

YD3132CNC 数控干式滚齿机



主要特点:

本机床是十轴数控干式滚齿机。

机床双通道两工位共同工作。滚齿工位具有三个数控直线轴:径向进给轴(X轴);轴向进给轴(Z轴);切向运动轴(Y轴)。三个数控回转轴:工作台回转轴(C轴);滚刀主轴回转轴(B轴);刀架回转轴(A轴)。

机床标准配置FANUC 0i-F数控系统,可实现四轴联动控制。倒棱工位具有工作台回转轴(C1轴);倒棱刀进给轴(Y1轴);去毛刺刀进给轴(Y2轴)。工件通过机械手回转轴(C2轴)实现自动上下料。

- 1、机床具有倒棱工位和四工位交换机械手,实现齿轮的滚倒加工功能。
- 2、各轴均由独立的交流伺服电机直接控制,具有传动链短,传动刚性好,传动精度高等特性。工作台回转轴(C轴)和滚刀主轴回转轴(B轴)均由内藏式主轴电机直接驱动,实现零间隙传动,大大提高了主轴的驱动刚度和动态响应速度。
- 3、滚刀主轴(B轴)能实现1~2000RPM范围内无级调速,特别适用于多头滚刀高速高效干式滚齿加工。
- 4、主要导轨副均采用高精度、高刚度的滚柱直线导轨,传动刚性好,支承能力大,运动直线度高。
- 5、机床可配置自动对齿装置,实现硬齿面刮削加工。

Main features:

This machine is a ten-axis CNC dry gear hobbing machine.

The double-channel two-station of the machine are working simultaneously. The gear hobbing station incorporates three CNC linear shafts: radial feeding shaft (X-axis), axial feeding shaft (Z-axis), tangential motion shaft (Y-axis). Three CNC rotating shafts: Worktable rotating shaft (C-axis), hobbing cutter spindle rotating shaft (B-axis), and toolpost rotating shaft (A-axis).

This machine is installed with standard FANUC 0i-F CNC system to realize four-axis linkage control. The chamfering station incorporates workbench rotating shaft (C1-axis), chamfering cutter feeding shaft (Y1-axis), and deburring cutter feeding shaft (Y2-axis). The automatic loading and unloading of workpiece are realized by the manipulator rotating shaft (C2-axis).

1. The machine incorporates the chamfering station and four-station switchover manipulator to realize the hobbing and chamfering functions of the gears.
2. All shafts are directly controlled by independent AC servo motors, featuring short drive chain, good drive stiffness, and high drive accuracy. The worktable rotating spindle (C-axis) and the hobbing cutter rotating spindle (B-axis) are directly driven by built-in spindle motors to realize zero-clearance drive and remarkably improve the drive stiffness and dynamic response speed of spindle.
3. The hobbing cutter spindle (B-axis) can realize stepless speed change within the range of 1~2,000RPM, which is especially suitable for the high-speed high-efficiency dry-type gear hobbing with multi-head hobbing cutter.
4. All slideway pairs adopt the high-precision high-stiffness linear roller slideways, featuring good drive stiffness, high carrying capacity, and high motion linearity.
5. This machine can be installed with automatic tooth alignment device to realize the hobbing function for hard tooth faces.

机床主要参数： Machine main specification:

项目	Item	技术规格 Technical parameter	单位Unit
最大工件直径	Maximum workpiece diameter	φ220	mm
最大模数	Maximum modulus	4	mm
加工斜齿轮螺旋角(A轴)	Helical angle of machined helical gear (A-axis)	±45	°
可安装滚刀最大直径	Maximum diameter of installed hobbing cutter	φ100	mm
可安装滚刀最大长度	Maximum length of installed hobbing cutter	200	mm
滚刀最大轴向移动量(Y轴)	Maximum axial movement of hobbing cutter (Y-axis)	200	mm
滚刀中心到工作台中心水平距离(X轴)	Horizontal distance from center of hobbing cutter to center of worktable (X-axis)	35~175	mm
滚刀中心到工作台中心竖直距离(Z轴)	Vertical distance from center of hobbing cutter to surface of worktable (X-axis)	80~430	mm
滚齿尾架至滚齿工作台台面距离	Distance from hobbing tailstock to hobbing workbench face	300~650	mm
滚刀主轴转速范围(B轴)	Speed range of hobbing cutter spindle (B-axis)	1~2700	rpm
工作台转速范围(C轴)	Speed range of worktable (C-axis)	1~250	rpm
径向快速移动速度(X轴)	Radial quick movement speed (X-axis)	10000	mm/min
切向运动速度(Y轴)	Tangential moving speed (Y-axis)	5000	mm/min
轴向快速移动速度(Z轴)	Axial quick movement speed (Z-axis)	7000	mm/min
数控系统	CNC system	西门子SIEMENS SINUMERIK 828D	
电机总功率	Motor total power	51.28	KW
主电机额定输出功率	Rated output power of main motor	22	KW
机床占地面积	Occupation area of machine	295x386x267	cm
机床净重	Net weight of machine	9000	Kg