



精密切削刀具系列

PRECISION CUTTING TOOL SERIES



天工国际有限公司
Tiangong International Company limited

2023.10

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中国重点发展先进基础材料、关键战略材料、前沿新材料及精密切削刀具生产制造商，高速工具钢入选国家级制造业单项冠军，2007年在香港联交所主板上市，是国家重点高新技术企业、中国民营企业、中国民营企业制造业500强，中国五金工具出口质量安全示范企业，世界工模具钢强企前两强，中国第一位，欧盟“双反”案首例成功胜诉企业。天工建有中国首条工模具钢及钛合金粉末冶金工业化生产线，与钢研总院成立了中国首个粉末冶金研究院，粉末冶金材料亮相央视大型纪录片《栋梁之材》，天工已形成从矿业、新材料业到精密切削刀具制造一体化科研、生产、销售、服务体系。

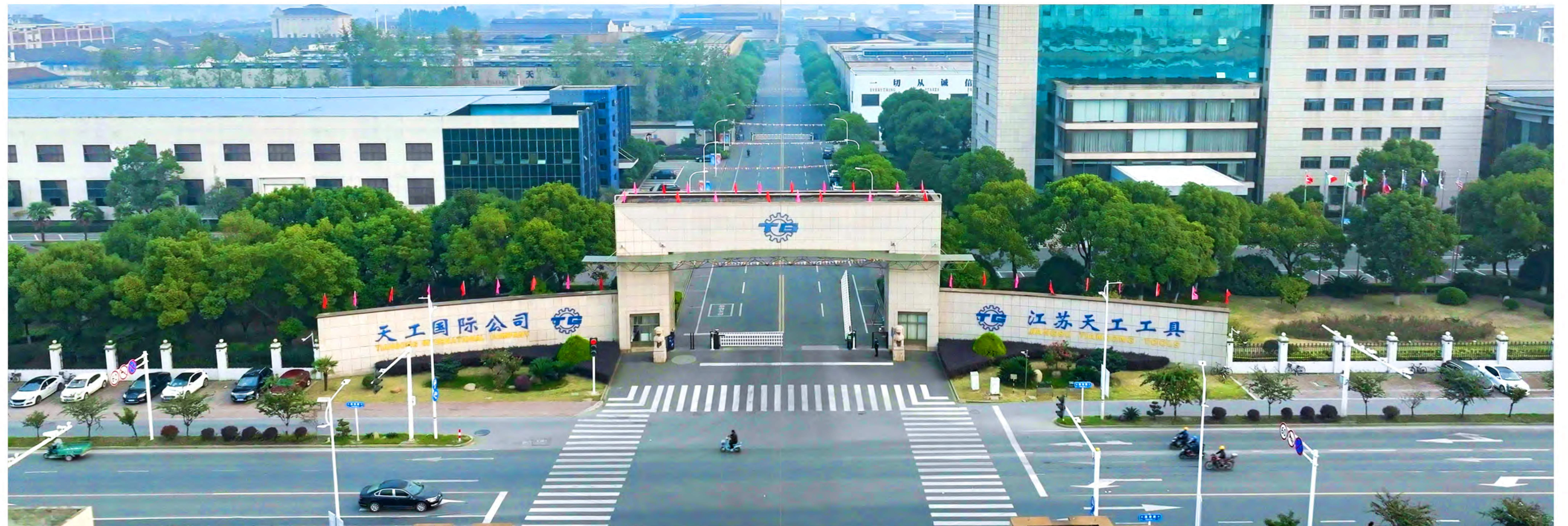
天工是中国唯一一家全产业链、全品种特种新材料生产企业，产品被广泛应用于航空、汽车、海洋、高速列车、石油化工等行业，以及机械加工、激光熔覆、3D打印等不同领域，畅销欧美等世界近百个国家以及香港、台湾等地区。在美国、俄罗斯、捷克、韩国、土耳其、加拿大、意大利、墨西哥、泰国、印尼、印度、台湾、越南等国家和地区设有分公司。

未来，天工致力成为世界新材料行业引领者，成为世界唯一全粉末系列产品生产制造商。

Tiangong International Co., Ltd. (referred to as "Tiangong International"), established in 1981, has 3,800 employees and is a leading manufacturer in China specializing in advanced basic materials, key strategic materials, cutting-edge new materials, and precision cutting tool production and its high-speed tool steel was selected as the National Single Champion Product in Manufacturing Industry. Listed on main board of the Hong Kong Stock Exchange in 2007, the company is a national-level high-tech enterprise, one of China's top 500 private enterprises in manufacturing, a quality and safety demonstration enterprise for China's hardware and tool exports, one of the top two tool and die steel companies in the world, and the first company won the EU "Anti-dumping and Countervailing" case in China. Tiangong has established China's first industrialized production line for powdered metallurgy for steel and titanium alloys, and partnered with Central Iron & Steel Research Institute to establish China's first Powder Metallurgy Research Institute. Its powdered metallurgy materials were featured in a large-scale documentary Cornerstones of Materials on CCTV. Tiangong International has developed an integrated research, production, sales, and service system covering the entire industry chain and various product categories, from mining and new materials to precision cutting tool manufacturing.

Tiangong International is the only enterprise in China with a complete industrial chain and a full range of special new materials. Their products are widely used in industries like aviation, automotive, marine, high-speed trains, petrochemicals, mechanical processing, laser cladding, 3D printing, and other fields. These products are sold in nearly a hundred countries worldwide, including Europe, the United States, and regions like Hong Kong and Taiwan. Tiangong International has subsidiaries in various countries and regions, such as the United States, Russia, the Czech Republic, South Korea, the Republic of Türkiye, Canada, Italy, Mexico, Thailand, Indonesia, India, Taiwan, and Vietnam etc.

In the future, Tiangong International aims to become a leader in the global new materials industry and the world's only manufacturer of a full series of powdered products.



精密切削刀具系列

PRECISION CUTTING TOOL SERIES

1987年，天工引进第一台轧制机，产出第一支麻花钻，至此天工精密切削刀具发展的匠心之路便铺呈开来，经过36年的发展，天工精密切削刀具产品不断迭代升级，从普通民用精密切削刀具到工业级，并实现以普通高速工具钢为母材向粉末材料为母材生产精密切削刀具对的彻底转变，产品性能全面提升，成为世界唯一全粉末系列普通刀具产品专业级生产制造商，产品涵盖所有孔加工刀具、螺孔加工刀具产品，被广泛应用于航空航天、石油化工、机械加工、医疗器械及军工领域。并与上海交通大学建立了良好的产业研合作关系，全面拓展粉末系列刀具产品，持续满足高端制造需求。

2022年6月，天工新磨制钻厂正式建设投产，月产磨制钻达1600万件，2022年粉末定柄钻研发成功，同年天工粉末丝锥厂建成投产，成为中国首家以自产的粉末钢为原材料生产高性能粉末丝锥的专业厂家，生产装备均选用日本、德国以及国内顶尖的丝锥生产装备，设计年产能达2000万支丝锥。天工正持续扩大粉末系列刀具产品的研发量产，致力于打造世界唯一全粉末系列刀具产品专业生产制造商。

In 1987, Tiangong International imported its first rolling mill and produced its first twist drill. This marked the beginning of Tiangong International's journey in the development of precision cutting tools. Over 36 years of development, Tiangong International's precision cutting tool products have continually evolved, transitioning from common civilian-grade precision cutting tools to industrial-grade tools. The company also made a complete transformation from using ordinary high-speed tool steel as the base material to using powder materials as the base material for the production of precision cutting tools. This upgrade led to a comprehensive improvement in product performance and made Tiangong International become the world's sole professional manufacturer of a full range of powder-based conventional cutting tools. Its products cover all hole processing and thread machining tool categories, and are widely employed in the aerospace, petrochemical, mechanical machining, medical equipment, and military industries. Tiangong International has established a fruitful industry-academic collaboration with Shanghai Jiao Tong University, extensively expanding their powder tool product range to continuously meet high-end manufacturing demands.

In June 2022, Tiangong International's new grinding and drilling factory was officially constructed and put into operation, with a monthly output of 16 million pieces of grinding drills. In 2022, the powder fixed-shank drill was successfully developed. In the same year, Tiangong International Powder Tap Factory was completed and put into operation, becoming the first professional manufacturer in China to produce high-performance powder taps using self-produced powder steel as raw materials. The production equipment is selected from Japan, Germany and domestic top tap equipment brands, with a designed annual production capacity of 20 million of taps. Tiangong International is continuing to expand the research and development and mass production of powder series cutting tool products, and aims to become a leader in the global new materials industry and the world's only professional manufacturer of a full series of powdered cutting tool products.



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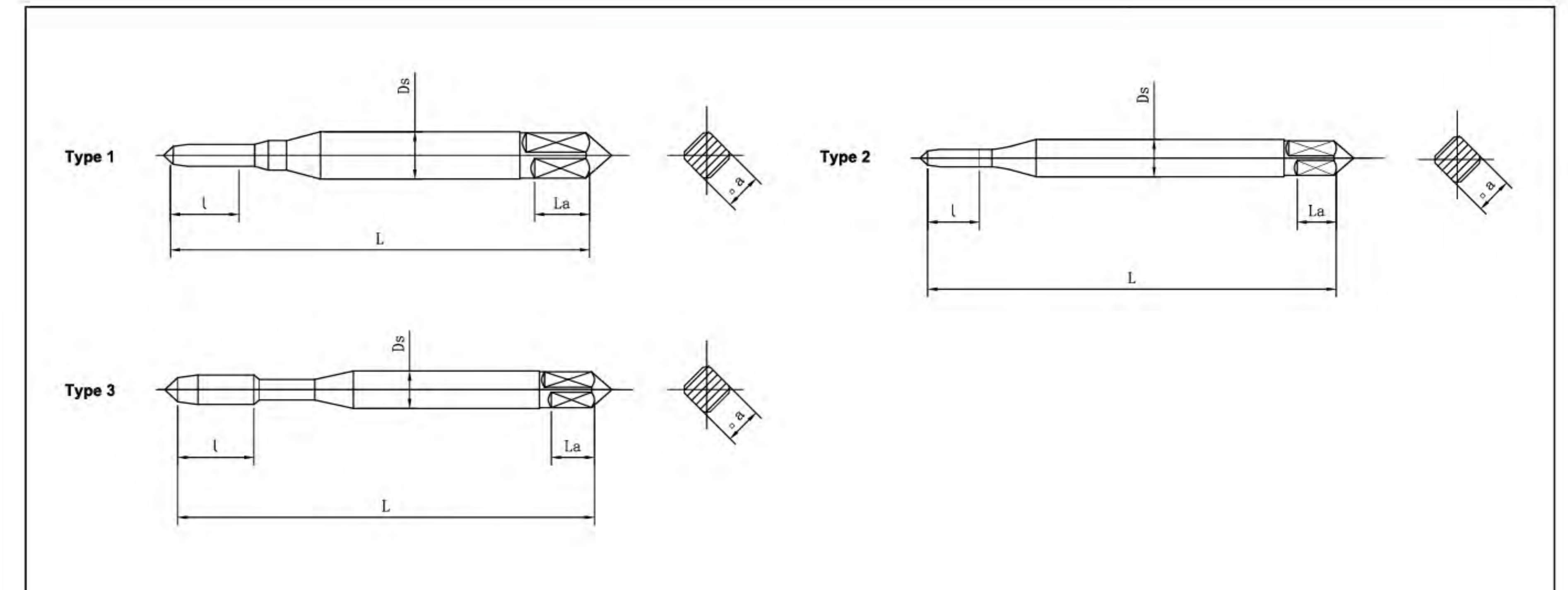
精密切削刀具系列

PRECISION CUTTING TOOL SERIES

丝锥 Tap

281 系列 粉末螺尖丝锥

281 Series PM Point Taps



推荐加工深度 Suggested Process Depth	2 倍径 two times Diameter
加工孔类型 Hole Type	通孔 Through Holes
基体材料 Base Material	TPM330
表面处理 Surface treatment	Bright
切削锥 Chamfer	6P
柄径公差 Shank diameter deviation	h8
旋向 Rotation direction	RH

规格 Specifi- cation	精度 Limit	直径 DIM.	牙距 /TPI Pitch/TPI	总长 Overall Length	刃长 Thread Length	柄径 Shank diameter	槽数 Flute number	型式 Type	突顶尖 External Center	货号 Product No.	库存 Inve- ntory
M1.0x0.25	OH1/6H	1	0.25	38	4.5	3	2	1	有	28101025CA	●
M1.2x0.25	OH1/6H	1.2	0.25	38	4.5	3	2	1	有	28112025CA	●
M1.4x0.3	OH1/6H	1.4	0.3	38	5.5	3	2	1	有	28114030CA	●
M1.6x0.35	OH1/6H	1.6	0.35	38	6.3	3	2	2	有	28116035CA	●
M2x0.4	OH2/6H	2	0.4	44	7.2	3	3	3	有	28102040CA	●
M2.5x0.45	OH2/6H	2.5	0.45	49	8	3	3	3	有	28125045CA	●

推荐加工深度 Suggested Process Depth	2 倍径 two times Diameter
加工孔类型 Hole Type	通孔 Through Holes
基体材料 Base Material	TPM330
表面处理 Surface treatment	Bright
切削锥 Chamfer	6P
柄径公差 Shank diameter deviation	h8
旋向 Rotation direction	RH

规格 Specification	精度 Limit	直径 DIM.	牙距 /TPI Pitch/TPI	总长 Overall Length	刃长 Thread Length	柄径 Shank diameter	槽数 Flute number	型式 Type	突顶尖 External Center	货号 Product No.	库存 Inventory
M3*0.5	OH2/6H	3	0.5	46	11	4	3	1	有	28103050CA	●
M3*0.35	OH2/6H	3	0.35	46	11	4	3	1	有	28103035FA	○
M3.5*0.6	OH2/6H	3.5	0.6	48	13	4	3	1	有	28135060CA	●
M3.5*0.35	OH2/6H	3.5	0.35	48	13	4	3	1	有	28135035FA	○
M4*0.7	OH2/6H	4	0.7	52	13	5	3	1	有	28104070CA	●
M4*0.5	OH2/6H	4	0.5	52	13	5	3	1	有	28104050FA	○
M4.5*0.75	OH2/6H	4.5	0.75	55	13	5	3	1	有	28145075CA	○
M4.5*0.5	OH2/6H	4.5	0.5	55	13	5	3	1	有	28145050FA	○
M5*0.8	OH2/6H	5	0.8	60	16	5.5	3	1	有	28105080CA	●
M5*0.5	OH2/6H	5	0.5	60	16	5.5	3	1	有	28105050FA	○
M5.5*0.5	OH2/6H	5.5	0.5	60	17	5.5	3	1	有	28155050FA	○
M6*1	OH2/6H	6	1	62	19	6	3	1	有	28106100CA	●

规格 Specification	精度 Limit	直径 DIM.	牙距 /TPI Pitch/TPI	总长 Overall Length	刃长 Thread Length	柄径 Shank diameter	槽数 Flute number	型式 Type	突顶尖 External Center	货号 Product No.	库存 Inventory
M6*0.75	OH2/6H	6	0.75	62	19	6	3	1	有	28106075FA	○
M6*0.5	OH2/6H	6	0.5	62	19	6	3	1	有	28106050FA	●
M7*1	OH2/6H	7	1	65	19	6.2	3	2	-	28107100CA	○
M7*0.75	OH2/6H	7	0.75	65	19	6.2	3	2	-	28107075FA	○
M8*1.25	OH3/6H	8	1.25	70	22	6.2	3	2	-	28108125CA	●
M8*1	OH2/6H	8	1	70	22	6.2	3	2	-	28108100FA	●
M8*0.75	OH2/6H	8	0.75	70	22	6.2	3	2	-	28108075FA	○
M9*1.25	OH3/6H	9	1.25	72	22	7	3	2	-	28109125CA	○
M9*1	OH2/6H	9	1	72	22	7	3	2	-	28109100FA	○
M9*0.75	OH2/6H	9	0.75	72	22	7	3	2	-	28109075FA	○
M10*1.5	OH3/6H	10	1.5	75	24	7	3	2	-	28110150CA	●
M10*1.25	OH3/6H	10	1.25	75	24	7	3	2	-	28110125FA	●
M10*1	OH3/6H	10	1	75	24	7	3	2	-	28110100FA	●
M10*0.75	OH2/6H	10	0.75	75	24	7	3	2	-	28110075FA	○
M11*1.5	OH3/6H	11	1.5	80	24	8	3	2	-	28111150CA	○
M11*1	OH3/6H	11	1	80	24	8	3	2	-	28111100FA	○
M11*0.75	OH2/6H	11	0.75	80	24	8	3	2	-	28111075FA	○
M12*1.75	OH4/6H	12	1.75	82	29	8.5	3	2	-	28112175CA	●
M12*1.5	OH3/6H	12	1.5	82	29	8.5	3	2	-	28112150FA	●
M12*1.25	OH4/6H	12	1.25	82	29	8.5	3	2	-	28112125FA	●
M12*1	OH3/6H	12	1	82	29	8.5	3	2	-	28112100FA	●
M14*2	OH4/6H	14	2	88	30	10.5	3	2	-	28114200CA	●
M14*1.5	OH3/6H	14	1.5	88	30	10.5	3	2	-	28114150FA	●
M14*1.25	OH3/6H	14	1.25	88	30	10.5	3	2	-	28114125FA	○
M14*1	OH3/6H	14	1	88	30	10.5	3	2	-	28114100FA	○
M15*1.5	OH3/6H	15	1.5	95	32	10.5	3	2	-	28115150FA	○
M15*1	OH3/6H	15	1	95	32	10.5	3	2	-	28115100FA	○
M16*2	OH4/6H	16	2	95	32	12.5	3	2	-	28116200CA	●
M16*1.5	OH3/6H	16	1.5	95	32	12.5	3	2	-	28116150FA	●
M16*1	OH3/6H	16	1	95	32	12.5	3	2	-	28116100FA	○

