

## V. 机床主要技术参数 Specifications of Machine

工 件 箱 workhead			
从主轴端面至机床中心的距离	最大Max.	600	mm
Distance from face of spindle to machine center	最小 Min.	125	mm
表示主轴端面至机床中心距离游标尺每一格的读数Reading of each graduation for Vernier & scale showing the Distance	直尺 Scale	1	mm
	游标Vernier	0.02	mm
主轴从中心位置的向下垂直移动 Downward from center position	当主轴端面至机床中心调整位置为右列各值时 when the distance from face of spindle to machine center being at	125~270	25 mm
		270~330	70 mm
		330~540	90 mm
主轴从中心位置的向上垂直移动 Upward from center position		90	mm
主轴垂直移动游标尺每格读数Reading of each graduation for Vernier & scale showing the upward and Downward	直尺 Scale	1	mm
	游标Vernier	0.02	mm
主轴锥孔尺寸 Taper hole of spindle	大端直径at large end	153	mm
	锥度Taper	1: 20	
	锥长Length of taper	180	mm
主轴通孔直径 Diameter of through hole		125	mm
主轴法兰直径 Colouring diameter of spindle		235	mm
摇 台 Cradle			
摇台安装角 Setting angle	最大Max.	360°	
	最小 Min.	0°	
摇台安装角每一刻线值Reading of each graduation for vernier & Scale showing setting angle	圆周上Scale	30°	
	游标上Vernier	29'	
摇台偏心调整角 Eccentric setting angle	最大Max.	180°	
	最小 Min.	0°	mm
刀盘主轴的相应径向位移 Radial setting of cutter	最大Max.	340	mm
	最小 Min.	0	
偏心量调整角每一刻线位 Reading of each graduation for Vernier & Scale showing eccentric setting angle	圆周上Scale	20'	
	游标上Vernier	19'	
摇台最大摆角Max. cradle roll angle		60°	
床 鞍 Sliding Base			
由中心位置移动最大距离 Max. movement from machine center	向前Forward	25	mm
	向后Backward	150	mm
其 它 Miscellaneous			
机床外形尺寸(长×宽×高) Overall dimensions of machine		2900×2750×2200	mm
机床净重 Net weight of machine		12.5	T

注: 随着产品不断更新, 技术数据将有所变更, 届时请联系我们。

Note: The specifications are reference for you only, because of the continuous development of our product.

天津第一机床有限公司

TIANJIN NO.1 MACHINE TOOL CO., LTD.

地址: 天津市西青经济开发区大寺高新技术产业园储源道11号

Add: NO.11 Chuyuan Road, Dasi High-tech Industrial Park,

Xiqing Economic Development Area, Tianjin

电话Tel: 022-24390723

传真Fax: 022-24932536

Http://www.tmtw.com

E-mail: sales@tmtw.com tyjgs@tmtw.com

邮编Postal Code: 300385

## YKD2280

数控弧齿锥齿轮铣齿机

CNC SPIRAL BEVEL GEAR GENERATOR



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TIANJIN NO.1 MACHINE TOOL CO., LTD.

# YKD2280 数控弧齿锥齿轮铣齿机

# CNC SPIRAL BEVEL GEAR GENERATOR

## I. 机床用途及使用范围

YKD2280型机床为精密数控弧齿锥齿轮铣齿机，可用于加工直径800毫米，最大模数15毫米范围内的各种格里森齿制的弧齿锥齿轮、准双曲面齿轮和格里森制圆弧等高齿齿轮。

本机床刀具装在摇台上（圆导轨），该结构整体刚性强，工作平稳，精度高。亦可用于硬齿面刮削，该摇台结构式齿轮机床经久耐用，正常使用寿命可达数十年。

本机床的万能性好，适合大批量生产粗、精加工中、重型卡车、矿山机械、工程机械、船舶齿轮。

本机床采用西门子828D数控系统和交流数字伺服系统，具有三个数控轴：工件（Y轴）、摇台（X轴）、床鞍（Z轴），可实现三轴联动，刀具主轴（S轴）采用交流变频调速，使机床无需改变任何挂轮可实现切削运动，操作更方便，柔性强，使只具有机械铣齿机操作调整经验的人员能将常用的YT2250（或Y225）、Y2280等机床调整卡的有关参数转换为本机床的相应参数使用。

