



南京二机齿轮机床有限公司  
NANJING NO.2 MACHINE TOOL WORKS

# YX3150CNC型 数控滚齿机

## CNC Gear Hobbing Machine Model YX3150CNC



### 主要特点:

### Main features:

YX3150CNC型数控高效滚齿机为六轴数控滚齿机，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）；刀架转角回转轴（A轴）；滚刀主轴回转轴（B轴）；工作台回转轴（C轴）。

CNC Gear Hobbing machines Model YX3150CNC have 6 CNC axes. The Axes is as follow: Radial Feeding (X axis), tangential feeding (Y axis), axial feeding (Z axis), cutter carriage swivel (A axis), cutter rotation (B axis), worktable rotation (C axis).

径向进给轴（X轴）、切向进给轴（Y轴）和轴向进给轴（Z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、传动精度高特性。

The linear CNC axes are driven by the independent Servo motor, the transfer chain is short and the accuracy is high.

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，使主轴最高转速可达700rpm范围内无级调速，切削速度可达70—120m/min。主轴电机功率为15kw，能承受较大的切削力，可使用多头滚刀进行大进给量滚齿。

The cutter rotation is driven by 3 pairs high accuracy cylinder gears from the AC spindle motor, the spindle Max. rotation speed can achieved 700rpm, the cutting speed can achieved 120m/min. the spindle motor power is 15kw. It is suitable to heavy machining with the multi-lead gear hobbing cutter.

机床采用工作台固定、立柱移动的方式实现径向进给运动，使加工刚性得到提高，而且更便于配置盘类及轴类零件的自动上下料装置。

The machine used worktable fixed and big column for radial feeding, it improved the rigid of machining and easy to equip the load/unload system of disk gears and gear shaft.

刀架结构紧凑，滚刀窜刀运动、刀架转角运动传动链集中在刀架体内，传动链短，传动刚性高，刀架悬伸长度小，使得切削力产生的颠覆力矩小，增加了刀架承受机床切削力的能力，同时使刀架的热变形达到最小。

The cutter carriage is Compact, cutter shifting, cutter carriage swivel are all in the cutter body. The transfer chain is short and rigid, the hanging length is short, it will improve the cutter bearing power. The thermal deformation is small.

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，径向快速运动速度最高可达4m/min，轴向快速运动速度最高可达2.8m/min。

The main guide is rectangular large plane guide and coated Teflon. Driven by the ball screw, the transfer rigid is good and the support power is heavy, the rapid radial feeding can achieved 4m/min, the rapid axial feeding can achieved 2.8m/min.

标准配置采用FANUC Oi+EGB数控系统，配有与电脑相连的传输接口（RS232C）。系统自带的EGB电子齿轮箱代替了普通机床各种交换齿轮的功能，所以机床各项运动精度高，调整方便。由于采用了数控系统，提高了机床的柔性，使得切削循环可设置一次、二次方循环、L循环等多种切削循环方式，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，同时大大提高了机床操作调整的方便性。

The standard equipped the FANUC Oi system plus the EGB function. It have the RS232C adapter. The CNC system replace the change gear by the EGB, the machine moving accuracy is high and easy adjusting. The machine can realized the rectangle circle, double rectangle circle and L type circle etc. except machining the cylindrical straight gear, helix gear, spline, sprocket, worm etc. the machine can cutting some special gear, for example the taper gear, crowning gear etc.

带有故障自诊断功能，当系统或机床发生故障时，故障内容可显示在显示屏上，如：防护门未关，压力不够，行程开关发生问题等都可通过显示文本在显示屏上显示，以提醒操作者。

The machine have self diagnosis function, while machine fault, the fault will show the fault text on the LED, for example the Door open, hydraulic pressure shortage, limited switch press etc.

本机床可根据用户要求配置盘类及轴类零件的自动上下料装置。

Machine can equipped the load/unload system for disk gear or gear shaft.

本机床在正常情况下，加工精度可达GB10095—2001国标的7级。

Normally, the machine cutting accuracy can achieved class 7 of GB10095—2001.

本机床特别适用于重型汽车、工程机械等大批大量生产齿轮的企业，也适用于小批量、多品种生产齿轮的企业。

The machine is suitable in heavy truck industry, engineering machinery etc for mass machining the gears. It also suitable for multi-type & small batch hobbing gears.

