

YKD2280

数控弧齿锥齿轮铣齿机

CNC SPIRAL BEVEL GEAR GENERATOR



中国天津第一机床总厂

TIANJIN NO. 1 MACHINE TOOL WORKS CHINA

YKD2280 数控弧齿锥齿轮铣齿机

一、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，可用于粗切、精切最大直径至 800 毫米，最大模数至 15 毫米的弧齿锥齿轮及准双曲面齿轮。

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 802D 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，柔性更强，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。

二、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。

三、动力电源参数：380V50HZ

四、电气主要参数：主驱动交流变频电机：15KW、1500rpm

摇台及工件箱伺服电机：42NM、1500rpm

进给运动伺服电机：23NM、2000rpm

机床电气总容量：35KVA

I .Main Usage and Application 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 with the diameter up to 800mm and module 15mm. The machine is with universal features and it is suitable for roughing and finishing, in mass production, gears used for medium & heavy load trucks, mine machineries, construction machineries and shipbuildings. The machine is equipped with CNC control system 802D (SIEMENS) and designed to operate as a three-axes machine, i.e. cradle oscillation (X axis), work spindle rotation (Y axis) and sliding base movement (Z axis) being simultaneously controlled by control system for cutting gears. The rotation of cutter spindle (S axis) is controlled by an A.C. frequency variable motor for its step less control. So, there is no any change gears used in machine for cutting gears, easy and flexible operations. The clients with conventional machine can convert the machine settings for YT2250 (or Y225) and Y2280 machines into the relative machine settings of YKD2280 machine.

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II. Main features of Machine

The A.C. frequency variable motor is used as a main driving power source while the cradle oscillation and work spindle rotation are driven by the servo motors. The sliding base movement is driven by a servo motor through the ball screws. All of these features of machine are for the purpose of simplifying the conventional mechanical structure, reducing machine setup time and shorting 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 auto chip conveyor can be provided on the machine. The machine is equipped with a sealed cabinet which is with air conditioner.

III. Power Source: 380V, 50 HZ

IV. Main Electrical Parameter: A.C. Frequency Variable Motor (main driving) 15KW, 1500rpm

Servo Motor (cradle & workhead) 42NM, 1500rpm

Servo Motor (feed movement) 23NM, 2000rpm

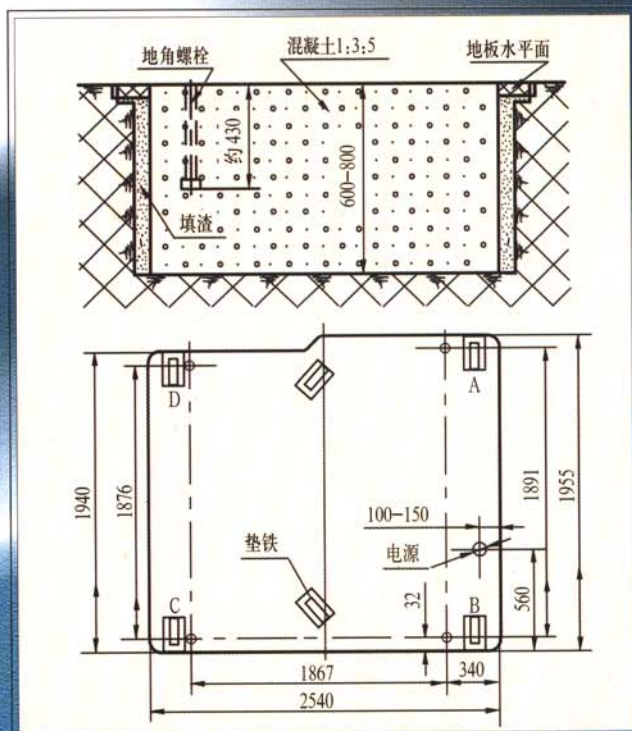
Total Power Capacity 35KVA

五. 机床主要技术规格 Main Specifications

(一) 被加工工件尺寸 Work to be machined			
最大加工模数 Max. module	mm		15
最大节锥母线长度 (螺旋角 30°) Max. pitch cone distance(spiral angle 30°)	mm		420
最大节圆直径 (螺旋角 30° 传动比 10: 1 时) Max. pitch diameter(spiral angle 30° at ratio 10:1)	mm		800
根锥角: 最大 84° 0' 、最小 5° 30' Root angle: Max. 84° 0' Min. 5° 30'			
最大传动比 (轴夹角 90° 时) Extreme ratio (shaft angle 90°)	ratio		10: 1
最大螺旋角 Max. spiral angle	degree		45°
最大切齿深度 Max. cutting depth	mm		32
最大齿圈宽度 Max. face width	mm		100
加工齿数 Number of teeth	teeth		4-100
(二) 工件主轴 Work spindle			
主轴锥孔大端直径 Diameter of taper hole at large end	mm		153
锥 度 Taper	ratio		1: 20
锥 长 Taper length	mm		180
主轴通孔直径 Diameter of through hole	mm		125
主轴法兰直径 Diameter of flange	mm		235

机床主要技术规格 (续) Main Specifications (Contin)

(三) 刀盘直径	Cutter diameter	6" 7 1/2" 9" 12" 18"
(四) 工件箱调整量	Work head setup	
主轴最大垂直位移, 自中心位置向上 Max. offset of work spindle; Above center		90
自中心位置向下 Below center	125-270	25
当主轴端面至机床中心距离调整在下列各值时 When machine center to nose of spindle is adjusted to the following values	270-330	70
330-540		90
主轴端面至机床中心距离 Machine center to nose of spindle		125-600
(五) 刀盘转速	Cutter speed	rpm 31-110
(六) 摇台调整量	Cradle setup	
调整角	Adjustable angle	degree 0-360°
偏心鼓轮调整角	Adjustable angle of eccentric drum	degree 0-180°
刀盘主轴的相应径向位移 Relative radial displacement of cutter spindle	mm	0-340
最大摇摆角	Max. swivel angle	degree 60°
(七) 床位	自中心最大位移向前 25mm, 向后 150mm Position of sliding base Max. displacement from center Forward 25mm, Backward 150mm	
(八) 机床净重	Machine weight	t 12.5
(九) 外形尺寸	Machine dimensions (L × W × H)	mm 2900 × 2750 × 2200



注: 随着产品技术不断提高, 以上规格仅供参考。

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

机床地基图

天津第一机床总厂 天津第一机床销售有限公司

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