我们致力于为客户提供刀具整体解决方案

We are providing overall cutter solution for customers.

hrbtool.en.alibaba.com

哈工

哈尔滨工具厂

HARBIN TOOL WORKS

企业简介

INTRODUCTION TO ENTERPRISE

哈尔滨工具厂始建于 1990 年，是一家以生产精密复杂齿轮刀具为主的现代企业。经过 20 余年的发展，公司拥有了雄厚的技术能力和设备加工能力。公司现已获得 13 项发明及实用新型专利。关键工序均配有从德国、瑞士、意大利和日本等国进口的生产、检测设备。热处理工艺采用德国先进技术，根据不同产品的材质、规格进行不同的热处理程序。公司现已引进瑞士巴尔查斯涂层设备，可对刀具进行各种涂层，实现干式切削。

哈尔滨工具厂不但提供高精度、高性能的产品，还一直致力于为顾客提供全面而优质的服务。与齿轮行业 20 余年的合作，使我们对客户在产品选型、设备采购、刀具订购及使用过程中出现的问题与需求十分了解，这笔宝贵的财富使我们可以为不同类型客户量身定制一整套刀具使用解决方案。

公司已通过 ISO9001：2008 标准质量管理体系认证。

HARBIN TOOL WORKS was set up in 1990, who is a modern enterprise mainly produces gear cutting tools. For more than 20 years' continuous development, we have acquired powerful capability and adequate production facility. We have got 13 national patents for invention and utility model. Some important operations in the production process are completed on sophisticated foreign facilities imported from Germany, Switzerland, Italy and Japan. We adopt advanced technology from Germany into heat treatment process according to the material and specifications of different products. We have introduced the Swiss Balzers coating equipment, which can be used in various coatings to achieve dry cutting.

HARBIN TOOL WORKS not only provides high-precision, high-performance products, but also offers comprehensive and high quality service. After 20 years' study in gear industry, we become acquainted with the questions and needs of clients in choosing products, purchasing equipments, booking and using cutters. It is a great fortune for us to serve clients with different needs.

HARBIN TOOL WORKS has been certified by the quality security standard ISO9001:2008

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新结构三面粗切铣刀

TRIPLEX ROUGHING CUTTER OF NEW STRUCTURE

公称直径 AVG DIAMETER	齿 数 No.OF TEETH			刀错距 PW POINT WIDTH	切 深 CUTTING DEPTH	刀体基距 BODY DISTANCE		锥孔直径 D TAPER-BORE DIAMETER	锥度 TAPER
	外刀齿 αW OUTSIDE BLADE	中刀齿 BOTTOM BLADE	内刀齿 αN INSIDE BLADE			K1	K2		
6″	5	10	5	1.8~3.8	12.7	68.825	65.025	58.196	1:24
7.5″	6	12	6	2.0~5.0	12.7	88.775	81.925		
9″	7	14	7	2.0~5.0	14.2	107.825	100.975		
10.5″	8	16	8	2.0~6.5	19.4	123.2	119.375	126.966	
12″	9	18	9	2.0~6.5	19.4	142.25	138.425		
14″	9	18	9	2.5~9.5	25.4	167.64	154.94		
16″	10	20	10	2.5~9.5	25.4	193.05	180.35	126.966 或 126.835 L=22	
18″	10	20	10	2.5~9.5	25.4	217	210	126.835 L=22	

■用于弧齿锥齿轮及准双曲面齿轮大轮的粗加工
For roughing cutting of spiral bevel gear and hyperbolic gear

新结构双面粗切铣刀

ALTERNATE ROUGHING CUTTER OF NEW STRUCTURE

公称直径 AVG DIAMETER	齿 数 No.OF TEETH		刀错距 PW POINT WIDTH	切 深 CUTTING DEPTH	刀体基距 BODY DISTANCE		锥孔直径 D TAPER-BORE DIAMETER	锥度 TAPER
	外刀齿 αW OUTSIDE BLADE	内刀齿 αN INSIDE BLADE			K1	K2		
4.5″	6	6	0.5~2.5	9.5	47.325	----	58.221	1:24
5″	8	8	0.5~3.8	9.5	53.675	----		
6″	10	10	0.5~3.8	12.7	68.825	65.025		
7.5″	12	12	0.75~5.0	12.7	88.775	81.925		
9″	14	14	0.75~5.0	14.2	107.825	100.975		
10.5″	16	16	0.75~6.35	19.4	123.2	119.375	126.966	
12″	18	18	0.75~6.35	19.4	142.25	138.425		
14″	18	18	1.27~7.6	25.4	167.64	154.94		
16″	20	20	1.27~7.6	25.4	193.05	180.35	126.966 或 126.835 L=22	
18″	20	20	1.27~7.6	25.4	217	210	126.835 L=22	

■用于弧齿锥齿轮及准双曲面齿轮大轮或小轮的粗加工
For roughing cutting of spiral bevel gear and hyperbolic gear or pinion

新结构双面精切铣刀

ALTERNATE FINISHING CUTTER OF NEW STRUCTURE

公称直径 AVG DIAMETER	齿数 No OF TEETH 外刀 oW OUTSIDE BLADE	齿数 No OF TEETH 内刀 oN OUTSIDE BLADE	刀错距 PW POINT WIDTH	切深 CUTTING DEPTH	刀体基距 BODY DISTANCE	锥孔直径 D TAPER-BORE DIAMETER	锥度 TAPER
4.5″	4	4	0.5~2.5	9.5	47.275	58.221	1:24
5″	6	6	0.5~3.8	9.5	53.625		
6″	6	6	0.5~3.8	12.7	65.125		
	8	8					
7.5″	8	8	0.75~5.0	12.7	84.075		
9″	10	10		14.2	103.125		
10.5″	10	10	1.7~7.6	19.4	120	126.966	
12″	14	14	0.75~6.5	19.4	139		
14″	14	14	1.27~7.5	25.4	162.025		
16″	18	18	1.27~7.5	19.4	184.875	126.966 或 126.835 L=22	
			1.27~10	25.4	184.875		
18″	18	18	1.27~12.7	25.4	215/208	126.835 L=22	
	12	12		38	215/208		

■用于弧齿锥齿轮及准双曲面齿轮大轮及小轮精切
For finishing cutting of spiral bevel gear and hyperbolic gear or pinion

新结构单外精切铣刀

OUTSIDE FINISHING CUTTER OF NEW STRUCTURE

公称直径 AVG DIAMETER	齿数 No OF TEETH	刀尖直径 DW	切深 CUTTING DEPTH	刀体基距 K BODY DISTANCE	锥孔直径 D TAPER-BORE DIAMETER	锥度 TAPER
5″	12	113.5~134.25	9.5	53.625	58.221	1:24
				53.625		
6″	12	135~167.5	12.7	60.625		
				65.125		
	16			67.75		
				72.25		
7.5″	16	156~187.25	12.7	69.5		
				74.5		
				80.875		
				87.25		
9″	20	175.75~260	14.2	93.625		
				96.75		
				103.125		
				108.125		
12″	24	262~333.5	19.4	122.375	126.966	
				130		
	28			138.875		
				146.5		
14″	28	318.6~382	25.4	147.9		
				152.09		
	32			169.15		
				174.15		
16″	32	346.5~451.5	25.4	163.375	126.966 或 126.835 L=22	
				174.25		
	36			184.875		
				195.25		
				205.25		
18″	36	447.75~517.75	25.4	215.375	126.835 L=22	
				225.5		
				235.625		
	24	438.5~515.75	38	204.5		
				215.875		
				227.375		