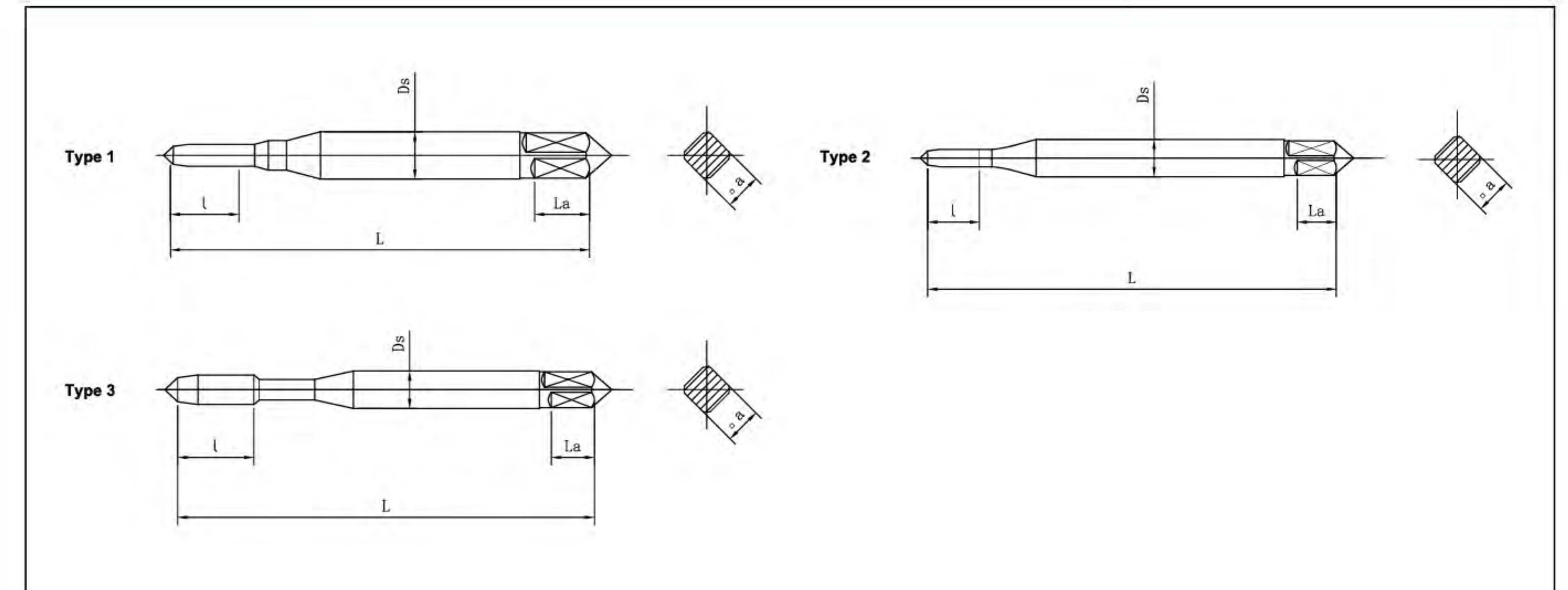
精密切削刀具系列

PRECISION CUTTING TOOL SERIES

丝锥 Tap

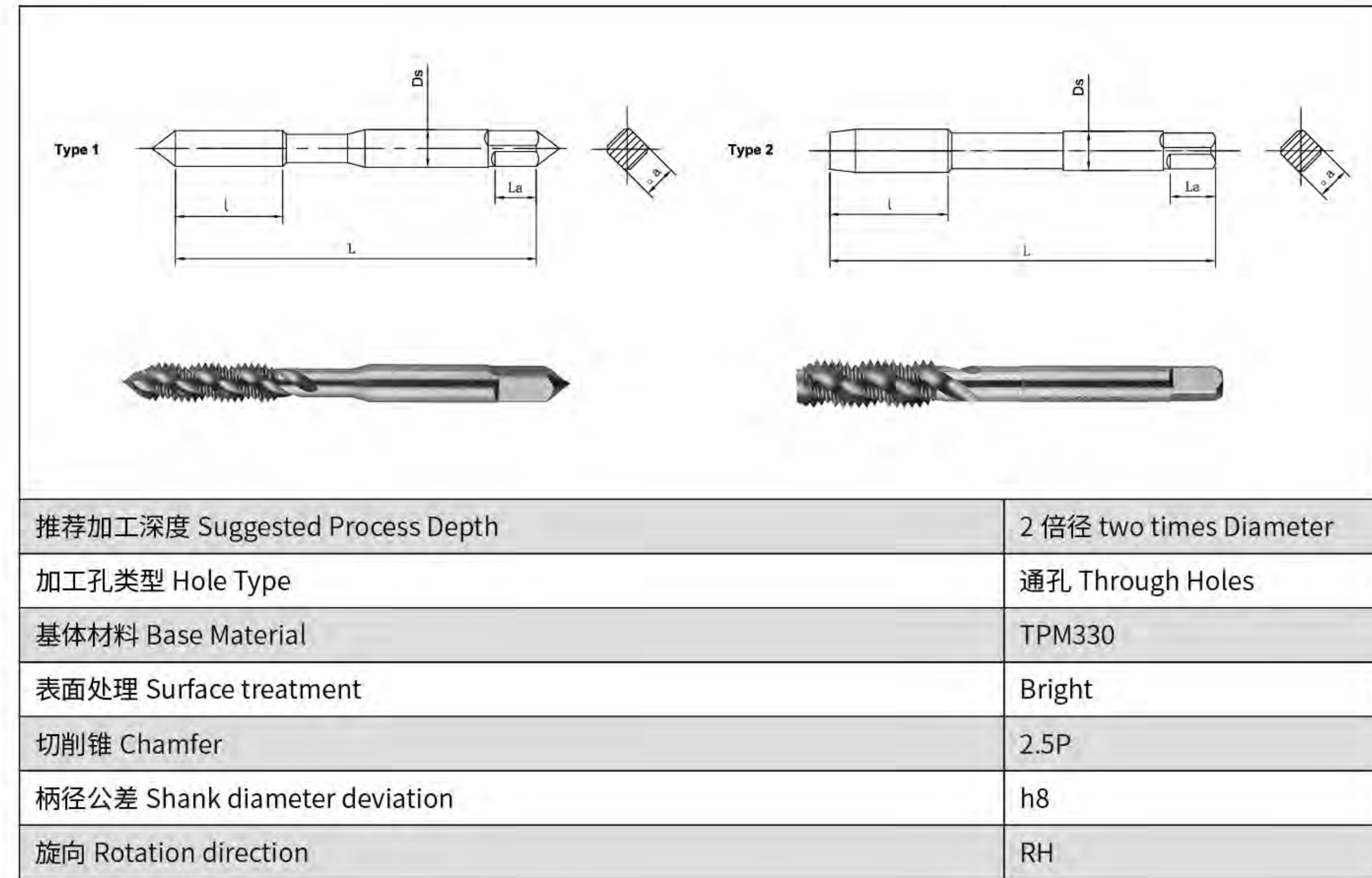
282/282S 系列 粉末螺旋丝锥

282/282S Series PM Spiral Flute Taps



推荐加工深度 Suggested Process Depth	2 倍径 two times Diameter
加工孔类型 Hole Type	通孔 Through Holes
基体材料 Base Material	TPM330
表面处理 Surface treatment	Bright
切削锥 Chamfer	2.5P
柄径公差 Shank diameter deviation	h8
旋向 Rotation direction	RH

规格 Specification	精度 Accuracy	直径 DIM.	牙距 /TPI Pitch/TPI	总长 Overall Length	长刃长 282系列 Long blade length Series 282	短刃长 282S系列 Short blade length Series 282S	柄径 Shank diameter	槽数 Flute number	突顶尖 Protruding apex	货号 282 系列 Product No. 282 Series	库存 Inventory	货号 282s 系列 Product No. 282s Series	库存 Inventory
M1.0x0.25	OH1/6H	1	0.25	38	4.5	-	3	2	有	28201025CA	●	-	-
M1.2x0.25	OH1/6H	1.2	0.25	38	4.5	-	3	2	有	28212025CA	●	-	-
M1.4x0.3	OH1/6H	1.4	0.3	38	5.5	-	3	2	有	28214030CA	●	-	-
M1.6x0.35	OH1/6H	1.6	0.35	38	6.3	-	3	2	有	28216035CA	●	-	-
M2x0.4	OH1/6H	2	0.4	44	7.2	-	3	2	有	28202040CA	●	-	-
M2.5x0.45	OH1/6H	2.5	0.45	49	8	-	3	2	有	28225045CA	●	-	-



规格 Specifi- cation	精度 Accu- racy	直径 DIM.	牙距 /TPI Pitch/TPI	总长 Overall Length	长刃长 282系列 Long blade length Series 282	短刃长 282S系列 Bhort blade length Series 282S	柄径 Shank diameter	槽数 Flute number	突顶尖 Protrud- ing apex	货号 282 系列 Product No. 282 Series	库存 Inve- ntory	货号 282s 系列 Product No. 282s Series	库存 Inve- ntory
M3*0.5	OH2/6H	3	0.5	46	11	6	4	3	有	28203050CA	●	282S03050CA	●
M3*0.35	OH2/6H	3	0.35	46	11	6	4	3	有	28203035FA	○	282S03035FA	○
M3.5*0.6	OH1/6H	3.5	0.6	48	13	7.2	4	3	有	28235060CA	●	282S35060CA	●
M3.5*0.35	OH1/6H	3.5	0.35	48	13	7.2	4	3	有	28235035FA	○	282S35035FA	○
M4*0.7	OH2/6H	4	0.7	52	13	8.4	5	3	有	28204070CA	●	282S04070CA	●
M4*0.5	OH2/6H	4	0.5	52	13	8.4	5	3	有	28204050FA	○	282S04050FA	○
M4.5*0.75	OH2/6H	4.5	0.75	55	13	9	5	3	有	28245075CA	○	282S45075CA	○
M4.5*0.5	OH2/6H	4.5	0.5	55	13	9	5	3	有	28245050FA	○	282S45050FA	○
M5*0.8	OH2/6H	5	0.8	60	16	9.6	5.5	3	有	28205080CA	●	282S05080CA	●
M5*0.5	OH2/6H	5	0.5	60	16	9.6	5.5	3	有	28205050FA	○	282S05050FA	○
M5.5*0.5	OH2/6H	5.5	0.5	60	17	10.8	5.5	3	有	28255050FA	○	282S55050FA	○
M6*1	OH2/6H	6	1	62	19	12	6	3	有	28206100CA	●	282S06100CA	●

规格 Specifi- cation	精度 Accu- racy	直径 DIM.	牙距 /TPI Pitch/TPI	总长 Overall Length	长刃长 282系列 Long blade length Series 282	短刃长 282S系列 Bhort blade length Series 282S	柄径 Shank diameter	槽数 Flute number	突顶尖 Protrud- ing apex	货号 282 系列 Product No. 282 Series	库存 Inve- ntory	货号 282s 系列 Product No. 282s Series	库存 Inve- ntory
M6*0.75	OH2/6H	6	0.75	62	19	12	6	3	有	28206075FA	○	282S06075FA	○
M6*0.5	OH2/6H	6	0.5	62	19	12	6	3	有	28206050FA	●	282S06050FA	●
M7*1	OH2/6H	7	1	65	19	12	6.2	3	-	28207100CA	○	282S07100CA	○
M7*0.75	OH2/6H	7	0.75	65	19	12	6.2	3	-	28207075FA	○	282S07075FA	○
M8*1.25	OH3/6H	8	1.25	70	22	15	6.2	3	-	28208125CA	●	282S08125CA	●
M8*1	OH2/6H	8	1	70	22	15	6.2	3	-	28208100FA	●	282S08100FA	●
M8*0.75	OH2/6H	8	0.75	70	22	15	6.2	3	-	28208075FA	○	282S08075FA	○
M9*1.25	OH3/6H	9	1.25	72	22	15	7	3	-	28209125CA	○	282S09125CA	○
M9*1	OH2/6H	9	1	72	22	15	7	3	-	28209100FA	○	282S09100FA	○
M9*0.75	OH2/6H	9	0.75	72	22	15	7	3	-	28209075FA	○	282S09075FA	○
M10*1.5	OH3/6H	10	1.5	75	24	18	7	3	-	28210150CA	●	282S10150CA	●
M10*1.25	OH3/6H	10	1.25	75	24	18	7	3	-	28210125FA	●	282S10125FA	●
M10*1	OH2/6H	10	1	75	24	18	7	3	-	28210100FA	●	282S10100FA	●
M10*0.75	OH2/6H	10	0.75	75	24	18	7	3	-	28210075FA	○	282S10075FA	○
M11*1.5	OH3/6H	11	1.5	80	24	18	8	3	-	28211150CA	○	282S11150CA	○
M11*1	OH3/6H	11	1	80	24	18	8	3	-	28211100FA	○	282S11100FA	○
M11*0.75	OH2/6H	11	0.75	80	24	18	8	3	-	28211075FA	○	282S11075FA	○
M12*1.75	OH3/6H	12	1.75	82	29	21	8.5	3	-	28212175CA	●	282S12175CA	●
M12*1.5	OH3/6H	12	1.5	82	29	21	8.5	3	-	28212150FA	●	282S12150FA	●
M12*1.25	OH3/6H	12	1.25	82	29	21	8.5	3	-	28212125FA	●	282S12125FA	●
M12*1	OH2/6H	12	1	82	29	21	8.5	3	-	28212100FA	●	282S12100FA	●
M14*2	OH2/6H	14	2	88	30	24	10.5	3	-	28214200CA	●	282S14200CA	●
M14*1.5	OH2/6H	14	1.5	88	30	24	10.5	3	-	28214150FA	●	282S14150FA	●
M14*1.25	OH2/6H	14	1.25	88	30	24	10.5	3	-	28214125FA	○	282S14125FA	○
M14*1	OH2/6H	14	1	88	30	24	10.5	3	-	28214100FA	○	282S14100FA	○
M15*1.5	OH2/6H	15	1.5	95	32	24	10.5	3	-	28215150FA	○	282S15150FA	○
M15*1	OH2/6H	15	1	95	32	24	10.5	3	-	28215100FA	○	282S15100FA	○
M16*2	OH2/6H	16	2	95	32	24	12.5	3	-	28216200CA	●	282S16200CA	●
M16*1.5	OH2/6H	16	1.5	95	32	24	12.5	3	-	28216150FA	●	282S16150FA	●
M16*1	OH2/6H	16	1	95	32	24	12.5	3	-	28216100FA	○	282S16100FA	○

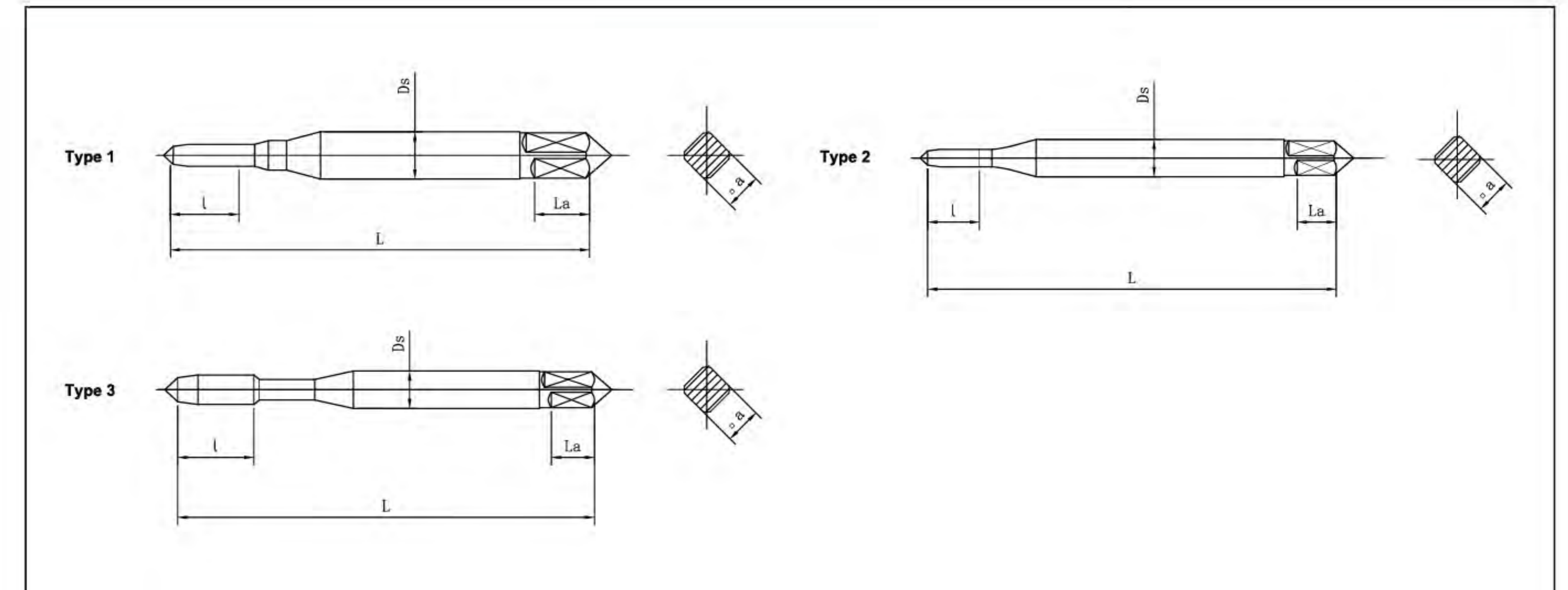
精密切削刀具系列

PRECISION CUTTING TOOL SERIES

丝锥 Tap

256 系列
粉末涂层螺尖丝锥

256 Series
PM Point Taps with Coating



推荐加工深度 Suggested Process Depth	2 倍径 two times Diameter
加工孔类型 Hole Type	通孔 Through Holes
基体材料 Base Material	TPM638
表面处理 Surface treatment	AlCrN
切削锥 Chamfer	6P
柄径公差 Shank diameter deviation	h8
旋向 Rotation direction	RH

规格 Specification	精度 Limit	直径 DIM.	牙距 /TPI Pitch/TPI	总长 Overall Length	刃长 Thread Length	柄径 Shank diameter	槽数 Flute number	突顶尖 External Center	货号 Product No.	库存 Inventory
M1.0x0.25	OH1/6H	1	0.25	38	4.5	3	2	有	25601025CA	●
M1.2x0.25	OH1/6H	1.2	0.25	38	4.5	3	2	有	25612025CA	●
M1.4x0.3	OH1/6H	1.4	0.3	38	5.5	3	2	有	25614030CA	●
M1.6x0.35	OH1/6H	1.6	0.35	38	6.3	3	2	有	25616035CA	●
M2x0.4	OH2/6H	2	0.4	44	7.2	3	3	有	25602040CA	●
M2.5x0.45	OH2/6H	2.5	0.45	49	8	3	3	有	25625045CA	●

推荐加工深度 Suggested Process Depth	2 倍径 two times Diameter
加工孔类型 Hole Type	通孔 Through Holes
基体材料 Base Material	TPM638
表面处理 Surface treatment	AlCrN
切削锥 Chamfer	6P
柄径公差 Shank diameter deviation	h8
旋向 Rotation direction	RH

规格 Specification	精度 Limit	直径 DIM.	牙距 /TPI Pitch/TPI	总长 Overall Length	刃长 Thread Length	柄径 Shank diameter	槽数 Flute number	突顶尖 External Center	货号 Product No.	库存 Inventory
M3*0.5	OH2/6H	3	0.5	46	11	4	3	有	25603050CA	●
M3*0.35	OH2/6H	3	0.35	46	11	4	3	有	25603035FA	○
M3.5*0.6	OH2/6H	3.5	0.6	48	13	4	3	有	25635060CA	●
M3.5*0.35	OH2/6H	3.5	0.35	48	13	4	3	有	25635035FA	○
M4*0.7	OH2/6H	4	0.7	52	13	5	3	有	25604070CA	●
M4*0.5	OH2/6H	4	0.5	52	13	5	3	有	25604050FA	○
M4.5*0.75	OH2/6H	4.5	0.75	55	13	5	3	有	25645075CA	○
M4.5*0.5	OH2/6H	4.5	0.5	55	13	5	3	有	25645050FA	○
M5*0.8	OH2/6H	5	0.8	60	16	5.5	3	有	25605080CA	●
M5*0.5	OH2/6H	5	0.5	60	16	5.5	3	有	25605050FA	○
M5.5*0.5	OH2/6H	5.5	0.5	60	17	5.5	3	有	25655050FA	○
M6*1	OH2/6H	6	1	62	19	6	3	有	25606100CA	●

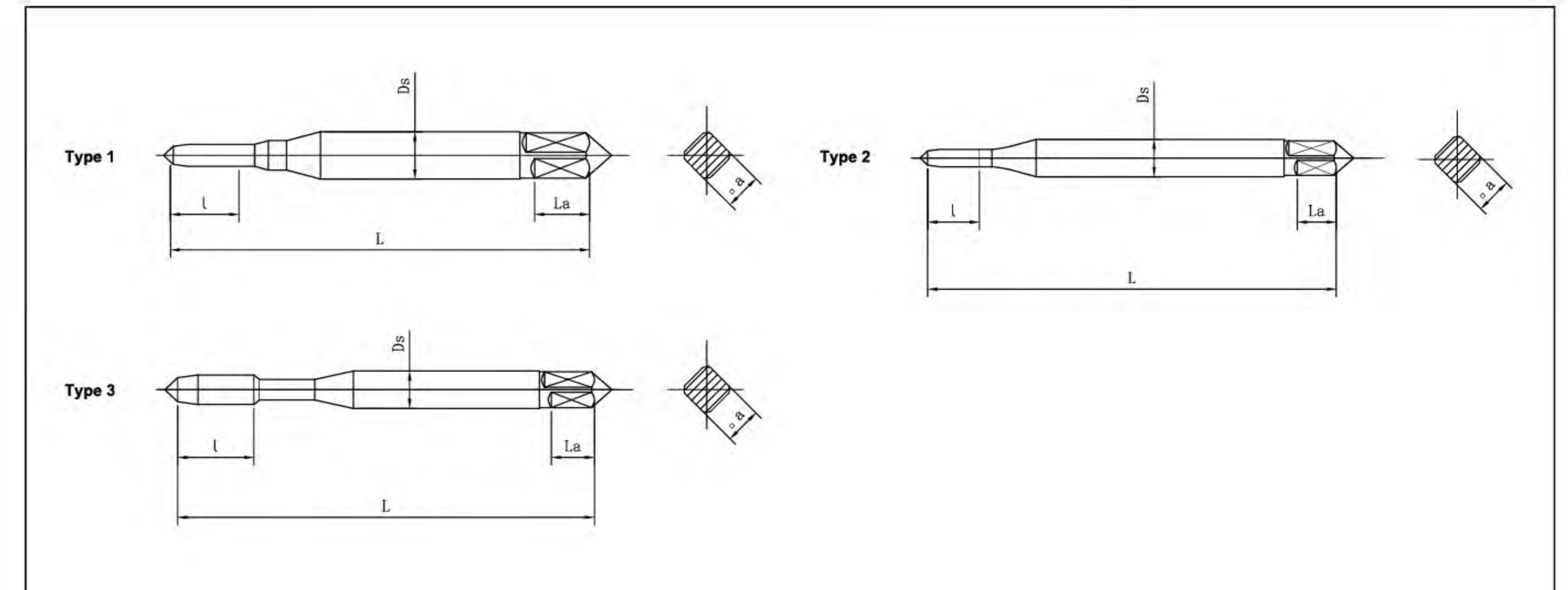
规格 Specification	精度 Limit	直径 DIM.	牙距 /TPI Pitch/TPI	总长 Overall Length	刃长 Thread Length	柄径 Shank diameter	槽数 Flute number	突顶尖 External Center	货号 Product No.	库存 Inventory
M6*0.75	OH2/6H	6	0.75	62	19	6	3	有	25606075FA	○
M6*0.5	OH2/6H	6	0.5	62	19	6	3	有	25606050FA	●
M7*1	OH2/6H	7	1	65	19	6.2	3	-	25607100CA	○
M7*0.75	OH2/6H	7	0.75	65	19	6.2	3	-	25607075FA	○
M8*1.25	OH3/6H	8	1.25	70	22	6.2	3	-	25608125CA	●
M8*1	OH2/6H	8	1	70	22	6.2	3	-	25608100FA	●
M8*0.75	OH2/6H	8	0.75	70	22	6.2	3	-	25608075FA	○
M9*1.25	OH3/6H	9	1.25	72	22	7	3	-	25609125CA	○
M9*1	OH2/6H	9	1	72	22	7	3	-	25609100FA	○
M9*0.75	OH2/6H	9	0.75	72	22	7	3	-	25609075FA	○
M10*1.5	OH3/6H	10	1.5	75	24	7	3	-	25610150CA	●
M10*1.25	OH3/6H	10	1.25	75	24	7	3	-	25610125FA	●
M10*1	OH3/6H	10	1	75	24	7	3	-	25610100FA	●
M10*0.75	OH2/6H	10	0.75	75	24	7	3	-	25610075FA	○
M11*1.5	OH3/6H	11	1.5	80	24	8	3	-	25611150CA	○
M11*1	OH3/6H	11	1	80	24	8	3	-	25611100FA	●
M11*0.75	OH2/6H	11	0.75	80	24	8	3	-	25611075FA	○
M12*1.75	OH4/6H	12	1.75	82	29	8.5	3	-	25612175CA	●
M12*1.5	OH3/6H	12	1.5	82	29	8.5	3	-	25612150FA	●
M12*1.25	OH4/6H	12	1.25	82	29	8.5	3	-	25612125FA	●
M12*1	OH3/6H	12	1	82	29	8.5	3	-	25612100FA	●
M14*2	OH4/6H	14	2	88	30	10.5	3	-	25614200CA	●
M14*1.5	OH3/6H	14	1.5	88	30	10.5	3	-	25614150FA	●
M14*1.25	OH3/6H	14	1.25	88	30	10.5	3	-	25614125FA	○
M14*1	OH3/6H	14	1	88	30	10.5	3	-	25614100FA	○
M15*1.5	OH3/6H	15	1.5	95	32	10.5	3	-	25615150FA	○
M15*1	OH3/6H	15	1	95	32	10.5	3	-	25615100FA	○
M16*2	OH4/6H	16	2	95	32	12.5	3	-	25616200CA	●
M16*1.5	OH3/6H	16	1.5	95	32	12.5	3	-	25616150FA	●
M16*1	OH3/6H	16	1	95	32	12.5	3	-	25616100FA	○

