

WERKÖ[®]

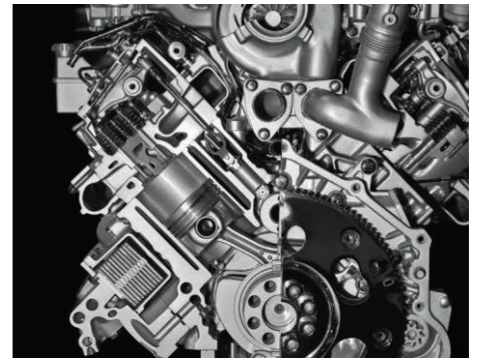
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WERKÖ®

HIGH PERFORMANCE TOOLS

File No. WK20221107



关于ABOUT WERKO

始于 1943 年的德国 WERKO 品牌，经过 75 的发展与创新，已成为欧洲最有能力的金属切削刀具供应商之一。为客户提供高品质的钻，攻，铰等精密刀具及金属加工解决方案。尤其在汽车及航空工业领域，无论是标准刀具还是客户定制非标刀具都有着优秀的表现。

WERKO brand started in 1943, after 75 years of development and innovation, has become one of the most capable suppliers of metal cutting tools in Europe. To provide customers with high quality drilling, tapping, reaming and other precision tools and metal processing solutions. Especially in the field of automobile and aviation industry, both standard cutting tools and customized non-standard cutting tools have excellent performance.

2008 年, WERKO 加入 TDC 远东工具, 为全世界客户提供更便捷的服务成为了可能。

In 2008, WERKO joined TDC Cutting Tools Inc., which makes it possible to provide more convenient services to customers around the world.

P1-2

WERKÖ®

涂层性能释义

Definition of coating performance

钻头 Drills

P5-17



丝锥 Taps

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技术资料

Technical data

P27-32

**HSS
HSCo-5**

HSS-高速钢,具有高韧性,高耐磨性,红硬性等良好的综合性能。

HSS- High speed steel, with toughness, high wear resistance, heat resistance and other good comprehensive properties.

HSCo-含钴高速钢(钴含量约5%),具有较好的硬度及红硬性

HSCo-High speed steel with cobalt (about 5% cobalt content) has good hardness and heat resistance.

N

氮化处理,可以增加刀具表面的硬度和耐磨性。麻花钻表面通过氮化处理,可增加圆周刃带上的强度和耐磨性。对于加工磨蚀性材料如:铸铁,酚醛塑料的丝锥来说,特别适合做氮化处理Nitriding treatment can increase the hardness and wear resistance of the tool surface. The surface of twist drill can be nitrided to increase the strength and wear resistance of the circular edge belt. For the processing of abrasive materials such as cast iron, phenolic plastic taps, especially suitable for nitriding treatment

Bronze

琥珀色表面,是在刀具上形成薄氧化层,主要用于钴高速钢和含钒高速钢。The amber surface, which forms a thin oxide layer on the tool, is mainly used in cobalt HSS and vanadium HSS.

TiCN

碳氮化钛涂层,是用PVD技术所生成的陶瓷涂层。TiCN硬度高于TiN,兼具较好的硬度、韧性和良好的耐磨性,且摩擦系数较低,可提高刀具加工性能

Titanium carbon nitride coating is a ceramic coating produced by PVD technology. TiCN hardness is higher than TiN, with good hardness, toughness and wear resistance, and lower friction coefficient, can improve the machining performance of the tool.

TiN

氮化钛是用物理气相沉积法(PVD)所产生的金色涂层,具有较高的硬度和较低的摩擦阻力,提高了刀具的切削性能及使用寿命。Titanium nitride is a golden coating produced by physical vapor deposition (PVD). It has higher hardness and lower friction resistance, and improves the cutting performance and service life of the tool.





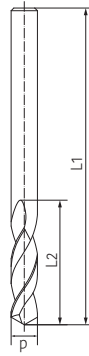
钻头索引 Drills Indexes

标准 Standard	1/2"等柄 equal shank	DIN1897	DIN338	DIN338	DIN338	DIN340	DIN345	DIN1869-1	DIN1869-2	DIN1869-3
图片 Picture										
规格Size	13.0-30.0	3.0-10.0	2.0-13.0	2.5-20.0	3.0-13.0	3.0-13.0	13.0-30.0	2.0-13.0	3.0-13.0	3.5-13.0
类型Type	N	N	Precise	SN	UDL	N	N	Para	Para	Para
订货号List-No.	4101	1101	1201	1202	1203	1303	2101	3101	3201	3301
材质 Material	HSS	HSS	HSS	HSS	HSCo-5	HSS	HSS	HSS	HSS	HSS
切削方向 Cutting direction	右Right	右Right	右Right	右Right	右Right	右Right	右Right	右Right	右Right	右Right
修磨横刃 Web thinning	Form A	Form C	-	Form C	Form C	Form C	Form A	Form C	Form C	Form C
表面处理 Surface	TiN	TiN-Top	B&G	TiN-Top	TiN-Top	TiN-Top	TiN	Blank/Bright	Blank/Bright	Blank/Bright
顶角 Point angle	118°	118°	118°	130°	135°	118°	118°	130°	130°	130°
页码Page	5	6	8-10	8-10	8-10	11-13	14	15	16	17

高速钢直柄麻花钻 High Speed Steel straight shank twist drills DIN1897



- Blank/Bright
- Nitrided lands
- TiN
- B&G
- Bronze
- TiCN



槽型Type	N
材质Material	HSS
切削方向Cutting direction	右Right
修磨横刃Web thinning	Form C
表面处理Surface	
顶角Point angle	118°
产品系列号Product serial No.	1101