■用于弧齿锥齿轮及准双曲面齿轮小轮凹面精切
For finishing cutting of spiral bevel gear and hyperbolic pinion's concave side

新结构单内精切铣刀

INSIDE FINISHING CUTTER OF NEW STRUCTURE

公称直径 AVG DIAMETER	齿 数 No.OF TEETH	刀尖直径 DN	切 深 CUTTING DEPTH	刀体基距 BODY DISTANCE	锥孔直径 D TAPER-BORE DIAMETER	锥度 TAPER
5″	12	113~136.5	9.5	53.625	58.221	1:24
				55.625		
6″	12	132.75~169.75	12.7	60.625		
				65.125		
	16			67.75		
				72.25		
7.5″	16	153.25~191.75	12.7	69.5		
				74.5		
				80.875		
				87.25		
9″	20	176~271.75	14.2	93.625		
				96.75		
				103.125		
				108.125		
12″	24	262.25~339.75	19.4	122.375	126.966	
				130		
	28			138.875		
				146.5		
14″	28	318.5~394.8	25.4	147.9		
				152.09		
	32			169.15		
				174.15		
16″	32	343.75~459.5	25.4	163.375	126.966 或 126.835 L=22	
				174.25		
	36			184.875		
				195.25		
				205.25		
18″	36	447.75~538.25	25.4	215.375	126.835 L=22	
				225.5		
				235.625		
	24	443.5~536.25	38	204.5		
				215.875		
				227.375		

■用于弧齿锥齿轮及准双曲面齿轮小轮凸面精切

For finishing cutting of spiral bevel gear and hyperbolic pinion's convex side

单循环法精切铣刀

SINGLE CYCLE FINISHING CUTTER

公称直径 AVG DIAMETER	齿 数 No.OF TEETH	齿形角 外刀 αW αW OUTSIDE BLADE	齿形角 内刀 αN αN INSIDE BLADE	刀错距 PW POINT WIDTH	切 深 CUTTING DEPTH	刀体基距 BODY DISTANCE K1	刀体基距 BODY DISTANCE K2	锥孔直径 D TAPER-BORE DIAMETER	锥度 TAPER
5″	8	20°~25°	20°~25°	1.7~3.75	12.7	57.15	53.34	58.221	1:24
6″				1.7~3.75	12.7	69.85	66.04		
7.5″				1.75~5.0	12.6	87.63	83.82		
9″				1.75~5.0	12	106.68	102.87		
12″				1.75~6.5	22.8	146.05	135.89	126.966	

■用于弧齿锥齿轮大轮成型法精切，铣刀径向和轴向有齿升量

For finishing cutting of spiral bevel gear, cutters are having both axial and radial steps

公称直径 AVG DIAMETER	齿 数 No.OF TEETH	齿形角 外刀 αW αW OUTSIDE BLADE	齿形角 内刀 αN αN INSIDE BLADE	刀错距 PW POINT WIDTH	切 深 CUTTING DEPTH	刀体基距 BODY DISTANCE K1	刀体基距 BODY DISTANCE K2	锥孔直径 D TAPER-BORE DIAMETER	锥度 TAPER
5″	10	20°~25°	20°~25°	1.7~3.75	12.7	57.15	53.34	58.221	1:24
6″				1.7~3.75	12.7	69.85	66.04		
7.5″				1.75~5.0	12.6	87.63	83.82		
9″				1.75~5.0	12	106.68	102.87		
12″				1.75~6.5	22.8	142.55	135.89	126.966	
14″				1.75~7.5	25.4	172.72	160.02		
16″				1.75~7.5	25.4	191.15	184.15		

■用于弧齿锥齿轮大轮成型法精切，刀齿径向和轴向没有升量，铣刀盘中平垫片有有升量，组装后铣刀产生径向升量．如有因组合导致的升量误差可通过微调螺钉来调整调整，同一盘铣刀可通过更改换升量平垫片而调节出一定范围内不同的刀错距．

For finishing cutting of spiral bevel gear, cutters aren't having both axial and radial steps. The parallels on cutter body are having steps, after assembly the cutters are having radial steps. If it has step tolerance, it can be adjusted by adjusting screw. In one cutter different point width can be adjusted by changing stepped parallel.

螺旋成形法精切铣刀
HELIXFORM FINISHING CUTTER

公称直径 AVG DIAMETER	齿 数 No.OF TEETH	齿形角 外刀 αW OUTSIDE BLADE	齿形角 内刀 αN INSIDE BLADE	刀错距 PW POINT WIDTH	切 深 CUTTING DEPTH	刀体基距 BODY DISTANCE K1	刀体基距 BODY DISTANCE K2	锥孔直径 D TAPER-BORE DIAMETER	锥度 TAPER
5″	8	24°	10°	1.7~3.75	13	57.15	53.34	58.221	1:24
6″					13	69.85	66.04		
7.5″				1.75~5.0	14.3	87.63	83.82		
9″					17.8	106.68	102.87		

■用于弧齿锥齿轮大轮螺旋成型法精切，铣刀径向和轴向有齿升量，加工时是带有轴向运动的螺旋拉削
For finishing cutting of spiral bevel gear Helixform, cutters are having both axial and radial steps with axial motion

精切铣刀齿修缘代号及对应尺寸
TOPREM' S SYMBOL LETTER AND SIZES FOR FINISHING CUTTER BLADE AND

修缘代号	A	B	C	D	E	F	M	W	Z
修缘长度 L0	3.180	2.680	2.160	1.910	1.650	1.270	5.970	4.950	3.980
修缘量 a0	0.144	0.121	0.980	0.086	0.075	0.057	0.270	0.224	0.180

刀号 CUTTER NO.											
0	1/2	1	1 1/2	2	2 1/2	3	3 1/2	4	4 1/2	5	5 1/2
6	6 1/2	7	7 1/2	8	8 1/2	9	9 1/2	10	10 1/2	11	11 1/2
12	12 1/2	13	13 1/2	14	14 1/2	15	15 1/2	16	16 1/2	17	17 1/2
18	18 1/2	19	19 1/2	20	20 1/2						

