

YXN3132CNC/ YXN3140CNC型 数控高效滚齿机



主要特点:

本机床为五轴数控滚齿机,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);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FANUC-0iF数控系统,配有常用通讯接口。本机床具有如下的特点:

- 1、主运动由安装在刀架上的交流主轴电机经过三对高精度圆柱齿轮传至滚刀主轴,主轴电机功率为15kw,刀具主轴末端齿轮副采用一齿差消除机构,可使用多头滚刀进行大进给量滚齿。
- 2、为满足不同加工对象的要求,该机床有三种形式的工作台结构可供用户选用:标准机工作台(最高转速30RPM);转台轴承工作台(最高转速60RPM);直驱电机工作台(最高转速120RPM)
- 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。Z轴运动采用立柱上的平衡油缸与链条连接的新结构,降低了机床的整体高度,使得刀架滑板上下运动时能够更好地平衡。
- 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 five-axis CNC gear hobbing machine, of which the five CNC shafts are radial feeding shaft (X-axis), tangential feeding shaft (Y-axis), axial feeding shaft (Z-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 tooth profiles, including taper gears and drum gears, besides the cylindrical spur gears, spiral gears, short spline shafts, sprockets, and worm gears.

The standard model is installed with FANUC-0iF CNC system and is provided with common communication interfaces.

This machine features following characteristics:

1. The main motion is transmitted from the AC spindle motor on the toolpost to the hobbing cutter spindle by three pairs of high-precision cylindrical gears, with the spindle motor power at 15kw. A tooth difference anti-backlash mechanism is installed on the end gear pair of cutter spindle and the multi-head hobbing cutter can be used for high feeding rate hobbing.
2. To meet the needs of different machining objects, this machine offers three structure types of worktable at the user's choice: Standard worktable (Maximum speed at 30RPM), rotating bearing worktable (Maximum speed at 60RPM), and direct drive motor worktable (Maximum speed at 120RPM).
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. The new connection structure between balance cylinder on the column and the chain is applied for Z-axis motion to reduce the overall height of machine and better balance the vertical motion of toolpost slide.
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	YXN3132CNC	YXN3140CNC	单位Unit
加工范围	Machining scope			
最大工件直径	Maximum workpiece diameter	φ320	φ400	mm
最大模数	Maximum modulus	8	10	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	170	170	mm
可安装滚刀最大长度	Maximum length of installed hobbing cutter	220	220	mm
滚刀最大轴向移动量	Maximum axial movement of hobbing cutter	180	180	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	SK50	SK50	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	45~300	45~300	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	210~560	210~560	mm
后立柱顶尖到工作台台面距离	Distance from rear column center to worktable surface	320~680	320~680	mm
工作台台面直径	Diameter of worktable surface	350	400	mm
工作台台面至床身底面距离	Distance from worktable surface to bed bottom	1100	1100	mm
运动参数	Motion parameters			
滚刀主轴最高转速	Maximum speed of hobbing cutter spindle	700	700	rpm
轴向进给速度范围(Z轴)	Axial feeding speed range (Z-axis)	1~1000	1~1000	mm/min
轴向快速移动速度范围(Z轴)	Axial quick movement speed range (Z-axis)	1000~1500	1000~1500	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)	1000~2000	1000~2000	mm/min
切向运动最大速度(Y轴)	Maximum tangential motion speed (Y-axis)	1600	1600	mm/min
工作台最大转速范围	Maximum speed range of worktable	30	30	rpm
刀架回转速度	Rotating speed of toolpost	0.9	0.9	°/s
机床体积(长×宽×高)	Machine volume (Length × Width × Height)	360×350×290	360×350×290	cm
机床净重	Net weight of machine	12000	12000	Kg