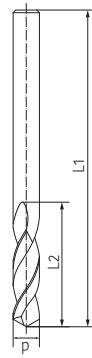
d mm	L1 mm	L2 mm	
3.0	46	16	
3.1	49	18	
3.2	49	18	
3.3	49	18	
3.4	52	20	
3.5	52	20	
3.6	52	20	
3.7	52	20	
3.8	55	22	
3.9	55	22	
4.0	55	22	
4.1	55	22	
4.2	55	22	
4.3	58	24	
4.4	58	24	
4.5	58	24	
4.6	58	24	
4.7	58	24	
4.8	62	26	
4.9	62	26	
5.0	62	26	
5.1	62	26	
5.2	62	26	
5.3	62	26	
5.4	66	28	
5.5	66	28	
5.6	66	28	
5.7	66	28	
5.8	66	28	
5.9	66	28	
6.0	66	28	
6.1	70	31	
6.2	70	31	
6.3	70	31	
6.4	70	31	
6.5	70	31	
6.6	70	31	
6.7	70	31	
6.8	74	34	
6.9	74	34	
7.0	74	34	

钻头 Drills

高速钢直柄麻花钻 High Speed Steel straight shank twist drills DIN1897

WERKÖ®

- Blank/Bright
- Nitrided lands
- TiN
- B&G
- Bronze
- TiCN



槽型 Type	N
材质 Material	HSS
切削方向 Cutting direction	右 Right
修磨横刃 Web thinning	Form C
表面处理 Surface	
顶角 Point angle	118°
产品系列号 Product serial No.	1101

d mm	L1 mm	L2 mm	
7.1	74	34	
7.2	74	34	
7.3	74	34	
7.4	74	34	
7.5	74	34	
7.6	79	37	
7.7	79	37	
7.8	79	37	
7.9	79	37	
8.0	79	37	
8.1	79	37	
8.2	79	37	
8.3	79	37	
8.4	79	37	
8.5	79	37	
8.6	84	40	
8.7	84	40	
8.8	84	40	
8.9	84	40	
9.0	84	40	
9.1	84	40	
9.2	84	40	
9.3	84	40	
9.4	84	40	
9.5	84	40	
9.6	89	43	
9.7	89	43	
9.8	89	43	
9.9	89	43	
10.0	89	43	

钻头 Drills

高速钢/钴高速钢直柄麻花钻 HSS/HSCo twist Drills with straight shank
DIN338



钻头 Drills							
	槽型 Type				Precise	SN	UDL
	材质 Material				HSS	HSS	HSCo-5
	切削方向 Cutting direction				右 Right	右 Right	右 Right
	修磨横刃 Web thinning				-	Form C	Form C
	表面处理 Surface						
	顶角 Point angle				118°	130°	135°
	产品系列号 Product serial No.				1201	1202	1203
		d mm	L1 mm	L2 mm			
		2.0	49	24			
		2.1	49	24			
		2.2	53	27			
		2.3	53	27			
		2.4	57	30			
		2.5	57	30			
	2.6	57	30				
	2.7	61	33				
	2.8	61	33				
	2.9	61	33				
	3.0	61	33				
	3.1	65	36				
	3.2	65	36				
	3.3	65	36				
	3.4	70	39				
	3.5	70	39				
	3.6	70	39				
	3.7	70	39				
	3.8	75	43				
	3.9	75	43				
	4.0	75	43				
	4.1	75	43				
	4.2	75	43				
	4.3	80	47				
	4.4	80	47				
	4.5	80	47				
	4.6	80	47				
	4.7	80	47				
	4.8	86	52				
	4.9	86	52				
	5.0	86	52				
	5.1	86	52				
	5.2	86	52				
	5.3	86	52				
	5.4	93	57				
	5.5	93	57				
	5.6	93	57				
	5.7	93	57				
	5.8	93	57				
	5.9	93	57				
	6.0	93	57				

高速钢/钴高速钢直柄麻花钻HSS/HSCo twist Drills with straight shank DIN338

<ul style="list-style-type: none"> Blank/Bright Nitrided lands TiN B&G Bronze TiCN 							
槽型Type				Precise	SN	UDL	
材质Material				HSS	HSS	HSCo-5	
切削方向Cutting direction				右Right	右Right	右Right	
修磨横刃Web thinning				-	Form C	Form C	
表面处理Surface							
顶角Point Angle				118°	130°	135°	
产品系列号Product serial No.				1201	1202	1203	
d mm	L1 mm	L2 mm					
6.1	101	63					
6.2	101	63					
6.3	101	63					
6.4	101	63					
6.5	101	63					
6.6	101	63					
6.7	101	63					
6.8	109	69					
6.9	109	69					
7.0	109	69					
7.1	109	69					
7.2	109	69					
7.3	109	69					
7.4	109	69					
7.5	109	69					
7.6	117	75					
7.7	117	75					
7.8	117	75					
7.9	117	75					
8.0	117	75					
8.1	117	75					
8.2	117	75					
8.3	117	75					
8.4	117	75					
8.5	117	75					
8.6	125	81					
8.7	125	81					
8.8	125	81					
8.9	125	81					
9.0	125	81					
9.1	125	81					
9.2	125	81					
9.3	125	81					
9.4	125	81					
9.5	125	81					
9.6	133	87					
9.7	133	87					
9.8	133	87					
9.9	133	87					
10.0	133	87					
10.1	133	87					

钻头 Drills

高速钢/钴高速钢直柄麻花钻HSS/HSCo twist Drills with straight shank
DIN338



钻头 Drills						
	槽型Type	Precise	SN	UDL		
	材质Material	HSS	HSS	HSCo-5		
	切削方向Cutting direction	右Right	右Right	右Right		
	修磨横刃Web thinning	-	Form C	Form C		
	表面处理Surface					
	顶角Point Angle	118°	130°	135°		
	产品系列号Product serial No.	1201	1202	1203		
	d mm	L1 mm	L2 mm			
	10.2	133	87			
	10.3	133	87			
	10.4	133	87			
	10.5	133	87			
	10.6	133	87			
	10.7	142	94			
10.8	142	94				
10.9	142	94				
11.0	142	94				
11.1	142	94				
11.2	142	94				
11.3	142	94				
11.4	142	94				
11.5	142	94				
11.6	142	94				
11.7	142	94				
11.8	142	94				
11.9	151	101				
12.0	151	101				
12.1	151	101				
12.2	151	101				
12.3	151	101				
12.4	151	101				
12.5	151	101				
12.6	151	101				
12.7	151	101				
12.8	151	101				
12.9	151	101				
13.0	151	101				

