2315** AlMgSi1, **3.3515** AlMg1	≤400		●
锻铝合金	**3.0615** AlMgSiPb, **3.1325** AlCuMg1, **3.3245** AlMg3Si, **3.4365** AlZnMgCu1,5	≤650		●
铸铝 ⩽ 10 % Si	**3.2131** G-AlSi5Cu1, **3.2153** G-AlSi7Cu3, **3.2573** G-AlSi9	≤600		●
⩽ 24 % Si	**3.2581** G-AlSi12, **3.2583** G-AlSi12Cu, - G-AlSi12CuNiMg	≤600		●
镁合金	**3.5200** MgMn2, **3.5812.05** G-MgAl8Zn1, **3.5612.05** G-MgAl6Zn1	≤400		○
低合金铜	**2.0070** SE-Cu, **2.1020** CuSn6, **2.1096** G-CuSn5ZnPb	≤500		●
黄铜,短屑	**2.0380** CuZn39Pb2, **2.0401** CuZn39Pb3, **2.0410** CuZn43Pb2	≤600		●
长屑	**2.0250** CuZn20, **2.0280** CuZn33, **2.0332** CuZn37Pb0,5	≤600		●
青铜,短屑	**2.1090** CuSn7ZnPb, **2.1170** CuPb5Sn5, **2.1176** CuPb10Sn	≤600		● ●
	2.0790 CuNi18Zn19Pb	≤850		●
青铜,长屑	**2.0916** CuAl5, **2.0960** CuAl9Mn, **2.1050** CuSn10	≤850		●
	2.0980 CuAl11Ni, **2.1247** CuBe2	≤1000		●
热固塑料	环氧树脂, Resopal, Pertinax, Moltopren	≤150		○
热塑塑料	Plexiglass, Hostalen, Novodur, Makralon	≤100		● ○
Kevlar 合成纤维	Kevlar	≤1000		○
玻璃/碳纤维	GFK/CFK	≤1000		○

≤5xD

89275	89414	89417	89272	89411	89408	89425	89426
WN	6537L	6537L	6537L	6537L	6537L	6537L	6537L
整体硬质合	整体硬质合	整体硬质合	整体硬质合	整体硬质合	整体硬质合	整体硬质合	整体硬质合
K/P	K/P	K/P	K/P	K/P	K/P		
T	F	F	T	F	F	Y	Y
100U	100U	100U	100U	100U	100U	100H	100H
DZ	HA	HE	HE	HA	HE	HA	HE
			axial	axial	axial	axial	axial
204	202	202	214	215	215	220	220







v_c m/min	进给率代号	v_c m/min	进给率代号		v_c m/min	进给率代号	v_c m/min	进给率代号		v_c m/min	进给率代号	
100	6	130	7	7	110	6	145	7	7	145	7	7
85	5	110	6	6	90	5	120	6	6	120	6	6
110	7	145	8	8	130	7	170	8	8	170	8	8
85	6	110	7	7	110	7	145	8	8	145	8	8
90	6	120	7	7	100	7	130	8	8	130	8	8
85	6	110	7	7	95	6	125	7	7	125	7	7
80	6	105	7	7	90	6	120	7	7	120	7	7
80	6	105	7	7	90	6	120	7	7	120	7	7
75	5	100	6	6	80	6	105	7	7	105	7	7
100	7	130	8	8	110	7	145	8	8	145	8	8
90	6	120	7	7	90	6	120	7	7	120	7	7
65	4	85	5	5	65	4	85	5	5	85	5	5
75	5	100	6	6	85	6	105	7	7	110	7	7
70	4	90	5	5	80	5	100	5	5	105	5	5
50	5	65	6	6	60	5	70	6	6	80	6	6
40	4	55	5	5	50	4	55	5	5	65	5	5
					45	4	60	5	5	60	4	4
35	2	45	3	3	45	2	60	3	3	60	3	3
35	1	35	1	1	40	2	55	2	2	55	3	3
20	1	20	1	1	25	1	35	2	2	35	2	2
40	2	40	2	2	45	4	60	5	5			
15	1	15	1	1	40	2	55	5	5			
35	2	35	2	2	35	4	45	5	5			
160	7	210	8	8	160	8	195	9	9			
120	7	155	8	8	120	8	160	9	9			
120	6	145	7	7	100	8	140	9	9			
95	6	125	7	7	95	7	130	8	8			
25	2	35	3	3	30	2	40	3	3			
20	3	25	4	4	25	3	35	4	4	35	4	4
15	1	15	1	1	35	3	45	4	4	45	4	4
15	1	15	1	1	30	2	40	3	3	40	3	3
200	8	260	9	9	240	8	310	9	9			
200	8	260	9	9	240	8	310	9	9			
170	8	235	9	9	200	8	260	9	9			
140	7	170	8	8	170	8	220	9	9			
200	7	260	8	8	230	7	280	8	8			
80	6	105	7	7	95	6	125	7	7			
210	7	270	8	8	250	7	325	8	8			
140	6	180	7	7	170	6	220	7	7			
80	5	105	6	6	95	6	125	7	7			
65	5	85	6	6	80	5	105	6	6			
60	4	80	5	5	70	5	90	6	6			
45	4	60	5	5	60	5	80	6	6			

TS-Drills 应用推荐

订单号 ®
标准/DIN
刀具材质
硬质合金等级
表面处理
类型
柄部形式
冷却
页码

进给代号为粗体的刀具是首选项

钻头直径 Ø mm	进给代号								
	1	2	3	4	5	6	7	8	9
	f (mm/rev.)								
0.50	0.004	0.006	0.007	0.008	0.010	0.012	0.014	0.016	0.019
1.00	0.006	0.008	0.012	0.014	0.016	0.018	0.020	0.023	0.025
2.00	0.020	0.025	0.032	0.040	0.050	0.063	0.080	0.100	0.125
2.50	0.025	0.032	0.040	0.050	0.063	0.080	0.100	0.125	0.160
3.15	0.032	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.160
4.00	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.200
5.00	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.250
6.30	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315
8.00	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.315
10.00	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.400
12.50	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500
16.00	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630
20.00	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.630
25.00	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	0.800
31.50	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	1.000
40.00	0.200	0.250	0.315	0.400	0.500	0.630	0.800	1.000	1.250
50.00	0.250	0.310	0.400	0.500	0.630	0.800	1.000	1.250	1.250
63.00	0.315	0.400	0.500	0.630	0.800	1.000	1.250	1.600	1.600
80.00	0.400	0.500	0.630	0.800	1.000	1.250	1.600	1.600	2.000

冷却方式:
○ 气冷
● 纯油
● 乳化液

切削方向:
® 右切削
Ⓛ 左切削

材料组	材料例举,最新牌号(括弧内为旧牌号) 粗体数字=材料代号依据DIN EN	拉伸强度_ MPa (N/mm²)	硬度	冷却方式
普通结构钢	**1.0035** S185(St33), **1.0486** P275N(StE285), **1.0345** P235GH(H1), **1.0425** P265GH(H2)	≤500		●
	1.0050 E295 (St50-2), **1.0070** E360 (St70-2), **1.8937** P500NH (WStE500)	≤1000		●
易切削钢	**1.0718** 11SMnPb30 (9SMnPb28), **1.0736** 11SMn37 (9SMn36)	≤850		●
	1.0727 46S20 (45S20), **1.0728** (60S20), **1.0757** 46SPb20 (45SPb20)	≤1000		●
非合金热处理钢	**1.0402** C22, **1.1178** C30E (Ck30)	≤700		●
	1.0503 C45, **1.1191** C45E (Ck45)	≤850		●
	1.0601 C60, **1.1221** C60E (Ck60)	≤1000		●
合金热处理钢	**1.5131** 50MnSi4, **1.7003** 38Cr2, **1.7030** 28Cr4	≤1000		●
	1.5710 36NiCr6, **1.7035** 41Cr4, **1.7225** 42CrMo4	≤1400		●
非合金表面硬化钢	**1.0301** (C10), **1.1121** C10E (Ck10)	≤850		●
合金表面硬化钢	**1.7276** 10CrMo11, **1.5125** 11MnSi6	≤1000		●
	1.5752 15NiCr13, **1.7131** 16MnCr5, **1.7264** 20CrMo5	≤1400		●
氮化钢	**1.8504** 34CrAl6	≤1000		●
	1.8519 31CrMoV9, **1.8550** 34CrAlNi7	≤1400		●
工具钢	**1.1750** C75W, **1.2067** 102Cr6, **1.2307** 29CrMoV9	≤850		●
	1.2080 X210Cr12, **1.2083** X42Cr13, **1.2419** 105WCr6, **1.2767** X45NiCrMo4	≤1400		●
高速钢	**1.3243** S 6-5-2-5, **1.3343** S 6-5-2, **1.3344** S 6-5-3	≤1400		●
弹簧钢	**1.5026** 55Si7, **1.7176** 55Cr3, **1.8159** 51CrV4 (51CrV4)		≤350 HB	●
硬化钢	–		≤48 HRC	●
			≤66 HRC	●
不锈钢,硫化	**1.4005** X12CrS13, **1.4104** X14CrMoS17, **1.4105** X6CrMoS17, **1.4305** X8CrNiS18-9	≤900		●
奥氏体	**1.4301** X5CrNi18-10 (V2A), **1.4541** X6CrNiTi18-10, **1.4571** X6CrNiMoTi 17-12-2 (V4A)	≤1100		●
马氏体	**1.4057** X20CrNi172 (X17CrNi16-2), **1.4122** X39CrMo17-1, **1.4521** X2CrMoTi18-2	≤1500		●
铸铁	**0.6010** EN-GJL-100 (GG10), **0.6020** EN-GJL-200 (GG20)		≤240 HB	○ ○
	0.6025 EN-GJL-250 (GG25), **0.6035** EN-GJL-350 (GG35)		≤350 HB	○ ○
球墨铁铸和	**0.7050** EN-GJS-500-7 (GGG50), **0.8035** EN-GJMW-350-4 (GTW35)		≤240 HB	●
可锻铸铁	**0.7070** EN-GJS-700-2 (GGG70), **0.8170** EN-GJMB-700-2 (GTS70)		≤350 HB	●
冷激铸铁	–		≤350 HB	●
蠕墨铸铁 GGV	**EN-GJV250** (GGV25), **EN-GJV350** (GGV35)		≤220 HB	○ ○
	EN-GJV400 (GGV40), **EN-GJV500** (GGV50), SiMo 6		≤300 HB	○ ○
蠕墨铸铁 ADI	**EN-GJS-800-8** (ADI800), **EN-GJS-1000-5** (ADI1000)	≤1000		○ ○
	EN-GJS-1200-2 (ADI1200), **EN-GJS-1400-1** (ADI1400)	≤1400		○ ○
特殊合金	Nimonic, Inconel, Monel, Hastelloy	≤2000		●
钛及钛合金	**3.7024** Ti99,5, **3.7114** TiAl5Sn2,5, **3.7124** TiCu2	≤850		●
	3.7154 TiAl6Zr5, **3.7165** TiAl6V4, **3.7184** TiAl4Mo4Sn2,5, - TiAl8Mo1V1	≤1400		●
铝及铝合金	**3.0255** Al99,5, **3.2315** AlMgSi1, **3.3515** AlMg1	≤400		●
锻铝合金	**3.0615** AlMgSiPb, **3.1325** AlCuMg1, **3.3245** AlMg3Si, **3.4365** AlZnMgCu1,5	≤650		●
铸铝 ⩽ 10 % Si	**3.2131** G-AlSi5Cu1, **3.2153** G-AlSi7Cu3, **3.2573** G-AlSi9	≤600		●
⩽ 24 % Si	**3.2581** G-AlSi12, **3.2583** G-AlSi12Cu, - G-AlSi12CuNiMg	≤600		●
镁合金	**3.5200** MgMn2, **3.5812.05** G-MgAl8Zn1, **3.5612.05** G-MgAl6Zn1	≤400		○
低合金铜	**2.0070** SE-Cu, **2.1020** CuSn6, **2.1096** G-CuSn5ZnPb	≤500		●
黄铜,短屑	**2.0380** CuZn39Pb2, **2.0401** CuZn39Pb3, **2.0410** CuZn43Pb2	≤600		●
长屑	**2.0250** CuZn20, **2.0280** CuZn33, **2.0332** CuZn37Pb0,5	≤600		●
青铜,短屑	**2.1090** CuSn7ZnPb, **2.1170** CuPb5Sn5, **2.1176** CuPb10Sn	≤600		● ●
	2.0790 CuNi18Zn19Pb	≤850		●
青铜,长屑	**2.0916** CuAl5, **2.0960** CuAl9Mn, **2.1050** CuSn10	≤850		●
	2.0980 CuAl11Ni, **2.1247** CuBe2	≤1000		●
热固塑料	环氧树脂, Resopal, Pertinax, Moltopren	≤150		○
热塑塑料	Plexiglass, Hostalen, Novodur, Makralon	≤100		● ○
Kevlar 合成纤维	Kevlar	≤1000		○
玻璃/碳纤维	GFK/CFK	≤1000		○