精密切削刀具系列

PRECISION CUTTING TOOL SERIES

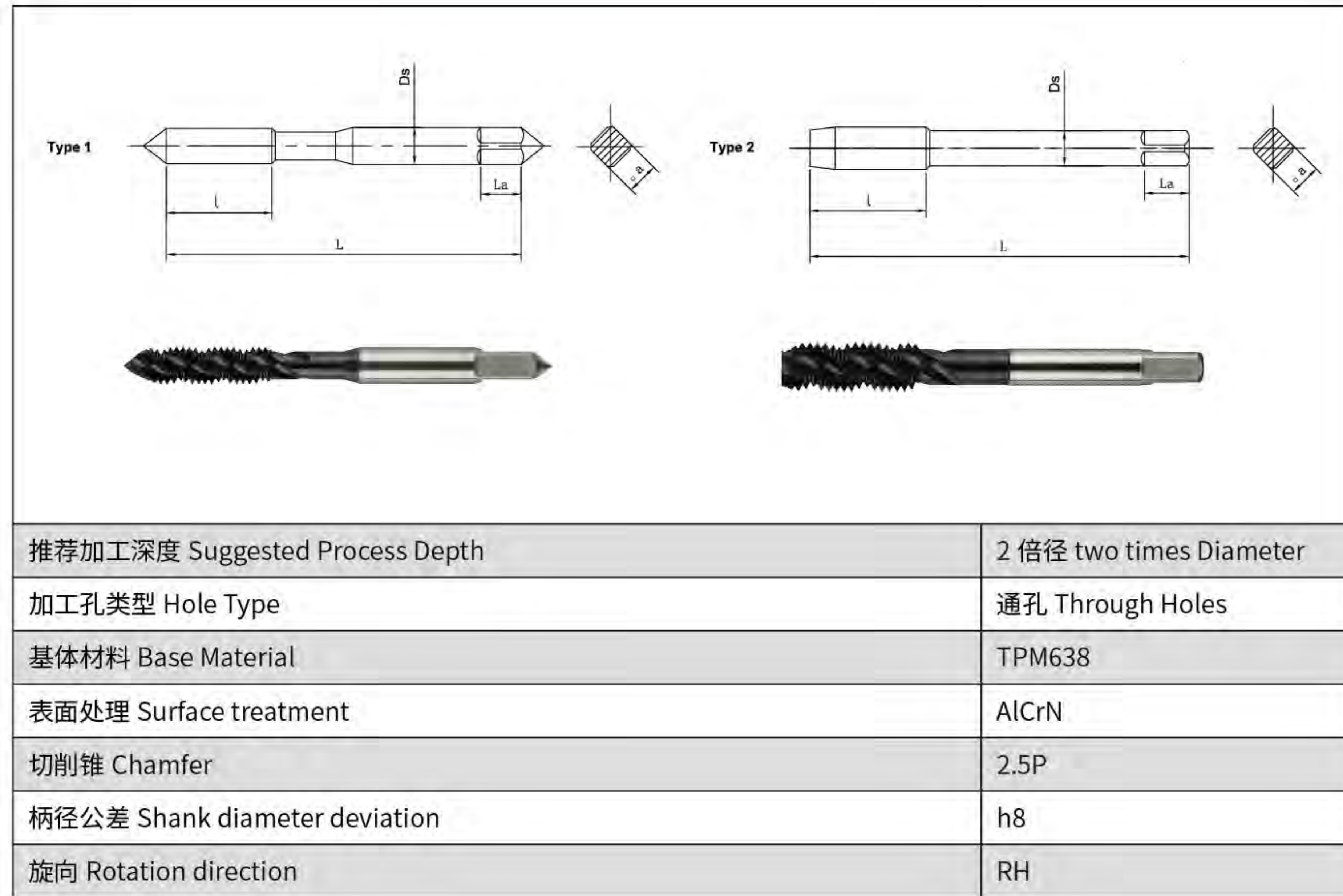
丝锥 Tap

257 系列 粉末涂层螺旋丝锥 257 Series PM Spiral Flute Taps with Coating



推荐加工深度 Suggested Process Depth	2 倍径 two times Diameter
加工孔类型 Hole Type	通孔 Through Holes
基体材料 Base Material	TPM638
表面处理 Surface treatment	AlCrN
切削锥 Chamfer	6P
柄径公差 Shank diameter deviation	h8
旋向 Rotation direction	RH

规格 Specification	精度 Limit	直径 DIM.	牙距 /TPI Pitch/TPI	总长 Overall Length	刃长 Thread Length	柄径 Shank diameter	槽数 Flute number	突顶尖 External Center	货号 Product No.	库存 Inventory
M1.0x0.25	OH1/6H	1	0.25	38	4.5	3	2	有	25601025CA	●
M1.2x0.25	OH1/6H	1.2	0.25	38	4.5	3	2	有	25612025CA	●
M1.4x0.3	OH1/6H	1.4	0.3	38	5.5	3	2	有	25614030CA	●
M1.6x0.35	OH1/6H	1.6	0.35	38	6.3	3	2	有	25616035CA	●
M2x0.4	OH2/6H	2	0.4	44	7.2	3	3	有	25602040CA	●
M2.5x0.45	OH2/6H	2.5	0.45	49	8	3	3	有	25625045CA	●



规格 Specification	精度 Limit	直径 DIM.	牙距 /TPI Pitch/TPI	总长 Overall Length	刃长 Thread Length	柄径 Shank diameter	槽数 Flute number	突顶尖 External Center	货号 Product No.	库存 Inventory
M3*0.5	OH2/6H	3	0.5	46	11	4	3	有	25703050CA	●
M3*0.35	OH2/6H	3	0.35	46	11	4	3	有	25703035FA	○
M3.5*0.6	OH1/6H	3.5	0.6	48	13	4	3	有	25735060CA	●
M3.5*0.35	OH1/6H	3.5	0.35	48	13	4	3	有	25735035FA	○
M4*0.7	OH2/6H	4	0.7	52	13	5	3	有	25704070CA	●
M4*0.5	OH2/6H	4	0.5	52	13	5	3	有	25704050FA	○
M4.5*0.75	OH2/6H	4.5	0.75	55	13	5	3	有	25745075CA	○
M4.5*0.5	OH2/6H	4.5	0.5	55	13	5	3	有	25745050FA	○
M5*0.8	OH2/6H	5	0.8	60	16	5.5	3	有	25705080CA	●
M5*0.5	OH2/6H	5	0.5	60	16	5.5	3	有	25705050FA	○
M5.5*0.5	OH2/6H	5.5	0.5	60	17	5.5	3	有	25755050FA	○
M6*1	OH2/6H	6	1	62	19	6	3	有	25706100CA	●

规格 Specification	精度 Limit	直径 DIM.	牙距 /TPI Pitch/TPI	总长 Overall Length	刃长 Thread Length	柄径 Shank diameter	槽数 Flute number	突顶尖 External Center	货号 Product No.	库存 Inventory
M6*0.75	OH2/6H	6	0.75	62	19	6	3	有	25706075FA	○
M6*0.5	OH2/6H	6	0.5	62	19	6	3	有	25706050FA	●
M7*1	OH2/6H	7	1	65	19	6.2	3	-	25707100CA	○
M7*0.75	OH2/6H	7	0.75	65	19	6.2	3	-	25707075FA	○
M8*1.25	OH3/6H	8	1.25	70	22	6.2	3	-	25708125CA	●
M8*1	OH2/6H	8	1	70	22	6.2	3	-	25708100FA	●
M8*0.75	OH2/6H	8	0.75	70	22	6.2	3	-	25708075FA	○
M9*1.25	OH3/6H	9	1.25	72	22	7	3	-	25709125CA	○
M9*1	OH2/6H	9	1	72	22	7	3	-	25709100FA	○
M9*0.75	OH2/6H	9	0.75	72	22	7	3	-	25709075FA	○
M10*1.5	OH3/6H	10	1.5	75	24	7	3	-	25710150CA	●
M10*1.25	OH3/6H	10	1.25	75	24	7	3	-	25710125FA	●
M10*1	OH2/6H	10	1	75	24	7	3	-	25710100FA	●
M10*0.75	OH2/6H	10	0.75	75	24	7	3	-	25710075FA	○
M11*1.5	OH3/6H	11	1.5	80	24	8	3	-	25711150CA	○
M11*1	OH3/6H	11	1	80	24	8	3	-	25711100FA	○
M11*0.75	OH2/6H	11	0.75	80	24	8	3	-	25711075FA	○
M12*1.75	OH3/6H	12	1.75	82	29	8.5	3	-	25712175CA	●
M12*1.5	OH3/6H	12	1.5	82	29	8.5	3	-	25712150FA	●
M12*1.25	OH3/6H	12	1.25	82	29	8.5	3	-	25712125FA	●
M12*1	OH2/6H	12	1	82	29	8.5	3	-	25712100FA	●
M14*2	OH2/6H	14	2	88	30	10.5	3	-	25714200CA	●
M14*1.5	OH2/6H	14	1.5	88	30	10.5	3	-	25714150FA	●
M14*1.25	OH2/6H	14	1.25	88	30	10.5	3	-	25714125FA	○
M14*1	OH2/6H	14	1	88	30	10.5	3	-	25714100FA	○
M15*1.5	OH2/6H	15	1.5	95	32	10.5	3	-	25715150FA	○
M15*1	OH2/6H	15	1	95	32	10.5	3	-	25715100FA	○
M16*2	OH2/6H	16	2	95	32	12.5	3	-	25716200CA	●
M16*1.5	OH2/6H	16	1.5	95	32	12.5	3	-	25716150FA	●
M16*1	OH2/6H	16	1	95	32	12.5	3	-	25716100FA	○

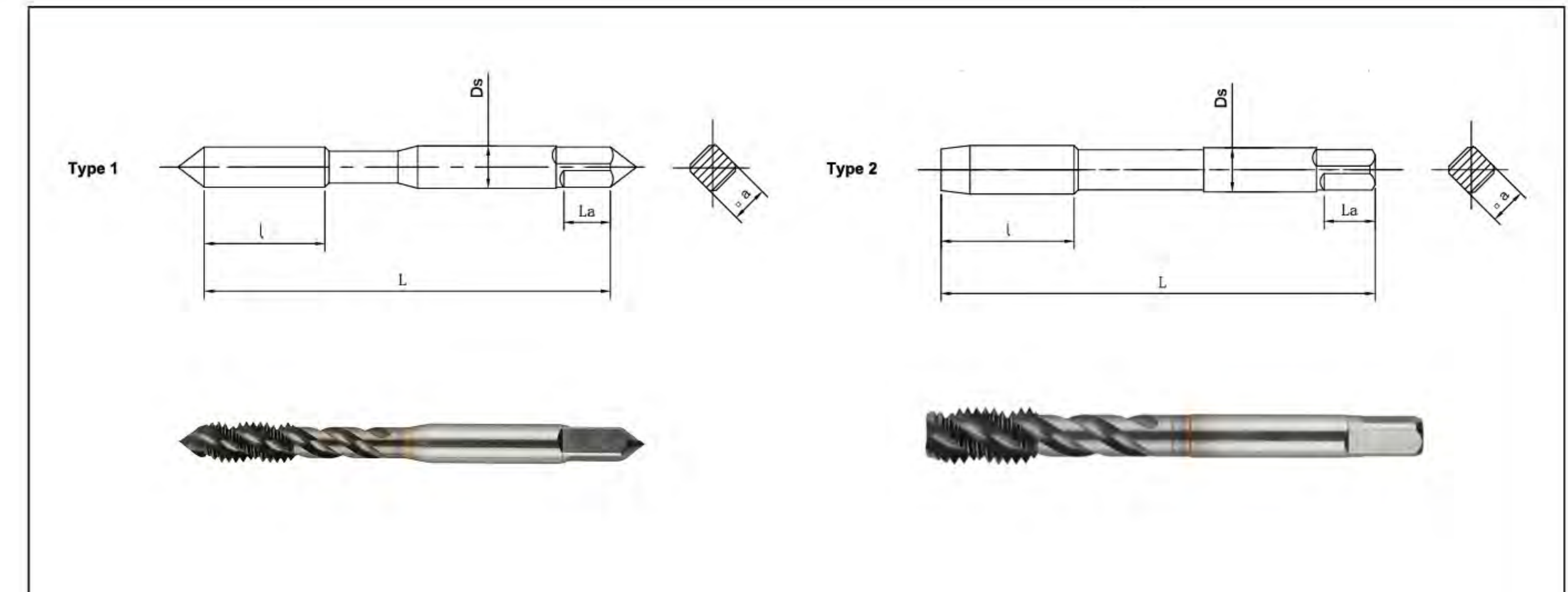
精密切削刀具系列

PRECISION CUTTING TOOL SERIES

丝锥 Tap

289 系列 不锈钢用螺旋丝锥

289 Series PM Spiral Flute Taps for SUS



推荐加工深度 Suggested Process Depth	2 倍径 two times Diameter
加工孔类型 Hole Type	通孔 Through Holes
基体材料 Base Material	TPM638
表面处理 Surface treatment	TiCN
切削锥 Chamfer	2.5P
柄径公差 Shank diameter deviation	h8
旋向 Rotation direction	RH

规格 Specification	精度 Limit	直径 DIM.	牙距 /TPI Pitch/TPI	总长 Overall Length	刃长 Thread Length	柄径 Shank diameter	槽数 Flute number	突顶尖 External Center	货号 Product No.	库存 Inventory
M3*0.5	OH2/6H	3	0.5	46	6	4	3	有	28903050CA	●
M3.5*0.6	OH2/6H	3.5	0.6	48	7.2	4	3	有	28935060CA	●
M3.5*0.35	OH2/6H	3.5	0.35	48	7.2	4	3	有	28935035FA	○
M4*0.7	OH2/6H	4	0.7	52	8.4	5	3	有	28904070CA	●
M4*0.5	OH2/6H	4	0.5	52	8.4	5	3	有	28904050FA	○
M5*0.8	OH2/6H	5	0.8	60	9.6	5.5	3	有	28905080CA	●
M5*0.5	OH2/6H	5	0.5	60	9.6	5.5	3	有	28905050FA	○
M6*1	OH2/6H	6	1	62	12	6	3	有	28906100CA	●
M6*0.75	OH2/6H	6	0.75	62	12	6	3	有	28906075FA	○
M6*0.5	OH2/6H	6	0.5	62	12	6	3	有	28906050FA	●
M7*1	OH2/6H	7	1	65	12	6.2	3	-	28907100CA	○
M7*0.75	OH2/6H	7	0.75	65	12	6.2	3	-	28907075FA	○

规格 Specifi- cation	精度 Limit	直径 DIM.	牙距 /TPI Pitch/TPI	总长 Overall Length	刃长 Thread Length	柄径 Shank diameter	槽数 Flute number	突顶尖 External Center	货号 Product No.	库存 Inventory
M8*1.25	OH3/6H	8	1.25	70	15	6.2	3	-	28908125CA	●
M8*1	OH2/6H	8	1	70	15	6.2	3	-	28908100FA	●
M8*0.75	OH2/6H	8	0.75	70	15	6.2	3	-	28908075FA	○
M10*1.5	OH3/6H	10	1.5	75	18	7	3	-	28910150CA	●
M10*1.25	OH3/6H	10	1.25	75	18	7	3	-	28910125FA	●
M10*1	OH2/6H	10	1	75	18	7	3	-	28910100FA	●
M10*0.75	OH2/6H	10	0.75	75	18	7	3	-	28910075FA	○
M12*1.75	OH3/6H	12	1.75	82	21	8.5	3	-	28912175CA	●
M12*1.5	OH3/6H	12	1.5	82	21	8.5	3	-	28912150FA	●
M12*1.25	OH3/6H	12	1.25	82	21	8.5	3	-	28912125FA	●
M12*1	OH2/6H	12	1	82	21	8.5	3	-	28912100FA	●
M14*2	OH3/6H	14	2	88	21	10.5	3	-	28914200CA	●
M14*1.5	OH3/6H	14	1.5	88	21	10.5	3	-	28914150FA	●
M14*1.25	OH3/6H	14	1.25	88	21	10.5	3	-	28914125FA	○
M14*1	OH3/6H	14	1	88	21	10.5	3	-	28914100FA	○
M16*2	OH3/6H	16	2	95	21	12.5	3	-	28916200CA	●
M16*1.5	OH3/6H	16	1.5	95	21	12.5	3	-	28916150FA	●
M16*1	OH3/6H	16	1	95	21	12.5	3	-	28916100FA	○

精密切削刀具系列

PRECISION CUTTING TOOL SERIES

丝锥 Tap

286 通孔挤压丝锥

286 Fluteless Tap for
through holes



螺纹类型 NRT: P 型 Thread type NRT: Type P

规格 Specifi- cation	精度 Limit	直径 DIM.	牙距 /TPI Pitch/TPI	全长 Length	螺纹长 Thread length	柄径 Shank diameter	棱角数 Edges and corners number	突顶尖 External Center	货号 Product No.	库存 Inve- ntory
M1.0x0.25	RH4	1	0.25	34	4	3	4	有	28601025CA	●
M1.2x0.25	RH4	1.2	0.25	34	4	3	4	有	28612025CA	●
M1.4x0.3	RH4	1.4	0.3	40	5	3	4	有	28614030CA	●
M1.6x0.35	RH4	1.6	0.35	40	6	3	4	有	28616035CA	●
M2x0.4	RH5	2	0.4	44	8	3	4	有	28602040CA	●
M2.5x0.45	RH5	2.5	0.45	49	10	3	4	有	28625045CA	●
M3*0.5	RH6	3	0.5	46	9+9	4	4	有	28603050CA	●
M3*0.35	RH6	3	0.35	46	9+9	4	4	有	28603035FA	○
M3.5*0.6	RH6	3.5	0.6	48	9+9	4	4	有	28635060CA	●
M3.5*0.35	RH6	3.5	0.35	48	9+9	4	4	有	28635035FA	○
M4*0.7	RH6	4	0.7	52	10+10	5	4	有	28604070CA	●
M4*0.5	RH6	4	0.5	52	10+10	5	4	有	28604050FA	○
M4.5*0.75	RH6	4.5	0.75	55	10+10	5	4	有	28645075CA	○
M4.5*0.5	RH6	4.5	0.5	55	10+10	5	4	有	28645050FA	○
M5*0.8	RH7	5	0.8	60	11+11	5.5	4	有	28605080CA	●
M5*0.5	RH7	5	0.5	60	11+11	5.5	4	有	28605050FA	●
M5.5*0.5	RH7	5.5	0.5	60	11+11	5.5	4	有	28655050FA	○
M6*1	RH7	6	1	62	12+12	6	4	有	28606100CA	●
M6*0.75	RH7	6	0.75	62	12+12	6	4	有	28606075FA	○
M6*0.5	RH7	6	0.5	62	12+12	6	4	有	28606050FA	○
M7*1	RH7	7	1	65	19	6.2	6	-	28607100CA	○
M7*0.75	RH7	7	0.75	65	19	6.2	6	-	28607075FA	○
M8*1.25	RH7	8	1.25	70	18	6.2	6	-	28608125CA	●
M8*1	RH7	8	1	70	18	6.2	6	-	28608100FA	●
M8*0.75	RH7	8	0.75	70	18	6.2	6	-	28608075FA	●
M9*1.25	RH7	9	1.25	72	18	7	6	-	28609125CA	○
M9*1	RH7	9	1	72	18	7	6	-	28609100FA	○
M9*0.75	RH7	9	0.75	72	18	7	6	-	28609075FA	○
M10*1.5	RH7	10	1.5	75	19	7	8	-	28610150CA	●

规格 Specifi- cation	精度 Limit	直径 DIM.	牙距 /TPI Pitch/TPI	全长 Length	螺纹长 Thread length	柄径 Shank diameter	棱角数 Edges and corners number	突顶尖 External Center	货号 Product No.	库存 Inve- ntory
M10*1.25	RH7	10	1.25	75	19	7	8	-	28610125FA	●
M10*1	RH7	10	1	75	19	7	8	-	28610100FA	●
M10*0.75	RH7	10	0.75	75	19	7	8	-	28610075FA	○
M11*1.5	RH8	11	1.5	80	19	8	8	-	28611150CA	○
M11*1	RH8	11	1	80	19	8	8	-	28611100FA	○
M11*0.75	RH8	11	0.75	80	19	8	8	-	28611075FA	○
M12*1.75	RH8	12	1.75	82	17	8.5	8	-	28612175CA	●
M12*1.5	RH8	12	1.5	82	17	8.5	8	-	28612150FA	●
M12*1.25	RH8	12	1.25	82	17	8.5	8	-	28612125FA	●
M12*1	RH8	12	1	82	17	8.5	8	-	28612100FA	●
M14*2	RH9	14	2	88	20	10.5	8	-	28614200CA	○
M14*1.5	RH9	14	1.5	88	20	10.5	8	-	28614150FA	○
M14*1.25	RH9	14	1.25	88	20	10.5	8	-	28614125FA	○
M14*1	RH9	14	1	88	20	10.5	8	-	28614100FA	○
M15*1.5	RH9	15	1.5	95	20	10.5	8	-	28615150FA	○
M15*1	RH9	15	1	95	20	10.5	8	-	28615100FA	○
M16*2	RH9	16	2	95	20	12.5	8	-	28616200CA	○
M16*1.5	RH9	16	1.5	95	20	12.5	8	-	28616150FA	○
M16*1	RH9	16	1	95	20	12.5	8	-	○	○