# YX3150CNC型 数控滚齿机 CNC Gear Hobbing Machine Model YX3150CNC

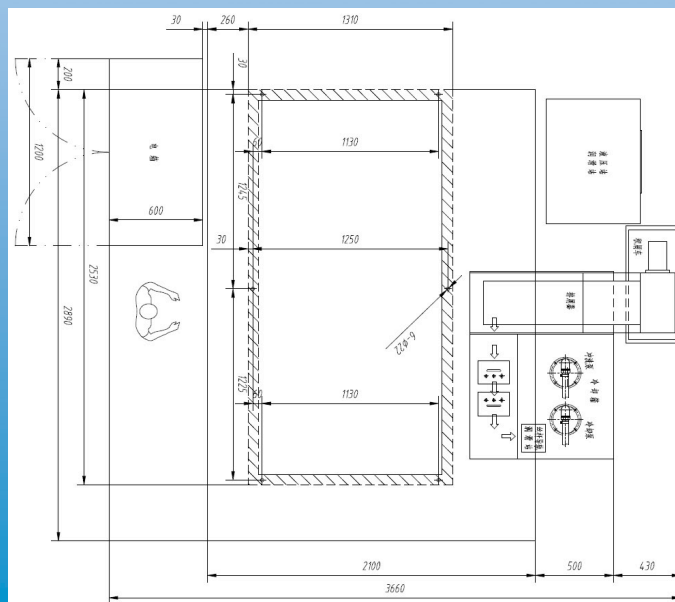
## 主要技术参数

Main specifications:

|                             | Name   | Specification       | Unit   |
|-----------------------------|--|---------------------|--------|
| 加工范围:                       | Max. cutting range                                 |                     |        |
| 最大工件直径                      | Max. Dia.  | φ 500               | mm     |
| 最大模数                        | Max. Module  | 12                  | mm     |
| 加工斜齿轮螺旋角                    | Max. helix   | ± 45                | 度      |
| 尺寸规格:                       | Size   |                     |        |
| 可安装滚刀最大直径                   | Max. cutter dia.                                   | 170                 | mm     |
| 可安装滚刀最大长度                   | Max. length of cutter                              | 220                 | mm     |
| 滚刀最大轴向移动量                   | Max. cutter shifting                               | 180                 | mm     |
| 滚刀可换芯轴直径                    | Arbor size   | 27、32、40、50         | mm     |
| 滚刀主轴锥孔锥度                    | Spindle Taper                                      | SK50                |        |
| 滚刀中心到工作台中心水平距离              | Center Dist. From cutter to worktable              | 70 400              | mm     |
| 滚刀中心到工作台台面垂直距离              | Dist. Form Center of cutter to face of worktable   | 145 745             | mm     |
| 后立柱顶尖到工作台台面距离               | Center on the back column to the face of worktable | 420 880             | mm     |
| 工作台台面直径                     | Worktable Dia.                                     | 500                 | mm     |
| 工作台定心孔径                     | Bore of worktable                                  | 75                  | mm     |
| 工作台台面至床身底面距离                | Dist. From worktable face to Ground                | 1165                | mm     |
| 运动参数:                       | Moving parameter                                   |                     |        |
| 滚刀主轴最大转速                    | Max. spindle rotation speed                        | 700                 | rpm    |
| 轴向进给速度范围 (Z轴)               | Axial feeding speed (Z axis)                       | 1 1000(Variable)    | mm/min |
| 轴向快速移动速度 (Z轴)               | Rapid Feeding(Z axis)                              | 2800 ( Variable )   | mm/min |
| 径向进给速度范围 (X轴)               | Radial feeding(X axis)                             | 2 1000 ( Variable ) | mm/min |
| 径向快速移动速度 (X轴)               | Rapid Radial feeding(X axis)                       | 1500 ( Variable )   | mm/min |
| 切向运动最大速度 (Y轴)               | Tangential feeding (Y axis)                        | 960                 | mm/min |
| 工作台最大转速                     | Max. worktable speed                               | 30                  | rpm    |
| 刀架回转速度                      | Cutter carriage swivel                             | 2.6                 | ° /s   |
| 数控系统: FANUC 0i+EGB数控系统      | CNC system: Fanuc 0i plus EGB function             |                     |        |
| 电机总容量:                      | Total Power  | Approx. 40          | kw     |
| 主轴电机 (B轴) α 15/7000i        | Spindle Motor(B axis)                              | 15                  | kw     |
| 轴向进给交流伺服电机 (Z轴) α 22/3000i  | Axial feeding servo motor(Z axis)                  | 4                   | kw     |
| 径向进给交流伺服电机 (X轴) α 12/3000i  | Radial feeding servo motor(X axis)                 | 3                   | kw     |
| 切向进给交流伺服电机 (Y轴) α 12/4000is | Tangential feeding servo motor(Y axis)             | 1.8                 | kw     |
| 工作台交流伺服电机 (C轴) α 30/3000i   | Worktable servo motor (C axis)                     | 7                   | kw     |
| 刀架回转交流伺服电机 (A轴) α 12/4000is | Cutter swivel servo motor(A axis)                  | 1.8                 | kw     |
| 机床体积 (长×宽×高)                | Size   | 306×214×285         | cm     |
| 机床净重                        | Weight   | Approx.15000        | kg     |

## 机床安装基础图

Foundation Plan:



规格、参数若有改变, 恕不另行通知, 客户如有特殊要求, 敬请垂询。

All the specifications are subject to revision without notice in advance .Please contact the manufacturer for special request on the machine.

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