HARTNER

≤5xD

89239	89247
6539	6537L
整体硬质合金	
K	K
○	○
TS 3 G	TS 3 G
DZ	HA
241	240

≤7xD

89308	89294	89421	89412	89416	89427
6538L	WN	WN	WN	WN	WN
整体硬质合金	整体硬质合金	整体硬质合金	整体硬质合金		整体硬质合
P	K	K/P	K/P	K/P	
T	○	F	F	F	Y
80U	150GG	100R	100U	100U	100H
HE	HA	HA	HA	HE	HA
	axial	axial	axial	axial	axial
226	230	228	224	224	227

≤10xD

89293	89295
WN	WN
整体硬质合金	
K	K
○	○
150GG	150GG
HA	HA
axial	axial
231	231

≤12xD

89418
WN
整体硬质合
K/P
F
100U
HA
axial
233



vc m/min	进给率代号		vc m/min	进给率代号	vc m/min	进给率代号	vc m/min	进给率代号		vc m/min	进给率代号	vc m/min	进给率代号		vc m/min	进给率代号
			95	4			145	6	6	145	6				110	6
			75	3			120	5	5	120	5				110	5
			90	5			170	7	7	170	7				110	7
			75	4			145	7	7	145	7				100	7
			80	4			130	7	7	130	7				110	7
			75	4			125	6	6	125	6				110	6
			60	4			120	6	6	120	6				100	6
			75	4			120	6	6	120	6				110	6
			60	3			105	6	6	105	6				105	6
			90	5			145	7	7	145	7				110	7
			75	4			120	6	6	120	6				110	6
			55	3			85	4	4	85	4				85	4
			75	4			110	6	6	110	6				100	6
			55	3			105	4	4	105	4				80	4
			40	3			80	5	5	80	5				80	5
			35	3			65	4	4	65	4				65	4
			40	2			60	4	4	60	3				50	4
							60	2	2	60	2				50	2
							55	2	2	55	2					
							35	1	1	35	1					
			35	1			60	4	4						60	4
			33	1			55	2	2						55	2
			25	1			45	4	4						45	4
100	6	6	150	5	120	6	210	8		195	8	8			120	8
80	6	6	110	5	100	6	160	8		160	8	8			100	8
80	6	6	110	5	90	6	160	8		140	8	8			90	8
70	6	6	90	4	80	6	130	7		130	7	7			80	7
					40	2				40	2	2			40	2
							130	7								
							100	7								
							80	7								
							60	7								
										35	3	3	35	3		
										40	3	3	45	3		
										40	2	2	40	4		
180	7	7	180	6	410	8				310	8	8			410	8
160	7	7	180	6	410	8				310	8	8			410	8
150	7	7	160	6	380	8				260	8	8			380	8
120	6	6	130	5	330	8				220	8	8			330	8
180	6	6								280	7	7				
										125	6	6				
180	6	6			280	7				325	7	7			280	7
										220	6	6				
					110	6				125	6	6			110	6
					80	5				105	5	5			80	5
										90	5	5				
										80	5	5				

HARTNER

TS-Drills 应用推荐

订单号
标准/DIN
刀具材质
硬质合金等级
表面处理
类型
冷却
页码

步骤：
- 初始化铣削加工表面， 加工表面必须加工至同钻孔加工进入角相垂直.
- 用普通钻头加工一轴向引导孔(最小孔深L=1xD, 公差F9)
- 进入导引孔，一般n=300rev./min,F=500mm/min.
- 设置好冷却压力和切削参数.
- 按照正常的切削参数一次性加工到要求深度.
- 对带斜出口的通孔，应降低VF至40%以免刀具折断.
- 加工到要求深度后，停止机床主轴和关闭冷却液，并将刀具退回至初 始位置.

进给代号为粗体的刀具是首选项

钻头直径Ø mm	进给代号								
	1	2	3	4	5	6	7	8	9
	f (mm/rev.)								
2,50	0.025	0.032	0.040	0.050	0.063	0.080	0.100	0.125	0.160
3,15	0.032	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.160
4,00	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.200
5,00	0.040	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.250
6,30	0.050	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315
8,00	0.063	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.315
10,00	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.400
12,50	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500
16,00	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630

