

## YN3180CNC型 数控滚齿机



### 主要特点:

本机床为六轴数控滚齿机, 数控轴分别为: 径向进给轴(X轴); 切向进给轴(Y轴); 轴向进给轴(Z轴); 刀架回转轴(A轴); 滚刀主轴回转轴(B轴); 工作台回转轴(C轴)。

标准配置采用西门子 840DSL 数控系统, 配有常用通讯接口。

1、交流主轴电动机直接安装在刀架上, 经过三对高精度圆柱斜齿轮传至滚刀主轴, 大大降低了传动误差, 提高了传动精度, 并增强了相关的传动特性和传动刚性。

2、工作台采用高精度双导程蜗轮蜗杆传动, 并设计有阻尼机构, 工作台下方还设有主轴卸荷油缸, 以降低C轴电机的负荷和延长工作台圆导轨的寿命。

3、床身等基础构件均采用双层壁结构, 筋板布局经过优化设计, 确保了机床基础构件具有足够的结构刚性。

4、主要导轨副采用了矩形大平面导轨且移动面注塑的工艺方法, 滚珠丝杆传动, 传动刚性好, 支承能力大, 运动直线度高。

5、X轴导轨采用三条导轨结构形式布局, 中间导轨作导向、两边导轨作承载, 刚性增强的同时导向精度和热稳定性等性能也大大提高。

6、后立柱顶尖座设计有旋转机构, 以方便大工件的装卸。

### Main features:

This machine is a six-axis CNC gear hobbing machine, of which the CNC shafts are radial feeding shaft (X-axis), tangential feeding shaft (Y-axis), axial feeding shaft (Z-axis), toolpost rotating shaft (A-axis), hobbing cutter spindle rotating shaft (B-axis) and worktable rotating shaft (C-axis).

This machine is installed with SIEMENS 840DSL CNC system and with common communication interface.

1. The motion of the AC spindle motor directly installed on the toolpost is transmitted to the hobbing cutter spindle by three high-precision cylindrical helical gear pairs to remarkably reduce the drive error, improve the drive accuracy, and enhance the related drive characteristics and drive stiffness.

2. The worktable is applied with high-precision double-lead worm gear drive and is designed with damping mechanism. The spindle unloading cylinder is installed beneath the worktable to reduce the load of C-axis motor and prolong the life of worktable circular slideways.

3. The foundation components, including bed, adopt the double-wall structure and the arrangement of the ribbed plates is optimized to guarantee the sufficient structural stiffness for the foundation components of the machine.

4. The main guiderail pairs adopt rectangular large-plane guiderails with injection molded movement faces and the ball screw drive is applied to ensure good drive stiffness, high support capacity, and high motion linearity.

5. The three-slideway structure is arranged for the X-axis slideways, of which the middle slideway is functioned for guiding and the two side slideways are functioned for carrying, to enhance the stiffness and remarkably improve the guide accuracy and thermal stability.

6. The rear column tailstock is designed with rotating mechanism to ease the loading and unloading of large workpieces.

## 主要技术规格参数： Main technical specification parameters

主要规格	Main specification	YN3180CNC	单位Unit
加工范围	Machining scope		
最大工件直径	Maximum workpiece diameter	φ800	mm
最大模数	Maximum modulus	16	mm
加工斜齿轮螺旋角	Helical angle of machined helical gear	±45	°
尺寸规格	Dimensions		
可安装滚刀最大直径	Maximum diameter of installed hobbing cutter	220	mm
可安装滚刀最大长度	Maximum length of installed hobbing cutter	220	mm
滚刀最大轴向移动量	Maximum axial movement of hobbing cutter	200	mm
滚刀主轴锥孔锥度	Conicity of hobbing cutter spindle taper bore	NT50	mm
滚刀中心到工作台中心水平距离	Horizontal distance from center of hobbing cutter to center of worktable	90~520	mm
滚刀中心到工作台台面垂直距离	Vertical distance from center of hobbing cutter to surface of worktable	200~850	mm
后立柱顶尖到工作台台面距离	Distance from rear column center to worktable surface	700~1300	mm
工作台台面直径	Diameter of worktable surface	650	mm
工作台台面至床身底面距离	Distance from worktable surface to bed bottom	1225	mm
运动参数	Motion parameters		
滚刀主轴最高转速	Maximum speed of hobbing cutter spindle	500	rpm
轴向进给速度范围(Z轴)	Axial feeding speed range (Z-axis)	1~1000	mm/min
轴向快速移动速度范围(Z轴)	Axial quick movement speed range (Z-axis)	1000~3000	mm/min
径向进给速度范围(X轴)	Radial feeding speed range (X-axis)	1~1000	mm/min
径向快速移动速度范围(X轴)	Radial quick movement speed range (X-axis)	1000~3000	mm/min
切向运动最大速度(Y轴)	Maximum tangential motion speed (Y-axis)	960	mm/min
工作台最高转速(C轴)	Maximum speed of worktable (C-axis)	20	rpm
刀架最高回转速度(A轴)	Maximum rotating speed of toolpost (A-axis)	3	°/s
机床体积(长×宽×高)	Machine volume (Length × Width × Height)	399x353x370	cm
机床净重	Net weight of machine	18000	Kg