高速钢直柄麻花钻 HSS twist Drills with straight shank DIN340

槽型Type			N
材质Material			HSS
切削方向Cutting direction			右Right
修磨横刃Web thinning			Form C
表面处理Surface			
顶角Point Angle			118°
产品系列号Product serial No.			1303
d mm	L1 mm	L2 mm	
3.0	100	66	
3.1	106	69	
3.2	106	69	
3.3	106	69	
3.4	112	73	
3.5	112	73	
3.6	112	73	
3.7	112	73	
3.8	119	78	
3.9	119	78	
4.0	119	78	
4.1	119	78	
4.2	119	78	
4.3	126	82	
4.4	126	82	
4.5	126	82	
4.6	126	82	
4.7	126	82	
4.8	132	87	
4.9	132	87	
5.0	132	87	
5.1	132	87	
5.2	132	87	
5.3	132	87	
5.4	139	91	
5.5	139	91	
5.6	139	91	
5.7	139	91	
5.8	139	91	
5.9	139	91	
6.0	139	91	
6.1	148	97	
6.2	148	97	
6.3	148	97	
6.4	148	97	
6.5	148	97	
6.6	148	97	
6.7	148	97	
6.8	156	102	
6.9	156	102	
7.0	156	102	

钻头 Drills

高速钢直柄麻花钻 HSS twist Drills with straight shank DIN340



- Blank/Bright
- Nitrided lands
- TiN
- B&G
- Bronze
- TiCN



槽型Type	N
材质Material	HSS
切削方向Cutting direction	右Right
修磨横刃Web thinning	Form C
表面处理Surface	
顶角Point Angle	118°
产品系列号Product serial No.	1303

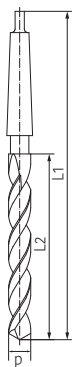
d mm	L1 mm	L2 mm	
7.1	156	102	
7.2	156	102	
7.3	156	102	
7.4	156	102	
7.5	156	102	
7.6	165	109	
7.7	165	109	
7.8	165	109	
7.9	165	109	
8.0	165	109	
8.1	165	109	
8.2	165	109	
8.3	165	109	
8.4	165	109	
8.5	165	109	
8.6	175	115	
8.7	175	115	
8.8	175	115	
8.9	175	115	
9.0	175	115	
9.1	175	115	
9.2	175	115	
9.3	175	115	
9.4	175	115	
9.5	175	115	
9.6	184	121	
9.7	184	121	
9.8	184	121	
9.9	184	121	
10.0	184	121	
10.1	184	121	
10.2	184	121	
10.3	184	121	
10.4	184	121	
10.5	184	121	
10.6	184	121	
10.7	195	128	
10.8	195	128	
10.9	195	128	
11.0	195	128	
11.1	195	128	

钻头 Drills

高速钢锥柄麻花钻 HSS Twist Drills with Taper Shank DIN345



- Blank/Bright
- Nitrided lands
- TiN
- B&G
- Bronze
- TiCN







槽型Type	N
材质Material	HSS
切削方向Cutting direction	右Right
修磨横刃Web thinning	Form A
表面处理Surface	
顶角Point Angle	118°
产品系列号Product serial No.	2101




d mm	L1 mm	L2 mm	
12.0	182	101	
12.5	182	101	
13.0	182	101	
13.5	189	108	
14.0	189	108	
14.5	212	114	
15.0	212	114	
15.5	218	120	
16.0	218	120	
16.5	223	125	
17.0	223	125	
17.5	228	130	
18.0	228	130	
18.5	233	135	
19.0	233	135	
19.5	238	140	
20.0	238	140	
20.5	243	145	
21.0	243	145	
21.5	248	150	
22.0	248	150	
22.5	253	155	
23.0	253	155	
23.5	276	155	
24.0	281	160	
24.5	281	160	
25.0	281	160	
25.5	286	165	
26.0	286	165	
26.5	286	165	
27.0	291	170	
27.5	291	170	
28.0	291	170	
28.5	296	175	
29.0	296	175	
29.5	296	175	
30.0	296	175	

钻头 Drills

高速钢直柄麻花钻, 加长型 HSS Twist Drills extra long series with straight shank DIN1869-1



钻头 Drills					
	槽型Type	Para			
	材质Material	HSS			
	切削方向Cutting direction	右Right			
	修磨横刃Web thinning	Form C			
	表面处理Surface				
	顶角Point Angle	130°			
	产品系列号Product serial No.	3101			
		d mm	L1 mm	L2 mm	
		2.0	125	85	
		2.5	140	95	
		3.0	150	100	
		3.5	165	115	
		4.0	175	120	
		4.5	185	125	
		5.0	195	135	
		5.5	205	140	
		6.0	205	140	
		6.5	215	150	
		7.0	225	155	
	7.5	225	155		
	8.0	240	165		
	8.5	240	165		
	9.0	250	175		
	9.5	250	175		
	10.0	265	185		
	10.5	265	185		
	11.0	280	195		
	11.5	280	195		
	12.0	295	205		
	12.5	295	205		
	13.0	295	205		










