

# 3 数控滚齿机

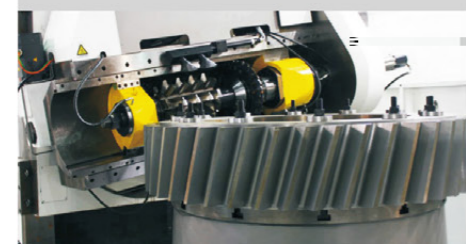
## CNC GEAR HOBBING MACHINE

### 我们将重新定义滚齿机 开启高效工艺

立式数控滚齿机不仅用于各种直齿、斜齿、锥度齿等齿轮的加工,还可以更换内滚刀架或者铣刀架满足内齿轮的高效加工,增加大齿圈零件可以实现无空刀加工,提高效率,提供齿面磨削解决方案。

### We will redefine gear hobbing machines and embark on efficient manufacturing processes

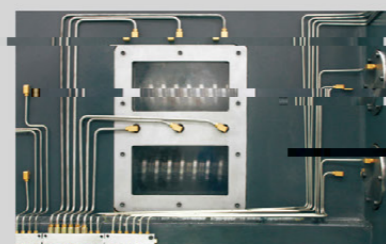
Vertical CNC gear hobbing machine is mainly used for straight gears, helical gears, tapered gears, and etc., the replacement of internal gear milling cutter head or internal hob head can meet the efficient machining of internal gears. Adding herringbone gear accessories can realize the machining of herringbone gear without empty cutter, and we can provide comprehensive solutions.



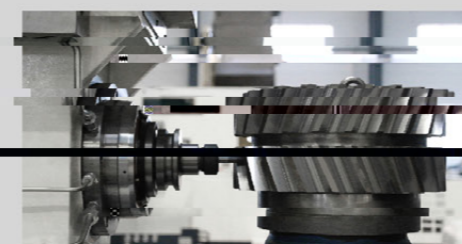
- 滚刀架角度的调整采用伺服电机直接驱动高精度蜗轮蜗杆副来实现,从而保证了角度调整的准确度。
- 滚刀主轴采用大功率交流变频电机驱动,实现调速,传动过程采用消隙机构,实现高精度、高刚性的主运动传动。

● The adjustment of the hob head angle by the servo motor directly driving the high-precision worm gear pair, to ensure the accuracy of the angle adjustment.

● The hob spindle is driven by a high-power AC spindle servo motor, achieving high-precision and rigidity main motion transmission.



- 工作台采用大规格静压轴承支撑,高精度双蜗轮蜗杆副传动,保证工作台精确的无间隙运动。
- The worktable is supported by large-sized hydrostatic bearings and the high-precision double worm gear pair to ensure accurate and gapless indexing movement of it.



- 更换滚刀架,加工内齿内孔零件。
- Replace the hob head and process the internal gear.



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# 立式数控滚齿机

## CNC VERTICAL GEAR HOBBING MACHINE

### 机床特点

- 1、高刚性:机床导轨、滚刀架、工作台等部件用无间隙传动技术,消除了切削过程振动,确保高效切削;
- 2、滚铣复合工艺:刀具主轴可以同时安装铣刀和滚刀,铣刀粗加工后通过自动换刀实现精加工;
- 3、自动化程度高:机床各轴运动均由伺服电机驱动,操作方便,可实现自动换刀以及自动换角度;
- 4、安全性高:机床具备断电回退功能,在意外情况下可以有效保护刀具;
- 5、机床的高刚性配以可转位滚刀可以实现干式滚齿,绿色环保。
- 6、中大型机床为淬硬钢导轨加滚动块的结构形式,具有无间隙,高刚性的特点。

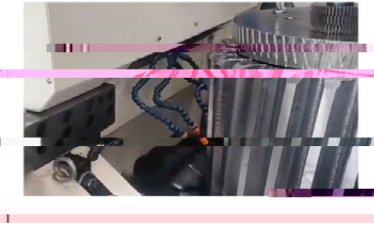
### MACHINE TOOL FEATURES

1. High rigidity: The machine tool guide rails, rolling tool holders, workbenches and other components use gapless transmission technology to eliminate vibration during the cutting process and ensure efficient cutting;
2. Rolling milling composite process: The tool spindle can be equipped with both milling cutters and hobs, and after rough machining, the milling cutter can achieve precision machining through automatic tool change;
3. High degree of automation: The movement of each axis is driven by a servo motor, which is easy to operate and can realize automatic tool change and automatic turning angle;
4. High safety: The machine tool has a power-off and fallback function, which can effectively protect the tool in case of unexpected situations;
5. The high rigidity of the machine tool combined with an indexable hob can achieve dry gear hobbing, which is green and environmentally friendly;
6. Medium and large machine tools use the structure of hardened steel guide rails with rolling blocks, which has the characteristics of no gap and high rigidity.



