



**HALLER**

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## 五轴弧面凸轮磨床

5 Axis Globoidal Cam Grinding Machine



## HALLER-C40

哈勒智能是一家高精度数控机床的制造商，致力于为客户提供刀具和零件加工解决方案。我们拥有不同系列的数控机床，如工具磨床、凸轮磨床、医疗骨锉磨床和齿轮倒角机床等，广泛应用于汽车、航空、电子、医疗等各个领域。

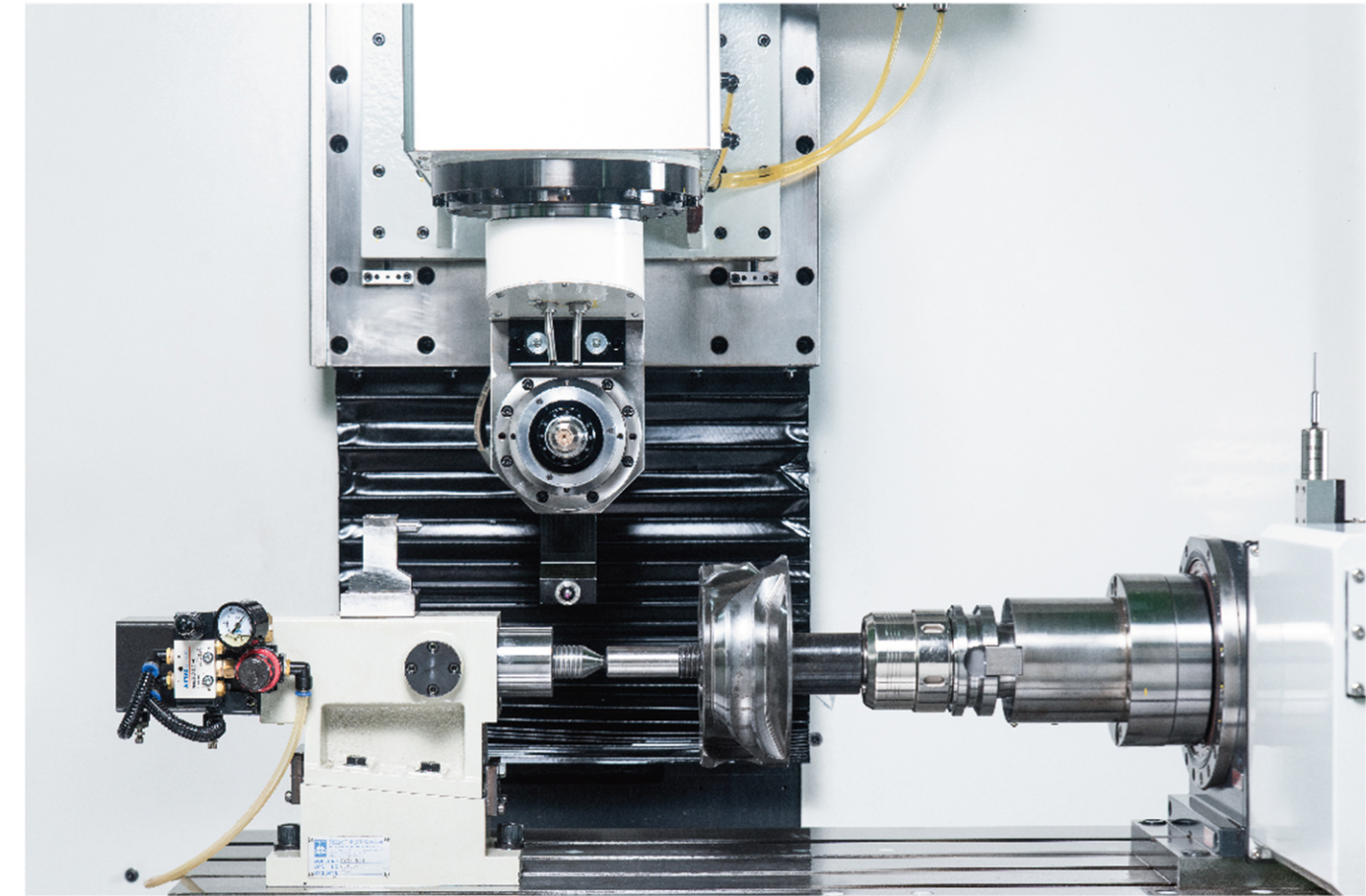
我们不仅可以为客户提供多元化的解决方案，专业的应用培训，优质的售后服务，还可以帮助客户解决加工难点，为客户创造更多价值。

Haller Intelligent is a manufacturer of high precision CNC machines, providing solutions of tools and parts processing. We have different series of CNC machines, such as tool grinding machines, cam grinding machines, medical bone rasper grinding machines, gear chamfering machines, widely used in industry fields including automobile, aviation, electronics, medical etc.