钻头 Drills				
	<ul style="list-style-type: none"> Blank/Bright Nitrided lands TiN B&G Bronze TiCN 			
	槽型 Type			Para
	材质 Material			HSS
	切削方向 Cutting direction			右 Right
	修磨横刃 Web thinning			Form C
	表面处理 Surface			
	顶角 Point Angle			130°
	产品系列号 Product serial No.			3201
	d mm	L1 mm	L2 mm	
	3.0	190	130	
	3.5	210	145	
	4.0	220	150	
	4.5	235	160	
	5.0	245	170	
	5.5	260	180	
	6.0	260	180	
	6.5	275	190	
	7.0	290	200	
	7.5	290	200	
8.0	305	210		
8.5	305	210		
9.0	320	220		
9.5	320	220		
10.0	340	235		
10.5	340	235		
11.0	365	250		
11.5	365	250		
12.0	375	260		
12.5	375	260		
13.0	375	260		

高速钢直柄麻花钻, 加长型 HSS Twist Drills extra long series with straight shank
DIN1869-3



钻头 Drills					
	<ul style="list-style-type: none"> Blank/Bright Nitrided lands TiN B&G Bronze TiCN 				
	槽型Type	Para			
	材质Material	HSS			
	切削方向Cutting direction	右Right			
	修磨横刃Web thinning	Form C			
	表面处理Surface				
	顶角Point Angle	130°			
	产品系列号Product serial No.	3301			
		d mm	L1 mm	L2 mm	
		3.5	265	180	
		4.0	280	190	
		4.5	295	200	
		5.0	315	210	
		5.5	330	225	
		6.0	330	225	
		6.5	350	235	
		7.0	370	250	
		7.5	370	250	
	8.0	390	265		
	8.5	390	265		
	9.0	410	280		
	9.5	410	280		
	10.0	430	295		
	10.5	430	295		
	11.0	455	310		
	11.5	455	310		
	12.0	480	330		
	12.5	480	330		
	13.0	480	330		

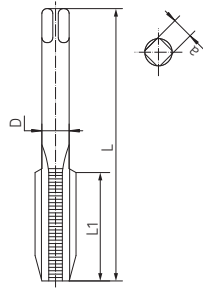
丝锥索引 Taps Indexes

类型 Type	直槽 Straight flute	直槽 Straight flute	直槽 Straight flute	直槽 Straight flute	螺旋槽 Spiral flute	螺旋槽 Spiral flute	螺旋槽 Spiral flute	螺旋槽 Spiral flute	螺尖 Spiral pointed	螺尖 Spiral pointed	螺尖 Spiral pointed	螺尖 Spiral pointed	手用三支组 Manual tools
图片 Picture													
材质 Material	HSS	HSCo-5	HSS	HSCo-5	HSS	HSCo-5	HSS	HSCo-5	HSS	HSCo-5	HSS	HSCo-5	HSS
标准 Standard	GB	GB	GB	GB	GB	GB	GB	GB	GB	GB	GB	GB	DIN352
粗/细牙 Coarse/Fine thread	粗牙 CT	粗牙 CT	细牙 FT	细牙 FT	粗牙 CT	粗牙 CT	细牙 FT	细牙 FT	粗牙 CT	粗牙 CT	细牙 FT	细牙 FT	-
规格范围 Size range	M2-M52	M2-M52	M2-M52	M2-M52	M3-M24	M3-M24	M3-M24	M3-M24	M2-M24	M2-M24	M2-M24	M2-M24	M3-M24
表面处理 Surface	TiCN	TiCN	TiCN	TiCN	TiCN	TiCN	TiCN	TiCN	TiCN	TiCN	TiCN	TiCN	Blank/Bright
订货号 Product Serial No.	5102	5103	5105	5106	5202	5203	5205	5206	5302	5303	5305	5306	6101
页码 Page	19	19	20-21	20-21	22	22	23	23	24	24	25	25	26

高速钢/钴高速钢直槽丝锥 HSS/HSCo Straight flute Taps
公制细牙, 国标 Metric Fine Thread, National standard



- Blank/Bright
- Nitrided lands
- TiN
- B&G
- Bronze
- TiCN



标准Standard	GB	
加工孔类型Processing holes Type	通孔&盲孔Through&blind holes	
材质Material	HSS	HSCo-5
切削方向Cutting direction	右Right	右Right
精度Precision	H2	H2
表面处理Surface		
产品系列号Product Serial No.	5105	5106

Size	p mm	L mm	L1 mm	D mm	axa mm		
M3	0.35	48	11	3.15	2.5		
M4	0.5	53	13	4	3.15		
M4.5	0.5	53	13	4.5	3.55		
M5	0.5	58	16	5	4		
M5	0.75	58	16	5	4		
M5.5	0.5	62	17	5.6	4.5		
M6	0.75	66	19	6.3	5		
M7	0.75	66	19	5.6	4.5		
M8	0.75	66	19	6.3	5.0		
M8	1.0	72	22	6.3	5.0		
M9	0.75	66	19	7.1	5.6		
M9	1.0	72	22	7.1	5.6		
M10	0.75	73	20	8.0	6.3		
M10	1.0	80	24	8.0	6.3		
M10	1.25	80	24	8.0	6.3		
M11	0.75	80	22	8.0	6.3		
M11	1	80	22	8.0	6.3		
M12	1	80	22	9.0	7.1		
M12	1.25	89	29	9.0	7.1		
M12	1.5	89	29	9.0	7.1		
M14	1.0	87	22	11.2	9		
M14	1.25	95	30	11.2	9		
M14	1.5	95	30	11.2	9		
M15	1.5	95	30	11.2	9		
M16	1.0	92	22	12.5	10		
M16	1.5	102	32	12.5	10		
M17	1.5	102	32	12.5	10		
M18	1.0	97	22	14.0	11.2		
M18	1.5	112	37	14.0	11.2		
M18	2.0	112	37	14.0	11.2		
M20	1.0	102	22	14	11.2		
M20	1.5	112	37	14	11.2		
M20	2.0	112	37	14	11.2		
M22	1.0	109	24	16	12.5		
M22	1.5	118	38	16	12.5		
M22	2.0	118	38	16	12.5		
M24	1.0	114	24	18	14		
M24	1.5	130	45	18	14		
M24	2.0	130	45	18	14		
M25	1.5	130	45	18	14		
M25	2.0	130	45	18	14		