冷却方式:
○ 气冷
● 纯油
● 乳化液

切削方向:
右切削
左切削

材料组	材料例举,最新牌号(括弧内为旧牌号) 粗体数字=材料代号依据DIN EN	拉伸强度_ MPa (N/mm²)	硬度	冷却方式
普通结构钢	**1.0035** S185(St33), **1.0486** P275N(StE285), **1.0345** P235GH(H1), **1.0425** P265GH(H2)	≤500		●
	1.0050 E295 (St50-2), **1.0070** E360 (St70-2), **1.8937** P500NH (WStE500)	≤1000		●
易切削钢	**1.0718** 11SMnPb30 (9SMnPb28), **1.0736** 11SMn37 (9SMn36)	≤850		●
	1.0727 46S20 (45S20), **1.0728** (60S20), **1.0757** 46SPb20 (45SPb20)	≤1000		●
非合金热处理钢	**1.0402** C22, **1.1178** C30E (Ck30)	≤700		●
	1.0503 C45, **1.1191** C45E (Ck45)	≤850		●
	1.0601 C60, **1.1221** C60E (Ck60)	≤1000		●
合金热处理钢	**1.5131** 50MnSi4, **1.7003** 38Cr2, **1.7030** 28Cr4	≤1000		●
	1.5710 36NiCr6, **1.7035** 41Cr4, **1.7225** 42CrMo4	≤1400		●
非合金表面硬化钢	**1.0301** (C10), **1.1121** C10E (Ck10)	≤850		●
合金表面硬化钢	**1.7276** 10CrMo11, **1.5125** 11MnSi6	≤1000		●
	1.5752 15NiCr13, **1.7131** 16MnCr5, **1.7264** 20CrMo5	≤1400		●
氮化钢	**1.8504** 34CrAl6	≤1000		●
	1.8519 31CrMoV9, **1.8550** 34CrAlNi7	≤1400		●
工具钢	**1.1750** C75W, **1.2067** 102Cr6, **1.2307** 29CrMoV9	≤850		●
	1.2080 X210Cr12, **1.2083** X42Cr13, **1.2419** 105WCr6, **1.2767** X45NiCrMo4	≤1400		●
高速钢	**1.3243** S 6-5-2-5, **1.3343** S 6-5-2, **1.3344** S 6-5-3	≤1400		●
弹簧钢	**1.5026** 55Si7, **1.7176** 55Cr3, **1.8159** 51CrV4 (51CrV4)		≤350 HB	●
硬化钢	–		≤48 HRC	●
			≤66 HRC	●
不锈钢,硫化	**1.4005** X12CrS13, **1.4104** X14CrMoS17, **1.4105** X6CrMoS17, **1.4305** X8CrNiS18-9	≤900		●
奥氏体	**1.4301** X5CrNi18-10 (V2A), **1.4541** X6CrNiTi18-10, **1.4571** X6CrNiMoTi 17-12-2 (V4A)	≤1100		●
马氏体	**1.4057** X20CrNi172 (X17CrNi16-2), **1.4122** X39CrMo17-1, **1.4521** X2CrMoTi18-2	≤1500		●
铸铁	**0.6010** EN-GJL-100 (GG10), **0.6020** EN-GJL-200 (GG20)		≤240 HB	○ ○
	0.6025 EN-GJL-250 (GG25), **0.6035** EN-GJL-350 (GG35)		≤350 HB	○ ○
球墨铁铸和	**0.7050** EN-GJS-500-7 (GGG50), **0.8035** EN-GJMW-350-4 (GTW35)		≤240 HB	●
可锻铸铁	**0.7070** EN-GJS-700-2 (GGG70), **0.8170** EN-GJMB-700-2 (GTS70)		≤350 HB	●
冷激铸铁	–		≤350 HB	●
蠕墨铸铁 GGV	**EN-GJV250** (GGV25), **EN-GJV350** (GGV35)		≤220 HB	○ ○
	EN-GJV400 (GGV40), **EN-GJV500** (GGV50), SiMo 6		≤300 HB	○ ○
蠕墨铸铁 ADI	**EN-GJS-800-8** (ADI800), **EN-GJS-1000-5** (ADI1000)	≤1000		○ ○
	EN-GJS-1200-2 (ADI1200), **EN-GJS-1400-1** (ADI1400)	≤1400		○ ○
特殊合金	Nimonic, Inconel, Monel, Hastelloy	≤2000		●
钛及钛合金	**3.7024** Ti99,5, **3.7114** TiAl5Sn2,5, **3.7124** TiCu2	≤850		●
	3.7154 TiAl6Zr5, **3.7165** TiAl6V4, **3.7184** TiAl4Mo4Sn2,5, - TiAl8Mo1V1	≤1400		●
铝及铝合金	**3.0255** Al99,5, **3.2315** AlMgSi1, **3.3515** AlMg1	≤400		●
锻铝合金	**3.0615** AlMgSiPb, **3.1325** AlCuMg1, **3.3245** AlMg3Si, **3.4365** AlZnMgCu1,5	≤650		●
铸铝 ⩽ 10 % Si	**3.2131** G-AlSi5Cu1, **3.2153** G-AlSi7Cu3, **3.2573** G-AlSi9	≤600		●
⩽ 24 % Si	**3.2581** G-AlSi12, **3.2583** G-AlSi12Cu, - G-AlSi12CuNiMg	≤600		●
镁合金	**3.5200** MgMn2, **3.5812.05** G-MgAl8Zn1, **3.5612.05** G-MgAl6Zn1	≤400		○
低合金铜	**2.0070** SE-Cu, **2.1020** CuSn6, **2.1096** G-CuSn5ZnPb	≤500		●
黄铜,短屑	**2.0380** CuZn39Pb2, **2.0401** CuZn39Pb3, **2.0410** CuZn43Pb2	≤600		●
长屑	**2.0250** CuZn20, **2.0280** CuZn33, **2.0332** CuZn37Pb0,5	≤600		●
青铜,短屑	**2.1090** CuSn7ZnPb, **2.1170** CuPb5Sn5, **2.1176** CuPb10Sn	≤600		● ●
	2.0790 CuNi18Zn19Pb	≤850		●
青铜,长屑	**2.0916** CuAl5, **2.0960** CuAl9Mn, **2.1050** CuSn10	≤850		●
	2.0980 CuAl11Ni, **2.1247** CuBe2	≤1000		●
热固塑料	环氧树脂, Resopal, Pertinax, Moltopren	≤150		○
热塑塑料	Plexiglass, Hostalen, Novodur, Makralon	≤100		○ ○
Kevlar 合成纤维	Kevlar	≤1000		○
玻璃/碳纤维	GFK/CFK	≤1000		○

HARTNER

≤15xD

86509
Hartner 标准
整体硬质合金
K/P
RT 100 T
A
40 bar 传统冷却方式
235



vc m/min	进给率代号	vc m/min	进给率代号
110	8		
110	8		
120	8		
120	8		
110	6		
110	8		
100	7		
110	7	80	7
110	6	80	7
110	8		
110	7	80	6-7
110	6	80	6-7
100	5		
80	5		
100	6-7		
80	5		
50	5		
50	5		
50	4		
100	5		
70	2-3		
100	5		
140	8		
100	8		
140	8		
100	8		
100	6		
100	6		
90	8	90	8
30	2		
120	1		
120	8		

≤20xD

86511
Hartner 标准
整体硬质合金
K/P
RT 100 T
A
40 bar 传统冷却方式
236



vc m/min	进给率代号	vc m/min	进给率代号
110	8		
110	8		
120	8		
120	8		
110	6		
110	8		
100	7		
110	7	80	7
110	6	80	7
110	8		
110	7	80	6-7
110	6	80	6-7
100	5		
80	5		
100	6		
80	5		
50	5		
50	5		
50	4		
100	5		
60	3		
100	5		
140	8		
100	8		
140	8		
100	8		
100	6		
100	6		
90	8	90	8
30	2		
120	1		
120	8		

≤25xD

86512
Hartner 标准
整体硬质合金
K/P
RT 100 T
A
40 bar 传统冷却方式
237



vc m/min	进给率代号	vc m/min	进给率代号
100	8		
100	8		
120	8		
100	8		
110	6		
100	8		
100	7		
100	7	70	7
100	6	70	7
100	8		
100	7	70	6-7
100	6	70	6-7
80	5		
60	5		
90	6		
70	4		
50	4		
50	4		
50	4		
100	5		
60	3		
100	5		
130	8		
90	8		
130	8		
90	8		
90	6		
90	6		
80	8	80	8
30	2		
120	1		
110	8		

≤30xD

86513
Hartner 标准
整体硬质合金
K/P
RT 100 T
A
40 bar 传统冷却方式
238



vc m/min	进给率代号	vc m/min	进给率代号
80	7		
80	7		
100	8		
100	8		
110	6		
80	7		
80	7		
80	7	60	7
80	6	60	7
80	7		
80	6	60	6-7
80	6	60	6-7
80	5		
60	5		
80	6		
70	4		
50	4		
50	4		
50	4		
80	5		
60	3		
80	5		
120	8		
80	8		
120	8		
80	8	65	8
80	6		
80	6		
70	8	70	8
30	2		
120	1		
100	8		

≤40xD

86514
Hartner 标准
整体硬质合金
K/P
RT 100 T
A
40 bar
239



vc m/min	进给率代号
80	7
80	7
100	8
100	8
110	6
80	7
80	7
80	6-7
80	6
80	7
80	6
80	6
80	5
60	5
80	6-7
70	4
50	4
50	4
50	4
80	5
70	2-3
80	5
120	8
80	8
120	8
80	8
80	6
80	6
70	8
30	2
120	1
100	8

HARTNER

枪钻应用推荐

枪钻加工深孔的步骤

- 用普通钻头加工引导孔(孔深L=1,5xD, 公差H8)
- 枪钻低转速进入到引导孔内,一般 n=200rev./min, F=500mm/min.
  孔深>40XD时，左旋方式进入到引导孔。
- 打开冷却液同时提高切削速度至正常值.
- 继续一次性加工到预定深度. 当长径比加大时,我们建议降低切削参数(降为正常的75%)加工到深度约 25mm后再按正常切削参数加工.
- 加工到要求的深度后关闭冷却液.
- 停转并快速退出枪钻至孔口.

钻头直径 Ø mm from	进给代号 11	12	13	14	15	16	17	18
	f (mm/rev.)							
1.50	0.002	0.004	0.006	0.008	0.012	0.020	0.032	0.045
2.00	0.003	0.005	0.007	0.010	0.016	0.028	0.046	0.055
2.50	0.004	0.006	0.008	0.012	0.018	0.030	0.054	0.070
4.00	0.005	0.007	0.010	0.016	0.025	0.043	0.065	0.085
6.00	0.007	0.009	0.013	0.024	0.035	0.061	0.085	0.120
8.00	0.010	0.014	0.022	0.032	0.045	0.068	0.100	0.150
10.00	0.012	0.016	0.028	0.040	0.055	0.075	0.120	0.160
14.00	0.020	0.025	0.035	0.050	0.065	0.085	0.130	0.180
18.00	0.025	0.030	0.040	0.055	0.070	0.095	0.145	0.200
20.00	0.026	0.035	0.045	0.060	0.080	0.110	0.180	0.250
24.00	0.027	0.036	0.047	0.065	0.085	0.130	0.185	0.300
28.00	0.028	0.038	0.049	0.068	0.090	0.140	0.195	0.350
30.00	0.030	0.040	0.050	0.070	0.100	0.150	0.200	0.400
35.00	0.035	0.045	0.055	0.075	0.120	0.180	0.250	0.450
40.00	0.040	0.050	0.060	0.080	0.150	0.200	0.300	0.500

*有时进给率会涉及到相应的刀具涂层. 因为带与不带涂层的切削性能差别很大.