We can not only provide customers with diversified solutions, professional application training, and high-quality service, but also can help them solve processing problems and create more value for customers.

## 内部概览

### Inside Overview

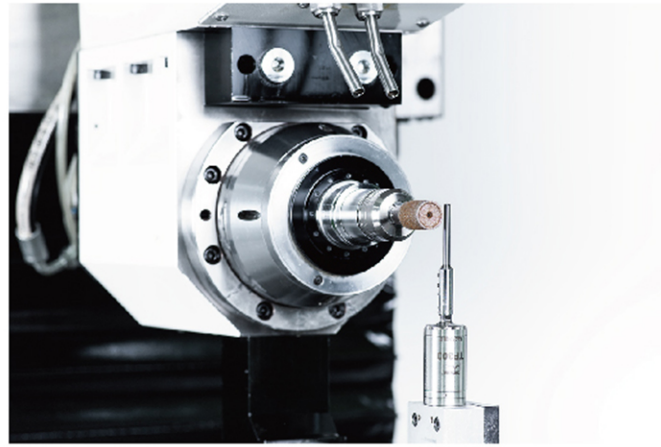


### 功能优势 Function Advantage

- ◆ 铸铁床身刚性好，不易变形，耐磨性高；
  - ◆ 五轴联动，高度的灵活性，充分满足自动化加工的多种要求；
  - ◆ 自动探测系统，可检测工件起始位置，无需人工调试；
  - ◆ 大功率高频主轴，转速高，加工速度快；
  - ◆ 自主开发的弧面凸轮磨削软件，操作简单；
  - ◆ 力士乐控制器，开放的系统，简单的工程设计和便捷的维护；
  - ◆ 金刚石自动修正砂轮直径；
  - ◆ 标配气动脚踏板，以控制工件轴夹紧和松开，符合人体工程学原理；
  - ◆ 基于CAD-CAM技术，开发满足需求的五轴后处理软件，开放式编程，可以满足客户多样化需求。
- ◆ Cast iron machine bed has good rigidity, high wear-resistance, not easy to deform;
  - ◆ 5-axis grinding with high flexibility to fully satisfy multi-requirements of automatic processing;
  - ◆ Automatic probing system for starting position detection without manual commissioning;
  - ◆ High power spindle with high speed, fast processing;
  - ◆ Innovative cambered cam grinding software for easy operating;
  - ◆ Rexroth control system with open interface, simple engineering design and convenient for maintenance;
  - ◆ Diamond pen automatic dressing grinding wheel diameter;
  - ◆ Pneumatic foot pedal control for clamping and releasing workpiece, conform to ergonomic principle;
  - ◆ Based on CAD-CAM technology, the control system is able to realize the 5-axis post-processing programming for various free programming needs of the customers sides.

## 自动在线测量系统

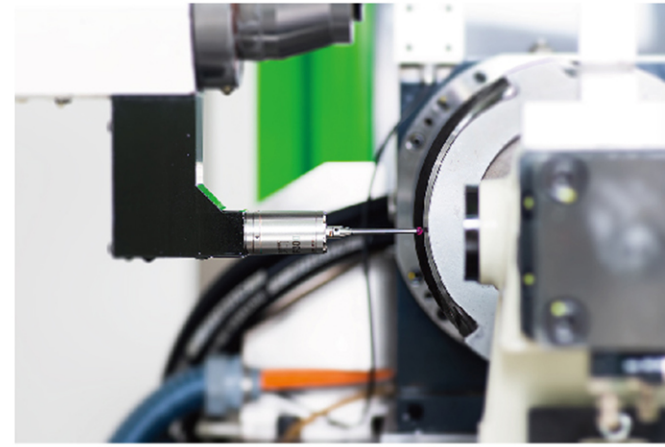
Automatic Internal Measuring System



### 工件测量系统 Workpiece measuring system

在线对工件进行迅速定位，在凸轮加工过程中测量并修整工件参数，保证了凸轮加工的质量。

The workpiece is internally rapid-positioned, and the workpiece parameters are measured and adjusted in the process of cam machining to ensure the cam quality.