老结构双面粗切铣刀

ALTERNATE ROUGHING CUTTER OF OLD STRUCTURE

公称直径 AVG DIAMETER	齿数 No.OF TEETH 外刀 αW OUTSIDE BLADE	内刀 αN INSIDE BLADE	刀错距 PW POINT WIDTH	刀体基距 K BODY DISTANCE	锥孔直径 D TAPER-BORE DIAMETER	锥度 TAPER	切深 CUTTING DEPTH
4.5″	6	6	0.5~2.5	48.674	25.4	1:12	9.5
5″	6	6	0.5~3.25	55.024	25.4	1:12	9.5
6″	8	8	0.5~3.25	67.724	58.196	1:24	12.7
7.5″	10	10	0.5~4.25	85.852	58.196	1:24	12.7
9″	12	12	0.5~4.25	104.902	58.196	1:24	14.2
12″	16	16	0.75~5.5	140.462	126.96	1:24	19.4
14″	16	16	0.75~6.5	161.96	126.96	1:24	25.4
16″	20	20	0.75~6.5	188	126.96	1:24	25.4
18″	12	12	1.27~6.5	210	215.8	-	25.4
	16	16					

■用于弧齿锥齿轮及准双曲面齿轮大轮或小轮的粗加工
For roughing cutting of spiral bevel gear and hyperbolic gear or pinion

老结构三面粗切铣刀

TRI-PLEX ROUGHING CUTTER OF OLD STRUCTURE

公称直径 AVG DIAMETER	齿数 No.OF TEETH 外 αW OUTSIDE BLADE	内 αN INSIDE BLADE	中	刀错距 PW POINT WIDTH	刀体基距 K BODY DISTANCE	锥孔直径 D TAPER-BORE DIAMETER	锥度 TAPER	切深 CUTTING DEPTH
6″	4	4	8	2.0~3.25	67.724	58.196	1:24	9.5
7.5″	5	5	10	2.0~4.25	85.852	58.196	1:24	12.7
9″	6	6	12	2.0~5.5	104.902	58.196	1:24	14.2
12″	8	8	16	2.0~6.5	140.462	126.96	1:24	19.4
16″	10	10	20	2.0~6.5	188	126.96	1:24	25.4
18″	6	6	12	2.0~6.5	210	215.8	—	25.8
	8	8	16					

■用于弧齿锥齿轮及准双曲面齿轮大轮的粗加工
For roughing cutting of spiral bevel gear and hyperbolic gear

老结构双面精切铣刀

ALTERNATE FINISHING CUTTER OF OLD STRUCTURE

公称直径 AVG DIAMETER	齿 数 No.OF TEETH	刀错距 PW POINT WIDTH	刀体基距 K BODY DISTANCE	锥孔直径 D TAPER-BORE DIAMETER	锥度 TAPER	切深 CUTTING DEPTH
3.5″	8	0.4~2.5	37.306	25.4	1:12	8
4.5″	8	0.5~3.25	48.674	25.4	1:12	9.5
5″	8	0.5~3.25	55.024	25.4	1:12	9.5
6″	12	0.5~3.25	67.724	58.196	1:24	12.7
7.5″	12	0.65~5.0	84.005	58.196	1:24	12.7
9″	16	0.65~5.0	103.055	58.196	1:24	14.2
12″	20	0.75~6.5	138.94	126.96	1:24	25.4
14″	24	0.75~6.5	161.625	126.96	1:24	25.4
16″	24	0.75~7.5	184.875	126.96	1:24	25.4
18″	24	0.75~7.5	211.362	215.8	-	25.4
21″	28	1.0~10.0	247.862	215.8		34
24″	32	1.0~10.0	284.362	215.8		37
28″	36	1.5~10.0	334.09	330		42
32″	32	2.0~12.6	375.015	330		49
		2.0~15.5				
40″	36	2.0~11.0	474.665	330		57
		2.0~15.5				

■用于弧齿锥齿轮及准双曲面齿轮大轮及小轮精切
For finishing cutting of spiral bevel gear and hyperbolic gear or pinion

最大可提供公称直径 60″的刀盘及刀片
maximum productive capacity:60 inch disc and blade

老结构单内精切铣刀

INSIDE FINISHING CUTTER OF OLD STRUCTURE

公称直径 AVG DIAMETER	齿 数 No.OF TEETH	刀尖直径 DN PW POINT WIDTH	刀体基距 K BODY DISTANCE	锥孔直径 D TAPER-BORE DIAMETER	锥度 TAPER	切深 CUTTING DEPTH
3.5″	8	86.1~96.1	37.306	25.4	1:12	8
4.5″	8	110.5~120.5	48.674	25.4	1:12	9.5
5″	8	123.67~133.17	55.024	25.4	1:12	9.5
6″	12	149.07~158.57	67.724	58.196	1:24	12.7
7.5″	12	166.34~180.84	74.48	58.196	1:24	12.7
		179.04~193.54	80.83			
		191.74~206.24	87.18			
9″	12	204.44~218.94	93.53	58.196	1:24	14.2
	16	210.79~225.29	96.705			
		223.49~237.99	103.055			
		233.65~248.15	108.135			
		246.35~260.85	114.485			
12″	16	265.15~283.65	122.43	126.96	1:24	19.4
	20	280.39~298.89	130.05			
		298.17~316.67	138.94			
		313.41~331.91	146.5			
14″	20	323.2~341.2	152.738	126.96	1:24	25.4
	24	341~357	161.625			
		356.3~372.3	169.245			
16″	24	380.99~403.49	180.35	126.96	1:24	25.4
		398.77~421.27	189.24			
		414.01~436.51	196.86			
18″	24	438.388~466.888	205.524	215.8	—	25.4
		450.004~478.564	211.362			
		458.7~487.2	215.68			
21″	28	510.364~538.864	241.512	215.8	—	34
		523.064~551.564	247.862			
		533.224~561.724	252.942			

■用于弧齿锥齿轮及准双曲面齿轮小轮凸面精切
For finishing cutting of spiral bevel gear and hyperbolic pinion's convex side

最大可提供公称直径 60″的刀盘及刀片
maximum productive capacity:60 inch disc and blade

老结构单外精切铣刀

OUTSIDE FINISHING CUTTER OF OLD STRUCTURE

公称直径 AVG DIAMETER	齿 数 No.OF TEETH	刀尖直径 DW	刀体基距 K BODY DISTANCE	锥孔直径 D TAPER-BORE DIAMETER	锥度 TAPER	切深 CUTTING DEPTH
3.5″	8	86.1~96.1	37.306	25.4	1:12	8
4.5″	8	110.5~120.5	48.674	25.4	1:12	9.5
5″	8	123.67~133.17	55.024	25.4	1:12	9.5
6″	12	149.07~158.57	67.724	58.196	1:24	12.7
7.5″	12	166.34~180.84	74.48	58.196	1:24	12.7
		179.04~193.54	80.83			
		191.74~206.24	87.18			
9″	12	204.44~218.94	93.53	58.196	1:24	14.2
	16	210.79~225.29	96.705			
		223.49~237.99	103.055			
		233.65~248.15	108.135			
		246.35~260.85	114.485			
12″	16	265.15~283.65	122.43	126.96	1:24	19.4
	20	280.39~298.89	130.05			
		298.17~316.67	138.94			
		313.41~331.91	146.5			
14″	20	323.2~341.2	152.738	126.96	1:24	25.4
	24	341~357	161.625			
		356.3~372.3	169.245			
16″	24	380.99~403.49	180.35	126.96	1:24	25.4
		398.77~421.27	189.24			
		414.01~436.51	196.86			
18″	24	438.388~466.888	205.524	215.8	—	25.4
		450.004~478.564	211.362			
		458.7~487.2	215.68			
21″	28	510.364~538.864	241.512	215.8	—	34
		523.064~551.564	247.862			
		533.224~561.724	252.942			