冷却方式:
- ○ 气冷
- ● 纯油
- ● 乳化液

E100

单刃枪钻

整体硬质合金

0.9 ... 12.0

页码 253



材料组	材料例举,最新牌号(括弧内为旧牌号) 粗体数字=材料代号依据DIN EN	拉伸强度_ 硬度 MPa (N/mm²)	冷却方式	recom. coating*	≤35xD v_c m/min	≤35xD 进给率代号	>35xD v_c m/min	>35xD 进给率代号
普通结构钢	**1.0035** S185, **1.0486** P275N, **1.0345** P235GH, **1.0425**	≤500	○		100	15	100	15
	1.0050 E295), **1.0070** E360, **1.8937** P500NH	≤1000	○		85	15	85	15
易切削钢	**1.0718** 11SMnPb30, **1.0736** 11SMn37	≤850	○		90	15	90	15
	1.0727 46S20, **1.0728** 60S20, **1.0757** 46SPb20	≤1000	○		80	15	80	15
非合金热处理钢	**1.0402** C22, **1.1178** C30E	≤700	○		80	14	80	14
	1.0503 C45, **1.1191** C45E	≤850	○		75	14	75	14
	1.0601 C60, **1.1221** C60E	≤1000	○		75	14	75	14
合金热处理钢	**1.5131** 50MnSi4, **1.7003** 38Cr2, **1.7030** 28Cr4	≤1000	○	A	75	14	75	14
	1.5710 36NiCr6, **1.7035** 41Cr4, **1.7225** 42CrMo4	≤1400	○	A	65	14	65	14
非合金表面硬化钢	**1.0301**, **1.1121** C10E	≤850	○	A	80	15	80	15
合金表面硬化钢	**1.7276** 10CrMo11, **1.5125** 11MnSi6	≤1000	●		75	14	75	14
	1.5752 15NiCr13, **1.7131** 16MnCr5, **1.7264** 20CrMo5	≤1400	●		65	14	65	14
氮化钢	**1.8504** 34CrAl6	≤1000	○	A	75	14	75	14
	1.8519 31CrMoV9, **1.8550** 34CrAlNi7	≤1400	●	A	65	14	65	14
工具钢	**1.1750** C75W, **1.2067** 102Cr6, **1.2307** 29CrMoV9	≤850	○	A	75	13	75	13
	1.2080 X210Cr12, **1.2083** X42Cr13, **1.2419**, **1.2767**	≤1400	●	A	65	13	65	13
高速钢	**1.3243** S 6-5-2-5, **1.3343** S 6-5-2, **1.3344** S 6-5-3	≤1400	●	A	55	12	55	12
弹簧钢	**1.5026** 55Si7, **1.7176** 55Cr3, **1.8159** 51CrV4	≤350 HB	●	A	65	13	65	13
硬化钢	**1.4005** X12CrS13, **1.4104** X14CrMoS17, **1.4105**	≤48 HRC	●		30	13	30	13
	1.4301 X5CrNi18-10, **1.4541** X6CrNiTi18-10, **1.4571**	≤66 HRC	●		25	10	25	14
不锈钢,硫化	**1.4057** X20CrNi172, **1.4122** X39CrMo17-1, **1.4521**	≤900	●		40	14	40	14
奥氏体	–	≤1100	●	A	35	14	35	14
马氏体		≤1500	●		35	14	35	14
铸铁	Nimonic, Inconel, Monel, Hastelloy	≤240 HB	○ ○		85	16	85	16
	0.6010 EN-GJL-100, **0.6020** EN-GJL-200	≤350 HB	○ ○		80	16	85	16
球墨铁铸和	**0.6025** EN-GJL-250, **0.6035** EN-GJL-350	≤240 HB	○		80	15	80	15
可锻铸铁	**0.7050** EN-GJS-500-7, **0.8035** EN-GJMW-350-4	≤350 HB	○		70	15	70	15
冷激铸铁	**0.7070** EN-GJS-700-2, **0.8170** EN-GJMB-700-2	≤350 HB	○		55	14	55	14
蠕墨铸铁 GGV	–	≤220 HB	○ ○					
	3.7024 Ti99,5, **3.7114** TiAl5Sn2,5, **3.7124** TiCu2	≤300 HB	○ ○					
蠕墨铸铁 ADI	**3.7154** TiAl6Zr5, **3.7165** TiAl6V4, **3.7184**	≤1000	○ ○					
	3.0255 Al99,5, **3.2315** AlMgSi1, **3.3515** AlMg1	≤1400	○ ○					
特殊合金	**3.0615** AlMgSiPb, **3.1325** AlCuMg1, **3.3245**, **3.4365**	≤2000	●	A	20	12	20	12
钛及钛合金	**3.2131** G-AlSi5Cu1, **3.2153** G-AlSi7Cu3, **3.2573** G-AlSi9	≤850	●		35	12	35	12
	3.2581 G-AlSi12, **3.2583** G-AlSi12Cu, - G-AlSi12CuNiMg	≤1400	●		30	12	30	12
铝及铝合金	**3.5200** MgMn2, **3.5812.05** G-MgAl8Zn1, **3.5612.05**	≤400	○		150	17	150	17
锻铝合金	**2.0070** SE-Cu, **2.1020** CuSn6, **2.1096** G-CuSn5ZnPb	≤650	○		120	19	120	19
铸铝 ⩽ 10 % Si	**2.0380** CuZn39Pb2, **2.0401** CuZn39Pb3, **2.0410**	≤600	○		120	20	120	20
⩽ 24 % Si	**2.0250** CuZn20, **2.0280** CuZn33, **2.0332** CuZn37Pb0,5	≤600	○		130	18	130	18
镁合金	**2.1090** CuSn7ZnPb, **2.1170** CuPb5Sn5, **2.1176**	≤400	○		110	17	110	17
低合金铜	**2.0790** CuNi18Zn19Pb	≤500	○	A	75	15	75	15
黄铜,短屑	**2.0916** CuAl5, **2.0960** CuAl9Mn, **2.1050** CuSn10	≤600	○		120	18	120	18
长屑	**2.0980** CuAl11Ni, **2.1247** CuBe2	≤600	○		90	18	90	18
青铜,短屑	环氧树脂, Resopal, Pertinax, Moltopren	≤600	○ ●		95	17	95	17
	Plexiglass, Hostalen, Novodur, Makralon	≤850	●		75	17	75	17
青铜,长屑	**EN-GJV250** (GGV25), **EN-GJV350** (GGV35)	≤850	●		70	17	70	17
	EN-GJV400 (GGV40), **EN-GJV500** (GGV50), SiMo 6	≤1000	●		60	17	60	17
热固塑料	**EN-GJS-800-8** (ADI800), **EN-GJS-1000-5** (ADI1000)	≤150	○		75	15	75	15
热塑塑料	**EN-GJS-1200-2** (ADI1200), **EN-GJS-1400-1** (ADI1400)	≤100	○ ○		70	15	70	15
Kevlar 合成纤维	Kevlar	≤1000	○		60	14	60	14
玻璃/碳纤维	GFK/CFK	≤1000	○		50	14	50	14

HARTNER

应用建议
- 孔深>40 X D时，推荐两把或以上枪钻，例 ϕ 10 X 400mm 和 ϕ 9.95 X 800mm.
- 孔深>40 X D 时，枪钻反转进入引导孔 .
- 孔深>40 X D时，打开冷却液，仅1秒钟内刀具产生振动.
- 加工长屑材料时，枪钻槽内抛光。
- 一般来说，推荐使用乳化液，最小含油量10%。
- 单刃枪钻加工长屑材料，顶角180°，带卷屑槽。
- 加工含 Si 量< 1%的铝,如，分段提速最终速度 Vc > 160 m/min, 另外要求约 3 X D的预孔钻。

STOP

枪钻当其刚开始切削时，
必须要有导向和支撑.
在没有支撑和导向的情况下，
枪钻永远不可以全速运转.

E80

单刃枪钻

硬质合金头部

2.0 ... 40.0

260



recom. coating*	≤35xD v_c m/min	≤35xD 进给率代号	>35xD v_c m/min	>35xD 进给率代号
T	100	14	95	13
	85	14	80	13
T	90	14	85	13
	80	14	75	13
	90	13	85	12
T	80	13	75	12
	75	13	70	12
T	75	13	70	12
	65	13	60	12
T	80	14	75	13
T	75	13	70	12
	65	13	60	12
C	75	13	70	12
	65	13	60	12
C	75	12	70	11
	65	12	60	11
C	55	11	50	11
C	65	12	60	12
C	30	12	25	11
	25	11	20	11
	55	13	50	12
C	45	13	40	12
	35	13	35	12
	85	15	80	14
	80	15	75	14
	80	14	75	13
	70	14	65	13
	55	13	50	12
C	20	11	20	11
	35	11	30	11
	30	11	25	11
C	150	16	140	15
	120	15	115	14
	150	16	140	15
	130	16	120	15
	110	16	100	15
C	75	14	70	13
	120	17	115	16
	90	17	85	16
	95	16	90	15
	75	16	70	15
	70	16	65	15
	60	16	55	15
	75	14	70	13
	70	14	65	13
	60	13	55	12
	50	13	45	12

Z80

双刃枪钻

硬质合金头部

6.0 ... 27.0

252



recom. coating*	≤35xD v_c m/min	≤35xD 进给率代号	>35xD v_c m/min	>35xD 进给率代号
	85	18	80	17
	80	18	75	17
	75	17	70	16
	70	17	65	16
	65	16	60	15
	120	18	115	17
	110	18	105	17
	135	18	130	17
	120	17	115	16
	130	18	125	17
	120	18	115	17
	110	17	105	16
	110	17	105	16
	95	17	90	16
	95	17	90	16

E800

单刃枪钻

带刀片

12.0 ... 40.0

264



recom. coating*	≤35xD v_c m/min	≤35xD 进给率代号	>35xD v_c m/min	>35xD 进给率代号
T	90	15	85	15
	80	15	75	15
T	85	16	80	16
	75	16	70	16
	85	15	80	15
T	80	15	75	15
	75	15	70	15
T	75	15	70	15
	65	15	60	15
T	80	15	75	15
T	75	15	70	15
	70	15	65	15
T	70	15	65	15
	60	15	55	15
T	65	14	60	14
	60	14	55	14
T	55	14	50	14
T	65	15	60	15
T	30	13	25	13
	25	12	20	12
	50	14	45	14
F	45	14	40	14
	40	14	35	14
	85	16	80	16
	80	16	75	16
T	75	16	70	16
	70	16	65	16
	55	15	50	15
F	25	13	20	13
	35	13	30	13
	30	12	25	12
F	140	16	135	16
	125	16	120	16
	170	17	165	17
	140	17	135	17
	115	16	110	16
F	75	15	70	15
	120	17	115	17
	90	17	85	17
	95	17	90	17
	75	17	70	17
	70	17	65	17
	60	17	55	17
	75	16	70	16
	70	16	65	16
	60	15	55	15
	50	15	45	15

