

YS3120CNC/ YS3132CNC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)。本机床除可加工圆柱直齿轮、斜齿轮、短花键轴、链轮、蜗轮等外, 还可以加工多种锥度齿、鼓形齿等特殊齿形的齿轮。

标准配置采用西门子 828D 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、工作台采用大直径、高精度圆柱斜齿轮传动, 改变了传统的工作台由蜗轮、蜗杆传动的形式, 采用了高精度、高刚度滚动轴承支承, 使得工作台最高转速可达150rpm。显著提高了机床加工精度和效率。
- 3、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。
- 4、机床可配置双工位交换机械手及料仓实现工件的自动上下料。

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 can be used for machining of various gears with special axial modifications, including small taper gears and drum gears, besides the cylindrical spur gears, spiral gears, short spline shafts, sprockets, and worm gears.

This machine is installed with SIEMENS 828D 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 large-diameter high-precision cylindrical helical gear drive is applied to change the worm and worm gear drive mode of traditional worktable. The worktable is supported by high-precision high-stiffness rolling bearings, with the maximum speed up to 150rpm, to remarkably promote the machining accuracy and efficiency of the machine.
3. 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.
4. This machine can be installed with double-station switching manipulator and material bin to realize the automatic loading and unloading of workpieces.

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

主要规格	Main specification	YS3120CNC	YS3132CNC	单位Unit
加工范围	Machining scope			
最大工件直径	Maximum workpiece diameter	φ200	φ320	mm
最大模数	Maximum modulus	6	8	mm
加工斜齿轮螺旋角	Helical angle of machined helical gear	±45	±45	°
尺寸规格	Dimensions			
可安装滚刀最大直径	Maximum diameter of installed hobbing cutter	140	150	mm
可安装滚刀最大长度	Maximum length of installed hobbing cutter	230	230	mm
滚刀最大轴向移动量	Maximum axial movement of hobbing cutter	170	170	mm
滚刀可换芯轴直径	Replaceable mandrel diameter of hobbing cutter	27、32、40	27、32、40	mm
滚刀主轴锥孔锥度	Conicity of hobbing cutter spindle taper bore	SK40	SK40	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	30~250	30~250	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	180~430	174~424	mm
后立柱顶尖到工作台台面距离	Distance from rear column center to worktable surface	270~690	300~720	mm
工作台台面直径	Diameter of worktable surface	200	320	mm
工作台台面至床身底面距离	Distance from worktable surface to bed bottom	965	971	mm
运动参数	Motion parameters			
滚刀主轴最高转速	Maximum speed of hobbing cutter spindle	1200	1200	rpm
轴向进给速度范围(Z轴)	Axial feeding speed range (Z-axis)	1~1500	1~1500	mm/min
轴向快速移动速度范围(Z轴)	Axial quick movement speed range (Z-axis)	2000~6000	2000~6000	mm/min
径向进给速度范围(X轴)	Radial feeding speed range (X-axis)	1~1000	1~1000	mm/min
径向快速移动速度范围(X轴)	Radial quick movement speed range (X-axis)	3000~6000	3000~6000	mm/min
切向运动最大速度(Y轴)	Maximum tangential motion speed (Y-axis)	3000	3000	mm/min
工作台最大转速范围	Maximum speed range of worktable	150	120	rpm
刀架最高回转速度(A轴)	Maximum rotating speed of toolpost (A-axis)	4.5	4.5	°/s
机床体积(长×宽×高)	Machine volume (Length × Width × Height)	305x315.5x281.5	305x315.5x281.5	cm
机床净重	Net weight of machine	9800	9800	Kg