### 技术参数 THE MAIN PARAMETERS

| 名称<br>Description   | 型号<br>Type       |                    |                     |                     |                |                |                 |                 |                 |
|---|------------------|--------------------|---------------------|---------------------|----------------|----------------|-----------------|-----------------|-----------------|
|   | YK3150           | YK3180A<br>YK3180B | YK31125<br>YK31125A | YK31160<br>YK31160A | YK31200A       | YK31300        | YK31400         | YK31600         | YK31800         |
| 最大工件直径<br>Max. workpiece diameter                         | 500              | 800                | 1250                | 1600                | 2000           | 3000           | 4000            | 5000            | 8000            |
| 最大模数<br>Max. module                                       | 12               | 16/20              | 25                  | 25                  | 25             | 25             | 30              | 30              | 30              |
| 最大齿宽<br>Max. face width                                   | 400              | 600                | 800                 | 800                 | 800            | 800            | 1600            | 1600            | 1600            |
| 最大螺旋角<br>Max. helical angle                               | ±45              | ±45                | ±45                 | ±45                 | ±45            | ±45            | ±45             | ±35             | ±35             |
| 滚刀转速<br>Rotation speed of hob                             | 10-450<br>20-150 | 10-450<br>20-150   | 20-250<br>20-150    | 20-250<br>20-150    | 20-150         | 20-250         | 10-200          | 10-200          | 10-200          |
| 滚刀最大直径<br>Max. diameter of hob                            | 150              | 200                | 250                 | 250                 | 250            | 250            | 250             | 250             | 250             |
| 滚刀最大长度<br>Max. length of hob                              | 300              | 500                | 700                 | 700                 | 700            | 700            | 700             | 700             | 700             |
| 主轴中心至工作台中心距离<br>Center distance spindle/worktable         | 50-410           | 50-600             | 150-870             | 150-1050            | 300-1300       | 300-1750       | 400-2300        | 1200-3500       | 2000-4500       |
| 刀具回转中心至工作台面距离<br>Distance cutter center/worktable surface | 250-800          | 400-1200           | 500-1600            | 500-1600            | 500-1600       | 700-1800       | 900-2700        | 900-2700        | 900-2700        |
| 工作台最大承重<br>Max. load capacity of worktable                | 5000             | 7000               | 10000               | 10000               | 20000          | 20000          | 40000           | 100000          | 150000          |
| 工作台直径<br>Worktable diameter                               | 500              | 800                | 1200                | 1500                | 1600           | 1600           | 2500            | 2500            | 5500            |
| 工作台孔径<br>Bore of the worktable                            | 140              | 200                | 300                 | 300                 | 500            | 500            | 600             | 1000            | 1000            |
| 工作台转速<br>Worktable rotary speed                           | 0-20             | 0-15               | 0-10                | 0-10                | 0-7.5          | 0-7.5          | 0-5             | 0-2             | 0-2             |
| 径向进给速度<br>Radial feed speed                               | 0-3000           | 0-3000             | 0-3000              | 0-3000              | 0-3000         | 0-3000         | 0-3000          | 0-3000          | 0-3000          |
| 轴向进给速度<br>Axial feed speed                                | 0-1000           | 0-1000             | 0-3000              | 0-3000              | 0-3000         | 0-3000         | 0-3000          | 0-3000          | 0-3000          |
| 机床功率<br>Total power                                       | 2970             | 2970               | 29100               | 29100               | 29100          | 29100          | 29100           | 29100           | 29100           |
| 机床总重量<br>Total weight                                     | 约16              | 约20                | 约40                 | 约41                 | 约45            | 约46            | 约80             | 约100            | 约120            |
| 主机外形尺寸(长×宽×高)<br>Main Machine Dimension                   | 3723x2292x1633   | 4583x2292x1633     | 6146x4237x1633      | 6466x4237x1633      | 8318x4666x1633 | 8318x4666x1633 | 10566x5272x1633 | 10566x5272x1633 | 13116x5272x1633 |



注:  
1. 重量仅供搬运起吊时参考,具体以实物为准;  
2. 外观防护半防护全防护用户可根据实际需要进行选择;  
3. 公司将持续研发新产品,产品参数将持续优化。

Note:  
1. The weight is for reference only and the actual product shall prevail;  
2. The appearance protection of this machine tool has two options: semi-protection and full protection, which can be selected according to actual needs;  
3. We continue to innovate machine tool design. The parameters of each series of products in this manual are for reference only. If you have any inquiry, please contact us for the update.