Multiplex 应用推荐

进给代号为粗体的刀具是首选项

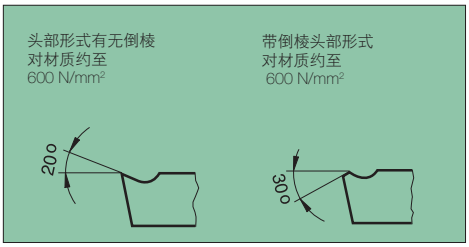
钻头直径 Ø mm	进给代号 1	2	3	4	5	6
	f (mm/rev.)					
10,00	0,08	0,09	0,11	0,14	0,19	0,24
12,50	0,09	0,11	0,13	0,17	0,22	0,28
16,00	0,11	0,13	0,16	0,21	0,27	0,34
20,00	0,13	0,15	0,19	0,25	0,32	0,40
25,00	0,16	0,18	0,23	0,29	0,38	0,48
31,50	0,19	0,22	0,27	0,35	0,45	0,57
40,00	0,23	0,26	0,33	0,42	0,54	0,69
50,00	0,27	0,31	0,39	0,50	0,64	0,82
63,00	0,32	0,38	0,47	0,60	0,77	0,98
102,00	0,40	0,48	0,59	0,74	0,85	1,20
150,00	0,59	0,70	0,87	1,09	1,25	1,76
100,00	0,78	0,93	1,16	1,45	1,67	2,35

冷却方式:
○ 气冷
● 纯油
● 乳化液

切削方向:
右切削
左切削

材料组	材料例举,最新牌号(括弧内为旧牌号) 粗体数字=材料代号依据DIN EN	拉伸强度_ MPa (N/mm²)	硬度	冷却方式
普通结构钢	**1.0035** S185(St33), **1.0486** P275N(StE285), **1.0345** P235GH(H1), **1.0425** P265GH(H2)	≤500		●
	1.0050 E295 (St50-2), **1.0070** E360 (St70-2), **1.8937** P500NH (WStE500)	≤1000		●
易切削钢	**1.0718** 11SMnPb30 (9SMnPb28), **1.0736** 11SMn37 (9SMn36)	≤850		●
	1.0727 46S20 (45S20), **1.0728** (60S20), **1.0757** 46SPb20 (45SPb20)	≤1000		●
非合金热处理钢	**1.0402** C22, **1.1178** C30E (Ck30)	≤700		●
	1.0503 C45, **1.1191** C45E (Ck45)	≤850		●
	1.0601 C60, **1.1221** C60E (Ck60)	≤1000		●
合金热处理钢	**1.5131** 50MnSi4, **1.7003** 38Cr2, **1.7030** 28Cr4	≤1000		●
	1.5710 36NiCr6, **1.7035** 41Cr4, **1.7225** 42CrMo4	≤1400		●
非合金表面硬化钢	**1.0301** (C10), **1.1121** C10E (Ck10)	≤850		●
合金表面硬化钢	**1.7276** 10CrMo11, **1.5125** 11MnSi6	≤1000		●
	1.5752 15NiCr13, **1.7131** 16MnCr5, **1.7264** 20CrMo5	≤1400		●
氮化钢	**1.8504** 34CrAl6	≤1000		●
	1.8519 31CrMoV9, **1.8550** 34CrAlNi7	≤1400		●
工具钢	**1.1750** C75W, **1.2067** 102Cr6, **1.2307** 29CrMoV9	≤850		●
	1.2080 X210Cr12, **1.2083** X42Cr13, **1.2419** 105WCr6, **1.2767** X45NiCrMo4	≤1400		●
高速钢	**1.3243** S 6-5-2-5, **1.3343** S 6-5-2, **1.3344** S 6-5-3	≤1400		●
弹簧钢	**1.5026** 55Si7, **1.7176** 55Cr3, **1.8159** 51CrV4 (51CrV4)		≤350 HB	●
硬化钢	–		≤48 HRC	●
			≤66 HRC	●
不锈钢,硫化	**1.4005** X12CrS13, **1.4104** X14CrMoS17, **1.4105** X6CrMoS17, **1.4305** X8CrNiS18-9	≤900		●
奥氏体	**1.4301** X5CrNi18-10 (V2A), **1.4541** X6CrNiTi18-10, **1.4571** X6CrNiMoTi 17-12-2 (V4A)	≤1100		●
马氏体	**1.4057** X20CrNi172 (X17CrNi16-2), **1.4122** X39CrMo17-1, **1.4521** X2CrMoTi18-2	≤1500		●
铸铁	**0.6010** EN-GJL-100 (GG10), **0.6020** EN-GJL-200 (GG20)		≤240 HB	○ ○
	0.6025 EN-GJL-250 (GG25), **0.6035** EN-GJL-350 (GG35)		≤350 HB	○ ○
球墨铁铸和	**0.7050** EN-GJS-500-7 (GGG50), **0.8035** EN-GJMW-350-4 (GTW35)		≤240 HB	●
可锻铸铁	**0.7070** EN-GJS-700-2 (GGG70), **0.8170** EN-GJMB-700-2 (GTS70)		≤350 HB	●
冷激铸铁	–		≤350 HB	●
蠕墨铸铁 GGV	**EN-GJV250** (GGV25), **EN-GJV350** (GGV35)		≤220 HB	○ ○
	EN-GJV400 (GGV40), **EN-GJV500** (GGV50), SiMo 6		≤300 HB	○ ○
蠕墨铸铁 ADI	**EN-GJS-800-8** (ADI800), **EN-GJS-1000-5** (ADI1000)	≤1000		○ ○
	EN-GJS-1200-2 (ADI1200), **EN-GJS-1400-1** (ADI1400)	≤1400		○ ○
特殊合金	Nimonic, Inconel, Monel, Hastelloy	≤2000		●
钛及钛合金	**3.7024** Ti99,5, **3.7114** TiAl5Sn2,5, **3.7124** TiCu2	≤850		●
	3.7154 TiAl6Zr5, **3.7165** TiAl6V4, **3.7184** TiAl4Mo4Sn2,5, - TiAl8Mo1V1	≤1400		●
铝及铝合金	**3.0255** Al99,5, **3.2315** AlMgSi1, **3.3515** AlMg1	≤400		●
锻铝合金	**3.0615** AlMgSiPb, **3.1325** AlCuMg1, **3.3245** AlMg3Si, **3.4365** AlZnMgCu1,5	≤650		●
铸铝 ⩽ 10 % Si	**3.2131** G-AlSi5Cu1, **3.2153** G-AlSi7Cu3, **3.2573** G-AlSi9	≤600		●
⩽ 24 % Si	**3.2581** G-AlSi12, **3.2583** G-AlSi12Cu, - G-AlSi12CuNiMg	≤600		●
镁合金	**3.5200** MgMn2, **3.5812.05** G-MgAl8Zn1, **3.5612.05** G-MgAl6Zn1	≤400		○
低合金铜	**2.0070** SE-Cu, **2.1020** CuSn6, **2.1096** G-CuSn5ZnPb	≤500		●
黄铜,短屑	**2.0380** CuZn39Pb2, **2.0401** CuZn39Pb3, **2.0410** CuZn43Pb2	≤600		●
长屑	**2.0250** CuZn20, **2.0280** CuZn33, **2.0332** CuZn37Pb0,5	≤600		●
青铜,短屑	**2.1090** CuSn7ZnPb, **2.1170** CuPb5Sn5, **2.1176** CuPb10Sn	≤600		● ●
	2.0790 CuNi18Zn19Pb	≤850		●
青铜,长屑	**2.0916** CuAl5, **2.0960** CuAl9Mn, **2.1050** CuSn10	≤850		●
	2.0980 CuAl11Ni, **2.1247** CuBe2	≤1000		●
热固塑料	环氧树脂, Resopal, Pertinax, Moltopren	≤150		○
热塑塑料	Plexiglass, Hostalen, Novodur, Makralon	≤100		● ○
Kevlar 合成纤维	Kevlar	≤1000		○
玻璃/碳纤维	GFK/CFK	≤1000		○

86602	86608	86609	86708	86709	86701	86702
10…25	10…25	10…102	10…35	10…35	10…35	10…35
HSS-E-PM	HSS-E-PM	HSS-E-PM	整体硬质合金	整体硬质合金	整体硬质合金	整体硬质合金
			H22	H22	H22	H22
			K20/K40	K20/K40	K20/K40	K20/K40
T	F	A	T	T	F	F
361	362	363	364	366	367	365











v_c m/min	进给率代号	v_c m/min	进给率代号	v_c m/min	进给率代号	v_c m/min	进给率代号	v_c m/min	进给率代号
40	4	48	4	48	4	60	5	70	5
35	4	42	4	42	4	55	4	65	4
50	5	60	5	60	5	100	4	115	4
40	5	50	5	50	5	95	4	105	4
40	4	45	4	45	4	80	4	90	4
35	4	40	4	40	4	80	4	90	4
30	4	35	4	35	4	75	3	85	3
25	3	28	3	28	3	70	4	80	4
22	2	25	2	25	2	60	3	70	3
35	3	40	3	40	3	85	4	95	4
25	3	28	3	28	3	70	4	80	4
22	2	25	2	25	2	55	3	65	3
22	3	25	3	25	3	60	3	65	3
15	2	18	2	18	2	50	2	55	2
26	3	28	3	28	3	40	3	45	3
22	2	25	2	25	2	35	2	40	2
12	2	18	2	18	2	40	2	45	2
10	2	13	2	13	2	35	2	40	2
						25	1	30	1
20	2	23	2	23	2	40	2	45	2
15	2	17	2	17	2				
15	2	20	2	20	2	25	2	30	2
35	4	40	4	40	4	100	5	120	5
35	4	40	4	40	4	90	4	105	4
35	4	40	4	40	4	80	4	90	4
28	4	33	4	33	4	65	3	75	3
						25	1	30	1
60	5	65	5	65	5	180	5	200	5
80	5	85	5	85	5	160	5	180	5
85	5	85	5	85	5	140	5	160	5
70	5	70	5	70	5	130	5	150	5
45	4	50	4	50	4	150	5	160	5
45	4	50	4	50	4	70	4	80	4
60	5	65	5	65	5	160	5	180	5
45	4	50	4	50	4	110	4	120	4
32	5	35	5	35	5	80	5	90	5
40	3	45	3	45	3	65	4	75	4
36	3	40	3	40	3	45	4	50	4
28	3	32	3	32	3	35	4	40	4
22	3	27	3	27	3	70	3	85	3
						70	3	85	3
						70	3	85	3
						70	3	85	3