● 常备库存 ○ 需订货
● Running stock ○ Order required

精密切削刀具系列

PRECISION CUTTING TOOL SERIES

丝锥 Tap

287 盲孔挤压丝锥

287 Fluteless Tap for blind holes



螺纹类型 NRT: B 型 Thread type NRT: Type B

规格 Specifi- cation	精度 Limit	直径 DIM.	牙距 /TPI Pitch/TPI	全长 Length	螺纹长 Thread length	柄径 Shank diameter	棱角数 Edges and corners number	突顶尖 External Center	货号 Product No.	库存 Inve- ntory
M1.0x0.25	RH4	1	0.25	34	4	3	4	有	28701025CA	●
M1.2x0.25	RH4	1.2	0.25	34	4	3	4	有	28712025CA	●
M1.4x0.3	RH4	1.4	0.3	40	5	3	4	有	28714030CA	●
M1.6x0.35	RH4	1.6	0.35	40	6	3	4	有	28716035CA	●
M2x0.4	RH5	2	0.4	44	8	3	4	有	28702040CA	●
M2.5x0.45	RH5	2.5	0.45	49	10	3	4	有	28725045CA	●
M3*0.5	RH6	3	0.5	46	9+9	4	4	有	28703050CA	●
M3*0.35	RH6	3	0.35	46	9+9	4	4	有	28703035FA	○
M3.5*0.6	RH6	3.5	0.6	48	9+9	4	4	有	28735060CA	●
M3.5*0.35	RH6	3.5	0.35	48	9+9	4	4	有	28735035FA	○
M4*0.7	RH6	4	0.7	52	10+10	5	4	有	28704070CA	●
M4*0.5	RH6	4	0.5	52	10+10	5	4	有	28704050FA	○
M4.5*0.75	RH6	4.5	0.75	55	10+10	5	4	有	28745075CA	○
M4.5*0.5	RH6	4.5	0.5	55	10+10	5	4	有	28745050FA	○
M5*0.8	RH7	5	0.8	60	11+11	5.5	4	有	28705080CA	●
M5*0.5	RH7	5	0.5	60	11+11	5.5	4	有	28705050FA	●
M5.5*0.5	RH7	5.5	0.5	60	11+11	5.5	4	有	28755050FA	○
M6*1	RH7	6	1	62	12+12	6	4	有	28706100CA	●
M6*0.75	RH7	6	0.75	62	12+12	6	4	有	28706075FA	○
M6*0.5	RH7	6	0.5	62	12+12	6	4	有	28706050FA	○
M7*1	RH7	7	1	65	19	6.2	6	-	28707100CA	○
M7*0.75	RH7	7	0.75	65	19	6.2	6	-	28707075FA	○
M8*1.25	RH7	8	1.25	70	18	6.2	6	-	28708125CA	●
M8*1	RH7	8	1	70	18	6.2	6	-	28708100FA	●
M8*0.75	RH7	8	0.75	70	18	6.2	6	-	28708075FA	●
M9*1.25	RH7	9	1.25	72	18	7	6	-	28709125CA	○
M9*1	RH7	9	1	72	18	7	6	-	28709100FA	○
M9*0.75	RH7	9	0.75	72	18	7	6	-	28709075FA	○
M10*1.5	RH7	10	1.5	75	19	7	8	-	28710150CA	●

规格 Specifi- cation	精度 Limit	直径 DIM.	牙距 /TPI Pitch/TPI	全长 Length	螺纹长 Thread length	柄径 Shank diameter	棱角数 Edges and corners number	突顶尖 External Center	货号 Product No.	库存 Inve- ntory
M10*1.25	RH7	10	1.25	75	19	7	8	-	28710125FA	●
M10*1	RH7	10	1	75	19	7	8	-	28710100FA	●
M10*0.75	RH7	10	0.75	75	19	7	8	-	28710075FA	○
M11*1.5	RH8	11	1.5	80	19	8	8	-	28711150CA	○
M11*1	RH8	11	1	80	19	8	8	-	28711100FA	○
M11*0.75	RH8	11	0.75	80	19	8	8	-	28711075FA	○
M12*1.75	RH8	12	1.75	82	17	8.5	8	-	28712175CA	●
M12*1.5	RH8	12	1.5	82	17	8.5	8	-	28712150FA	●
M12*1.25	RH8	12	1.25	82	17	8.5	8	-	28712125FA	●
M12*1	RH8	12	1	82	17	8.5	8	-	28712100FA	●
M14*2	RH9	14	2	88	20	10.5	8	-	28714200CA	○
M14*1.5	RH9	14	1.5	88	20	10.5	8	-	28714150FA	○
M14*1.25	RH9	14	1.25	88	20	10.5	8	-	28714125FA	○
M14*1	RH9	14	1	88	20	10.5	8	-	28714100FA	○
M15*1.5	RH9	15	1.5	95	20	10.5	8	-	28715150FA	○
M15*1	RH9	15	1	95	20	10.5	8	-	28715100FA	○
M16*2	RH9	16	2	95	20	12.5	8	-	28716200CA	○
M16*1.5	RH9	16	1.5	95	20	12.5	8	-	28716150FA	○
M16*1	RH9	16	1	95	20	12.5	8	-	28716100FA	○

● 常备库存 ○ 需订货
● Running stock ○ Order required

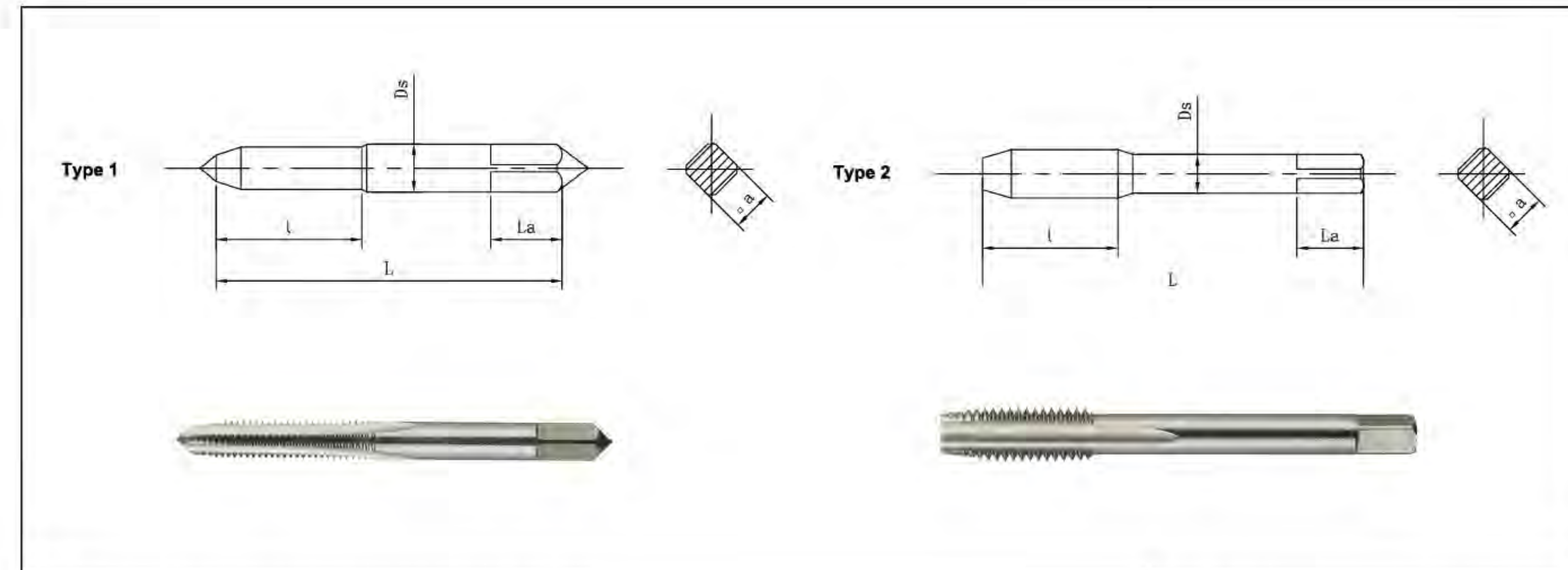
精密切削刀具系列

PRECISION CUTTING TOOL SERIES

丝锥 Tap

231 粉末直槽丝锥 Powder HSS Straight Flute Taps





推荐加工深度 Suggested Process Depth	2 倍径 two times Diameter
加工孔类型 Hole Type	通孔 Through Holes
基体材料 Base Material	TPMM3
表面处理 Surface treatment	光亮 Bright
切削锥 Chamfer	5.5P
柄径公差 Shank diameter deviation	h9
旋向 Rotation direction	RH

规格 Specification	精度 Limit	直径 DIM.	牙距 /TPI Pitch/TPI	总长 Overall Length	刃长 Thread Length	柄径 Shank diameter	槽数 Flute number	突顶尖 External Center	货号 Product No.	库存 Inventory
M3	H2/6H	3	0.5	48	15	3.15	3	有	23103050CA	●
M3×0.35	H2/6H	3	0.35	48	15	3.15	3	有	23103035FA	○
M4	H2/6H	4	0.7	53	17	4	3	有	23104070CA	●
M4×0.5	H2/6H	4	0.5	53	17	4	3	有	23104050FA	●
M5	H2/6H	5	0.8	58	21	5	3	有	23105080CA	●
M5×0.5	H2/6H	5	0.5	58	21	5	3	有	23105050FA	●
M6	H2/6H	6	1	66	25	6.3	3	有	23106100CA	●
M6×0.5	H2/6H	6	0.5	66	25	6.3	3	有	23106050FA	○
M6×0.75	H2/6H	6	0.75	66	25	6.3	3	有	23106075FA	○
M8	H2/6H	8	1.25	72	22	6.3	3	-	23108125CA	●
M8×0.75	H2/6H	8	0.75	66	19	6.3	3	-	23108075FA	○
M8×1	H2/6H	8	1	72	22	6.3	3	-	23108100FA	●
M10	H2/6H	10	1.5	80	24	8	3	-	23110150CA	●
M10×0.75	H2/6H	10	0.75	73	20	8	3	-	23110075FA	○
M10×1	H2/6H	10	1	80	24	8	3	-	23110100FA	●
M10×1.25	H2/6H	10	1.25	80	24	8	3	-	23110125FA	●

规格 Specification	精度 Limit	直径 DIM.	牙距 /TPI Pitch/TPI	总长 Overall Length	刃长 Thread Length	柄径 Shank diameter	槽数 Flute number	突顶尖 External Center	货号 Product No.	库存 Inventory
M12	H2/6H	12	1.75	89	29	9	4	-	23112175CA	●
M12×1	H2/6H	12	1	80	22	9	4	-	23112100FA	○
M12×1.25	H2/6H	12	1.25	89	29	9	4	-	23112125FA	●
M12×1.5	H2/6H	12	1.5	89	29	9	4	-	23112150FA	●
M14	H2/6H	14	2	95	30	11.2	4	-	23114200CA	●
M14×1	H2/6H	14	1	87	22	11.2	4	-	23114100FA	○
M14×1.25	H2/6H	14	1.25	95	30	11.2	4	-	23114125FA	●
M14×1.5	H2/6H	14	1.5	95	30	11.2	4	-	23114150FA	●
M16	H2/6H	16	2	102	32	12.5	4	-	23116200CA	●
M16×1	H2/6H	16	1	92	22	12.5	4	-	23116100FA	○
M16×1.5	H2/6H	16	1.5	102	32	12.5	4	-	23116150FA	●
M18	H2/6H	18	2.5	112	37	14	4	-	23118250CA	●
M18×1	H2/6H	18	1	97	22	14	4	-	23118100FA	○
M18×1.5	H2/6H	18	1.5	112	37	14	4	-	23118150FA	●
M18×2	H2/6H	18	2	112	37	14	4	-	23118200FA	●
M20	H2/6H	20	2.5	112	37	14	4	-	23120250CA	●
M20×1	H2/6H	20	1	102	22	14	4	-	23120100FA	○
M20×1.5	H2/6H	20	1.5	112	37	14	4	-	23120150FA	●
M20×2	H2/6H	20	2	112	37	14	4	-	23120200FA	●
M22	H2/6H	22	2.5	118	38	16	4	-	23122250CA	●
M22×1	H2/6H	22	1	109	24	16	4	-	23122100FA	○
M22×1.5	H2/6H	22	1.5	118	38	16	4	-	23122150FA	●
M22×2	H2/6H	22	2	118	38	16	4	-	23122200FA	●
M24	H2/6H	24	3	130	45	18	4	-	23124300CA	●
M24×1	H2/6H	24	1	114	24	18	4	-	23124100FA	○
M24×1.5	H2/6H	24	1.5	130	45	18	4	-	23124150FA	●
M24×2	H2/6H	24	2	130	45	18	4	-	23124200FA	●
M27	H2/6H	27	3	135	35	20	4	-	23127300CA	●
M27×1	H2/6H	27	1	120	25	20	4	-	23127100FA	○
M27×1.5	H2/6H	27	1.5	127	37	20	4	-	23127150FA	●
M27×2	H2/6H	27	2	127	37	20	4	-	23127200FA	●
M30	H2/6H	30	3.5	138	48	20	4	-	23130350CA	●
M30×1	H2/6H	30	1	120	25	20	4	-	23130100FA	○
M30×1.5	H2/6H	30	1.5	127	37	20	4	-	23130150FA	●
M30×2	H2/6H	30	2	127	37	20	4	-	23130200FA	●
M30×3	H2/6H	30	3	138	48	20	4	-	23130300FA	●

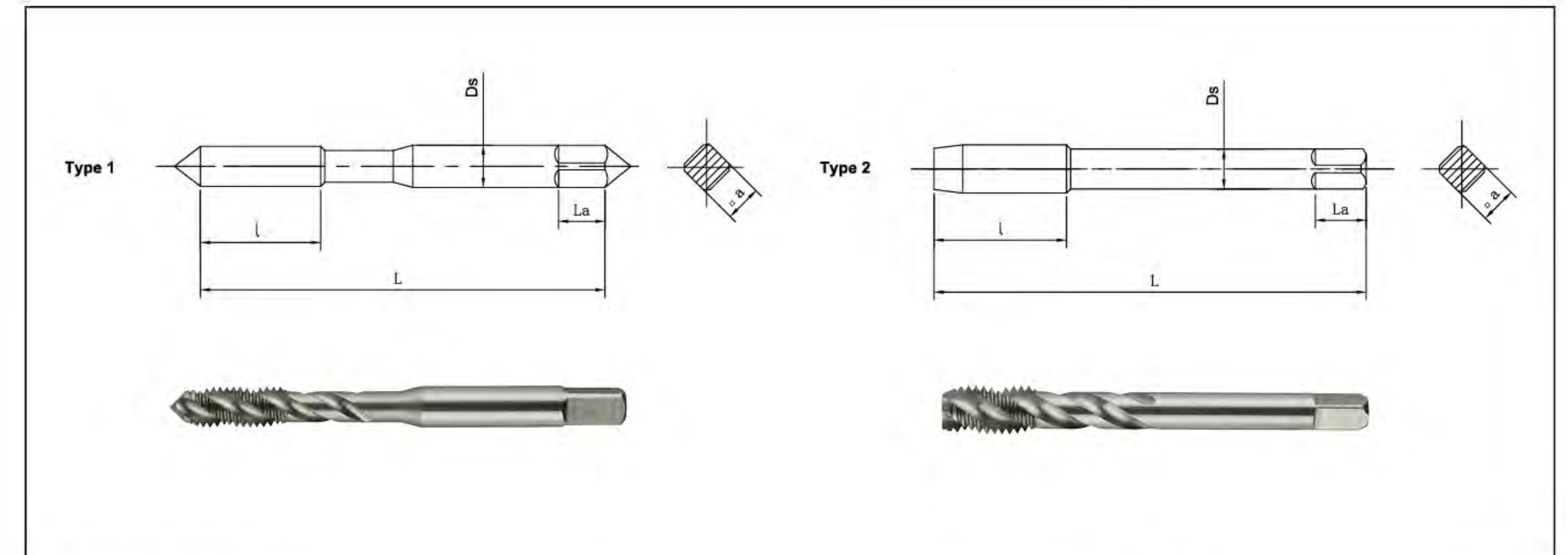
精密切削刀具系列

PRECISION CUTTING TOOL SERIES

丝锥 Tap

234 粉末螺旋槽丝锥

Powder HSS Spiral Flute Taps



推荐加工深度 Suggested Process Depth	2 倍径 two times Diameter
加工孔类型 Hole Type	盲孔 Through Holes
基体材料 Base Material	TPMM3
表面处理 Surface treatment	光亮 Bright
切削锥 Chamfer	2.5P
柄径公差 Shank diameter deviation	h9
旋向 Rotation direction	RH

规格 Specifi- cation	精度 Limit	直径 DIM.	牙距 /TPI Pitch/TPI	总长 Overall Length	刃长 Thread Length	柄径 Shank diameter	槽数 Flute number	突顶尖 External Center	货号 Product No.	库存 Inventory
M3	H2/6H	3	0.5	48	6	3.15	3	有	23403050CA	●
M3×0.35	H2/6H	3	0.35	48	6	3.15	3	有	23403035FA	○
M4	H2/6H	4	0.7	53	8.4	4	3	有	23404070CA	●
M4×0.5	H2/6H	4	0.5	53	8.4	4	3	有	23404050FA	●
M5	H2/6H	5	0.8	58	9.6	5	3	有	23405080CA	●
M5×0.5	H2/6H	5	0.5	58	9.6	5	3	有	23405050FA	●
M6	H2/6H	6	1	66	12	6.3	3	有	23406100CA	●
M6×0.5	H2/6H	6	0.5	66	12	6.3	3	有	23406050FA	○
M6×0.75	H2/6H	6	0.75	66	12	6.3	3	有	23406075FA	○
M8	H2/6H	8	1.25	72	15	6.3	3	-	23408125CA	●
M8×0.75	H2/6H	8	0.75	66	15	6.3	3	-	23408075FA	○
M8×1	H2/6H	8	1	72	15	6.3	3	-	23408100FA	●
M10	H2/6H	10	1.5	80	18	8	3	-	23410150CA	●
M10×0.75	H2/6H	10	0.75	73	18	8	3	-	23410075FA	○
M10×1	H2/6H	10	1	80	18	8	3	-	23410100FA	●
M10×1.25	H2/6H	10	1.25	80	18	8	3	-	23410125FA	●

规格 Specifi- cation	精度 Limit	直径 DIM.	牙距 /TPI Pitch/TPI	总长 Overall Length	刃长 Thread Length	柄径 Shank diameter	槽数 Flute number	突顶尖 External Center	货号 Product No.	库存 Inventory
M12	H2/6H	12	1.75	89	21	9	3	-	23412175CA	●
M12×1	H2/6H	12	1	80	21	9	3	-	23412100FA	○
M12×1.25	H2/6H	12	1.25	89	21	9	3	-	23412125FA	●
M12×1.5	H2/6H	12	1.5	89	21	9	3	-	23412150FA	●
M14	H2/6H	14	2	95	24	11.2	3	-	23414200CA	●
M14×1	H2/6H	14	1	87	24	11.2	3	-	23414100FA	○
M14×1.25	H2/6H	14	1.25	95	24	11.2	3	-	23414125FA	●
M14×1.5	H2/6H	14	1.5	95	24	11.2	3	-	23414150FA	●
M16	H2/6H	16	2	102	24	12.5	3	-	23416200CA	●
M16×1	H2/6H	16	1	92	24	12.5	3	-	23416100FA	○
M16×1.5	H2/6H	16	1.5	102	24	12.5	3	-	23416150FA	●
M18	H2/6H	18	2.5	112	30	14	4	-	23418250CA	●
M18×1	H2/6H	18	1	97	30	14	4	-	23418100FA	○
M18×1.5	H2/6H	18	1.5	112	30	14	4	-	23418150FA	●
M18×2	H2/6H	18	2	112	30	14	4	-	23418200FA	●
M20	H2/6H	20	2.5	112	30	14	4	-	23420250CA	●
M20×1	H2/6H	20	1	102	30	14	4	-	23420100FA	○
M20×1.5	H2/6H	20	1.5	112	30	14	4	-	23420150FA	●
M20×2	H2/6H	20	2	112	30	14	4	-	23420200FA	●
M22	H2/6H	22	2.5	118	30	16	4	-	23422250CA	●
M22×1	H2/6H	22	1	109	30	16	4	-	23422100FA	○
M22×1.5	H2/6H	22	1.5	118	30	16	4	-	23422150FA	●
M22×2	H2/6H	22	2	118	30	16	4	-	23422200FA	●
M24	H2/6H	24	3	130	36	18	4	-	23424300CA	●
M24×1	H2/6H	24	1	114	36	18	4	-	23424100FA	○
M24×1.5	H2/6H	24	1.5	130	36	18	4	-	23424150FA	●
M24×2	H2/6H	24	2	130	36	18	4	-	23424200FA	●
M27	H2/6H	27	3	135	36	20	4	-	23427300CA	●
M27×1	H2/6H	27	1	120	36	20	4	-	23427100FA	○
M27×1.5	H2/6H	27	1.5	127	36	20	4	-	23427150FA	●
M27×2	H2/6H	27	2	127	36	20	4	-	23427200FA	●
M30	H2/6H	30	3.5	138	42	20	4	-	23430350CA	●
M30×1	H2/6H	30	1	120	42	20	4	-	23430100FA	○
M30×1.5	H2/6H	30	1.5	127	42	20	4	-	23430150FA	●
M30×2	H2/6H	30	2	127	42	20	4	-	23430200FA	●
M30×3	H2/6H	30	3	138	42	20	4	-	23430300FA	●