丝锥 Taps

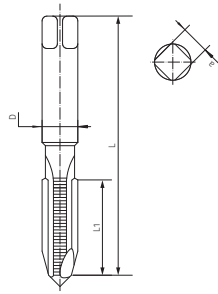
高速钢/钴高速钢直槽丝锥 HSS/HSCo Straight flute Taps

公制细牙, 国标 Metric Fine Thread, National standard

丝锥 Taps										
	标准 Standard							GB		
加工孔类型 Processing holes Type							通孔&盲孔 Through&blind holes			
材质 Material							HSS	HSCo-5		
切削方向 Cutting direction							右 Right	右 Right		
精度 Precision							H2	H2		
表面处理 Surface										
产品系列号 Product Serial No.							5105	5106		
Size	p mm	L mm	L1 mm	D mm	axa mm					
M27	1.5	127	37	20	16					
M27	2.0	127	37	20	16					
M28	1.5	127	37	20	16					
M28	2.0	127	37	20	16					
M30	1.0	120	25	20	16					
M30	1.5	127	37	20	16					
M30	2.0	127	37	20	16					
M30	3.0	138	48	20	16					
M32	1.5	137	37	22.4	18					
M32	2.0	137	37	22.4	18					
M33	1.5	137	37	22.4	18					
M33	2.0	137	37	22.4	18					
M33	3.0	151	51	22.4	18					
M35	1.5	144	39	25	20					
M36	1.5	144	39	25	20					
M36	2.0	144	39	25	20					
M36	3.0	162	57	25	20					
M38	1.5	149	39	28	22.4					
M39	1.5	149	39	28	22.4					
M39	2.0	149	39	28	22.4					
M39	3.0	170	60	28	22.4					
M40	2.0	149	39	28	22.4					
M40	3.0	170	60	28	22.4					
M42	1.5	149	39	28	22.4					
M42	2.0	149	39	28	22.4					
M42	3.0	170	60	28	22.4					
M42	4.0	170	60	28	22.4					
M45	1.5	165	45	31.5	25					
M45	2.0	165	45	31.5	25					
M45	3.0	187	67	31.5	25					
M48	1.5	165	45	31.5	25					
M48	2.0	165	45	31.5	25					
M48	3.0	187	67	31.5	25					
M48	4.0	187	67	31.5	25					
M50	3.0	187	67	31.5	25					
M52	2.0	175	45	35.5	28					
M52	3.0	200	70	35.5	28					
M52	4.0	200	70	35.5	28					

高速钢/钴高速钢螺尖丝锥 HSS/HSCo Spiral Pointed Taps
 公制粗牙, 国标 Metric Coarse Thread, National standard

- Blank/Bright
- Nitrided lands
- TiN
- B&G
- Bronze
- TiCN



标准Standard

GB

加工孔类型Processing holes Type

通孔Through holes

材质Material

HSS

HSCo-5

切削方向Cutting direction

右Right

右Right

精度Precision

H2

H2

表面处理Surface



产品系列号Product Serial No.

5302

5303

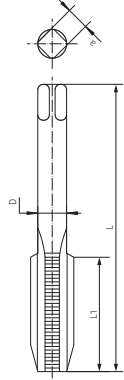
Size	p mm	L mm	L1 mm	D mm	axa mm		
M2	0.4	41	8	2.5	2		
M3	0.5	48	11	3.15	2.5		
M3.5	0.6	50	13	3.55	2.8		
M4	0.7	53	13	4	3.15		
M5	0.8	58	16	5	4		
M6	1.0	66	19	6.3	5		
M7	1.0	66	19	5.6	4.5		
M8	1.25	72	22	6.3	5.0		
M9	1.25	72	22	7.1	5.6		
M10	1.5	80	24	8.0	6.3		
M11	1.5	85	25	8	6.3		
M12	1.75	89	29	9	7.1		
M14	2.0	95	30	11.2	9		
M16	2.0	102	32	12.5	10		
M18	2.5	112	37	14.0	11.2		
M20	2.5	112	37	14	11.2		
M22	2.5	118	38	16	12.5		
M24	3.0	130	45	18	14		

丝锥 Taps

高速钢手用丝锥 HSS Hand Taps

DIN352

-  Blank/Bright
-  Nitrided lands
-  TiN
-  B&G
-  Bronze
-  TiCN



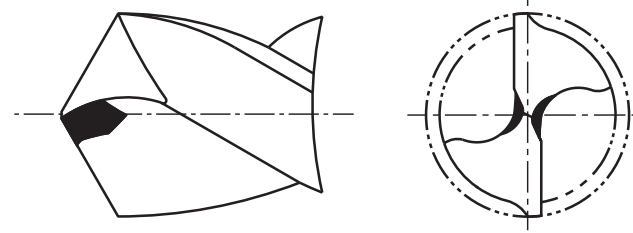
标准Standard	DIN352
加工孔类型Processing holes Type	通孔&盲孔Through&Blind holes
材质Material	HSS
切削方向Cutting direction	右Right
精度Precision	H2
表面处理Surface	
产品系列号Product Serial No.	6101

Size	p mm	L mm	L1 mm	D mm	axa mm
M3	0.5	40	11	3.5	2.7
M3.5	0.6	45	13	4	3.0
M4	0.7	45	13	4.5	3.4
M4.5	0.75	50	16	6	4.9
M5	0.8	50	16	6	4.9
M6	1	50	19	6	4.9
M7	1	50	19	6	4.9
M8	1.25	56	22	6	4.9
M9	1.25	63	22	7	5.5
M10	1.5	70	24	7	5.5
M12	1.75	75	29	9	7
M14	2	80	30	11	9
M16	2	80	32	12	9
M18	2.5	95	40	14	11
M20	2.5	95	40	16	12
M22	2.5	100	40	18	14.5
M24	3	110	50	18	14.5