Multiplex HPC 应用推荐

订单号
标准/DIN
刀具材质
硬质合金等级
类型
类型
柄部形式
页码

钻头直径 Ø mm	进给代号 1	2	3	4	5	6	7	8	9
	f (mm/rev.)								
10.00	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.400
12.50	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500
16.00	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630
20.00	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.630
25.00	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	0.800
31.50	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	1.000
40.00	0.200	0.250	0.315	0.400	0.500	0.630	0.800	1.000	1.250

冷却方式:
○ 气冷
● 纯油
● 乳化液

进给代号为粗体的刀具是优选项

材料组	材料例举,最新牌号(括弧内为旧牌号) 粗体数字=材料代号依据DIN EN	拉伸强度_ MPa (N/mm²)	硬度	冷却方式
普通结构钢	**1.0035** S185(St33), **1.0486** P275N(StE285), **1.0345** P235GH(H1), **1.0425** P265GH(H2)	≤500		●
	1.0050 E295 (St50-2), **1.0070** E360 (St70-2), **1.8937** P500NH (WStE500)	≤1000		●
易切削钢	**1.0718** 11SMnPb30 (9SMnPb28), **1.0736** 11SMn37 (9SMn36)	≤850		●
	1.0727 46S20 (45S20), **1.0728** (60S20), **1.0757** 46SPb20 (45SPb20)	≤1000		●
非合金热处理钢	**1.0402** C22, **1.1178** C30E (Ck30)	≤700		●
	1.0503 C45, **1.1191** C45E (Ck45)	≤850		●
	1.0601 C60, **1.1221** C60E (Ck60)	≤1000		●
合金热处理钢	**1.5131** 50MnSi4, **1.7003** 38Cr2, **1.7030** 28Cr4	≤1000		●
	1.5710 36NiCr6, **1.7035** 41Cr4, **1.7225** 42CrMo4	≤1400		●
非合金表面硬化钢	**1.0301** (C10), **1.1121** C10E (Ck10)	≤850		●
合金表面硬化钢	**1.7276** 10CrMo11, **1.5125** 11MnSi6	≤1000		●
	1.5752 15NiCr13, **1.7131** 16MnCr5, **1.7264** 20CrMo5	≤1400		●
氮化钢	**1.8504** 34CrAl6	≤1000		●
	1.8519 31CrMoV9, **1.8550** 34CrAlNi7	≤1400		●
工具钢	**1.1750** C75W, **1.2067** 102Cr6, **1.2307** 29CrMoV9	≤850		●
	1.2080 X210Cr12, **1.2083** X42Cr13, **1.2419** 105WCr6, **1.2767** X45NiCrMo4	≤1400		●
高速钢	**1.3243** S 6-5-2-5, **1.3343** S 6-5-2, **1.3344** S 6-5-3	≤1400		●
弹簧钢	**1.5026** 55Si7, **1.7176** 55Cr3, **1.8159** 51CrV4 (51CrV4)		≤350 HB	●
硬化钢	–		≤48 HRC	●
			≤66 HRC	●
不锈钢,硫化	**1.4005** X12CrS13, **1.4104** X14CrMoS17, **1.86681** X6CrMoS17, **1.4305** X8CrNiS18-9	≤900		●
奥氏体	**1.4301** X5CrNi18-10 (V2A), **1.4541** X6CrNiTi18-10, **1.4571** X6CrNiMoTi 17-12-2 (V4A)	≤1100		●
马氏体	**1.4057** X20CrNi172 (X17CrNi16-2), **1.4122** X39CrMo17-1, **1.4521** X2CrMoTi18-2	≤1500		●
铸铁	**0.6010** EN-GJL-100 (GG10), **0.6020** EN-GJL-200 (GG20)		≤240 HB	○ ○
	0.6025 EN-GJL-250 (GG25), **0.6035** EN-GJL-350 (GG35)		≤350 HB	○ ○
球墨铁铸和	**0.7050** EN-GJS-500-7 (GGG50), **0.8035** EN-GJMW-350-4 (GTW35)		≤240 HB	●
可锻铸铁	**0.7070** EN-GJS-700-2 (GGG70), **0.8170** EN-GJMB-700-2 (GTS70)		≤350 HB	●
冷激铸铁	–		≤350 HB	●
蠕墨铸铁 GGV	**EN-GJV250** (GGV25), **EN-GJV350** (GGV35)		≤220 HB	○ ○
	EN-GJV400 (GGV40), **EN-GJV500** (GGV50), SiMo 6		≤300 HB	○ ○
蠕墨铸铁 ADI	**EN-GJS-800-8** (ADI800), **EN-GJS-1000-5** (ADI1000)	≤1000		○ ○
	EN-GJS-1200-2 (ADI1200), **EN-GJS-1400-1** (ADI1400)	≤1400		○ ○
特殊合金	Nimonic, Inconel, Monel, Hastelloy	≤2000		●
钛及钛合金	**3.7024** Ti99,5, **3.7114** TiAl5Sn2,5, **3.7124** TiCu2	≤850		●
	3.7154 TiAl6Zr5, **3.7165** TiAl6V4, **3.7184** TiAl4Mo4Sn2,5, - TiAl8Mo1V1	≤1400		●
铝及铝合金	**3.0255** Al99,5, **3.2315** AlMgSi1, **3.3515** AlMg1	≤400		●
锻铝合金	**3.0615** AlMgSiPb, **3.1325** AlCuMg1, **3.3245** AlMg3Si, **3.4365** AlZnMgCu1,5	≤650		●
铸铝 ⩽ 10 % Si	**3.2131** G-AlSi5Cu1, **3.2153** G-AlSi7Cu3, **3.2573** G-AlSi9	≤600		●
⩽ 24 % Si	**3.2581** G-AlSi12, **3.2583** G-AlSi12Cu, - G-AlSi12CuNiMg	≤600		●
镁合金	**3.5200** MgMn2, **3.5812.05** G-MgAl8Zn1, **3.5612.05** G-MgAl6Zn1	≤400		○
低合金铜	**2.0070** SE-Cu, **2.1020** CuSn6, **2.1096** G-CuSn5ZnPb	≤500		●
黄铜,短屑	**2.0380** CuZn39Pb2, **2.0401** CuZn39Pb3, **2.0410** CuZn43Pb2	≤600		●
长屑	**2.0250** CuZn20, **2.0280** CuZn33, **2.0332** CuZn37Pb0,5	≤600		●
青铜,短屑	**2.1090** CuSn7ZnPb, **2.1170** CuPb5Sn5, **2.1176** CuPb10Sn	≤600		● ●
	2.0790 CuNi18Zn19Pb	≤850		●
青铜,长屑	**2.0916** CuAl5, **2.0960** CuAl9Mn, **2.1050** CuSn10	≤850		●
	2.0980 CuAl11Ni, **2.1247** CuBe2	≤1000		●
热固塑料	环氧树脂, Resopal, Pertinax, Moltopren	≤150		○
热塑塑料	Plexiglass, Hostalen, Novodur, Makralon	≤100		● ○
Kevlar 合成纤维	Kevlar	≤1000		○
玻璃/碳纤维	GFK/CFK	≤1000		○

HARTNER

≤1,5×D

86722	86725	86723	86724
钻领标准	钻领标准	钻领标准	钻领标准
整体硬质合金	整体硬质合金	整体硬质合金	整体硬质合金
K/P	K/P	K/P	K/P
1,5xD	1,5xD	1,5xD	1,5xD
F	a	F	○
普通钢	不锈钢	铸铁	铝和铝合金
392	401	395	398






v_c m/min	进给率代号	v_c m/min	进给率代号	v_c m/min	进给率代号	v_c m/min	进给率代号
130	6						
110	5						
130	7						
110	6						
130	6						
125	6						
110	5						
110	6						
90	5						
130	7						
110	6						
70	4						
105	5						
70	4						
60	5						
55	4						
55	3						
50	2						
		25	2				
		55	3				
		40	3				
		35	3				
				100	6		
				90	6		
				120	7		
				100	6		
		90	6				
				80	5		
				80	5		
				80	5		
				80	5		
		25	2				
		40	3				
		35	2				
						200	7
						180	7
						150	7
						120	7
						180	7
						70	6
						180	7
						120	6
						70	6
						50	6
						45	6
						35	5

≤3×D

86722	86725	86723	86724
钻领标准	钻领标准	钻领标准	钻领标准
整体硬质合金	整体硬质合金	整体硬质合金	整体硬质合金
K/P	K/P	K/P	K/P
3xD	3xD	3xD	3xD
F	a	F	○
普通钢	不锈钢	铸铁	铝和铝合金
392	401	395	398






v_c m/min	进给率代号	v_c m/min	进给率代号	v_c m/min	进给率代号	v_c m/min	进给率代号
130	6						
110	5						
130	7						
110	6						
130	6						
125	6						
110	5						
110	6						
90	5						
130	7						
110	6						
70	4						
105	5						
70	4						
60	5						
55	4						
55	3						
50	2						
		25	2				
		55	3				
		40	3				
		35	3				
				100	6		
				90	6		
				120	7		
				100	6		
		90	6				
				80	5		
				80	5		
				80	5		
				80	5		
		25	2				
		40	3				
		35	2				
						200	7
						180	7
						150	7
						120	7
						180	7
						70	6
						180	7
						120	6
						70	6
						50	6
						45	6
						35	5