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# 卧式数控滚齿机

## CNC HORIZONTAL GEAR HOBBIING MACHINE

### 机床特点

1. 高刚性: 机床导轨、滚刀架、工作台等部件应用无间隙传动技术, 消除了切削过程中振动, 保障高效切削, 滚刀刀具寿命长;
2. 自动化程度高: 机床各轴运动均由伺服电机驱动, 操作方便, 可实现自动换刀以及自动换角度, 尾座夹紧力自动调整;
3. 安全性高: 机床具备断电回退功能, 在意外情况下可以有效保护刀具;
4. 可以实现干式滚齿, 绿色环保;
5. 机床导轨结构主要采用分型设计, 产品采用滚动直线导轨副, 定位精度高, 中大机型床身和床罩导轨副采用滚动导轨, 具有无间隙、高刚性的特点。

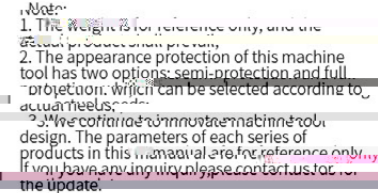
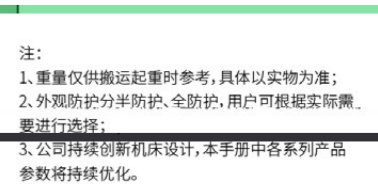
### MACHINE TOOL FEATURES

1. High rigidity: the machine guideway, hob head, table and other components use backlash-free transmission technology, eliminating vibration and improving cutting efficiency.
2. High automation: each axis is driven by a servo motor, which is easy to operate and to realize ATC & automatic angle adjustment, clamping force adjustment.
3. High safety: automatically retract function with the machine with the power off, ensure the cutters safety.
4. High efficient dry cutting is environmentally friendly.
5. Small machine tools use rolling linear guide pairs with high positioning accuracy, medium and large machine tools use the structure of hardened steel guideways with rolling blocks, which has the characteristics of no gap and high rigidity.



### 技术参数 THE MAIN PARAMETERS

| 名称<br>Description  | 型号<br>Type |              |         |            |              |
|--|------------|--------------|---------|------------|--------------|
|  | YK3620     | YK3650       | YK3680  | YK36125    |              |
| 最大滚齿直径<br>Max. workpiece diameter  | 200        | 500          | 800     | 1250       |              |
| 最大工件长度<br>Max. workpiece length  | 1200       | 3200         | 4000    | 5000       |              |
| 最大加工齿数<br>Max. module  | 6          | 20           | 32      | 32         |              |
| 最大工件重量<br>Max. workpiece weight  | 300        | 3000         | 15000   | 20000(带托架) |              |
| 刀具回转轴线与工件回转轴线距离<br>Distance between tool rotation axis and workpiece rotation axis | 40~180     | 100~300      | 100~500 | 100~850    |              |
| 径向/轴向进给速度<br>Radial/Axial feed speed   | mm/min     | 0~5000       | 0~2000  | 0~3000     | 0~3000       |
| 滚刀转速<br>Rotate speed of hob  | r/min      | 20~1200      | 20~300  | 20~250     | 25~250       |
| 工件转速<br>Rotation speed of workpiece  | r/min      | 0.1~200      | 0.1~20  | 0.1~20     | 0.1~20       |
| 最大滚刀直径<br>Max. diameter of hob   | mm         | 140          | 350     | 450        | 450          |
| 最大滚刀长度<br>Max. length of hob   | mm         | 200          | 400     | 400        | 400          |
| 刀架旋转角度<br>Rotation angle of tool rest  | °          | ±45          | ±45~90  | ±45~90     | ±45~90       |
| 尾座套筒最大行程<br>Max. travel of tailstock sleeve  | mm         | 70           | 100     | 100        | 100          |
| 机床总功率<br>Total power   | kW         | 约50          | 约66     | 约100       | 约122         |
| 机床总重量<br>Total weight  | t          | 约12          | 约25     | 约68        | 约98          |
| 主机外形尺寸(长×宽×高)<br>Main Machine Dimension  | m          | 3.4x2.3x2.76 | 9.7x3.4 | 10x5x5     | 10.6x5.2x5.2 |



注:  
1. 重量仅供搬运起重时参考, 具体以实物为准;  
2. 外观防护分半防护、全防护, 用户可根据实际需求进行选择;  
3. 公司持续创新机床设计, 本手册中各系列产品参数将持续优化。

Note:  
1. The weight is for reference only, and the actual weight shall prevail.  
2. The appearance protection of this machine tool has two options: semi-protection and full-protection, which can be selected according to actual needs.  
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