■用于弧齿锥齿轮及准双曲面齿轮小轮凹面精切
For finishing cutting of spiral bevel gear and hyperbolic pinion's concave side

最大可提供公称直径 60″的刀盘及刀片
maximum productive capacity:60 inch disc and blade

小直径整体铣刀

SMALL DIAMETER SOLID CUTTER

规格 SPECIFICATION	齿数 No.OF TEETH	刀号 CUTTER NO.	刀错距 POINT WIDTH	锥孔大端直径 D TAPER-BORE DIAMETER	孔锥度 TAPER	装配形式 Assembly style
0.7″~1″	4	0~24.5	0.15~0.7	25.4	1:12	压盖 Gland
1.1″	4、8		0.2~0.85			
1.3″	8、10		0.2~1.25			
1.5″	8、12		0.2~1.25			
2″	4、8、16		0.3~1.25			

■用于加工小模数弧齿锥齿轮及准双曲面齿轮
For cutting fine pitch gears and hyperbolic gear

规格 SPECIFICATION	齿数 No.OF TEETH	刀号 CUTTER NO.	刀错距 POINT WIDTH	锥孔大端直径 TAPER-BORE DIAMETER	孔锥度 TAPER	装配形式 Assembly style
2.5″	8、12	0~24.5	0.3~1.25	25.4	1:12	中心螺栓 Screw
2.75″	8、12、16、20		0.5~1.5			4 个压紧螺钉 Screw
3″	8、16、20		0.5~1.5			
3.5″	8、16、20		0.5~1.5			
4.5″	16、20		3.2			
5″	20		4.1	58.196/58.221	1:24	
6″	20		4.1			

■用于加工小模数弧齿锥齿轮及准双曲面齿轮
For cutting fine pitch gears and hyperbolic gear

奥利康铣刀条（即克林贝格＆格里森铣刀）

OERLIKON CUTTER BLADE (KLINGELNBERG&GLEASON CUTTER)

H 9	B 7.5	L 95
12.7	10.16	100
15.24	15.24	104
17	13.5	110
19.69	13.97	108
19.69	15.24	108
20	16	115
21.59	14.732	108
22.8	14.7	108
27.94	13.97	110

硬质合金奥利康铣刀条

CARBIDE OERLIKON CUTTER BLADE

克林贝尔格铣刀

AMK KLINGELNBERG CUTTER BLADE

克林根贝尔格铣刀
KLINGELNBERG CUTTER BLADE

克林根贝尔格铣刀盘
KLINGELNBERG CUTTER BLADE
克林根贝尔格铣刀盘及成套配件
KLINGELNBERG CUTTER BODY AND PARTS

克林贝尔格硬切刀

HPG-S KLINGELNBERG CUTTER BLADE

型号 Type	模数 Module	型号 Type	模数 Module	型号 Type	模数 Module
R75	M1.5	R170	M7	R260	M8
R100	M2.6		M8		M10
	M3.2		M10		M12
	M4		M12		M14
	M5	R210	M8		M17
R135	M4		M10	GMC160	M10
	M5		M12		M12
	M6		M14		M14
	M7				M17
					M24
					M28

■克林贝尔格硬切刀适用于克林贝尔格机床对螺旋伞齿淬火后的精加工。
刀刃采用 CBN 复合片与刀体整体焊接，具有刚性好、一致性好的特点。加工出的齿轮接触区好，光洁度高。
Klingelnberg HPG cutting blade is for Kingelnberg cyclo palloid geometry finishing spiral bevel gear after heat treatment.
Cutting edge with CNB and welded the whole body,with the features of consistency and rigidity.The gear area is good,finish high.

克林根贝尔格铣刀盘

KLINGELNBERG CUTTER BLADE

克林根贝尔格铣刀
R135：M4、M5、M6、M7
R170：M7、M8、M10、M12
R210：M8、M10、M12、M14
R260：M8、M12
克林根贝尔格铣刀盘及成套配件
R75、R100、R135、R170、R210、R260

整体直齿锥齿轮双盘铣刀

SOLID STRAIGHT BEVEL GEAR CUTTER

整体直齿锥齿轮双盘铣刀
G104E（24-110）T-A、B、C、D、E、F
G104E（24-110）U-A、B、C、D、E、F

直齿锥齿轮双盘铣刀

DOULBE-DISC STRAIGHT BEVEL GEAR CUTTER BLADE

凹入角 concave angle	1°30″ 、2°30″ 、5°
齿顶宽 blade point	0.4-4
每组刀齿数 No. of blade	22、28、36

直齿锥齿轮铣刀
STRAIGHT BEVEL GEAR CUTTER

锥齿轮铣刀片

BEVEL GEAR CUTTER BLADE

梳齿刀

RACK TYPE CUTTER

可加工 M5~M6 规格梳齿刀

标准齿轮滚刀

STANDARD GEAR HOB

标准齿形
a=20° or14.5°
hk=1.25m
hf=1.25m
h=2.5m
hl=2.25m
r1=r2=0.3m
C=0.25m
标准齿轮切割用途
STANDARD TOOTH PROFILE

倒角标准齿形
a=20° or14.5°
hk=1.25m
hl=2.25m
r1=0.3m
h' a' r2是根据工件的
齿轮参数计算出来的
齿轮外径倒角，
降低噪音的齿形
h' a' r2 IS CALCULATED ACCORDING TO WORKPIECE'S DATA.

I 型 AA 级
I TYPE AA CLASS

模数 MODULE	外径 OUTSIDE DIAMETER	全长 LENGTH	孔径 DIAMETER OF HOLE	轴台直径 HUB DIAMETER	轴台宽度 HUB WIDTH	齿数 No.OF TEETH
1	63	63	27	45	5	16
1.25						
1.5	71	71	32	55		
1.75						
2	80	80				
2.25						
2.5	90	90	40	65		14
2.75						
3	100	100				
3.25						
3.5						
3.75						
4	112	112				
4.5						
5	125	125	50	75		12
5.5						
6	140	140				
6.5						
7						
8	160	160	60	85		
9	180	180				
10	200	200				

II 型 AA、A、B、C 级
II TYPE AA、A、B、C CLASS

模数 MODULE	外径 OUTSIDE DIAMETER	全长 LENGTH	孔径 DIAMETER OF HOLE	轴台直径 HUB DIAMETER	轴台宽度 HUB DIAMETER	齿数 No.OF TEETH
1	50	32	22	35	4	14
1.25		40				
1.5	63	40	27	45	5	
1.75						
2	71	50				
2.25						
2.5		63				
2.75						
3	80	71	32	55		12
3.25						
3.5						
3.75	90	90				
4						
4.5						
5	100	100				10
5.5	112	112	40	65		
6						
6.5	118	118				
7						
8	125	132				
9	140	140				
10	150	170	50	75		

■模数 11~25 同样接受订货
The modules 11 to 25 also accept order

■同时英制孔 Φ22.225、Φ25.4、Φ31.75、Φ38.1、Φ50.8 及 JIS、 DIN 、ANS 标准齿轮滚刀也可以定制加工。
And imperial sizing holeΦ22.225, Φ25.4, Φ31.75, Φ38.1, Φ50.8 and JIS、DIN、ANS standard gear hob can also be customized processing.