● 天工欧思特 OSTTE 丝锥应用领域及推荐参数

Application fields and recommended parameters of the tap of Tiangong OSTTE

系列 Series	被切削材 Material to be cut	一般结构钢 碳钢 General structural steel Carbon steel	合金钢 Alloy steel		高硬度钢 Glass hard steel	不锈钢 Stainless steel	铸铁 Cast iron	球墨铸铁 Ductile Iron	铝合金 Aluminium alloy	备注 Remarks
		~200HB	~200HB	20~30HRC	30~40HRC					
281	适用度 Applica- bility	●	●	○	○	◆	×	×	●	
	切削速度 Grinding speed m/min	10~20	10~20	10~15	5~10	5~10			15~30	
282	适用度 Applica- bility	●	●	○	×	◆	×	×	●	
	切削速度 Grinding speed m/min	8~16	8~16	8~12		5~10			15~30	
282S	适用度 Applica- bility	●	●	○	×	◆	×	×	●	可用于 3 倍径以下 深孔螺纹 加工 It can be used for proces- sing of deep hole threads below 3 times the diameter
	切削速度 Grinding speed m/min	8~16	8~16	8~12		5~10			15~30	
256	适用度 Applica- bility	○	○	○	●	○	○	○	○	
	切削速度 Grinding speed m/min	10~25	10~25	10~15	8~12	8~12	15~30	10~20	20~30	

应用领域及推荐参数 Application fields and recommended parameters

系列 Series	被切削材 Material to be cut	一般结构钢 碳钢 General structural steel Carbon steel	合金钢 Alloy steel		高硬度钢 Glass hard steel	不锈钢 Stainless steel	铸铁 Cast iron	球墨铸铁 Ductile Iron	铝合金 Aluminium alloy	备注 Remarks
		~200HB	~200HB	20~30HRC	30~40HRC					
257	适用度 Applicability	○	○	●	○	○	○	○	○	
	切削速度 Grinding speed m/min	10~20	10~20	10~15	5~10	5~8	10~25	10~15	15~30	
289	适用度 Applicability	○	○	○	×	●	×	×	○	
	切削速度 Grinding speed m/min	8~16	8~16	8~12		8~12			15~30	
286	适用度 Applicability	○	○	◆	×	●	×	×	●	
	切削速度 Grinding speed m/min	7~13	5~8	3~6	/	5~10	/	/	7~20	
287	适用度 Applicability	○	○	◆	×	●	×	×	●	
	切削速度 Grinding speed m/min	6~12	5~7	3~5	/	5~9	/	/	7~18	

系列 Series	被切削材 Material to be cut	一般结构钢 碳钢 General structural steel Carbon steel	合金钢 Alloy steel		高硬度钢 Glass hard steel	不锈钢 Stainless steel	铸铁 Cast iron	球墨铸铁 Ductile Iron	铝合金 Aluminium alloy	备注 Remarks
		~200HB	~200HB	20~30HRC	30~40HRC					
231	适用度 Applicability	●	●	○	×	×	○	○	○	
	切削速度 Grinding speed m/min	10~15	10~15	5~10	/	/	10~25	10~15	10~15	
234	适用度 Applicability	○	●	●	×	×	○	○	○	
	切削速度 Grinding speed m/min	5~10	10~15	10~15	/	/	10~25	10~15	10~15	

● 非常适用 ○ 可以适用 ◆ 有限条件下使用(攻丝油) × 不推荐使用
 ● Very suitable ○ Can be applied ◆ Used under limited conditions (tapping oil) × Not recommended for use

精密切削刀具系列
PRECISION CUTTING TOOL SERIES

钻头 Drill
粉末定柄钻
HSSE-PM
Fixed-Shank Drill



长寿命
Long service life

更长
longer

超越对标系列的耐久性和稳定性
surpassing the durability and
stability of benchmark series)



高效率
High efficiency

更快
faster

提高转速，提高进给仍能保持高性能
大幅缩短工作时间
increasing speed and feed can still
maintain high performance and
significantly shorten working time



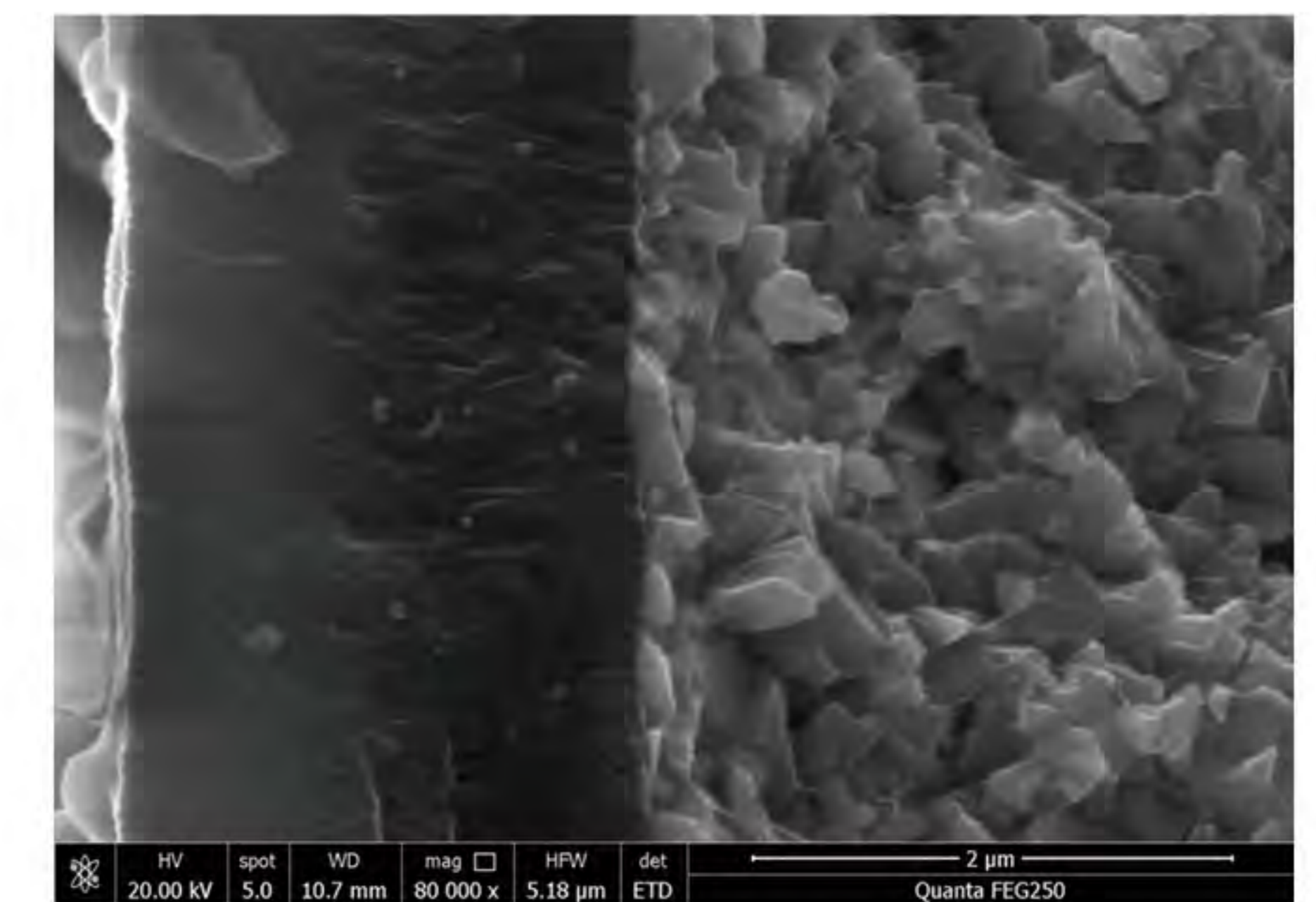
多用途
Multipurpose

更广泛
more widely

更广泛的适用更多被加工材料
more widely applicable to more
processed materials

● 涂层 Coating

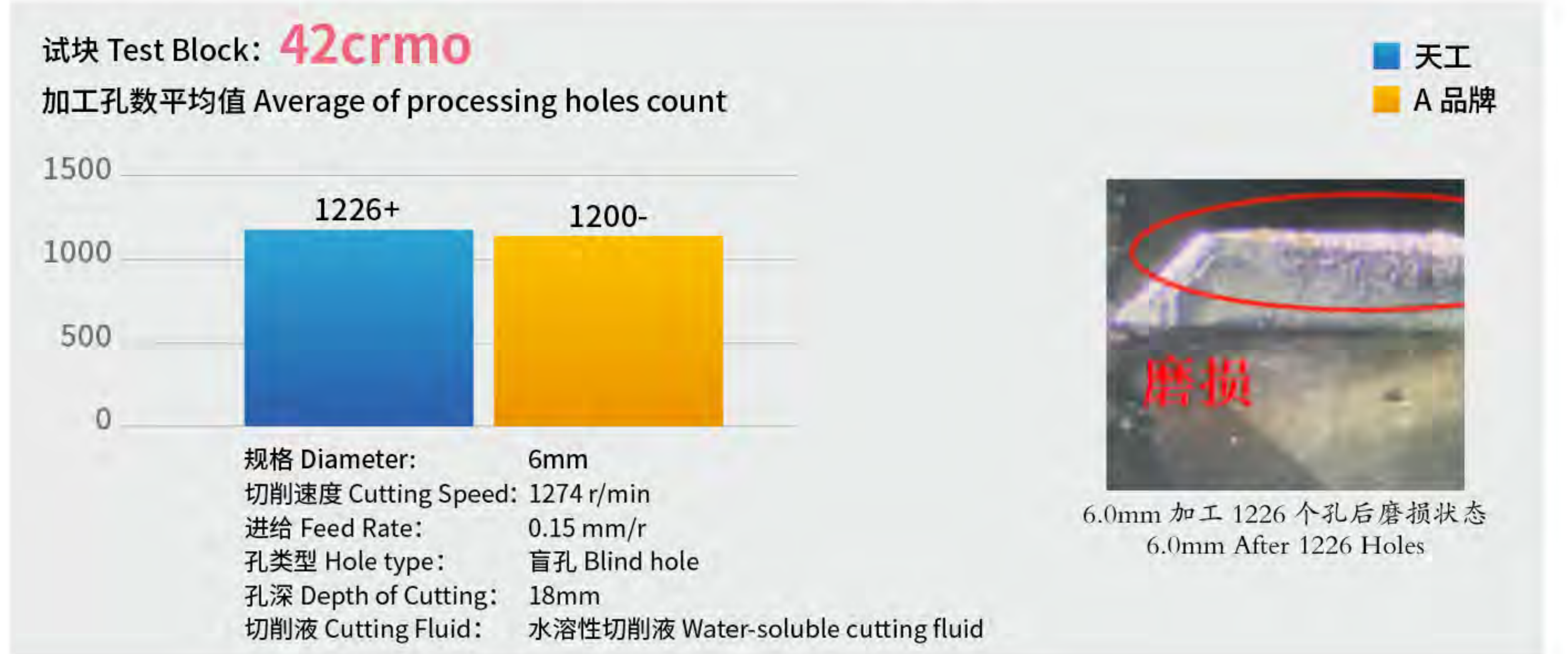
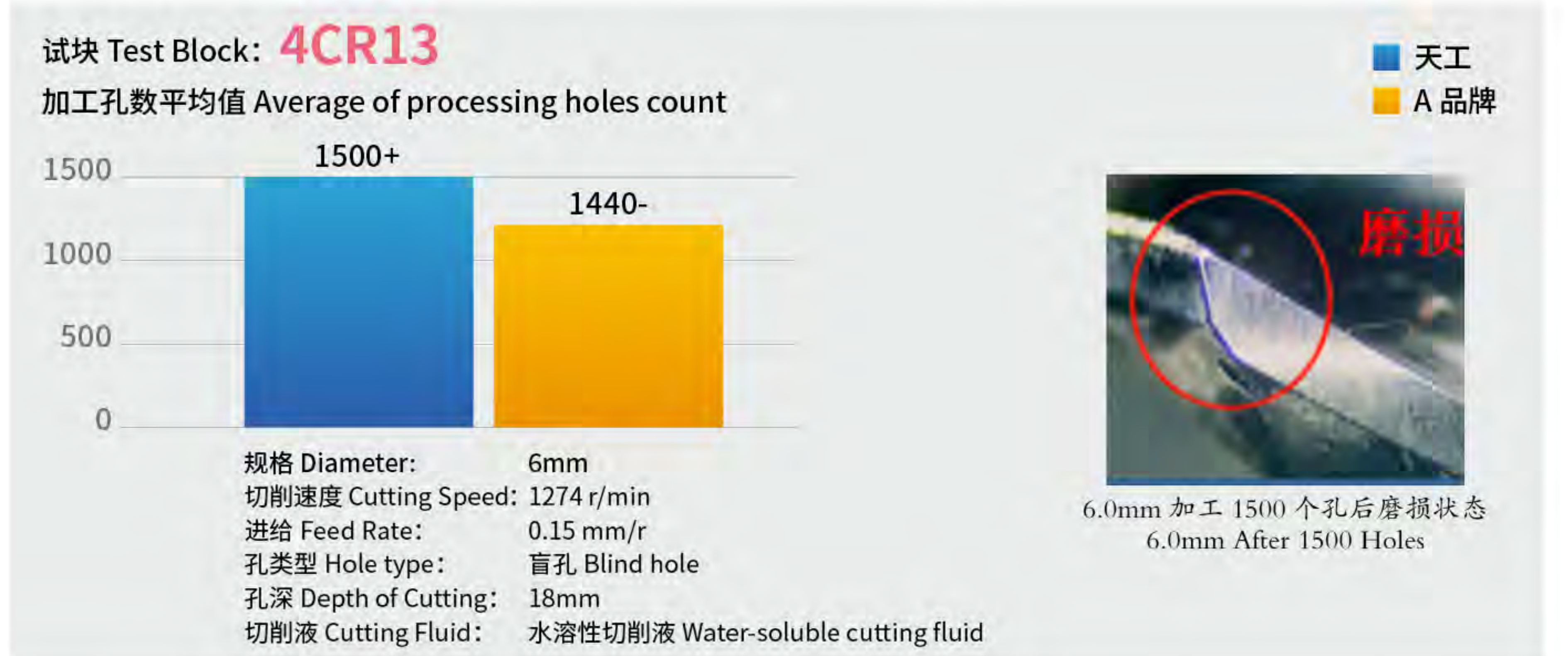
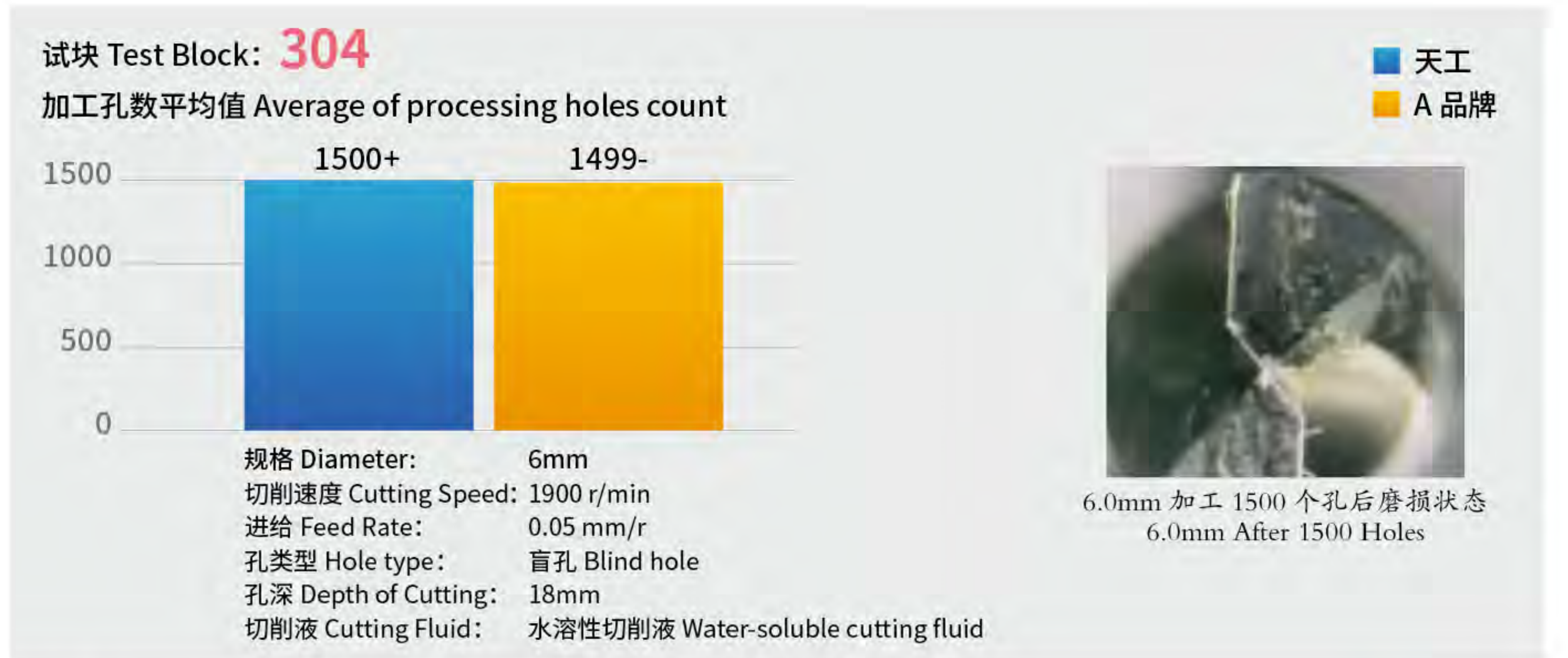
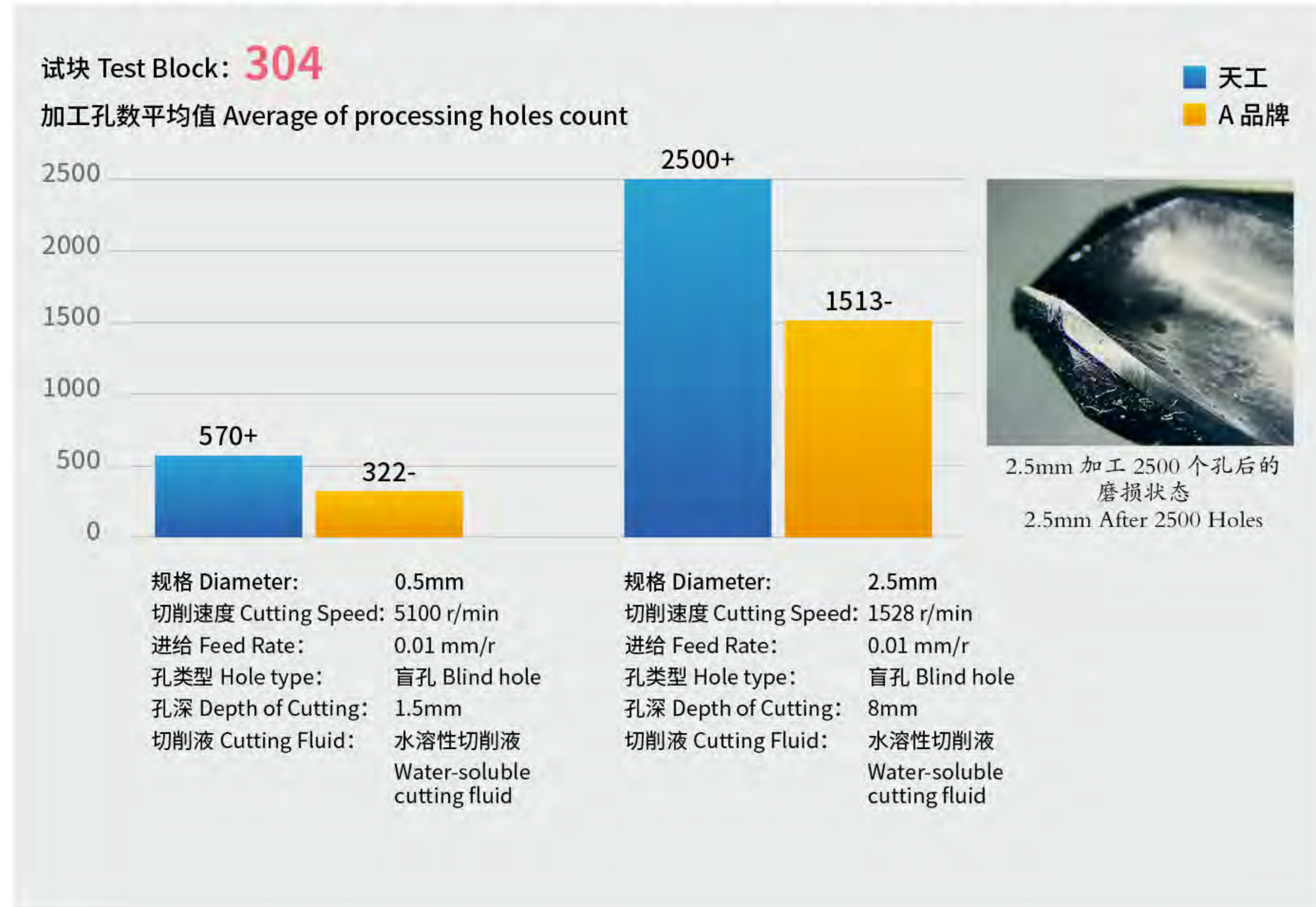
- (1) 新开发的适合粉末高速钢孔加工用的 TiCN 涂层。
Newly developed TiCN coating suitable for powder high-speed steel hole processing.
- (2) 硬度达 HV2000 以上，具有高耐磨性，使用寿命长。
Hardness above HV2000, with high wear resistance and long service life.
- (3) 工作温度可达 550°C，提高红硬性，适宜孔加工工况。
The working temperature can reach 550 °C, suitable for hole processing conditions.
- (4) 涂层表面细腻光滑，低摩擦系数，有效降低切削阻力。
The coating surface is delicate and smooth, with low friction coefficient, effectively reducing cutting resistance



