

主要技术参数 Main specifications:

项目内容	Main specifications	单位 Unit	YN31200CNC
最大加工直径	Max. diameter to be hobbled	mm	2000
最大加工模数	Max. module to be hobbled	mm	32
最大加工螺旋角	Max. helix angle to be cut	deg.	± 45°
可安装滚刀最大直径	Max. hob diameter to be mounted	mm	450
可安装滚刀最大长度	Max. hob length to be mounted	mm	500
滚刀最大轴向移动量	Max. axial travel of the hob head slide	mm	550
滚刀主轴锥孔	Cone of the hob spindle bore		HSK-B160
滚刀中心到工作台中心水平距离	Horizontal distance from the hob to the worktable	mm	50-1270
滚刀中心到工作台面垂直距离	Vertical distance from the hob to the worktable	mm	490-1790
后立柱支架端面到工作台面距离	Distance from the tailstock center to the worktable	mm	1096-1996
工作台面直径	Diameter of the worktable	mm	1460
工作台面至床身底面距离	Distance from the worktable surface to the bottom of the machine bed	mm	1010
滚刀主轴转速范围 (无级)	Hob spindle speeds, infinitely variable	rpm	20-200
工作台最高转速	Max. worktable speed	rpm	6
轴向进给速度范围	Axial federates	mm/min.	1-4000
径向进给速度	Radial federates	mm/min.	1-3000
切向运动速度	Tangential feedrates	mm/min.	1-3000
工作台最大负载	Max. workload of the worktable	N	200000
主轴电机功率	Power of the spindle motor	KW	46
电气总容量	Total power consumption	KW	110
机床占地面积 (长×宽×高)	Overall dimensions (L×W×H)	cm	872×617×480
机床净重, 约	Net weight, approx.	Kg	45000

铣内齿刀架	Hob head for milling the internal gears		
最大加工模数	Max. module	mm	32
最大加工齿宽	Max. face width	mm	470
最大加工螺旋角	Max. helix angle	deg.	± 25°
铣刀直径范围	Diameters of the milling cutters	mm	Φ310~Φ420
主轴电机功率	Power of the spindle motor	KW	37
主轴转速范围 (无级)	Spindle speeds, infinitely variable	rpm	18-180

机床主要配置 Optional collocation (upon customer's request):

标准配置 Standard collocation:		
序号	名称 Description	技术描述 Details
1	主机 Basic machine	YN31200CNC /六轴数控滚齿机主机 Basic machine of the 6-axes CNC gear-hobbing machine Model YN31200CNC
2	控制及驱动、检测系统 Control system, drive system & detection system	西门子840DSL Siemens 840DSL
3	液压装置 Hydraulic power pack	带液位检测及报警 Attached with a liquid-level detector and an alarm generator
4	液压油温控制器 Hydraulic oil temperature controller	固定式 Fixed type
5	冷却装置 Coolant unit	带液位检测及报警 Attached with a liquid-level detector and an alarm generator
6	自动排屑器 Automatic chip conveyor	磁性平板式 Magnetic plate type
7	外置独立电柜 External and independent control cabinet	
8	润滑装置 Lubrication unit	间歇集中润滑和连续润滑 (带液位检测及报警) Used for the centralized intermittent lubrication system and the continuous lubrication system (Attached with a liquid-level detector and an alarm generator)
9	全封闭防护罩 Full-enclosed safety guard	
10	油雾分离器 Oil mist separator	静电式 Electrostatic type

特殊配置 (根据用户要求) Optional collocation (upon customer's request):		
序号	名称 Description	技术描述 Details
1	夹具 Work fixtures	盘类/轴类 Used for clamping the shaft components and chuck work components
2	特殊心轴 Special hob arbours	
3	副操作面板 Secondary control panel	
4	可移动式手摇脉冲发生器 Mobile manual pulse generator	
5	铣内齿刀架 Hob-head for milling the internal gears	

YN31200CNC型 数控滚齿机

CNC Gear-Hobbing Machine Models

- 提高了工作台传动平稳性和传动精度
The machines improved smooth drive transmission and the transmission accuracy of the worktable.
- 提高了传动刚性和抗扭振能力
The machines improved the transmission rigidity and the torsion strength.
- 提高了X轴的定位与重复定位精度
The machines improve the positioning accuracy and the repeatability of X axis.
- 具备完善的故障监测与诊断功能
The machines have a perfect trouble detecting system and a function of making self-diagnosis of machine failures.
- 机床可配置专用铣内齿刀架, 扩大加工功能
The machine can be equipped with a special hob head to mill the internal gears.



