



# YS3118CNC型 高速数控滚齿机

## CNC high speed Gear Hobbing machine model YS3118CNC

本机床为按连续分度法工作的五轴数控高速滚齿机，具有三个数控直线轴：径向进给轴(X轴)；切向进给轴(Y轴)；轴向进给轴(Z轴)；两个数控回转轴：滚刀主轴回转轴(B轴)；工作台回转轴(C轴)。本机床吸取日本及欧洲机床的优点。The machine is 5 axes CNC high speed gear hobbing machine and work by the Continuous indexing. It has 3 CNC linear axes: radial feeding(X axis), tangential feeding(Y axis), axial feeding (Z axis), cutter spindle(B axis), worktable rotation (C axis). The machine gathered the advantage of Europe and Japan machine, and has the main features as follow:



### 主要特点：

#### Main features:

- 各运动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。
- 交流主轴电动机直接安装在刀架上，经过三对高精度圆柱斜齿轮传至滚刀主轴，区别于传统滚齿机设计中主轴运动由普通或变频电机通过较长传动链传至主轴，而此设计大大降低了传动误差，提高了传动精度，并增强了相关的传动特性和传动刚性，转速可在100-1000r.p.m范围内无级调速，特别适用于小直径多头滚刀高速高效滚齿加工。本机床具有刀具自动夹紧装置，刀具可以先在机床外对刀装置上调整好，对刀精度高，使得刀具快换成为可能，大大节约了非切削时间。
- 工作台采用大直径(Φ500mm)、高精度(3级)圆柱斜齿轮传动，改变了传统的工作台由蜗轮、蜗杆传动的形式，提高了加工效率，采用了高精度、高刚度滚动轴承支承，使得工作台最高转速可达300rpm。显著提高了机床加工精度和效率。
- 主要导轨副均采用了矩形大平面注塑镶钢淬硬导轨，传动刚性好，支承能力大，运动直线度高，径向和轴向快速运动速度最高可达2m/min。
- 机床在设计时考虑了整机的热平衡问题，热平衡结构设计、主要结构件均采用双层壁结构，自动磁力排屑装置等，在连续零件加工时机床热变形小，加工精度一致性好、刚性高，工人操作劳动强度小。
- 本机床的液压、润滑两部分油液相互分离，提高了液压系统的可靠性。润滑系统分为两个独立的部分，分别润滑齿轮传动副和滑动导轨副，用户可根据要求使用不同型号的润滑油。
- 本机床采用工作台固定、立柱移动方式实现径向进给，使加工刚性得到提高，并可方便配置盘类及轴类零件自动上、下料装置。
- 机床采用全数字控制。标准配置采用发那科公司高性能FANUC Oi-MD+EGB系统，并带有EGB电子齿轮箱，由它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，具有自动计数功能。本机床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。
- 本机床在正常情况下，加工精度可达GB10095-2001国标的7级。

The Axes drive by the independent AC servo motor, the transfer chain is short and the transmission rigidity is good, accuracy is high.

The AC spindle motor is directly setup on the cutter carriage; drive the spindle by 3 sets high accuracy cylinder helix gear. It is different from traditional gear hobbing machine in the design of spindle driving by ordinary or frequency motor pass a long chain. It will reduce the transmission error and improve the transmission accuracy, transmission rigid, the speed range is variable 100~1000RPM, it should be especially suitable for high speed and efficient cutting gear by small diameter and long hob cutter.

The worktable driven by AC servo motor pass the big size(Φ500mm) and high accuracy(3 class)cylindrical helix gear. it had changed traditional worktable driving by the worm wheel and support by the high accuracy and high rigidity roll bearing. The worktable rotation speed can achieve MAX. 300RPM. it improve the machining precision and efficiency.

The main guide are adopted the Rectangular, coated plastic, harden steel. The transfer rigidity is good and the support is well, radial feeding and axial feeding rapid speed can achive 2M/min.

the machine design had taken whole machine thermal balance and the main construction have double wall design and equipment the automatic chip conveyor etc. The thermal deformation is small in the continuous parts processing, the accuracy is good consistency, Workers labor intensity is small.