TiCN 低摩擦系数涂层
TiCN Coating

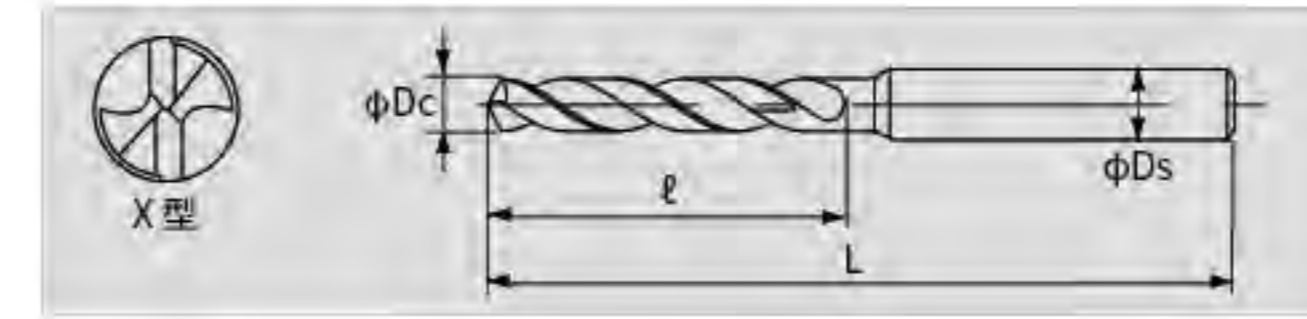
粉末冶金 TPM638 基体
TPM638

● 天工粉末定柄钻与国外 A 品牌的切削寿命对比
Comparison of cutting test data between
Tiangong HSSE-PM Fixed-Shank Drill and Japanese Brand A fixed shank drill



加工材料 Work Material	结构钢 碳素钢 Structural Steel Carbon Steel	合金钢 调质钢 Alloy steel Quenched and tempered steel	模具钢 预硬钢 Die Steel Pre-Hardened Steel	不锈钢 Stainless steel	铸铁 Cast iron	铝合金 铜合金 Aluminium alloy Copper alloy	耐热合金 钛合金 Heat-resistant alloy Titanium alloy	高硬度钢 Hardened Steel
	~200HB	20~30HRC	30~40HRC	SUS304/316	FC250/FCD400	A5052/C1100	30~40HRC	45~55HRC
粉末定柄钻 LIST168 Powder HSS Fixed-handle drill LIST168	○	○	○	○	○	○	○	×

◎: 最佳 Excellent ○: 适用 Good ×: 不适用 Not Used

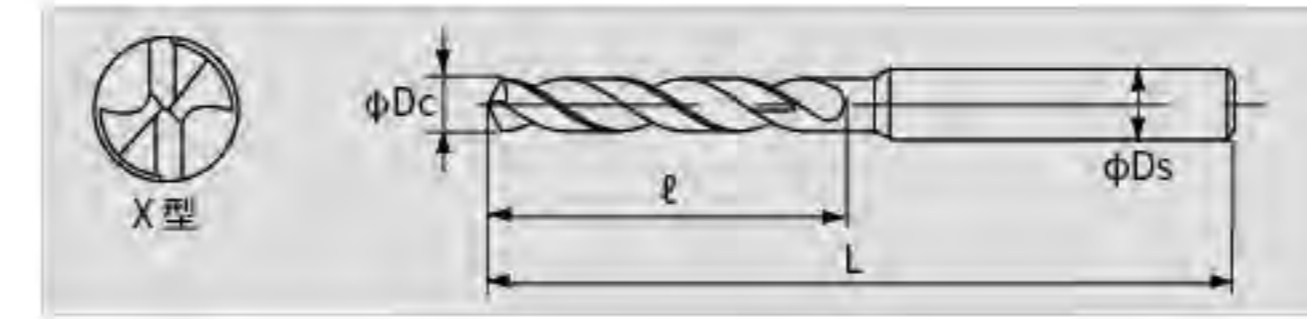


商品编码 Product code	直径 DIM.	槽长 Slot length	全长 Length	柄径 Shank diameter
1680050A	0.50	3.0	38	3
1680051A	0.51			
1680052A	0.52			
1680053A	0.53			
1680054A	0.54			
1680055A	0.55			
1680056A	0.56			
1680057A	0.57			
1680058A	0.58			
1680059A	0.59			
1680060A	0.60			
1680061A	0.61			
1680062A	0.62			
1680063A	0.63			
1680064A	0.64			
1680065A	0.65			
1680066A	0.66			
1680067A	0.67			
1680068A	0.68			
1680069A	0.69			
1680070A	0.70			
1680071A	0.71			
1680072A	0.72			
1680073A	0.73			
1680074A	0.74			
1680075A	0.75			
1680076A	0.76			
1680077A	0.77			
1680078A	0.78			
1680079A	0.79			
1680080A	0.80			
1680081A	0.81			
1680082A	0.82			
1680083A	0.83			
1680084A	0.84			
1680085A	0.85			
1680086A	0.86			
1680087A	0.87			
1680088A	0.88			

商品编码 Product code	直径 DIM.	槽长 Slot length	全长 Length	柄径 Shank diameter
1680089A	0.89	5.0	38	3
1680090A	0.90			
1680091A	0.91			
1680092A	0.92			
1680093A	0.93			
1680094A	0.94			
1680095A	0.95			
1680096A	0.96			
1680097A	0.97			
1680098A	0.98			
1680099A	0.99			
1680100A	1.00			
1680101A	1.01			
1680102A	1.02			
1680103A	1.03			
1680104A	1.04			
1680105A	1.05			
1680106A	1.06			
1680107A	1.07			
1680108A	1.08			
1680109A	1.09			
1680110A	1.10			
1680111A	1.11			
1680112A	1.12			
1680113A	1.13			
1680114A	1.14			
1680115A	1.15			
1680116A	1.16			
1680117A	1.17			
1680118A	1.18			
1680119A	1.19			
1680120A	1.20			
1680121A	1.21			
1680122A	1.22			
1680123A	1.23			
1680124A	1.24			
1680125A	1.25			
1680126A	1.26			
1680127A	1.27			

商品编码 Product code	直径 DIM.	槽长 Slot length	全长 Length	柄径 Shank diameter
1680128A	1.28	8.0	40	3
1680129A	1.29			
1680130A	1.30			
1680131A	1.31			
1680132A	1.32			
1680133A	1.33			
1680134A	1.34			
1680135A	1.35			
1680136A	1.36			
1680137A	1.37			
1680138A	1.38			
1680139A	1.39			
1680140A	1.40			
1680141A	1.41			
1680142A	1.42			
1680143A	1.43			
1680144A	1.44			
1680145A	1.45			
1680146A	1.46			
1680147A	1.47			
1680148A	1.48			
1680149A	1.49			
1680150A	1.50			
1680151A	1.51			
1680152A	1.52			
1680153A	1.53			
1680154A	1.54			
1680155A	1.55			
1680156A	1.56			
1680157A	1.57			
1680158A	1.58			
1680159A	1.59			
1680160A	1.60			
1680161A	1.61			
1680162A	1.62			
1680163A	1.63			
1680164A	1.64			
1680165A	1.65			
1680166A	1.66			

商品编码 Product code	直径 DIM.	槽长 Slot length	全长 Length	柄径 Shank diameter
1680167A	1.67	10.0	42	3
1680168A	1.68			
1680169A	1.69			
1680170A	1.70			
1680171A	1.71			
1680172A	1.72			
1680173A	1.73			
1680174A	1.74			
1680175A	1.75			
1680176A	1.76			
1680177A	1.77			
1680178A	1.78			
1680179A	1.79			
1680180A	1.80			
1680181A	1.81			
1680182A	1.82			
1680183A	1.83			
1680184A	1.84			
1680185A	1.85			
1680186A	1.86			
1680187A	1.87			
1680188A	1.88			
1680189A	1.89			
1680190A	1.90			
1680191A	1.91			
1680192A	1.92			
1680193A	1.93			
1680194A	1.94			
1680195A	1.95			
1680196A	1.96			
1680197A	1.97			
1680198A	1.98			
1680199A	1.99			
1680200A	2.00			
1680201A	2.01			
1680202A	2.02			
1680203A	2.03			
1680204A	2.04			
1680205A	2.05			

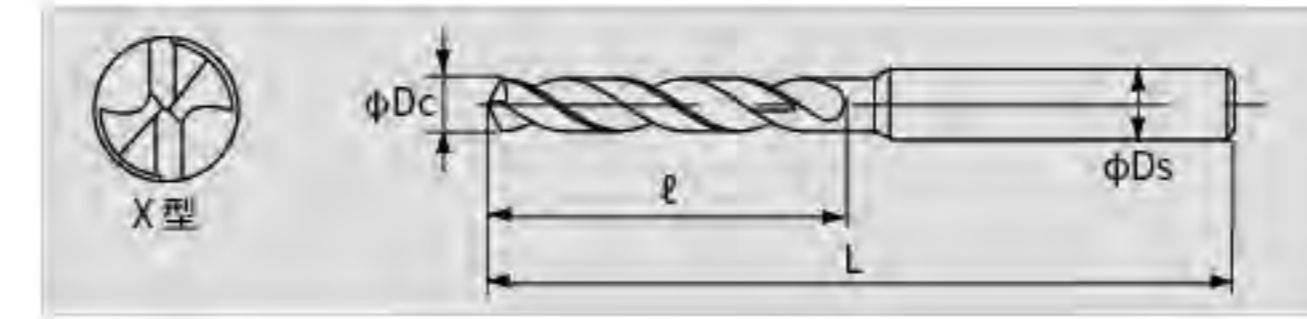


商品编码 Product code	直径 DIM.	槽长 Slot length	全长 Length	柄径 Shank diameter
1680206A	2.06	12.0	44	3
1680207A	2.07			
1680208A	2.08			
1680209A	2.09			
1680210A	2.10			
1680211A	2.11			
1680212A	2.12			
1680213A	2.13			
1680214A	2.14			
1680215A	2.15			
1680216A	2.16			
1680217A	2.17			
1680218A	2.18			
1680219A	2.19			
1680220A	2.20			
1680221A	2.21			
1680222A	2.22			
1680223A	2.23			
1680224A	2.24			
1680225A	2.25			
1680226A	2.26			
1680227A	2.27			
1680228A	2.28			
1680229A	2.29			
1680230A	2.30			
1680231A	2.31			
1680232A	2.32			
1680233A	2.33			
1680234A	2.34			
1680235A	2.35			
1680236A	2.36			
1680237A	2.37			
1680238A	2.38			
1680239A	2.39			
1680240A	2.40			
1680241A	2.41			
1680242A	2.42			
1680243A	2.43			
1680244A	2.44			

商品编码 Product code	直径 DIM.	槽长 Slot length	全长 Length	柄径 Shank diameter
1680245A	2.45	14.0	46	3
1680246A	2.46			
1680247A	2.47			
1680248A	2.48			
1680249A	2.49			
1680250A	2.50			
1680251A	2.51			
1680252A	2.52			
1680253A	2.53			
1680254A	2.54			
1680255A	2.55			
1680256A	2.56			
1680257A	2.57			
1680258A	2.58			
1680259A	2.59			
1680260A	2.60			
1680261A	2.61			
1680262A	2.62			
1680263A	2.63			
1680264A	2.64			
1680265A	2.65			
1680266A	2.66			
1680267A	2.67			
1680268A	2.68			
1680269A	2.69			
1680270A	2.70			
1680271A	2.71			
1680272A	2.72			
1680273A	2.73			
1680274A	2.74			
1680275A	2.75			
1680276A	2.76			
1680277A	2.77			
1680278A	2.78			
1680279A	2.79			
1680280A	2.80			
1680281A	2.81			
1680282A	2.82			
1680283A	2.83			

商品编码 Product code	直径 DIM.	槽长 Slot length	全长 Length	柄径 Shank diameter
1680284A	2.84	16.0	48	3
1680285A	2.85			
1680286A	2.86			
1680287A	2.87			
1680288A	2.88			
1680289A	2.89			
1680290A	2.90			
1680291A	2.91			
1680292A	2.92			
1680293A	2.93			
1680294A	2.94			
1680295A	2.95			
1680296A	2.96			
1680297A	2.97			
1680298A	2.98			
1680299A	2.99			
1680300A	3.00			
1680301A	3.01			
1680302A	3.02			
1680303A	3.03			
1680304A	3.04			
1680305A	3.05			
1680306A	3.06			
1680307A	3.07			
1680308A	3.08			
1680309A	3.09			
1680310A	3.10			
1680311A	3.11			
1680312A	3.12			
1680313A	3.13			
1680314A	3.14			
1680315A	3.15			
1680316A	3.16			
1680317A	3.17			
1680318A	3.18			
1680319A	3.19			
1680320A	3.20			
1680321A	3.21			
1680322A	3.22			

商品编码 Product code	直径 DIM.	槽长 Slot length	全长 Length	柄径 Shank diameter
1680323A	3.23	18.0	50	4
1680324A	3.24			
1680325A	3.25			
1680326A	3.26			
1680327A	3.27			
1680328A	3.28			
1680329A	3.29			
1680330A	3.30			
1680331A	3.31			
1680332A	3.32			
1680333A	3.33			
1680334A	3.34			
1680335A	3.35			
1680336A	3.36			
1680337A	3.37			
1680338A	3.38			
1680339A	3.39			
1680340A	3.40			
1680341A	3.41			
1680342A	3.42			
1680343A	3.43			
1680344A	3.44			
1680345A	3.45			
1680346A	3.46			
1680347A	3.47			
1680348A	3.48			
1680349A	3.49			
1680350A	3.50			
1680351A	3.51			
1680352A	3.52			
1680353A	3.53			
1680354A	3.54			
1680355A	3.55			
1680356A	3.56			
1680357A	3.57			
1680358A	3.58			
1680359A	3.59			
1680360A	3.60			
1680361A	3.61			

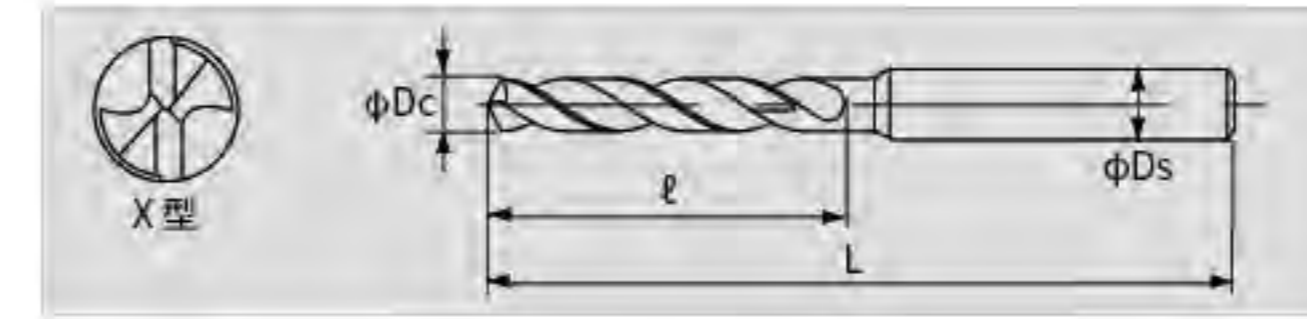


商品编码 Product code	直径 DIM.	槽长 Slot length	全长 Length	柄径 Shank diameter
1680362A	3.62	20.0	52	4
1680363A	3.63			
1680364A	3.64			
1680365A	3.65			
1680366A	3.66			
1680367A	3.67			
1680368A	3.68			
1680369A	3.69			
1680370A	3.70			
1680371A	3.71			
1680372A	3.72			
1680373A	3.73			
1680374A	3.74			
1680375A	3.75			
1680376A	3.76			
1680377A	3.77			
1680378A	3.78			
1680379A	3.79			
1680380A	3.80			
1680381A	3.81			
1680382A	3.82			
1680383A	3.83			
1680384A	3.84			
1680385A	3.85			
1680386A	3.86			
1680387A	3.87			
1680388A	3.88			
1680389A	3.89			
1680390A	3.90			
1680391A	3.91			
1680392A	3.92			
1680393A	3.93			
1680394A	3.94			
1680395A	3.95			
1680396A	3.96			
1680397A	3.97			
1680398A	3.98			
1680399A	3.99			
1680400A	4.00			

商品编码 Product code	直径 DIM.	槽长 Slot length	全长 Length	柄径 Shank diameter
1680401A	4.01	22.0	66	6
1680402A	4.02			
1680403A	4.03			
1680404A	4.04			
1680405A	4.05			
1680406A	4.06			
1680407A	4.07			
1680408A	4.08			
1680409A	4.09			
1680410A	4.10			
1680411A	4.11			
1680412A	4.12			
1680413A	4.13			
1680414A	4.14			
1680415A	4.15			
1680416A	4.16			
1680417A	4.17			
1680418A	4.18			
1680419A	4.19			
1680420A	4.20			
1680421A	4.21			
1680422A	4.22			
1680423A	4.23			
1680424A	4.24			
1680425A	4.25			
1680426A	4.26			
1680427A	4.27			
1680428A	4.28			
1680429A	4.29			
1680430A	4.30			
1680431A	4.31			
1680432A	4.32			
1680433A	4.33			
1680434A	4.34			
1680435A	4.35			
1680436A	4.36			
1680437A	4.37			
1680438A	4.38			
1680439A	4.39			

商品编码 Product code	直径 DIM.	槽长 Slot length	全长 Length	柄径 Shank diameter
1680440A	4.40	24.0	68	6
1680441A	4.41			
1680442A	4.42			
1680443A	4.43			
1680444A	4.44			
1680445A	4.45			
1680446A	4.46			
1680447A	4.47			
1680448A	4.48			
1680449A	4.49			
1680450A	4.50			
1680451A	4.51			
1680452A	4.52			
1680453A	4.53			
1680454A	4.54			
1680455A	4.55			
1680456A	4.56			
1680457A	4.57			
1680458A	4.58			
1680459A	4.59			
1680460A	4.60			
1680461A	4.61			
1680462A	4.62			
1680463A	4.63			
1680464A	4.64			
1680465A	4.65			
1680466A	4.66			
1680467A	4.67			
1680468A	4.68			
1680469A	4.69			
1680470A	4.70			
1680471A	4.71			
1680472A	4.72			
1680473A	4.73			
1680474A	4.74			
1680475A	4.75			
1680476A	4.76			
1680477A	4.77			
1680478A	4.78			

商品编码 Product code	直径 DIM.	槽长 Slot length	全长 Length	柄径 Shank diameter
1680479A	4.79	26.0	70	6
1680480A	4.80			
1680481A	4.81			
1680482A	4.82			
1680483A	4.83			
1680484A	4.84			
1680485A	4.85			
1680486A	4.86			
1680487A	4.87			
1680488A	4.88			
1680489A	4.89			
1680490A	4.90			
1680491A	4.91			
1680492A	4.92			
1680493A	4.93			
1680494A	4.94			
1680495A	4.95			
1680496A	4.96			
1680497A	4.97			
1680498A	4.98			
1680499A	4.99			
1680500A	5.00			
1680501A	5.01			
1680502A	5.02			
1680503A	5.03			
1680504A	5.04			
1680505A	5.05			
1680506A	5.06			
1680507A	5.07			
1680508A	5.08			
1680509A	5.09			
1680510A	5.10			
1680511A	5.11			
1680512A	5.12			
1680513A	5.13			
1680514A	5.14			
1680515A	5.15			
1680516A	5.16			
1680517A	5.17			



商品编码 Product code	直径 DIM.	槽长 Slot length	全长 Length	柄径 Shank diameter
1680518A	5.18	26.0	70	6
1680519A	5.19			
1680520A	5.20			
1680521A	5.21			
1680522A	5.22			
1680523A	5.23			
1680524A	5.24			
1680525A	5.25			
1680526A	5.26			
1680527A	5.27			
1680528A	5.28			
1680529A	5.29			
1680530A	5.30			
1680531A	5.31			
1680532A	5.32			
1680533A	5.33			
1680534A	5.34			
1680535A	5.35			
1680536A	5.36			
1680537A	5.37			
1680538A	5.38			
1680539A	5.39			
1680540A	5.40			
1680541A	5.41			
1680542A	5.42			
1680543A	5.43			
1680544A	5.44			
1680545A	5.45			
1680546A	5.46			
1680547A	5.47			
1680548A	5.48			
1680549A	5.49			
1680550A	5.50			
1680551A	5.51			
1680552A	5.52			
1680553A	5.53			
1680554A	5.54			
1680555A	5.55			
1680556A	5.56			

商品编码 Product code	直径 DIM.	槽长 Slot length	全长 Length	柄径 Shank diameter
1680557A	5.57	28.0	72	6
1680558A	5.58			
1680559A	5.59			
1680560A	5.60			
1680561A	5.61			
1680562A	5.62			
1680563A	5.63			
1680564A	5.64			
1680565A	5.65			
1680566A	5.66			
1680567A	5.67			
1680568A	5.68			
1680569A	5.69			
1680570A	5.70			
1680571A	5.71			
1680572A	5.72			
1680573A	5.73			
1680574A	5.74			
1680575A	5.75			
1680576A	5.76			
1680577A	5.77			
1680578A	5.78			
1680579A	5.79			
1680580A	5.80			
1680581A	5.81			
1680582A	5.82			
1680583A	5.83			
1680584A	5.84			
1680585A	5.85			
1680586A	5.86			
1680587A	5.87			
1680588A	5.88			
1680589A	5.89			
1680590A	5.90			
1680591A	5.91			
1680592A	5.92			
1680593A	5.93			
1680594A	5.94			
1680595A	5.95			