磨前滚刀

PRE-GRINDING HOB

模数 MODULE	外径 OUTSIDE DIAMETER	全长 LENGTH	孔径 DIAMETER OF HOLE	轴台直径 HUB DIAMETER	轴台宽度 HUB WIDTH	齿数 No.OF TEETH
1	50	32	22	35	5	12
1.25		40				
1.5	63	50	27	45		
1.75						
2						
2.25	71	56				
2.5		63				
2.75						
3	80	71	32	55		
3.25						
3.5						
3.75	90	80				10
4						
4.5		90				
5	100	100				
5.5	112	112	40	65		
6						
6.5	118	118				
7		125				
8	125	132				
9	140	150				
10	150	170	50	75		

剃前滚刀

PRE-SHAVING HOB

模数 MODULE	外径 OUTSIDE DIAMETER	全长 LENGTH	孔径 DIAMETER OF HOLE	轴台直径 HUB DIAMETER	轴台宽度 HUB WIDTH	齿数 No.OF TEETH
1	50	32	22	35	5	12
1.25		40				
1.5	63	50	27	45		
1.75						
2						
2.25	71	56				
2.5		63				
2.75						
3	80	71	32	55		
3.25						
3.5						
3.75	90	80				10
4						
4.25		90				
4.5						
5	100	100				
5.5	112	112	40	65		
6						
6.5	118	118				
7		125				
8	125	132				

留磨及剃前滚刀齿形
PRE-SHAVING-GRINDING HOB TOOTH

标准齿形 Standard tooth		a=20° or14.5° hk=1.35m hf>1.25m h>2.6m hI=2.35m r1=r2=0.3m Ck=0.25m	滚齿加工后用剃齿或磨齿完成制作时，滚齿加工用齿形在齿厚处留剃量或留磨量 After hobbing, It has shaving stock or grinding stock on tooth thickness. It is finished by shaving or grinding.
倒角齿形 semi-topping tooth		a=20° or14.5° hk=1.35m hI=2.35m r1=0.3m	h' a' r2是根据工件的齿轮参数计算出来的齿轮外径倒角，降低噪音的齿形滚齿加工后用剃齿或磨齿完成制作时，齿厚处留剃量或留磨量，加工工件齿顶有倒角 H',a',r2 is calculated according to workpiece's data.Chamfer of gear outside diameter can reduce the noise. After hobbing, It has shaving stock or grinding stock on tooth thickness. t is finished by shaving or grinding. The workpiece's tooth point has chamfer.
留头齿形 Protuberance tooth		a=20° or14.5° hk=1.35m hf>1.25m h>2.6m hI=2.35m r2=0.3m Ck=0.25	r1是根据参数计算出来的，滚齿加工后用剃齿或磨齿完成制作时，滚齿加工用齿形在齿厚处留剃量或留磨量，加工工件齿根有沉割 R1 is calculated according to workpiece's data. After hobbing, It has shaving stock or grinding stock on tooth thickness. It is finished by shaving or grinding. The workpiece's tooth root has undercut.
留头及倒角齿形 Protuberance semi-topping tooth		a=20° or14.5° hk=1.35m hI=2.35m r1=0.3m	h' a' r2是根据工件的齿轮参数计算出来的齿轮外径倒角，降低噪音的齿形。滚齿加工后用剃齿或磨齿完成制作时，齿厚处留剃量或留磨量，加工工件齿根有沉割，齿顶有倒角 h' a' r2 is calculated according to workpiece's data. Chamfer of gear outside diameter can reduce the noise After hobbing, It has shaving stock or grinding stock on tooth thickness. It is finished by shaving or grinding. The workpiece's tooth root has undercut and tooth point has chamfer .

矩形花键滚刀

RAMT TYPE SPLINE HOB

圆弧滚刀

ARC GEAR HOB

镶片滚刀

INSERTED BLADE HOB

模数 MODULE	外径 OUTSIDE DIAMETER	全长 LENGTH	切削部分的长度 LENGTH OF CUTTING PARTS	孔径 DIAMETER OF HOLE
9	175	170	125	50
10	180	180	135	
11	185	190	145	
12	190	200	155	
13	195	210	165	
14	200	220	175	
15	210	230	185	
16	215	240	195	
18	245	280	235	60
20	255	290	245	
22	300	340	295	80
24	310	350	305	
25	320	360	315	
26	330	370	325	
28	340	380	335	
30	350	390	345	
32	360	420	375	
35	380	530	485	

模数 MODULE	外径 OUTSIDE DIAMETER	全长 LENGTH	切削部分的长度 LENGTH OF CUTTING PARTS	孔径 DIAMETER OF HOLE
10	205	220	175	60
11	215	235	190	
12	220	240	195	
14	235	260	215	
16	250	280	235	
18	265	300	255	
20	280	320	275	
22	315	335	285	
25	330	350	300	80
28	345	365	315	
30	360	385	335	
32	375	405	355	

渐开线花键滚刀

INVOLUTE SPLINE HOB

渐开线花键滚刀

渐开线花键参数
m- 模数
a- 压力角
Z- 齿数
de- 花键大径
di- 花键小径
da- 渐开线起始圆直径
S- 分圆弧齿厚
或公法线长度和跨齿数
或跨棒距和量棒直径

模数 MODULE	外径 OUTSIDE DIAMETER	全长 LENGTH	孔径 DIAMETER OF HOLE	轴台直径 HUB DIAMETER	轴台宽度 HUB WIDTH	齿数 No.OF TEETH
1	50	35	22	35	4	15
1.25		40				
1.5		50				
1.75	63	63	27	45		
2						
2.5						12
3	71	71			5	
3.5						
4	80	80	32	55		
5	90	90				
6	100	100				10
8	112	112	40	65		
10	125	125				

三角花键滚刀

INVOLUTE SPLINE HOB

三角花键参数

渐开线花键参数
Z- 齿数
a- 槽形角
de- 花键大径
di- 花键小径
Mr- 跨棒距
dr- 量棒直径

链轮滚刀

ROLLER CHAIN SPROCKET HOB

链轮参数

P 节距
d 滚子直径
链轮齿形标准：
GB1244、DIN8196、ISO606、BS228
ANSI B29.1M、JIS B1802
特殊齿形（如齿形链、双结局链轮等）