HARTNER

Multiplex HPC 应用推荐

订单号
标准/DIN
刀具材质
硬质合金等级
类型
类型
柄部形式
页码

钻头直径 Ø mm	进给代号 1	2	3	4	5	6	7	8	9
	f (mm/rev.)								
10.00	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.400
12.50	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500
16.00	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630
20.00	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.630
25.00	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	0.800
31.50	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	1.000
40.00	0.200	0.250	0.315	0.400	0.500	0.630	0.800	1.000	1.250

冷却方式:
○ 气冷
● 纯油
● 乳化液

进给代号为粗体的刀具是优选项

材料组	材料例举,最新牌号(括弧内为旧牌号) 粗体数字=材料代号依据DIN EN	拉伸强度_ MPa (N/mm²)	硬度	冷却方式
普通结构钢	**1.0035** S185(St33), **1.0486** P275N(StE285), **1.0345** P235GH(H1), **1.0425** P265GH(H2)	≤500		●
	1.0050 E295 (St50-2), **1.0070** E360 (St70-2), **1.8937** P500NH (WStE500)	≤1000		●
易切削钢	**1.0718** 11SMnPb30 (9SMnPb28), **1.0736** 11SMn37 (9SMn36)	≤850		●
	1.0727 46S20 (45S20), **1.0728** (60S20), **1.0757** 46SPb20 (45SPb20)	≤1000		●
非合金热处理钢	**1.0402** C22, **1.1178** C30E (Ck30)	≤700		●
	1.0503 C45, **1.1191** C45E (Ck45)	≤850		●
	1.0601 C60, **1.1221** C60E (Ck60)	≤1000		●
合金热处理钢	**1.5131** 50MnSi4, **1.7003** 38Cr2, **1.7030** 28Cr4	≤1000		●
	1.5710 36NiCr6, **1.7035** 41Cr4, **1.7225** 42CrMo4	≤1400		●
非合金表面硬化钢	**1.0301** (C10), **1.1121** C10E (Ck10)	≤850		●
合金表面硬化钢	**1.7276** 10CrMo11, **1.5125** 11MnSi6	≤1000		●
	1.5752 15NiCr13, **1.7131** 16MnCr5, **1.7264** 20CrMo5	≤1400		●
氮化钢	**1.8504** 34CrAl6	≤1000		●
	1.8519 31CrMoV9, **1.8550** 34CrAlNi7	≤1400		●
工具钢	**1.1750** C75W, **1.2067** 102Cr6, **1.2307** 29CrMoV9	≤850		●
	1.2080 X210Cr12, **1.2083** X42Cr13, **1.2419** 105WCr6, **1.2767** X45NiCrMo4	≤1400		●
高速钢	**1.3243** S 6-5-2-5, **1.3343** S 6-5-2, **1.3344** S 6-5-3	≤1400		●
弹簧钢	**1.5026** 55Si7, **1.7176** 55Cr3, **1.8159** 51CrV4 (51CrV4)		≤350 HB	●
硬化钢	–		≤48 HRC	●
			≤66 HRC	●
不锈钢,硫化	**1.4005** X12CrS13, **1.4104** X14CrMoS17, **1.86681** X6CrMoS17, **1.4305** X8CrNiS18-9	≤900		●
奥氏体	**1.4301** X5CrNi18-10 (V2A), **1.4541** X6CrNiTi18-10, **1.4571** X6CrNiMoTi 17-12-2 (V4A)	≤1100		●
马氏体	**1.4057** X20CrNi172 (X17CrNi16-2), **1.4122** X39CrMo17-1, **1.4521** X2CrMoTi18-2	≤1500		●
铸铁	**0.6010** EN-GJL-100 (GG10), **0.6020** EN-GJL-200 (GG20)		≤240 HB	○ ○
	0.6025 EN-GJL-250 (GG25), **0.6035** EN-GJL-350 (GG35)		≤350 HB	○ ○
球墨铸铁和	**0.7050** EN-GJS-500-7 (GGG50), **0.8035** EN-GJMW-350-4 (GTW35)		≤240 HB	●
可锻铸铁	**0.7070** EN-GJS-700-2 (GGG70), **0.8170** EN-GJMB-700-2 (GTS70)		≤350 HB	●
冷激铸铁	–		≤350 HB	●
蠕墨铸铁 GGV	**EN-GJV250** (GGV25), **EN-GJV350** (GGV35)		≤220 HB	○ ○
	EN-GJV400 (GGV40), **EN-GJV500** (GGV50), SiMo 6		≤300 HB	○ ○
蠕墨铸铁 ADI	**EN-GJS-800-8** (ADI800), **EN-GJS-1000-5** (ADI1000)	≤1000		○ ○
	EN-GJS-1200-2 (ADI1200), **EN-GJS-1400-1** (ADI1400)	≤1400		○ ○
特殊合金	Nimonic, Inconel, Monel, Hastelloy	≤2000		●
钛及钛合金	**3.7024** Ti99,5, **3.7114** TiAl5Sn2,5, **3.7124** TiCu2	≤850		●
	3.7154 TiAl6Zr5, **3.7165** TiAl6V4, **3.7184** TiAl4Mo4Sn2,5, - TiAl8Mo1V1	≤1400		●
铝及铝合金	**3.0255** Al99,5, **3.2315** AlMgSi1, **3.3515** AlMg1	≤400		●
锻铝合金	**3.0615** AlMgSiPb, **3.1325** AlCuMg1, **3.3245** AlMg3Si, **3.4365** AlZnMgCu1,5	≤650		●
铸铝 ⩽ 10 % Si	**3.2131** G-AlSi5Cu1, **3.2153** G-AlSi7Cu3, **3.2573** G-AlSi9	≤600		●
⩽ 24 % Si	**3.2581** G-AlSi12, **3.2583** G-AlSi12Cu, - G-AlSi12CuNiMg	≤600		●
镁合金	**3.5200** MgMn2, **3.5812.05** G-MgAl8Zn1, **3.5612.05** G-MgAl6Zn1	≤400		○
低合金铜	**2.0070** SE-Cu, **2.1020** CuSn6, **2.1096** G-CuSn5ZnPb	≤500		●
黄铜,短屑	**2.0380** CuZn39Pb2, **2.0401** CuZn39Pb3, **2.0410** CuZn43Pb2	≤600		●
长屑	**2.0250** CuZn20, **2.0280** CuZn33, **2.0332** CuZn37Pb0,5	≤600		●
青铜,短屑	**2.1090** CuSn7ZnPb, **2.1170** CuPb5Sn5, **2.1176** CuPb10Sn	≤600		● ●
	2.0790 CuNi18Zn19Pb	≤850		●
青铜,长屑	**2.0916** CuAl5, **2.0960** CuAl9Mn, **2.1050** CuSn10	≤850		●
	2.0980 CuAl11Ni, **2.1247** CuBe2	≤1000		●
热固塑料	环氧树脂, Resopal, Pertinax, Moltopren	≤150		○
热塑塑料	Plexiglass, Hostalen, Novodur, Makralon	≤100		● ○
Kevlar 合成纤维	Kevlar	≤1000		○
玻璃/碳纤维	GFK/CFK	≤1000		○

HARTNER

≤5×D

86722	86725	86723	86724
钻领标准	钻领标准	钻领标准	钻领标准
整体硬质合金	整体硬质合金	整体硬质合金	整体硬质合金
K/P	K/P	K/P	K/P
1,5xD	1,5xD	1,5xD	1,5xD
F	a	F	○
普通钢	不锈钢	铸铁	铝和铝合金
392	401	395	398






v_c m/min	进给率代号	v_c m/min	进给率代号	v_c m/min	进给率代号	v_c m/min	进给率代号
125	6						
105	5						
125	7						
105	6						
125	6						
120	6						
105	5						
105	6						
85	5						
125	7						
105	6						
70	4						
105	5						
70	4						
55	5						
50	4						
55	3						
50	2						
		25	2				
		55	3				
		40	3				
		35	3				
				100	6		
				90	6		
				120	7		
				100	6		
		90	6				
				80	5		
				80	5		
				80	5		
				80	5		
		25	2				
		40	3				
		35	2				
						180	7
						180	7
						140	7
						110	7
						180	7
						70	6
						180	7
						120	6
						70	6
						50	6
						45	6
						35	5

≤7×D

86722	86725	86723	86724
钻领标准	钻领标准	钻领标准	钻领标准
整体硬质合金	整体硬质合金	整体硬质合金	整体硬质合金
K/P	K/P	K/P	K/P
3xD	3xD	3xD	3xD
F	a	F	○
普通钢	不锈钢	铸铁	铝和铝合金
392	401	395	398






v_c m/min	进给率代号	v_c m/min	进给率代号	v_c m/min	进给率代号	v_c m/min	进给率代号
120	5						
105	4						
120	6						
105	5						
120	5						
110	5						
100	4						
100	5						
85	4						
120	6						
100	5						
70	4						
105	4						
70	3						
55	4						
50	3						
55	2						
50	2						
		25	1				
		55	2				
		40	2				
		35	2				
				80	6		
				70	6		
				100	7		
				80	6		
		70	6				
				60	5		
				60	5		
				60	5		
				60	5		
		25	1				
		40	2				
		35	1				
						180	6
						180	6
						140	6
						110	6
						180	6
						70	5
						180	6
						120	5
						70	5
						50	5
						45	5
						35	4

Multiplex HPC 应用推荐

订单号
标准/DIN
刀具材质
硬质合金等级
类型
类型
柄部形式
页码

钻头直径 Ø mm	进给代号 1	2	3	4	5	6	7	8	9
	f (mm/rev.)								
10.00	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.400
12.50	0.080	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500
16.00	0.100	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630
20.00	0.125	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.630
25.00	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	0.800
31.50	0.160	0.200	0.250	0.315	0.400	0.500	0.630	0.800	1.000
40.00	0.200	0.250	0.315	0.400	0.500	0.630	0.800	1.000	1.250