商品编码 Product code	直径 DIM.	槽长 Slot length	全长 Length	柄径 Shank diameter
1680596A	5.96	28.0	72	6
1680597A	5.97			
1680598A	5.98			
1680599A	5.99			
1680600A	6.0			
1680610A	6.1	31.0	75	8
1680620A	6.2			
1680630A	6.3			
1680640A	6.4			
1680650A	6.5			
1680660A	6.6			
1680670A	6.7			
1680680A	6.8			
1680690A	6.9			
1680700A	7.0			
1680710A	7.1	34.0	78	8
1680720A	7.2			
1680730A	7.3			
1680740A	7.4			
1680750A	7.5			
1680760A	7.6			
1680770A	7.7			
1680780A	7.8			
1680790A	7.9			
1680800A	8.0			
1680810A	8.1	37.0	81	10
1680820A	8.2			
1680830A	8.3			
1680840A	8.4			
1680850A	8.5			
1680860A	8.6			
1680870A	8.7			
1680880A	8.8			
1680890A	8.9			
1680900A	9.0			
1680910A	9.1	40.0	90	10
1680920A	9.2			
1680930A	9.3			
1680940A	9.4			
1680940A	9.4			

商品编码 Product code	直径 DIM.	槽长 Slot length	全长 Length	柄径 Shank diameter	
1680950A	9.5	40.0	90	10	
1680960A	9.6	43.0	93		10
1680970A	9.7				
1680980A	9.8				
1680990A	9.9				
1681000A	10.0				
1681010A	10.1				
1681020A	10.2				
1681030A	10.3				
1681040A	10.4				
1681050A	10.5				
1681060A	10.6	47.0	104	12	
1681070A	10.7				
1681080A	10.8				
1681090A	10.9				
1681100A	11.0				
1681110A	11.1				
1681120A	11.2				
1681130A	11.3				
1681140A	11.4				
1681150A	11.5				
1681160A	11.6				
1681170A	11.7				
1681180A	11.8				
1681190A	11.9				
1681200A	12.0	51.0	108	12	
1681210A	12.1				
1681220A	12.2				
1681230A	12.3				
1681240A	12.4				
1681250A	12.5				
1681260A	12.6				
1681270A	12.7				
1681280A	12.8				
1681290A	12.9				
1681300A	13.0				

● 粉末定柄钻推荐切削参数

Recommended cutting parameters for HSSE-PM Fixed-Shank Drill

加工材料 Processing material	结构钢 Structural Steel		合金钢 Alloy steel		模具钢 Die steel	
	碳素钢 Carbon Steel		调质钢 Quenched and tempered steel		预硬钢 Pre-hardening steel	
	~200HB		20~30HRC		30~40HRC	
直径 DIM. mm	转速 Speed r/min	进给 Feed mm/min	转速 Speed r/min	进给 Feed mm/min	转速 Speed r/min	进给 Feed mm/min
0.5	16000	240	13000	150	9500	80
1	9500	280	8000	190	6400	140
2	5700	360	4600	240	3200	160
3	4200	430	3400	290	2100	165
5	2500	430	2000	290	1250	165
8	1600	370	1300	250	800	150
10	1300	340	1000	230	650	140
12	1100	310	850	210	530	130

● 切削条件使用的注意事项 Precautions for using cutting conditions

- 根据机床刚性和工件夹持状态调整切削条件。
Adjust the cutting conditions based on the rigidity of the machine tool and the clamping status of the workpiece.
- 该切削条件是基于水溶性切削液冷却情况。
This cutting condition is based on the cooling condition of water-soluble cutting fluid.
- 在加工中请保证切削液在钻尖端部分和沟槽部分充分供应。
Please ensure that the cutting fluid is fully supplied in the drilling tip and groove parts during processing.
- 如果不锈钢加工步骤请采用分步钻削加工方式。
If the processing steps of stainless steel are required, please use a step-by-step drilling processing method.
- 被切削材料和加工参数造成排屑变恶劣，在这种情况下，请采用分步钻。
The material being cut and processing parameters may cause poor chip removal. In this case, please use a step-by-step drill.

不锈钢 Stainless steel		铸铁 Cast iron		铝合金 Aluminium alloy		耐热合金 Heat-resistant alloy	
				铜合金 Copper alloy		钛合金 Titanium alloy	
sus304/316		FC250/FCD400		A5052/C1100		30~40HRC	
转速 Speed r/min	进给 Feed mm/min	转速 Speed r/min	进给 Feed mm/min	转速 Speed r/min	进给 Feed mm/min	转速 Speed r/min	进给 Feed mm/min
5100	50	20000	300	23000	300	2500	18
3500	65	12000	400	15000	500	1600	25
1900	80	6300	490	9700	780	800	27
1300	85	4700	600	7200	900	530	28
760	80	2800	600	4300	920	320	29
480	75	1800	530	2700	790	200	26
380	73	1400	460	2200	730	160	25
320	70	1200	430	1800	670	130	25

- 分步钻需要退回到孔入口处。
The step-by-step drill needs to be returned to the hole inlet.
- 分步钻步进量 Q 值为 (0.5~1.0) * Dc 为基准，小直径钻孔步进量 Q 值为 (0.2~0.5) * Dc 左右。
The Q value of the step-by-step drilling step is based on (0.5~1.0) * Dc, while the Q value of the small diameter drilling step is around (0.2~0.5) * Dc.

● 切削条件计算公式 Calculation formula for cutting conditions

$$v = \pi D n / 1000 \quad n = 1000 v / \pi D \quad vf = nf$$

v: 切削速度 Cutting speed (m/min)	n: 转速 Rotate speed (r/min)	D: 钻头直径 Drill diameter (mm)	f: 进给量 Feed amount (m/r)	vf: 进给速度 Feed rate (m/min)
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精密切削刀具系列

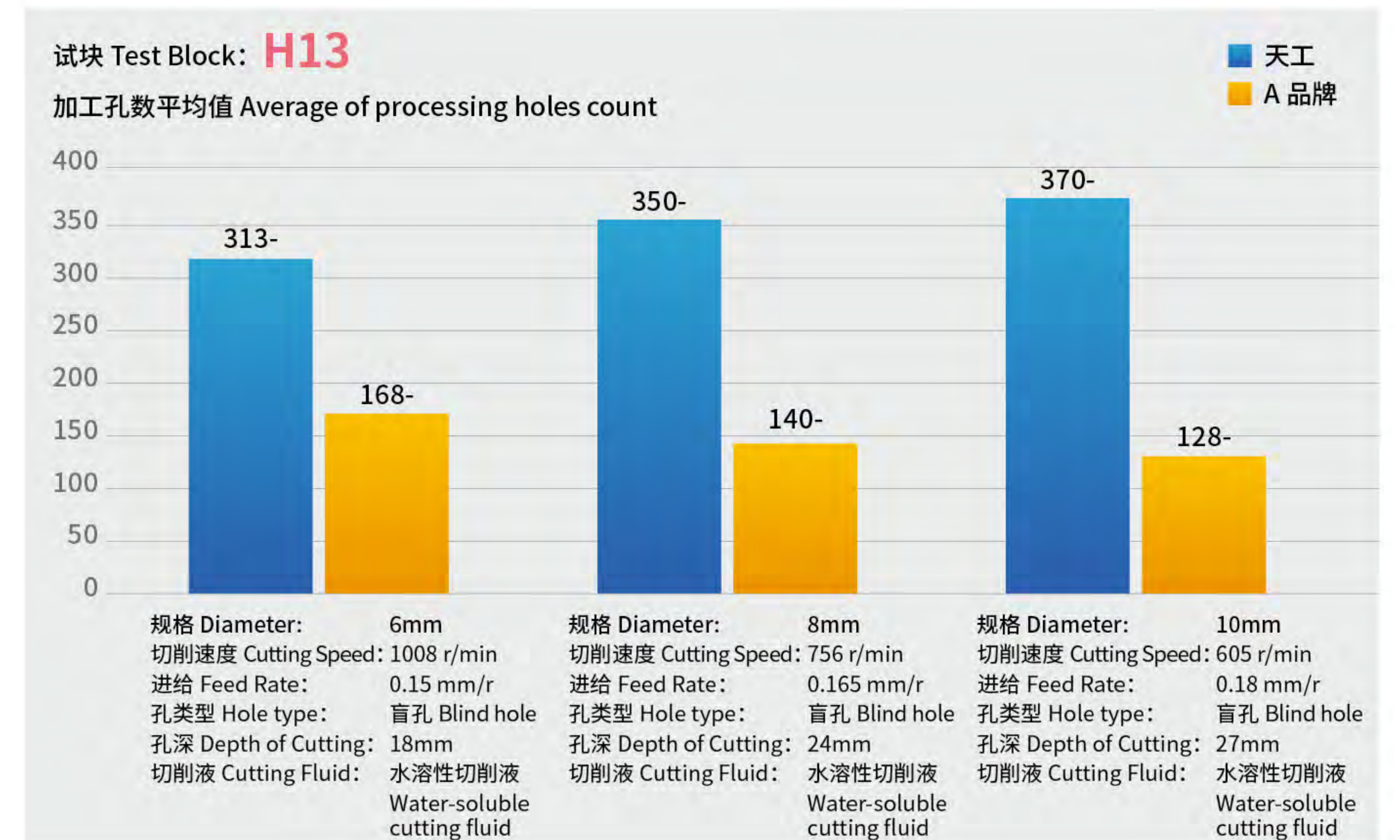
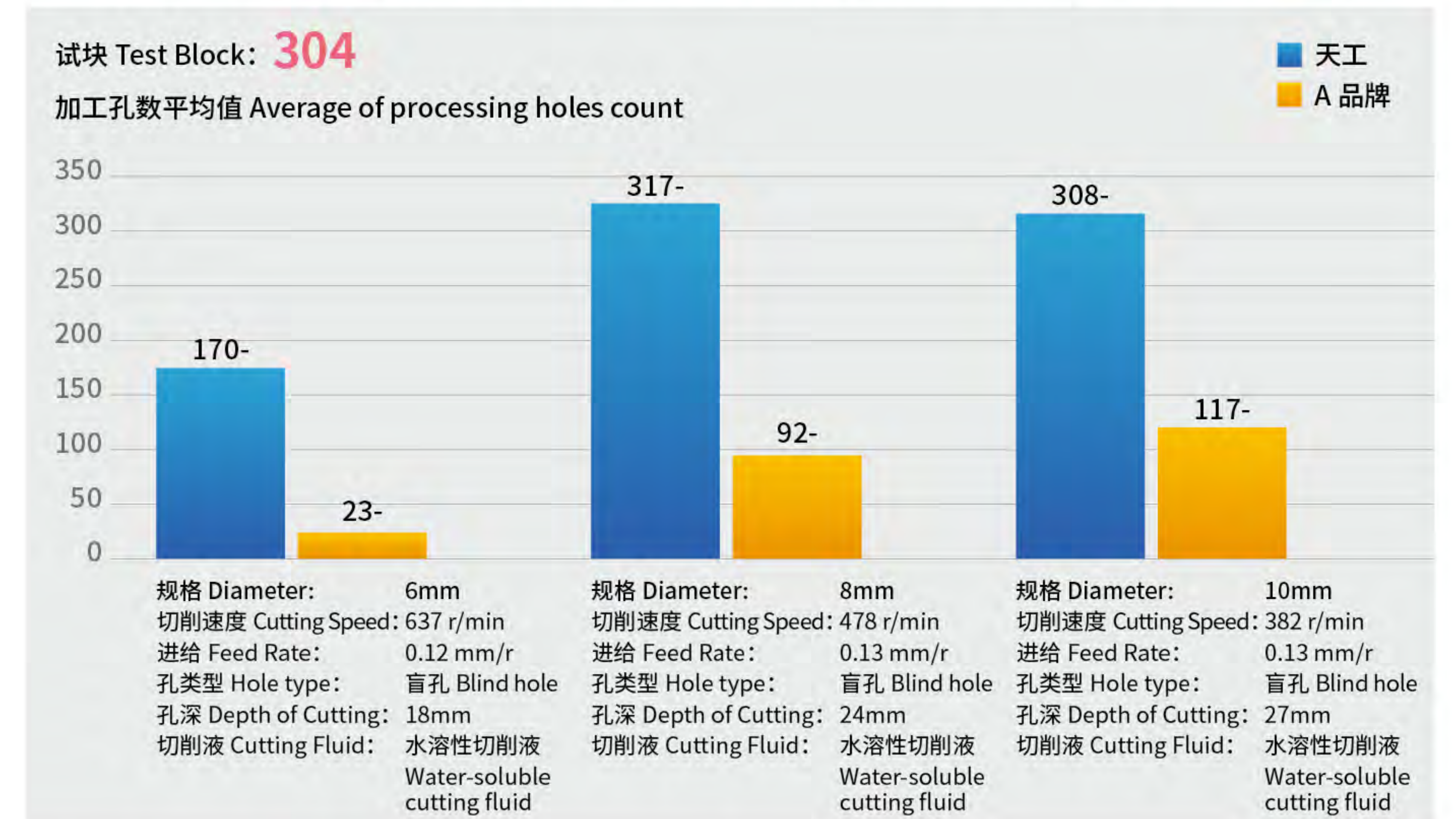
PRECISION CUTTING TOOL SERIES

钻头 Drill

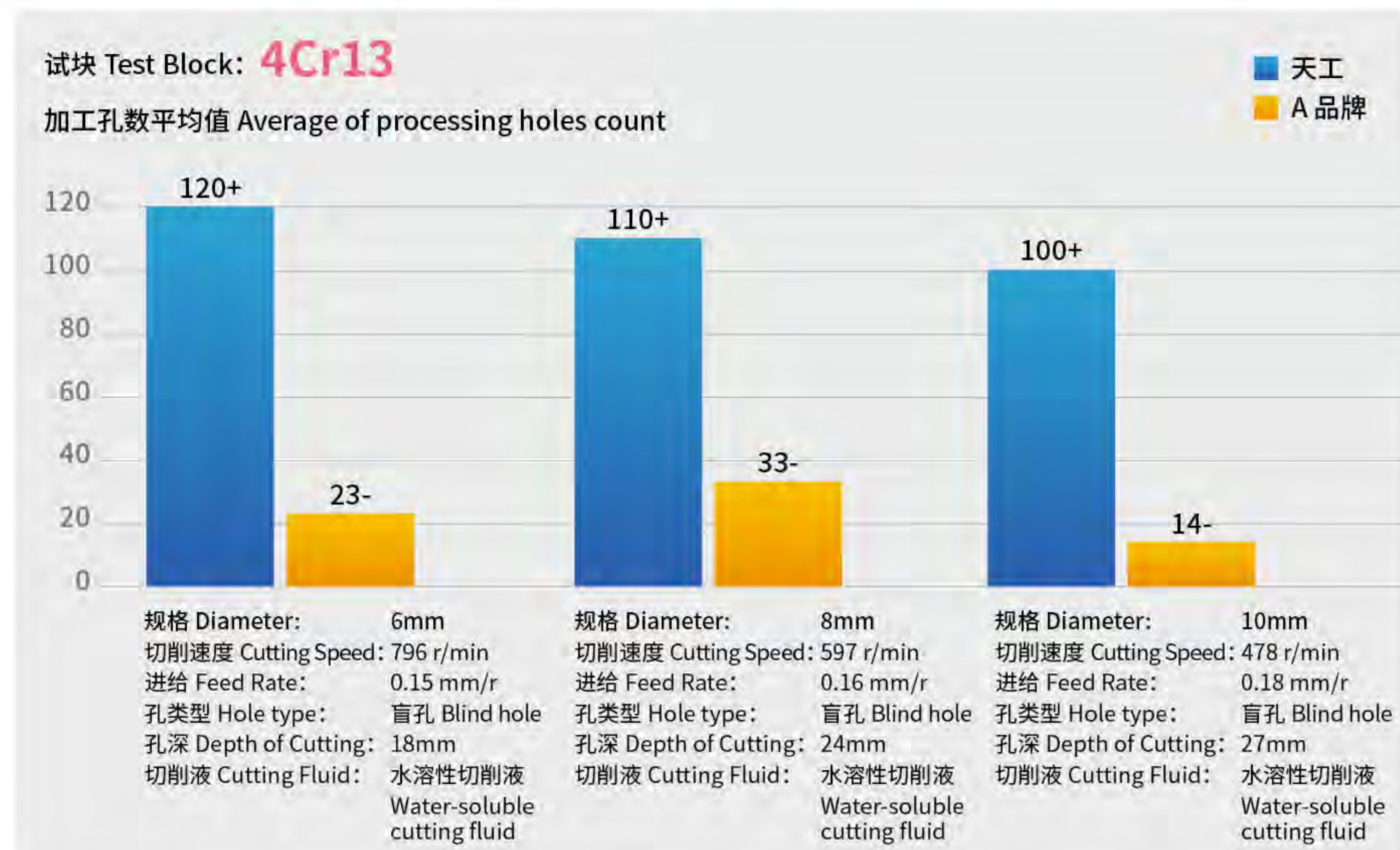
粉末轧制直柄钻 HSS-PM Rolled Straight shank drill



● 天工粉末轧制直柄钻与国内 A 品牌的切削寿命对比
Comparison of cutting test data between
Tiangong HSS-PM Rolled Straight shank drill and Japanese Brand A fixed shank drill



● 天工粉末轧制直柄钻与国内 A 品牌的切削寿命对比
Comparison of cutting test data between Tiangong HSS-PM Rolled Straight shank drill and Japanese Brand A fixed shank drill



● 粉末轧制直柄钻的优点 Advantages of HSS-PM Rolled Straight shank drill

- (1) 天工采用自产第三代粉末冶金高速钢，钢材成分和组织细致均匀，具有更好的抗弯强度和抗疲劳性能，粉末冶金产品与传统高速钢产品在相同热处理条件下具有更高的硬度和耐磨性。
 Tiangong uses self-produced third-generation powder metallurgy high-speed steel, with fine and uniform steel composition and structure, which has better bending strength and fatigue resistance. Powder metallurgy products have higher hardness and wear resistance compared to traditional high-speed steel products under the same heat treatment conditions.
- (2) 世界第一家研发设计粉末材料轧制工艺，并成功批量生产的天工粉末轧制直柄钻。
 The first company in the world to develop and design powder material rolling process and successfully mass produce Tiangong powder rolling straight shank drill.
- (3) 粉末轧制直柄钻适用更多被加工材料，更多的加工孔数，更快的加工效率，更高的耐磨性
 Powder rolled straight shank drill is suitable for more processed materials, more processing holes, faster processing efficiency, and higher wear resistance"
- (4) 最新的槽型设计，容屑空间大，123 度钻尖角。
 The latest groove design has a large chip holding space and 123° drill sharp angle."