带轮滚刀

TIMING PULLEY HOB

锯条滚刀

TIMING PULLEY HOB

硬质合金滚刀

CARBIDE HOB

规格（module）：M0.5~M3.0
精度（accuracy class）：DIN3968,classA/AA/AAA

硬质合金滚刀特点：
Carbide Hob's Characteristics
- 超高的切削速度
High cutting speeds
- 刀具加工周期短
Short machining times
- 使用寿命高于高速钢材质刀具
A longer tool life than conventional HSS cutter
- 可加工高硬度齿轮（≈ HRC60）
High hardness gear machining
- 滚刀更换周期缩短，从而减少齿轮加工周期
Shorter replacement cycle to reducing gear processing cycle
- 可加工高效率高精度齿轮
High efficiency and accuracy gear can be processed
- 无切削液条件下进行干切
High suitability for dry machining
- 降低齿轮加工成本
Lower gear generation costs

蜗轮滚刀

WORM GEAR HOB

模数量：m1.0-10.0
径　节：DP24~2.50
类　型：孔式涡轮滚刀
材　料：M2、M42、M35、ASP2030、S390
　　杆式蜗轮滚刀　短结构蜗轮滚刀 等

阿基米德蜗杆（ZA）

盘形剃齿刀

DISC TYPE GEAR SHAVING CUTTER

公称分圆直径 180mm α 20° β 5°
Nominal Pitch Diameter 180mm α20° β5°

单位：mm

法向模数 MODULE	齿数 No.OF TEETH	分圆螺旋角 HELIX	分圆直径 PITCH DIAMETER	齿顶圆直径 OUTSIDE DIAMETER	厚 度 THICKNESS	孔径 DIAMETER OF HOLE
1.25	115	5°	144.299	149.25	20	63.5
1.50	115	5°	173.159	178.66		
1.75	100	5°	175.668	181.72		
2.00	83	5°	166.634	171.714	20	63.5
2.25	73	5°	164.877	170.518		
2.50	67	5°	168.140	174.32		
2.75	61	5°	168.391	175.131		
3.00	53	5°	159.607	167.307		
3.25	53	5°	172.908	181.948		
3.50	47	5°	165.128	175.728		
3.75	43	5°	161.866	174.006		
4.00	41	5°	164.626	177.726		
4.50	37	5°	167.136	182.136		
5.00	31	5°	155.592	173.492		
5.50	29	5°	160.109	179.709		
6.00	27	5°	162.619	184.319		

公称分圆直径 180mm α 20° β 15°
Nominal Pitch Diameter 180mm α20° β5°

单位：mm

法向模数 MODULE	齿数 No.OF TEETH	分圆螺旋角 HELIX	分圆直径 PITCH DIAMETER	齿顶圆直径 OUTSIDE DIAMETER	厚 度 THICKNESS	孔径 DIAMETER OF HOLE
1.25	115	15°	148.821	153.77	20	63.5
1.50	115	15°	178.585	184.09		
1.75	100	15°	181.173	187.22		
2.00	83	15°	171.856	176.936	20	63.5
2.25	73	15°	170.044	175.685		
2.50	67	15°	173.409	179.590		
2.75	61	15°	173.668	180.408		
3.00	53	15°	164.609	172.310		
3.25	53	15°	178.326	186.567		
3.50	47	15°	170.303	179.763		
3.75	43	15°	166.938	178.159		
4.00	41	15°	169.785	181.866		
4.50	37	15°	172.373	186.394		
5.00	31	15°	160.468	177.369		
5.50	29	15°	165.127	183.827		
6.00	27	15°	167.715	187.856		

公称分圆直径 240mm α 20° β 5°
Nominal Pitch Diameter 240mm α20° β5°

单位：mm

法向模数 MODULE	齿数 No.OF TEETH	分圆螺旋角 HELIX	分圆直径 PITCH DIAMETER	齿顶圆直径 OUTSIDE DIAMETER	厚 度 THICKNESS	孔径 DIAMETER OF HOLE
2.00	115	5°	230.879	235.819	25	63.5
2.25	103	5°	232.635	238.135		
2.50	91	5°	228.369	234.549		
2.75	83	5°	229.122	235.862		
3.00	73	5°	219.837	227.536		
3.25	67	5°	218.582	226.822		
3.50	61	5°	214.316	223.115		
3.75	61	5°	229.624	238.964		
4.00	53	5°	212.810	222.71		
4.50	51	5°	230.377	241.377		
5.00	43	5°	215.821	229.921		
5.50	41	5°	226.361	241.901		
6.00	37	5°	222.848	240.708		
6.50	35	5°	228.369	247.989		
7.00	31	5°	217.829	240.189		
8.00	27	5°	216.825	243.445		

公称分圆直径 240mm α 20° β 15°
Nominal Pitch Diameter 240mm α20° β5°

单位：mm

法向模数 MODULE	齿数 No.OF TEETH	分圆螺旋角 HELIX	分圆直径 PITCH DIAMETER	齿顶圆直径 OUTSIDE DIAMETER	厚 度 THICKNESS	孔径 DIAMETER OF HOLE
2.00	115	15°	238.114	243.054	25	63.5
2.25	103	15°	239.925	245.425		
2.50	91	15°	235.525	241.705		
2.75	83	15°	236.302	243.042		
3.00	73	15°	226.725	234.425		
3.25	67	15°	225.431	233.671		
3.50	61	15°	221.031	229.831		
3.75	61	15°	236.819	246.159		
4.00	53	15°	219.479	229.379		
4.50	51	15°	237.596	248.596		
5.00	43	15°	222.584	234.684		
5.50	41	15°	233.455	246.655		
6.00	37	15°	229.831	246.471		
6.50	35	15°	235.525	253.885		
7.00	31	15°	224.655	245.815		
8.00	27	15°	223.620	249.06		

径向剃齿刀

PLUNGE METHOD GEAR SHAVING CUTTER

模数 MODULE	齿数 HELIX	分圆螺旋角 PITCH DIA	分圆直径 WIDTH
1.5~8	5°~30°	180~240	17~73

盘形插齿刀

DISC TYPE SHAPER CUTTER

公称分圆直径 Φ75mm　模数 m1 ～ 4　α 20°　　单位：mm

Nominal Pitch Diameter Φ75mm m1~4 α20°

m	z	D	d	b	ha*	B
1.00	76	76.00	31.743	10	1.25	15
1.25	60	75.00				
1.50	50	75.00				
1.75	43	75.25				17
2.00	38	76.00				
2.25	34	76.50				
2.50	30	75.00				
2.75	28	77.00				
3.00	25	75.00				
3.25	24	78.00				20
3.50	22	77.00				
3.75	20	75.00				
4.00	19	76.00				