## II. 机床主要特点：

采用交流变频电机作主驱动动力源，而摇台和工件主轴都由伺服电机驱动，床鞍进给由伺服电机通过滚珠丝杠驱动，简化了传统的机械结构，无需更换挂轮减少了机床调整时间，缩短了传动链，不但提高了机床精度，而且使操作更为准确、方便。本机床可配置安全防护罩和自动排屑器。机床的密封电气控制柜可配置空调。

## III. 动力电源参数：380V50HZ

IV. 电气主要参数：主驱动交流变频电机：15KW、1500rpm  
 摇台电机：48NM、2000rpm  
 工件电机：27NM、2000rpm  
 进给电机：20NM、2000rpm  
 机床电气总容量：35KVA

## I. Applications of Machine

Model YKD2280 machine is a precision CNC Spiral Bevel Gear Generator, which is designed for roughing and finishing Spiral Bevel Gears and Hypoid Gears and Constant-depth gears of the Gleason system with the diameter up to 800mm and module 15mm.

On this machine, the cutter is mounted on the cradle (circular guideway). The integral structure is rigid, highly accurate and working stably. The cradle-type gear cutting machine, which is also possible for hard surfacing, is durable and the service life will be several dozens of years under normal operating conditions.

The machine is with universal features and it is suitable for roughing and finishing, in mass production, gears used for medium & heavy load trucks, mining machineries, construction machineries and shipbuilding industry.

The machine is equipped with a CNC control system 828D (SIEMENS) and designed to operate as a three-axis machine, i.e. cradle rotation (X axis), work spindle rotation (Y axis) and sliding base movement (Z axis) being simultaneously controlled by the CNC control system to cut gears. The rotation of cutter spindle (S axis) is controlled by an A.C. frequency-variable motor for its stepless control. Therefore, no change gears will be used on the machine for cutting gears. The machine operation is easy and flexible. The clients who have the conventional machines can convert the machine settings used for

YT2250 (or Y225) and Y2280 machines into the machine settings for the YKD2280 machine.

## II. Main Features of Machine

An A.C. frequency-variable motor is used as a main driving power source while the cradle rotation and work spindle rotation are driven by the servo motors. The sliding base movement is driven by a servo motor through a ball screw. All of these features of the machine are for the purpose of simplifying the conventional mechanical structure, reducing the machine setup time and shortening the transmission train because of the change gears elimination. In this case, not only the machine accuracy is increased, but also the operation is easy and convenient. Safety guards and an automatic chip conveyor may be provided on the machine. The machine is equipped with a sealed electrical cabinet which is with an air conditioner.

## III. Power Supply: 380V, 50 HZ

## IV. Main Electrical Parameters:

A.C. Frequency-variable Motor (main drive)	15KW, 1500rpm
Cradle motor	48NM, 2000rpm
Workhead motor	27NM, 2000rpm
Feed motion motor	20NM, 2000rpm
Total capacity	35KVA

## V. 机床主要技术参数 Specifications of Machine

被加工工件的尺寸 Dimensions of work to be cut						
最大加工模数 Max. module			15	mm		
最大节锥母线长 Max. pitch cone distance	螺旋角 Spiral angle	0°	285	mm		
		15°	350	mm		
		30°	420	mm		
工件的节锥角 Pitch angle of workpiece	最大 Max.		90°			
	最小 Min.		5°			
被铣齿轮副轴间角为90° 的最大传动比 Max. gear ratio (shaft angle 90° )			10: 1			
被加工齿轮的 最大节圆直径 Max. pitch diameter	被加工齿轮副 传动比 Gear ratio	10: 1	螺旋角 Spiral angle	0°	575	mm
				15°	700	mm
				30°	800	mm
	2: 1	螺旋角 Spiral angle	0°	520	mm	
			15°	635	mm	
			30°	750	mm	
			0°	395	mm	
			15°	500	mm	
			30°	600	mm	
1: 1	螺旋角 Spiral angle	0°	100	mm		
		15°	32	mm		
		30°	32	mm		
最大齿高 Max. tooth depth			32	mm		
齿数 Number of teeth			4~100			
刀盘直径 Diameter of cutter			6" 9" 12" 18"			