商品编码 Product code	直径 DIM.	全长 Length	槽长 Slot length
1560100A	1.00	34	12
1560105A	1.05		
1560110A	1.10	36	14
1560115A	1.15		
1560120A	1.20	38	16
1560125A	1.25		
1560130A	1.30		
1560135A	1.35		
1560140A	1.40	40	18
1560145A	1.45		
1560150A	1.50		
1560155A	1.55		
1560160A	1.60	43	20
1560165A	1.65		
1560170A	1.70		
1560175A	1.75		
1560180A	1.80	46	22
1560185A	1.85		
1560190A	1.90		
1560195A	1.95		
1560200A	2.00	49	24
1560205A	2.05		
1560210A	2.10		
1560215A	2.15		
1560220A	2.20	53	27
1560225A	2.25		
1560230A	2.30		
1560235A	2.35		
1560240A	2.40	57	30
1560245A	2.45		
1560250A	2.50		
1560255A	2.55		
1560260A	2.60	61	33
1560265A	2.65		
1560270A	2.70		
1560275A	2.75		
1560280A	2.80	61	33
1560285A	2.85		
1560290A	2.90		

商品编码 Product code	直径 DIM.	全长 Length	槽长 Slot length
1560295A	2.95	61	33
1560300A	3.00	61	32
1560310A	3.10	65	35
1560320A	3.20		
1560330A	3.30	70	38
1560340A	3.40		
1560350A	3.50		
1560360A	3.60		
1560370A	3.70	75	42
1560380A	3.80		
1560390A	3.90		
1560400A	4.00		
1560410A	4.10	80	46
1560420A	4.20		
1560430A	4.30		
1560440A	4.40		
1560450A	4.50	86	51
1560460A	4.60		
1560470A	4.70		
1560480A	4.80		
1560490A	4.90	93	56
1560500A	5.00		
1560510A	5.10		
1560520A	5.20		
1560530A	5.30	101	62
1560540A	5.40		
1560550A	5.50		
1560560A	5.60		
1560570A	5.70	101	62
1560580A	5.80		
1560590A	5.90		
1560600A	6.00		
1560610A	6.10	101	62
1560620A	6.20		
1560630A	6.30		
1560640A	6.40		
1560650A	6.50	101	62
1560660A	6.60		
1560670A	6.70		



商品编码 Product code	直径 DIM.	全长 Length	槽长 Slot length
1560680A	6.80	109	68
1560690A	6.90		
1560700A	7.00		
1560710A	7.10		
1560720A	7.20		
1560730A	7.30		
1560740A	7.40		
1560750A	7.50		
1560760A	7.60		
1560770A	7.70		
1560780A	7.80		
1560790A	7.90		
1560800A	8.00	117	74
1560810A	8.10		
1560820A	8.20		
1560830A	8.30		
1560840A	8.40		
1560850A	8.50		
1560860A	8.60		
1560870A	8.70		
1560880A	8.80		
1560890A	8.90		
1560900A	9.00	125	80
1560910A	9.10		
1560920A	9.20		
1560930A	9.30		
1560940A	9.40		
1560950A	9.50		
1560960A	9.60		
1560970A	9.70		
1560980A	9.80		
1560990A	9.90		
1561000A	10.00	133	86
1561010A	10.10		
1561020A	10.20		
1561030A	10.30		
1561040A	10.40		
1561050A	10.50		
1561060A	10.60		

商品编码 Product code	直径 DIM.	全长 Length	槽长 Slot length
1561070A	10.70	142	93
1561080A	10.80		
1561090A	10.90		
1561100A	11.00		
1561110A	11.10		
1561120A	11.20		
1561130A	11.30		
1561140A	11.40		
1561150A	11.50		
1561160A	11.60		
1561170A	11.70	151	100
1561180A	11.80		
1561190A	11.90		
1561200A	12.00		
1561210A	12.10		
1561220A	12.20		
1561230A	12.30		
1561240A	12.40		
1561250A	12.50		
1561260A	12.60		
1561270A	12.70		
1561280A	12.80		
1561290A	12.90		
1561300A	13.00		

● 粉末轧制直柄钻推荐切削参数
Recommended cutting parameters for HSS-PM Rolled Straight shank drill

加工材料 Processing material	一般结构钢 General structural steel		合金钢 调质钢 Alloy steel Quenched and tempered steel		模具钢 预硬钢 Die steel Pre-hardening steel		不锈钢 Stainless steel		铸铁 Cast iron		铝合金 铜合金 Aluminium alloy Copper alloy	
	~200HB		20~30HRC		30~40HRC		sus304/316		FC250/FCD400		A5052/C1100	
直径 DIM. mm	转速 Speed r/min	进给 Feed mm/min	转速 Speed r/min	进给 Feed mm/min	转速 Speed r/min	进给 Feed mm/min	转速 Speed r/min	进给 Feed mm/min	转速 Speed r/min	进给 Feed mm/min	转速 Speed r/min	进给 Feed mm/min
1.0	4800	100	3800	65	2900	44	2500	40	5300	130	8100	200
2.0	2900	120	2300	78	1700	51	1250	40	3200	160	4900	250
3.0	2100	150	1700	100	1300	68	850	45	2300	200	3600	320
5.0	1300	140	1000	94	760	63	500	40	1400	190	2200	300
8.0	800	120	640	74	480	54	300	35	900	170	1400	260
10.0	640	110	510	68	380	48	250	32	700	150	1100	240
12.0	530	100	420	63	320	46	210	30	580	140	900	220

● 切削条件使用的注意事项 Precautions for using cutting conditions

- 本切削条件为使用水溶性切削液时的条件。
This cutting condition is applicable when using water-soluble cutting oil.
- 请向加工点及钻头钻刃处充分供给切削液。
Please provide sufficient cutting fluid to the processing point and drill tip.
- 本切削条件表适用于开孔深度为 3D 及以下的加工。
This cutting condition table is applicable to processing with a hole depth of 3D or below.
- 开孔深度超过 3D 时，请将转速进给速度降低 20%。
When the depth of the opening exceeds 3D, please reduce the speed and feed rate by 20%.
- 开孔深度超过 3D 时，请采用分级加工方式，但是根据被切削材料及加工条件，切削排出性有时会变差，及时孔深小于规定的孔深，也请使用分级进给。
When the depth of the hole exceeds 3D, please use a graded processing method. However, depending on the material being cut and the processing conditions, the cutting discharge may sometimes deteriorate. Even if the hole depth is less than the specified hole depth, please also use graded feeding.
- 分级进给时请返回孔的上面。
When making graded feeding, please return to the top of the hole.
- 请将分级量的大致标准设定为 0.5~1D，小直径时为 0.1~0.5D 左右。
Please set the approximate standard for grading to 0.5-1D, and it should be around 0.1-0.5D for small diameters.

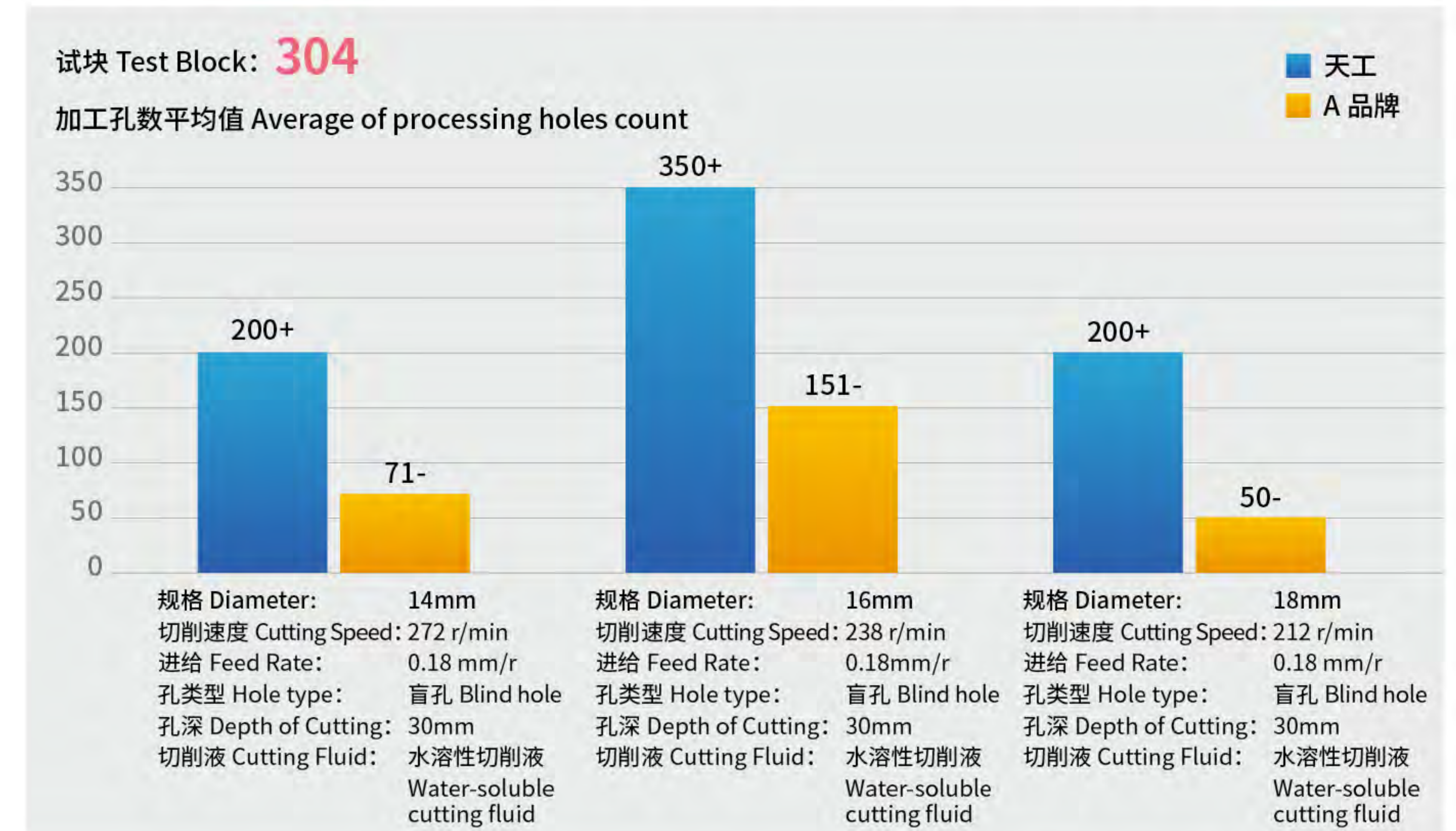
精密切削刀具系列
PRECISION CUTTING TOOL SERIES

钻头 Drill

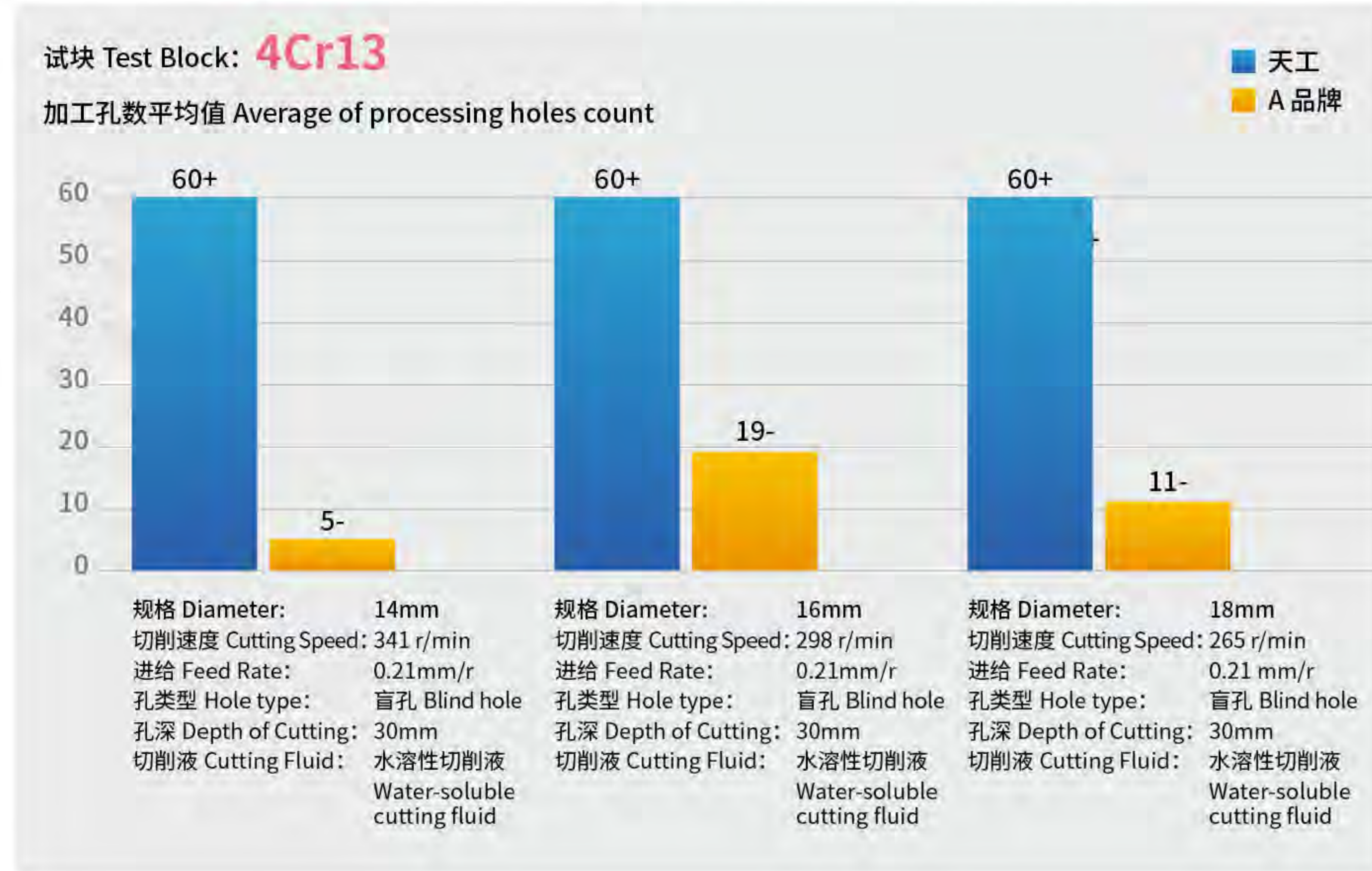
粉末轧制锥柄钻
HSS-PM Rolled
Taper shank drill



● 天工粉末轧制锥柄钻与国内 A 品牌的切削寿命对比
Comparison of cutting test data between
Tiangong HSS-PM Rolled Taper shank drill and Japanese Brand A fixed shank drill



● 天工粉末轧制锥柄钻与国内 A 品牌的切削寿命对比
Comparison of cutting test data between Tiangong HSS-PM Rolled Taper shank drill and Japanese Brand A fixed shank drill



● 粉末轧制锥柄钻的优点 Advantages of HSS-PM Rolled Taper shank drill

- (1) 天工采用自产第三代粉末冶金高速钢，钢材成分和组织细致均匀，具有更好的抗弯强度和抗疲劳性能，粉末冶金产品与传统高速钢产品在相同热处理条件下具有更高的硬度和耐磨性。
 Tiangong uses self-produced third-generation powder metallurgy high-speed steel, with fine and uniform steel composition and structure, which has better bending strength and fatigue resistance. Powder metallurgy products have higher hardness and wear resistance compared to traditional high-speed steel products under the same heat treatment conditions.
- (2) 全球第一家研发设计粉末材料轧制工艺，并成功生产的天工粉末轧制锥柄钻。
 The first company in the world to develop and design powder material rolling process and successfully produce Tiangong powder rolling cone shank drill.
- (3) 粉末轧制锥柄钻适用更多被加工材料，更多的加工孔数，更快的加工效率，更高的耐磨性。
 Powder rolled taper shank drill is suitable for more processed materials, more processing holes, faster processing efficiency, and higher wear resistance.
- (4) 最新的槽型设计，容屑空间大，123 度钻尖角。
 The latest groove design has a large chip holding space and 123° drill sharp angle.



商品编码 Product code	直径 DIM.	全长 Length	槽长 Slot length
1570800A	8.00	156	75
1570810A	8.10		
1570820A	8.20		
1570830A	8.30		
1570840A	8.40		
1570850A	8.50	162	81
1570860A	8.60		
1570870A	8.70		
1570880A	8.80		
1570890A	8.90		
1570900A	9.00		
1570910A	9.10		
1570920A	9.20		
1570930A	9.30		
1570940A	9.40		
1570950A	9.50	168	87
1570960A	9.60		
1570970A	9.70		
1570980A	9.80		
1570990A	9.90		
1571000A	10.00		
1571010A	10.10		
1571020A	10.20		
1571030A	10.30		
1571040A	10.40		
1571050A	10.50	175	94
1571060A	10.60		
1571070A	10.70		
1571080A	10.80		
1571090A	10.90		
1571100A	11.00		
1571110A	11.10		
1571120A	11.20		
1571130A	11.30		
1571140A	11.40		
1571150A	11.50		
1571160A	11.60		
1571170A	11.70		
1571180A	11.80		

商品编码 Product code	直径 DIM.	全长 Length	槽长 Slot length
1571190A	11.90	182	91
1571200A	12.00		
1571210A	12.10		
1571220A	12.20		
1571230A	12.30		
1571240A	12.40		
1571250A	12.50		
1571260A	12.60		
1571270A	12.70		
1571280A	12.80		
1571290A	12.90	189	98
1571300A	13.00		
1571310A	13.10		
1571320A	13.20		
1571330A	13.30		
1571340A	13.40		
1571350A	13.50		
1571360A	13.60		
1571370A	13.70		
1571380A	13.80		
1571390A	13.90	212	104
1571400A	14.00		
1571410A	14.10		
1571420A	14.20		
1571430A	14.30		
1571440A	14.40		
1571450A	14.50		
1571460A	14.60		
1571470A	14.70		
1571480A	14.80		
1571490A	14.90	218	110
1571500A	15.00		
1571510A	15.10		
1571520A	15.20		
1571530A	15.30		
1571540A	15.40		
1571550A	15.50		
1571560A	15.60		
1571570A	15.70		



商品编码 Product code	直径 DIM.	全长 Length	槽长 Slot length
1571580A	15.80	218	110
1571590A	15.90		
1571600A	16.00		
1571610A	16.10	223	115
1571620A	16.20		
1571630A	16.30		
1571640A	16.40		
1571650A	16.50		
1571660A	16.60		
1571670A	16.70		
1571680A	16.80		
1571690A	16.90		
1571700A	17.00		
1571710A	17.10	228	120
1571720A	17.20		
1571730A	17.30		
1571740A	17.40		
1571750A	17.50		
1571760A	17.60		
1571770A	17.70		
1571780A	17.80		
1571790A	17.90		
1571800A	18.00		
1571810A	18.10	233	125
1571820A	18.20		
1571830A	18.30		
1571840A	18.40		
1571850A	18.50		
1571860A	18.60		
1571870A	18.70		
1571880A	18.80		
1571890A	18.90		
1571900A	19.00		
1571910A	19.10	238	130
1571920A	19.20		
1571930A	19.30		
1571940A	19.40		
1571950A	19.50		
1571960A	19.60		

商品编码 Product code	直径 DIM.	全长 Length	槽长 Slot length
1571970A	19.70	238	130
1571980A	19.80		
1571990A	19.90		
1572000A	20.00	243	135
1572010A	20.10		
1572020A	20.20		
1572030A	20.30		
1572040A	20.40		
1572050A	20.50		
1572060A	20.60		
1572070A	20.70		
1572080A	20.80		
1572090A	20.90		
1572100A	21.00	248	140
1572110A	21.10		
1572120A	21.20		
1572130A	21.30		
1572140A	21.40		
1572150A	21.50		
1572160A	21.60		
1572170A	21.70		
1572180A	21.80		
1572190A	21.90		
1572200A	22.00	253	145
1572210A	22.10		
1572220A	22.20		
1572230A	22.30		
1572240A	22.40		
1572250A	22.50		
1572260A	22.60		
1572270A	22.70		
1572280A	22.80		
1572290A	22.90		
1572300A	23.00	276	145
1572310A	23.10		
1572320A	23.20		
1572330A	23.30		
1572340A	23.40		
1572350A	23.50		

商品编码 Product code	直径 DIM.	全长 Length	槽长 Slot length
1572360A	23.60	276	145
1572370A	23.70	281	150
1572380A	23.80		
1572390A	23.90		
1572400A	24.00		
1572410A	24.10		
1572420A	24.20		
1572430A	24.30		
1572440A	24.40		
1572450A	24.50		
1572460A	24.60		
1572470A	24.70	286	155
1572480A	24.80		
1572490A	24.90		
1572500A	25.00		
1572510A	25.10		
1572520A	25.20		
1572530A	25.30		
1572540A	25.40		
1572550A	25.50		
1572560A	25.60		
1572570A	25.70	291	160
1572580A	25.80		
1572590A	25.90		
1572600A	26.00		
1572610A	26.10		
1572620A	26.20		
1572630A	26.30		
1572640A	26.40		
1572650A	26.50		
1572670A	26.70		
1572680A	26.80		
1572690A	26.90		
1572700A	27.00		
1572710A	27.10		
1572720A	27.20		
1572730A	27.30		
1572740A	27.40		
1572750A	27.50		

商品编码 Product code	直径 DIM.	全长 Length	槽长 Slot length
1572760A	27.60	291	160
1572770A	27.70		
1572780A	27.80		
1572790A	27.90		
1572800A	28.00		
1572810A	28.10	296	165
1572820A	28.20		
1572830A	28.30		
1572840A	28.40		
1572850A	28.50		
1572860A	28.60		
1572870A	28.70		
1572880A	28.80		
1572890A	28.90		
1572900A	29.00		
1572910A	29.10		
1572920A	29.20		
1572930A	29.30		
1572940A	29.40		
1572950A	29.50		
1572960A	29.60		
1572970A	29.70		
1572980A	29.80		
1572990A	29.90		
1573000A	30.00		

● 粉末轧制锥柄钻推荐切削参数

Recommended cutting parameters for HSS-PM Rolled Taper shank drill

加工材料 Processing material	一般结构钢 General structural steel		合金钢 调质钢 Alloy steel Quenched and tempered steel		模具钢 预硬钢 Die steel Pre-hardening steel		不锈钢 Stainless steel		铸铁 Cast iron		铝合金 铜合金 Aluminium alloy Copper alloy	
	~200HB		20~30HRC		30~40HRC		sus304/316		FC250/FCD400		A5052/C1100	
直径 DIM. mm	转速 Speed r/min	进给 Feed mm/min	转速 Speed r/min	进给 Feed mm/min	转速 Speed r/min	进给 Feed mm/min	转速 Speed r/min	进给 Feed mm/min	转速 Speed r/min	进给 Feed mm/min	转速 Speed r/min	进给 Feed mm/min
16	400	92	320	63	240	41	160	28	440	130	680	200
20	320	83	250	55	190	37	120	25	350	115	540	180
25	250	75	200	51	150	34	100	23	280	100	430	160

● 切削条件使用的注意事项 Precautions for using cutting conditions

- 本切削条件为使用水溶性切削油时的条件。
This cutting condition is applicable when using water-soluble cutting oil.
- 请向加工点及钻尖钻刃处充分供给切削液。
Please provide sufficient cutting fluid to the processing point and drill tip.
- 本切削条件表适用于开孔深度为 3D 及以下的加工。
This cutting condition table is applicable to processing with a hole depth of 3D or below.
- 开孔深度超过 3D 时，请将转速进给速度降低 20%。
When the depth of the opening exceeds 3D, please reduce the speed and feed rate by 20%.
- 开孔深度超过 3D 时，请采用分级加工方式，但是根据被切削材料及加工条件，切削排出性有时会变差，及时孔深小于规定的孔深，也请使用分级进给。
When the depth of the hole exceeds 3D, please use a graded processing method. However, depending on the material being cut and the processing conditions, the cutting discharge may sometimes deteriorate. Even if the hole depth is less than the specified hole depth, please also use graded feeding.
- 分级进给时请返回孔的上面。
When making graded feeding, please return to the top of the hole.
- 请将分级量的大致标准设定为 0.5~1D，小直径时为 0.1~0.5D 左右。
Please set the approximate standard for grading to 0.5-1D, and it should be around 0.1-0.5D for small diameters.