公称分圆直径 Φ100mm　模数 m1 ～ 6　α 20°　　单位：mm

Nominal Pitch Diameter Φ100mm m1~6 α20°

m	z	D	d	b	ha*	B
1.00	100	100.00	31.743	10	1.25	18
1.25	80	100.00				
1.50	68	102.00				
1.75	58	101.50		12		22
2.00	50	100.00				
2.25	45	101.25				
2.50	40	100.00				
2.75	36	99.00				
3.00	34	102.00				
3.25	31	100.75				
3.50	29	101.50				24
3.75	27	101.25				
4.00	25	100.00				
4.50	22	99.00			1.3	
5.00	20	100.00				
5.50	19	104.50				
6.00	18	108.00				

插齿刀
SHAPER CUTTER

公称分圆直径 Φ125mm　模数 m4 ～ 8　α 20°　　单位：mm

Nominal Pitch Diameter Φ125mm m4~8 α20°

m	z	D	d	b	ha*	B
4.0	31	124.0	31.743	13	1.3	30
4.5	28	126.0				
5.0	25	125.0				
5.5	23	126.5				
6.0	21	126.0				
6.5	19	123.5				
7.0	18	126.0				
8.0	16	128.0				

公称分圆直径 Φ160mm　模数 m6 ～ 10　α 20°　　单位：mm

Nominal Pitch Diameter Φ160mm m6~10 α20°

m	z	D	d	b	ha*	B
6.0	27	162.0	88.9	18	1.25	35
6.5	25	162.5				
7.0	23	161.0				
8.0	20	160.0				
9.0	18	162.0				
10.0	16	160.0				

公称分圆直径 Φ200mm　模数 m8 ～ 12　α 20°　　单位：mm

Nominal Pitch Diameter Φ200mm m8~12 α20°

m	z	D	d	b	ha*	B
8	25	200	101.6	20	1.25	40
9	22	198				
10	20	200				
11	18	198				
12	17	204				

公称分圆直径 Φ240mm　模数 m14 ～ 16　α 20°　　单位：mm

Nominal Pitch Diameter Φ240mm m14~16 α20°

m	z	D	d	b	ha*	B
14	17	238	101.6	20	1.25	45
16	15	240				

碗形插齿刀

DEEP COUNTERBORE TYPE SHAPER CUTTER

公称分圆直径 Φ50mm　模数 m1 ～ 3.5　α 20°　　单位：mm
Nominal Pitch Diameter Φ50mm m1~3.5 α20°

m	z	d	d	ha*	B1	B
1.00	50	50.00	20	1.25	14	25
1.25	40	50.00				
1.50	34	51.00				
1.75	29	50.75			17	
2.00	25	50.00				
2.25	22	49.50				
2.50	20	50.00				
2.75	18	49.50				
3.00	17	51.00				
3.25	15	48.75			20	27
3.50	14	49.00				

公称分圆直径 Φ75mm　模数 m1 ～ 4　α 20°　　单位：mm
Nominal Pitch Diameter Φ75mm m1~4 α20°

m	z	d	d	ha*	B1	B
1.00	76	76.00	31.743	1.25	15	30
1.25	60	75.00				
1.50	50	75.00				
2.00	38	76.00			17	
2.25	34	76.50				
2.50	30	75.00				
2.75	28	77.00				
3.00	25	75.00			20	32
3.25	24	78.00				
3.75	20	75.00				
4.00	19	76.00				

公称分圆直径 Φ100mm　模数 m1 ～ 6　α 20°　　单位：mm
Nominal Pitch Diameter Φ100mm m1~6 α20°

m	z	d	d	ha*	B1	B
1.00	100	100.00	31.743	1.25	18	32
1.25	80	100.00				
1.50	68	102.00				
2.00	50	100.00			22	34
2.25	45	101.25				
2.50	40	100.00				
2.75	36	99.00				
3.00	34	102.00				
3.25	31	100.75			24	36
3.75	27	101.25				
4.00	25	100.00				
4.50	22	99.00		1.3		
5.00	20	100.00				
5.50	19	104.50				
6.00	18	108.00				

公称分圆直径 Φ125mm　模数 m4 ～ 8　α 20°　　单位：mm
Nominal Pitch Diameter Φ125mm m4~8 α20°

m	z	d	d	ha*	B1	B
4.0	31	124.0	31.743	1.3	28	40
4.5	28	126.0				
5.0	25	125.0				
6.0	21	126.0				
6.5	19	123.5				
7.0	18	126.0				
8.0	16	128.0				

渐开线内花键插齿刀

INVOLUTE INSIDE SPLINE SHAPER CUTTER

公称分圆直径 Φ50mm 模数 m3 ～ 5 α 30°

Nominal Pitch Diameter Φ50mm m3~5 α30°

单位：mm

模数 MODULE	齿数 NO.OF TEETH	分圆直径 PITCH DIAMETER	孔径 DIAMETER OF HOLE	内孔径厚 INNER HOLE THICKNESS	刀齿厚 TEETH THICKNESS	刀具厚 THICKNESS
3.0	16	48	20	10	20	27
3.5	14	49				
4.0	13	52				
5.0	11	55				

公称分圆直径 Φ75mm 模数 m3.5 ～ 6 α 30°

Nominal Pitch Diameter Φ75mm m3.5~6 α30°

单位：mm

模数 MODULE	齿数 NO.OF TEETH	分圆直径 PITCH DIAMETER	孔径 DIAMETER OF HOLE	内孔径厚 INNER HOLE THICKNESS	刀齿厚 TEETH THICKNESS	刀具厚 THICKNESS
3.5	21	73.5	31.743	10	20	32
4	19	76.0				
5	15	75.0				
6	13	78.0				

公称分圆直径 Φ100mm 模数 m5 ～ 10 α 30°

Nominal Pitch Diameter Φ100mm m5~10 α30°

单位：mm

模数 MODULE	齿数 NO.OF TEETH	分圆直径 PITCH DIAMETER	孔径 DIAMETER OF HOLE	内孔径厚 INNER HOLE THICKNESS	刀齿厚 TEETH THICKNESS	刀具厚 THICKNESS
5	20	100	31.743	10	24	36
6	17	102				
8	12	96				
10	10	100				

公称分圆直径 Φ125mm 模数 m8 ～ 10 α 30°

Nominal Pitch Diameter Φ125mm m8~10 α30°

单位：mm

模数 MODULE	齿数 NO.OF TEETH	分圆直径 PITCH DIAMETER	孔径 DIAMETER OF HOLE	内孔径厚 INNER HOLE THICKNESS	刀齿厚 TEETH THICKNESS	刀具厚 THICKNESS
8	16	128	31.743	13	28	40
10	13	130				

锥柄插齿刀

TAPER SHANK TYPE SHAPER CUTTER

公称分圆直径 Φ25mm 模数 m1 ～ 2.75 α 20°

Nominal Pitch Diameter Φ25mm m1~2.75 α20°

单位：mm

m	z	d	L	B	圆锥直径	莫氏短锥
1.00	26	26.00	75	10	17.981	2#
1.25	20	25.00				
1.50	18	27.00				
1.75	15	26.25				
2.00	13	26.00	80	12		
2.25	12	27.00				
2.50	10	25.00				
2.75	10	27.50		15		