丝锥 Taps

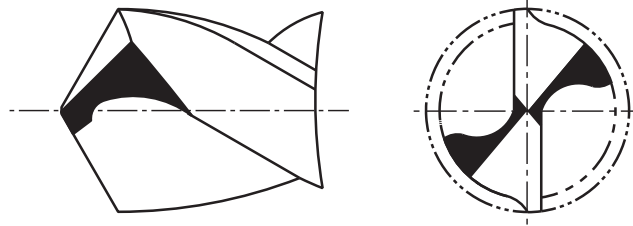


Technical Data



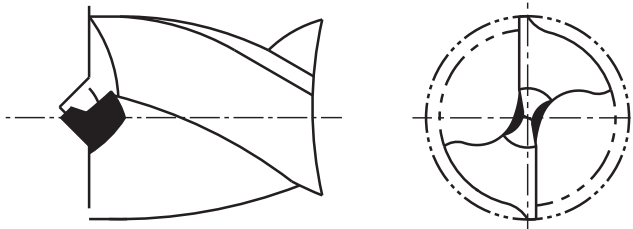
Form A - 横刀修薄型

Form A - Web thinned



Form C - 双后角

Form C - Split Point



Form E - 点焊型

Form E - Spot Weld Point

切削速度参数

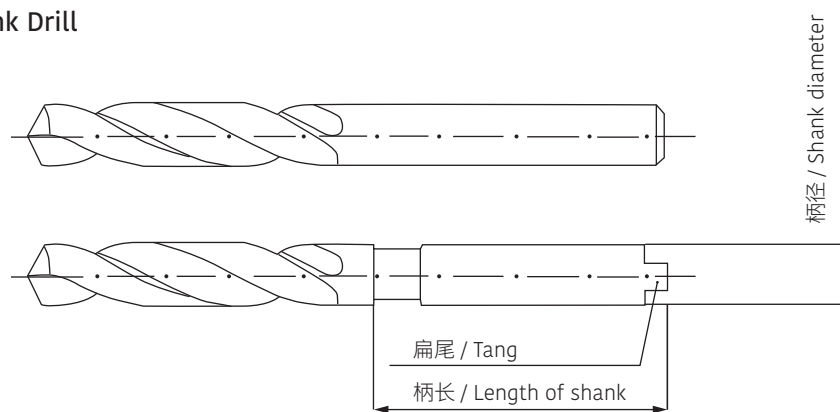
Speed Calculations

切削速度 average cutting speed vc in m/min	刃径 mm / Diameter in mm							
	2,50	4,00	6,30	10,0	16,0	25,0	40,0	63,0
	转速 / Speed in r.p.m.							
180	23.000	14.000	9.000	5.700	3.600	2.300	1.400	900
140	18.000	11.000	7.000	4.500	2.800	1.800	1.100	710
110	14.000	8.700	5.500	3.500	2.200	1.400	880	550
90	11.000	7.200	4.500	2.900	1.800	1.100	710	450
70	8.900	5.600	3.500	2.200	1.400	890	550	350
60	7.600	4.800	3.000	1.900	1.200	760	450	300
50	6.400	4.000	2.500	1.600	1.000	630	400	250
40	5.100	3.200	2.000	1.300	800	500	320	200
30	3.800	2.400	1.500	950	600	380	240	150
25	3.200	2.000	1.250	800	500	320	200	125
20	2.500	1.600	1.000	630	400	250	150	100
15	1.900	1.200	750	475	300	190	125	75
10	1.250	800	500	320	200	125	75	50
9	1.150	710	450	280	180	110	70	45
8	1.000	630	400	250	150	100	63	40
6	750	475	300	190	120	75	45	30
5	630	400	250	150	100	63	40	25
4	500	320	200	125	75	50	30	20
3	380	250	150	100	63	40	25	15