YN31200CNC 型数控滚齿机 CNC Gear-Hobbing Machine Models

YN31200CNC型数控滚齿机为按连续分度法工作的六轴数控滚齿机，数控轴分别为：径向进给轴（X轴）；轴向进给轴（Z轴）；切向运动轴（Y轴）；工作台回转轴（C轴）；滚刀主轴回转轴（B轴）；刀架转角回转轴（A轴）。机床可实现六轴四联动控制。机床以电子齿轮箱代替传统滚齿机的各种交换挂轮，传动刚性好、精度高、操作调整快速方便。

The Models YN31200CNC are the 6-axes CNC Gear-Hobbing Machines working by the continuous indexing method. The following are the 6 CNC-controlled axes: The radial feed (X-axis), the axial feed (Z-axis), the tangential movement (Y-axis), the worktable revolving movement (C-axis), the hob running motion (B-axis) and the swiveling motion of the hob head (A-axis). It is possible to complete the simultaneous movement of four axes. An electronic gearbox is used on the machines to replace the conventional change gears, thus enabling them to be good in the rigid transmission, high in the working accuracy and easy to operate.

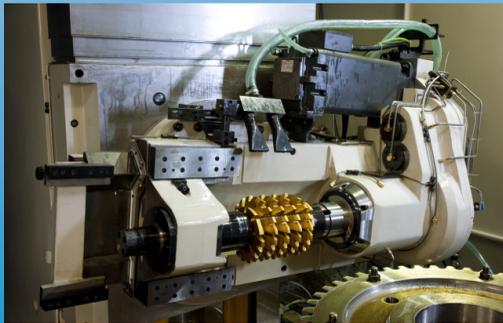
机床主要特点 Major features:

- 为适应大规格齿轮的高效强力切削，机床工作台机床工作台壳体独立安装并与床身对接，切削力可直接传递到坚固的地基上。工作台主传动采用双蜗轮副结构。消除了啮合间隙，提高了工作台传动平稳性和传动精度。

In order to adapt to the mass of the gear cutting machine, high strength worktable installed directly on machine bed, cutting force can be directly through the bed to solid foundation. The worktable is hydrostatically supported. The drive to the worktable is transmitted via a duplex wormwheel pair, thus eliminating the backlash and improving the smooth drive transmission and the transmission accuracy of the worktable.

- 机床刀具主轴交流伺服电机直接安装在刀架滑板上，经过高精度齿轮副传至刀具主轴，刀具主轴末端齿轮采用阻尼消除机构。主轴支承采用高刚度、高精度静压轴承，提高了传动刚性和抗扭振能力。

- The main drive to the hob spindle is transmitted from an AC servo motor via a high-precision gear pair. The AC servo motor is mounted directly on the hob head slide. The hob spindle has a damper type antibacklash mechanism mounted at its end gear. The hob spindle is supported by the special high-rigidity and high-precision hydraulic bearings, thus improving the transmission rigidity and the torsion strength.



- X轴床身导轨采用镶钢注塑与无间隙滚动块导向方式相结合的组合导轨形式。两侧宽平面淬硬导轨与预负荷压板机构，保证了大立柱在滚齿时产生断续交变切削力作用下不产生振颤。中间无间隙滚动块导轨导向结构，提高了X轴的定位与重复定位精度。

- The bedways of the X-axis are inserted with steel strips and their mating slideways are coated with Teflon. The antifriction piloting blocks are of the backlash-free type. The ample-dimensioned and hardened guideways and the preloaded pressure plate prevent the column from the vibration arising from the intermittent and alternate cutting force during the gear-hobbing operation. The backlash-free piloting blocks located in the middle are contributive to the improvement of the positioning accuracy and the repeatability of the X-axis.



- 机床配有全封闭罩壳及油雾分离设备，可确保强力切削大流量冷却液产生的油雾能得到有效处理。

- 工作台承重能力大，最大可达200000N。

- The machines are arranged with a full-enclosed safety guard and an oil mist separator to assure the effective disposal of the oil mist arising from the big coolant flowrate during the heavy-duty cutting operation.

- The worktable has a bearing capacity of up to 200000N.



- 小立柱尾架可自动转位移开，以方便工件的装卸

- The tailstock column can be automatically offset to allow the loading and unloading of workpieces.



- 机床配有丰富的用户软件，宜人的操作界面，可最大程度的满足各种直齿轮、斜齿轮、锥度齿轮、及鼓形齿轮的高效加工。

- The machines are equipped with an enriched user's software and an ergonomic control interface, thus being capable of performing the high-efficiency cutting of the straight gears, the helical gears, the little tapered gear teeth and the crowned gear teeth.



- 机床具备完善的故障监测与诊断功能。

- 机床可配置专用铣内齿刀架，扩大加工功能。

- The machines have a perfect trouble detecting system and a function of making self-diagnosis of machine failures.

- The machine can be equipped with a special hob head to mill the internal gears.