公称分圆直径 Φ38mm 模数 m1 ～ 3.75 α 20°

Nominal Pitch Diameter Φ38mm m1~3.75 α20°

单位：mm

m	z	d	L	B	圆锥直径	莫氏短锥
1.00	38	38.00	90	12	24.051	3#
1.25	30	37.50				
1.50	25	37.50				
1.75	22	38.50		15		
2.00	19	38.00				
2.25	16	36.00				
2.50	15	37.50				
2.75	14	38.50				
3.00	12	36.00				
3.25	12	39.00				
3.50	11	38.50				
3.75	10	37.50				

拉刀
BROACH

圆拉刀
ROUND BROACH

公称直径 AVERAGE DIAMETER	拉削长度 LENGTH
Φ10-Φ80	10-110

矩形花键拉刀
RAMT TYPE SPLINE BROACH

公称键宽 AVERAGE WIDTH OF KEY	键 数 NUMBER OF KEY	拉削长度 LENGTH
4-36	4-48	30-320

渐开线花键拉刀
INVOLUTE SPLINE BROACH

模 数 MODULE	齿 数 NUMBER OF KEY	拉削长度 LENGTH
M1-M5	12-36	20-180

PVD 涂层 ——仅千分之几毫米一切都将不同
Just a couple of thousands of a millimetre make all the difference

2013年，我厂全套引进Oerlikon Balzers (欧瑞康巴尔查斯)涂层设备Innova。
In 2013, our company introduceda complete set of OerlikonBalzers coating system - innova.

这套原产列支敦士登的先进涂层设备将为您提供BALINIT® A (TiN)、BALINIT® FUTNRA NANO(TiAlN)、ALINIT®ALCRONA PRO(AlCrN)及BALINIT®ALDURA(AlCrXN-Si)顶级涂层。
The powerful coating system which comes from Liechtenstein will provide to you BALINIT® A (TiN) BALINIT® FUTNRA NANO(TiAlN) BALINIT®ALCRONA PRO(AlCrN)and BALINIT®ALDURA(AlCrXN-Si)-Allrounder at the top level

Innova的优势
The advantage of innova

•是目前欧瑞康-巴尔查斯最先进的涂层设备
Innova is the top level coating system from oerlikon Balzers for now.

•独有的刻蚀技术进一步提高膜层的附着力
The unique etching technology to furtherimprove coating adhesion.

•先进的涂层工艺克服了传统复合层随着磨损而硬度降低的缺点，实现了表层与基层硬度一致，极大提高了刀具的耐磨性。
Advanced coating technology makes innova overcomes the traditional composite layer with wear and reduce the disadvantages of the hardness, the hardness of surface layer and base is consistent, greatly improve the wearability of the cutting tool.

•能够精确控制涂层的硬度、结构、耐化学性和耐温性。可根据客户不同的加工环境提供个性化服务。
The properties of the coating (such as hardness, structure, chemical and temperature resistance, adhesion) can be accurately controlled. According to the customer different processing environment to provide personalized service.

推荐应用
Recommended applications

•高速钢弧齿锥齿轮铣刀
HSS spiral bevel gear cutter
•硬质合金和高速钢滚齿刀
Carbide and HSS hobs
•硬质合金刀条
Carbide cutter blade
•硬质合金立铣刀以及组合铣削刀具粗铣和精铣加工
Solid carbide end mills and modular milling tools for roughing and finishing
•高速钢立铣刀粗铣和精铣加工
HSS end mills for roughing and finishing

AP涂层刀具
ALCRONA PRO coating cutters

滚刀订货设计参数表
ORDERING INFORMATION FOR HOBS

滚刀设计参数表 Ordering information for hobs		哈尔滨工具厂 Harbin tool works	
被加工齿轮图号 Reference part number		用户滚刀结构要求 Hob data	
□模数 □ DP □ CP Module		用户滚刀编号 Hob number	
齿 数 Number of teeth		滚刀类型 Hob Specification	□精滚 □剃前 □磨前 Precision Pre-shaving Pre-grinding
压力角 Pressure angle		滚刀头数 Thread number	
螺旋角 Helix angle	□直旋 □右旋 □左旋	滚刀旋向 Hand of helix	□右旋 □左旋 LH RH
旋 向 Hand of helix		滚刀外圆直径 Outside diameter	
外圆直径 Outside diameter		滚刀长度 Length	
根圆直径 Root diameter		滚刀内孔直径 Bore diameter	□ Ø16 □ Ø22 □ Ø27 □ Ø32 □ Ø40 □ Ø50
□精加工后公法线长度 _____ 跨齿数 _____ After finishing base tangent length Given number of teeth □精加工后跨棒距 _____ 量棒直径 _____ Over pin distance Pin diameter □精加工后齿轮法向弧齿厚 _____ Normal circular thickness			
□有效渐开线起始圆直径 _____ Start of active profile diameter □配对齿轮齿数 _____ 齿顶直径 _____ Number of teeth on mating gear Outside diameter 齿根直径 _____ 中心距 _____ 变位系数 _____ Root diameter Normal center distance Modification coefficient		滚刀齿数 Number of teeth	
用户滚齿加工工艺要求 Hobbing process requirement		滚刀精度标准 Accuracy class	□ GB6084 □ AA 级 □ DIN5480 □ A 级 □ _____ □ B 级
□滚齿序公法线长度 _____ 跨齿数 _____ Hobbingprocess base tangent length Given number of teeth □滚齿序跨棒距 _____ 量棒直径 _____ Over pin distance Pin diameter □滚齿序齿轮法向弧齿厚 _____ Normal circular tooth thickness □滚齿序单侧面上法向精加工余量 _____ Single sidenormal to finishing allowance		滚刀材料 Hob material	□ M2 □ M35 □ M42 □ S390 □ _____
滚齿序滚切齿轮齿顶（切顶滚刀） Topping hob		滚刀涂层 Coating	□ TIN □ TIALN □ _____
齿轮齿根为整圆弧（滚刀齿顶单圆弧） Dedendum arc		订刀数量 Order quantity	□ 1 件 □ 2 件 □ 3 件 □ _____
□滚齿序齿轮齿顶倒角量： Hobbingprocess chamfer ofrodius direction 倒角宽度 _____ 倒角高度 _____ Width of the chamfered Height of the chamfered □精加工后齿轮齿顶倒角量： Finishing stock on tooth chamfer ofrodius direction 倒角宽度 _____ 倒角高度 _____ Width of the chamfered Height of the chamfered		注：用户根据需要在□中选取 According to the requirement of user selected in □	

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- American Gear Tools
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哈工

哈尔滨工具厂

HARBIN TOOL WORKS

厂址：哈尔滨南岗区王岗双兴路8号
网址：www.hrbtool.com
电话：0451-86702277 86702288
传真：0451-86700684 邮编：150088
邮箱：hg@hrbtool.com

Add：NO.8 Shuangxing Road Wanggang Town Nangang Zone Harbin
Web site：www.hrbtool.com
Tel：0451-86702277 86702288
Fax：0451-86700684 Postcode：150088
E-mail:hg@hrbtool.com

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