The hydraulic system and lubrication system is separated; it improved the reliability of hydraulic system. The Lubrication system is divided into two separate parts; it is lubricating the gear transmission and guide respectively. The user can use the difference lubrication oil according requirement.

The worktable is fixed and the big column moving for the radial feeding, it will improve the cutting rigidity and easy to equipment the load/unload system for the disk gear or gear shaft.

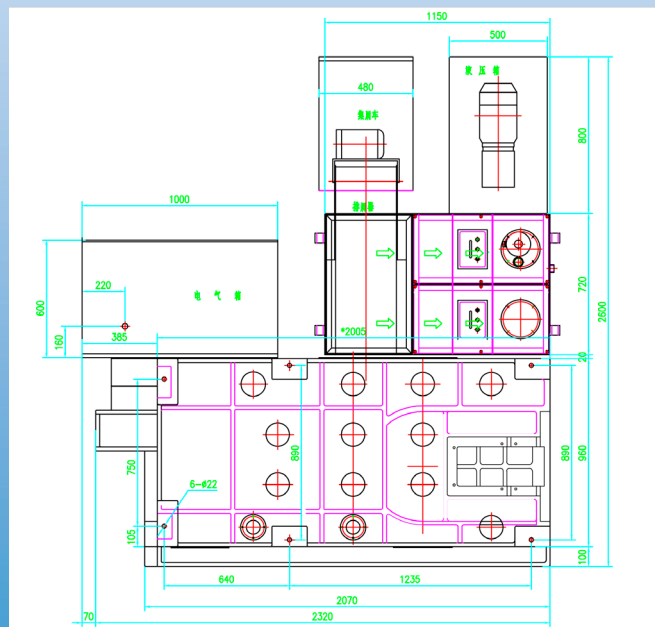
The machine is full CNC machine. It equipment the FANUC Oi-MD system plus the EGB (electrical gear box) function, it replaced the traditional change gears. The machine moving is high accuracy and easy to operating and automatic counting. The machines have Self-diagnosis function; the alarm text will show on the LED while the machine is failure.

The machining accuracy normally can achieve 7 class of GB10095-2001.

## 机床主要参数: Main specification:

最大加工直径	Max. Diameter	φ 180	mm
最大加工模数	Max. module	4	mm
最大加工螺旋角	Max. Helix angle	± 45	Deg.
可安装滚刀最大直径	Max. diameter of hobbing cutter	110	mm
可安装滚刀最大长度	Max. length of hobbing cutter	150	mm
滚刀最大轴向移动量	Max. Shifting length of hobbing cutter	115	mm
滚刀可换芯轴直径	Arbor	Φ 22、Φ 27、Φ 32	mm
滚刀主轴锥孔	Bore of the hobbing cutter	SK40	
滚刀中心到工作台中心水平距离	Dist. From the center of cutter to the center of worktable	25~210	mm
滚刀中心到工作台台面竖直距离	Vertical Dist. From the hobbing cutter to the face of worktable	240~490	mm
后立柱顶尖到工作台台面距离	Dist. from center of back column to the face of worktable	340~760	mm
工作台台面直径	Diameter of the worktable	Φ 200	mm
工作台孔径	The bore of the worktable	Φ 65	mm
工作台台面至床身底面距离	The Dist. From the face of worktable to the ground	900	mm
滚刀主轴转速范围 (B轴)	Max. Speed of the spindle	100~1000	rpm
工作台最高转速 (C轴)	Max. Speed of Worktable	300	rpm
轴向移动速度 (Z轴)	Axial feeding speed	1~2000	mm/min
径向进给速度 (X轴)	Radial feeding speed	1~2000	mm/min
切向运动速度 (Y轴)	Tangential feeding speed	750	mm/min
数控轴直线坐标分辨率	Ratio of CNC linear axes	0.001	mm
数控系统	CNC system	FANUC Oi-MD+EGB	
电机总容量	Total Power	approx 30	KW
主电机功率	Power of main motor	5.5	KW
主机体积	Size(L x W x H)	260x270x290	cm
机床净重	Net Weight	approx 7500	kg

## 机床平面布置图: Machine layout:



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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