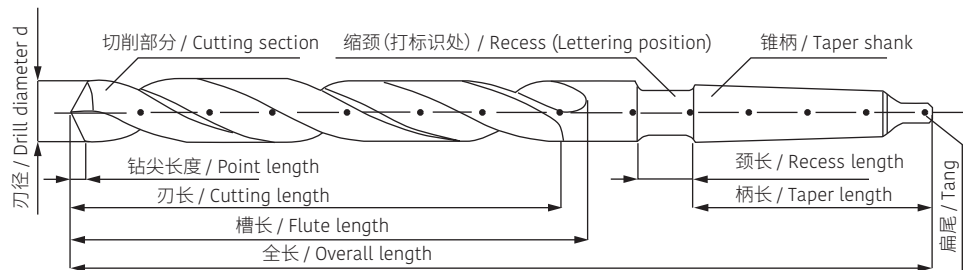
Service

钻头名词术语 Twist Drill Nomenclature

直柄麻花钻 Straight Shank Drill



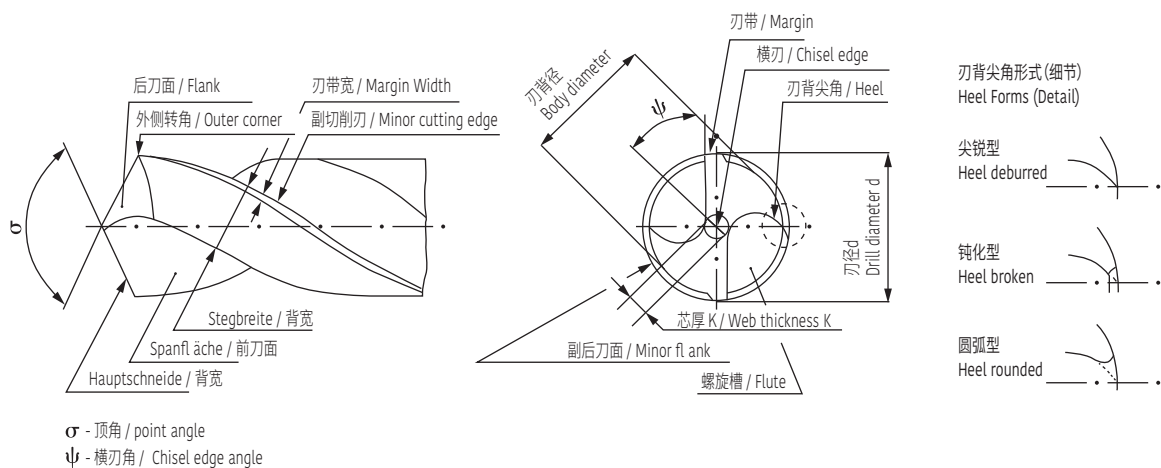
莫氏锥柄麻花钻 Morse Taper Shank Drill



带内冷孔钻头 Coolant Feed Drill

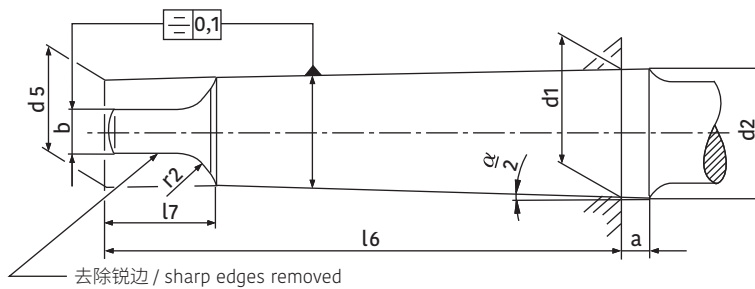


Schneidteil Cutting Section

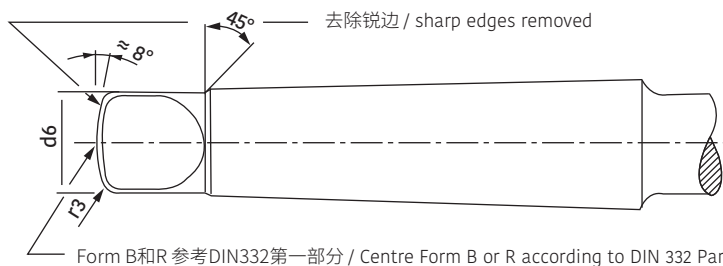


DIN228莫氏锥柄, Form B和BK
Morse Taper Shanks DIN228, Form B and BK

Morse Taper Size 莫氏锥柄 尺寸	a	Grenz-ab-maBe Tol. of a	b h13	d1	d2 ≈	d5 ≈	d6 max.	d12	d13	d14 0 -0,1	l6 0 -0,1	l7 max.	l8	l9	l10	r2	r3	$\frac{a}{2}$
MK 0 MT 0	3,0	+1,2 0	3,9	9,045	9,2	6,1	6,0				5	10,5				4,0	1,0	1°29'27"
MK 1 MT 1	3,5	+1,4 0	5,2	12,065	12,2	9,0	8,7				62,0	13,5				5,0	1,2	1°25'43"
MK 2 MT 2	5,0	+1,4 1	6,3	17,780	18,0	14,0	13,5	4,2	4,2	15,0	75,0	16,0	20,0	34,0	27,0	6,0	1,6	1°25'50"
MK 3 MT 3	5,0	+1,7 1	7,9	23,825	24,1	19,1	18,5	5,0	5,0	21,0	94,0	20,0	29,0	43,0	36,0	7,0	2,0	1°26'16"
MK 4 MT 4	6,5	+1,9 0	11,9	31,267	31,6	25,2	24,5	6,8	6,8	28,0	117,5	24,0	39,0	55,0	47,0	8,0	2,5	1°29'15"
MK 5 MT 5	6,5	+1,9 0	15,9	44,399	44,7	36,5	35,7	8,5	8,5	40,0	149,5	29,0	51,0	69,0	60,0	10,0	3,0	1°30'26"
MK 6 MT 6	8,0	+2,3 0	19,0	63,348	63,8	52,4	51,0	10,2	10,2	56,0	210,0	40,0	81,0	99,0	90,0	13,0	4,0	1°29'36"