冷却方式:
○ 气冷
● 纯油
● 乳化液

进给代号为粗体的刀具是优选项

材料组	材料例举,最新牌号(括弧内为旧牌号) 粗体数字=材料代号依据DIN EN	拉伸强度_ MPa (N/mm²)	硬度	冷却方式
普通结构钢	**1.0035** S185(St33), **1.0486** P275N(StE285), **1.0345** P235GH(H1), **1.0425** P265GH(H2)	≤500		●
	1.0050 E295 (St50-2), **1.0070** E360 (St70-2), **1.8937** P500NH (WStE500)	≤1000		●
易切削钢	**1.0718** 11SMnPb30 (9SMnPb28), **1.0736** 11SMn37 (9SMn36)	≤850		●
	1.0727 46S20 (45S20), **1.0728** (60S20), **1.0757** 46SPb20 (45SPb20)	≤1000		●
非合金热处理钢	**1.0402** C22, **1.1178** C30E (Ck30)	≤700		●
	1.0503 C45, **1.1191** C45E (Ck45)	≤850		●
	1.0601 C60, **1.1221** C60E (Ck60)	≤1000		●
合金热处理钢	**1.5131** 50MnSi4, **1.7003** 38Cr2, **1.7030** 28Cr4	≤1000		●
	1.5710 36NiCr6, **1.7035** 41Cr4, **1.7225** 42CrMo4	≤1400		●
非合金表面硬化钢	**1.0301** (C10), **1.1121** C10E (Ck10)	≤850		●
合金表面硬化钢	**1.7276** 10CrMo11, **1.5125** 11MnSi6	≤1000		●
	1.5752 15NiCr13, **1.7131** 16MnCr5, **1.7264** 20CrMo5	≤1400		●
氮化钢	**1.8504** 34CrAl6	≤1000		●
	1.8519 31CrMoV9, **1.8550** 34CrAlNi7	≤1400		●
工具钢	**1.1750** C75W, **1.2067** 102Cr6, **1.2307** 29CrMoV9	≤850		●
	1.2080 X210Cr12, **1.2083** X42Cr13, **1.2419** 105WCr6, **1.2767** X45NiCrMo4	≤1400		●
高速钢	**1.3243** S 6-5-2-5, **1.3343** S 6-5-2, **1.3344** S 6-5-3	≤1400		●
弹簧钢	**1.5026** 55Si7, **1.7176** 55Cr3, **1.8159** 51CrV4 (51CrV4)		≤350 HB	●
硬化钢	–		≤48 HRC	●
			≤66 HRC	●
不锈钢,硫化	**1.4005** X12CrS13, **1.4104** X14CrMoS17, **1.86681** X6CrMoS17, **1.4305** X8CrNiS18-9	≤900		●
奥氏体	**1.4301** X5CrNi18-10 (V2A), **1.4541** X6CrNiTi18-10, **1.4571** X6CrNiMoTi 17-12-2 (V4A)	≤1100		●
马氏体	**1.4057** X20CrNi172 (X17CrNi16-2), **1.4122** X39CrMo17-1, **1.4521** X2CrMoTi18-2	≤1500		●
铸铁	**0.6010** EN-GJL-100 (GG10), **0.6020** EN-GJL-200 (GG20)		≤240 HB	○ ○
	0.6025 EN-GJL-250 (GG25), **0.6035** EN-GJL-350 (GG35)		≤350 HB	○ ○
球墨铁铸和	**0.7050** EN-GJS-500-7 (GGG50), **0.8035** EN-GJMW-350-4 (GTW35)		≤240 HB	●
可锻铸铁	**0.7070** EN-GJS-700-2 (GGG70), **0.8170** EN-GJMB-700-2 (GTS70)		≤350 HB	●
冷激铸铁	–		≤350 HB	●
蠕墨铸铁 GGV	**EN-GJV250** (GGV25), **EN-GJV350** (GGV35)		≤220 HB	○ ○
	EN-GJV400 (GGV40), **EN-GJV500** (GGV50), SiMo 6		≤300 HB	○ ○
蠕墨铸铁 ADI	**EN-GJS-800-8** (ADI800), **EN-GJS-1000-5** (ADI1000)	≤1000		○ ○
	EN-GJS-1200-2 (ADI1200), **EN-GJS-1400-1** (ADI1400)	≤1400		○ ○
特殊合金	Nimonic, Inconel, Monel, Hastelloy	≤2000		●
钛及钛合金	**3.7024** Ti99,5, **3.7114** TiAl5Sn2,5, **3.7124** TiCu2	≤850		●
	3.7154 TiAl6Zr5, **3.7165** TiAl6V4, **3.7184** TiAl4Mo4Sn2,5, - TiAl8Mo1V1	≤1400		●
铝及铝合金	**3.0255** Al99,5, **3.2315** AlMgSi1, **3.3515** AlMg1	≤400		●
锻铝合金	**3.0615** AlMgSiPb, **3.1325** AlCuMg1, **3.3245** AlMg3Si, **3.4365** AlZnMgCu1,5	≤650		●
铸铝 ⩽ 10 % Si	**3.2131** G-AlSi5Cu1, **3.2153** G-AlSi7Cu3, **3.2573** G-AlSi9	≤600		●
⩽ 24 % Si	**3.2581** G-AlSi12, **3.2583** G-AlSi12Cu, - G-AlSi12CuNiMg	≤600		●
镁合金	**3.5200** MgMn2, **3.5812.05** G-MgAl8Zn1, **3.5612.05** G-MgAl6Zn1	≤400		○
低合金铜	**2.0070** SE-Cu, **2.1020** CuSn6, **2.1096** G-CuSn5ZnPb	≤500		●
黄铜,短屑	**2.0380** CuZn39Pb2, **2.0401** CuZn39Pb3, **2.0410** CuZn43Pb2	≤600		●
长屑	**2.0250** CuZn20, **2.0280** CuZn33, **2.0332** CuZn37Pb0,5	≤600		●
青铜,短屑	**2.1090** CuSn7ZnPb, **2.1170** CuPb5Sn5, **2.1176** CuPb10Sn	≤600		● ●
	2.0790 CuNi18Zn19Pb	≤850		●
青铜,长屑	**2.0916** CuAl5, **2.0960** CuAl9Mn, **2.1050** CuSn10	≤850		●
	2.0980 CuAl11Ni, **2.1247** CuBe2	≤1000		●
热固塑料	环氧树脂, Resopal, Pertinax, Moltopren	≤150		○
热塑塑料	Plexiglass, Hostalen, Novodur, Makralon	≤100		● ○
Kevlar 合成纤维	Kevlar	≤1000		○
玻璃/碳纤维	GFK/CFK	≤1000		○

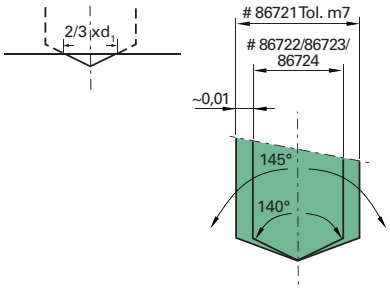
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≤10×D

86722	86725	86723	86724
钻领标准	钻领标准	钻领标准	钻领标准
整体硬质合金	整体硬质合金	整体硬质合金	整体硬质合金
K/P	K/P	K/P	K/P
1,5xD	1,5xD	1,5xD	1,5xD
F	a	F	○
普通钢	不锈钢	铸铁	铝和铝合金
392	401	395	398

≤1×D 预钻孔/锪孔

86721
钻领标准
整体硬质合金
K/P
1xD
a
预钻孔/锪孔
389



- 加工通孔时，支撑面必须停留在固定的接触面上，另外，在钻穿时要降低切削速度和进给。
- 般在钻深达到或超过5XD时，我们建议要有定位孔或引导孔No.86681 刀体配No.86721刀片。
- 若没有定位孔，我们要求在刚开始加工1.5~2倍径时，降低切削参数。
- 不要轻易用该型钻头，在没有验证的情况进行断续切削（如加工交叉孔，环槽孔等），在断续切削（最大0.2XD）时，一定要降速进给。
- 和普通可换刀片相比，HT800还适用加工成叠薄板
- 在车床上应用时（刀具不动），必须确保定心精确。
- 要获得理想加工结果的前提条件是有充足的冷却和润滑。
- 该型刀具在用于干切削或MQL切削时，有一定要求；在用于MQL时，要求刀具柄部 制造或MQL专用的圆锥倒角，刀柄也要也要采用MQL专用刀柄。若有要求，可与我们的销售工程师联系。







vc m/min	进给率代号	vc m/min	进给率代号	vc m/min	进给率代号	vc m/min	进给率代号	vc m/min	进给率代号
100	5							130	6
95	4							110	5
100	6							130	7
95	5							110	6
100	5							130	6
95	5							125	6
90	4							110	5
90	5							110	6
85	4							90	5
100	6							130	7
90	5							110	6
70	4							70	4
95	4							105	5
70	3							70	4
55	4							60	5
50	3							55	4
55	2							55	3
50	2							50	2
		25	1					25	2
		55	2					55	3
		40	2					40	3
		35	2					35	3
				80	6			100	6
				70	6			90	6
				100	7			120	7
				80	6			100	6
		70	6					90	6
				60	5			80	5
				60	5			80	5
				60	5			80	5
				60	5			80	5
		25	1					25	2
		40	2					40	3
		35	1					35	2
						150	6	200	7
						150	6	180	7
						130	6	150	7
						105	6	120	7
						150	6	180	7
						70	5	70	6
						150	6	180	7
						110	5	120	6
						70	5	70	6
						50	5	50	6
						45	5	45	6
						35	4	35	5

备注

备注

备注



Hartner哈特纳无论在德国，还是在国外市场，都具有广泛的销售网络和高效率的合作伙伴，可以为我们的客户提供销售和技术上的支持。这可以和Hartner哈特纳精密刀具相媲美。

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