

# YDB3122CNC 数控干式滚齿机



## 主要特点:

本机床是七轴数控干式滚齿机。

机床具有四个数控直线轴:径向进给轴(X轴);轴向进给轴(Z轴);切向运动轴(Y轴);尾架运动轴(Z4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)。机床可实现四轴联动控制。

- 1、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。
- 2、滚刀主轴(B轴)能实现1~2700RPM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。
- 3、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。
- 4、本机床床身和立柱一体铸造而成,增加了机床的整体刚性。
- 5、机床可配置自动对齿装置,实现硬齿面刮削加工。
- 6、机床可配置倒棱去毛刺单元,由两数控轴控制倒棱刀,去毛刺刀的位置,满足在不同工位高度上的倒棱去毛刺的要求,减少后续工序,提高加工效率。
- 7、机床预留自动上下料接口,可很方便地实现单机自动化及机床连线工作。

## Main features:

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

This machine incorporates four CNC linear shafts, namely radial feeding shaft (X-axis), axial feeding shaft (Z-axis), tangential motion shaft (Y-axis), and tailstock motion shaft (Z4-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 can realize the four-axis linkage control.

1. 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.
2. The hobbing cutter spindle (B-axis) can realize stepless speed change within the range of 1~2,700RPM, which is especially suitable for the high-speed high-efficiency dry-type gear hobbing with multi-head hobbing cutter.
3. All slideway pairs adopt the high-precision high-stiffness linear roller slideways, featuring good drive stiffness, high carrying capacity, and high motion linearity.
4. The machine bed and column are integrally cast to enhance the overall stiffness of the machine.
5. This machine can be installed with automatic tooth alignment device to realize the hobbing function for hard tooth faces.
6. The machine can be installed with deburring and chamfering device, of which the location of deburring and chamfering cutter is controlled by two CNC shafts to meet the deburring and chamfering needs at different station heights, save the subsequent processes, and improve the machining efficiency.
7. The machine is reserved with automatic loading and unloading interface to easily realize the automation of individual machine and the machine networking.

## 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