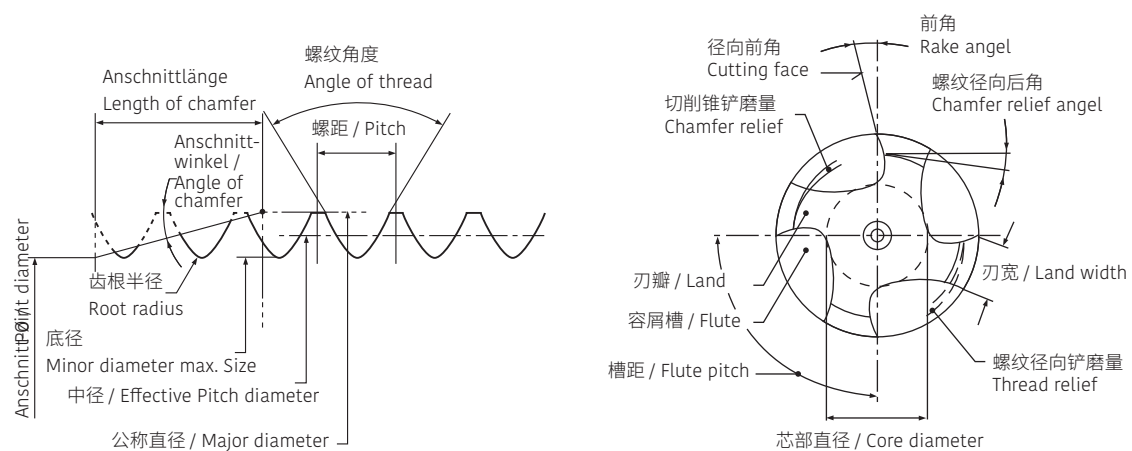
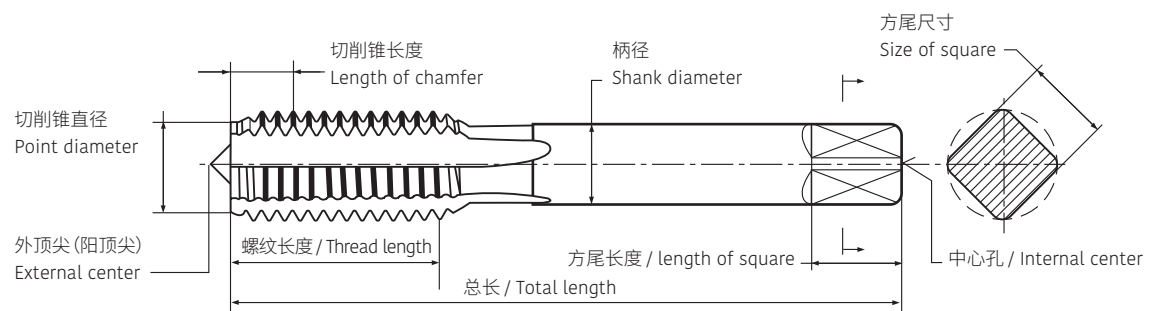
Form B, 莫氏锥柄带扁尾
Form B, Morse taper with tang



材料说明 Material Specification

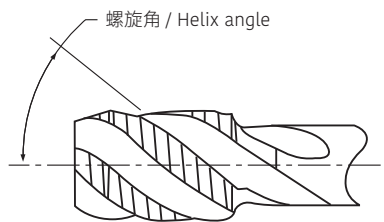
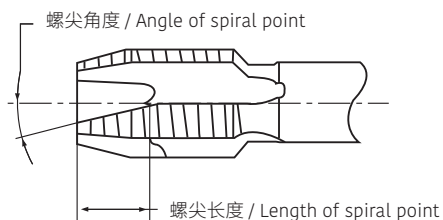
切削速度 average cutting speed vc in m/min	Steel designation 钢号	Material No.: 料号	USA Material No.: 美国料号	Approximate analysis in % (mean values) 成分分析 (近似值)							
				C	Si	Mn	Cr	Mo	V	W	Co
HSS	S 6-5-2	1.3343	M2	0,90	-	-	4,15	4,95	1,85	6,35	-
HSCo	S 6-5-2-5	1.3243	M35	0,92	-	-	4,15	4,95	1,85	6,35	4,75
HSS-E	S 6-5-3	1.3344	M3	1,22	-	-	4,15	4,95	2,95	6,35	-
HSCo-8	S 2-10-1-8	1.3247	M42	1,08	-	-	4,00	9,50	1,15	1,50	8,00
HSSE-PM	ASP60	-	-	2,30	-	-	4,00	7,00	6,50	6,50	10,50
柄部材料 / Shank material	C 60	1.0601	-	0,61	< 0,40	< 0,75	< 0,40	-	-	-	-

丝锥术语 Tap Nomenclature

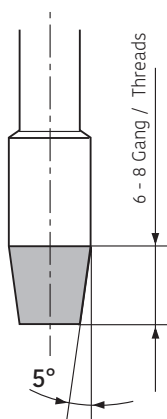


针对通孔加工, 采用刃倾角设计
Design with spiral point for through holes

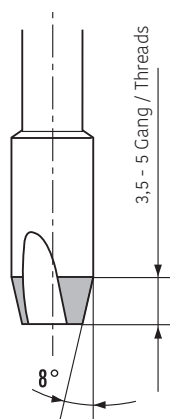
针对盲孔加工, 采用螺旋槽设计
Design with helical flutes for blind holes



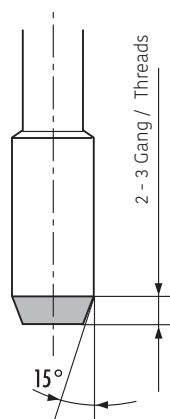
切削锥形式
Types of Lead DIN 2197



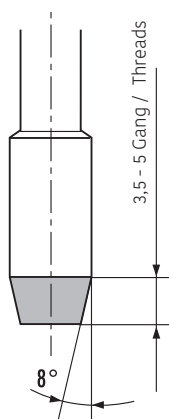
Form A
6-8牙
通孔
Long taper
6 to 8 threads
for through holes



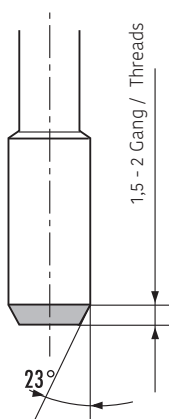
Form B
3.5-5牙
通孔
Medium taper
3.5 to 5 threads
with spiral for through holes



Form C
2-3牙
盲孔
Short taper
2 - 3 threads
for blind holes

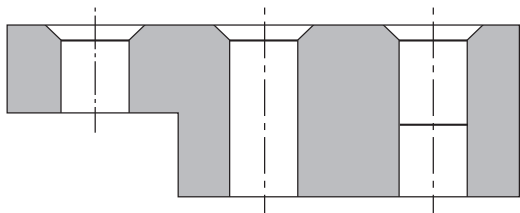


Form D
3.5-5牙
通孔&盲孔
Medium taper
3.5 to 5 threads
for through and blind holes
with long runout



Form E
1.5-2牙
通孔&盲孔
Short taper
1.5 - 2 threads
for through and blind holes
with short runout

通孔
Through holes



盲孔
Blind holes