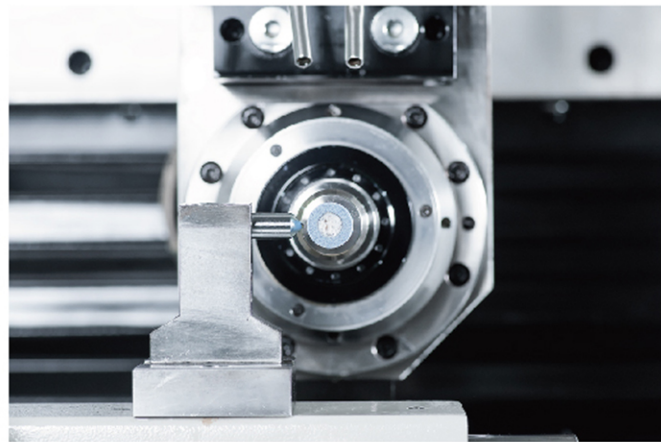
### 砂轮测量系统 Grinding wheel measuring system

机床在线测量砂轮参数，迅速便捷，有助于减少机外测量检测时间，避免人工检测错误，准确高效，从而保证凸轮加工稳定性，提高加工效率。

Machine automatic internal measurement of grinding wheel parameters is fast and convenient, to helpfully reduce the measuring time outside the machine, avoid manual checking errors, accurately and efficiently, so as to ensure the stability of the cam machining and efficiency is improved as well.

## 在线修整砂轮

On-line Wheel Dressing



工件在加工过程中可实现在线修整砂轮轮廓，确保磨削精度始终稳定，通过高精度传感器与数控系统联动，动态补偿砂轮磨损，减少人工干预，避免加工中断，提升生产效率。

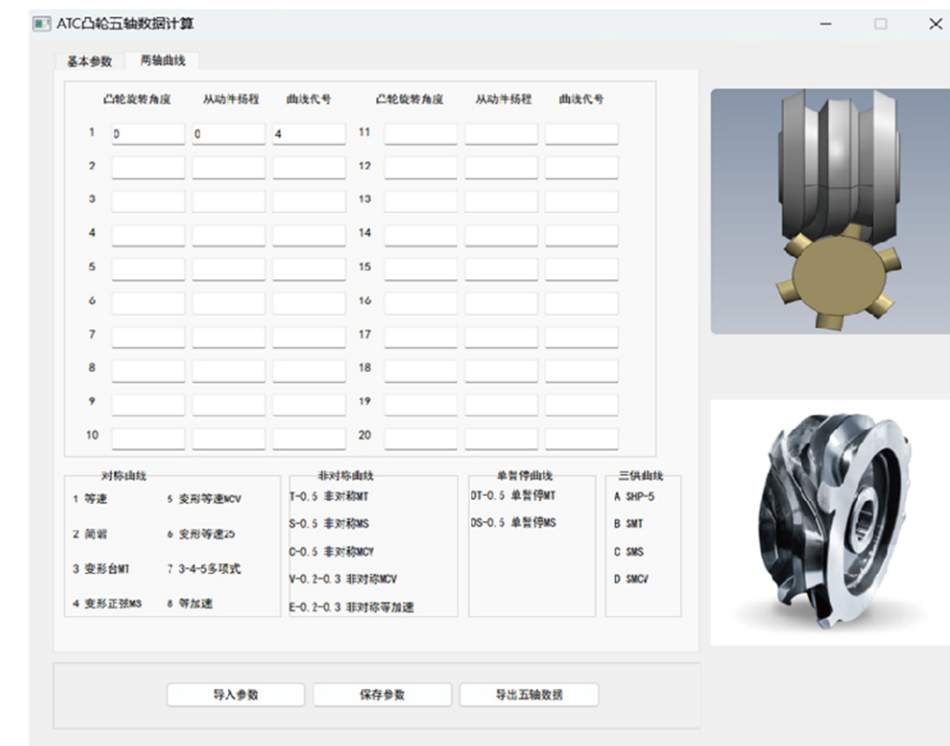
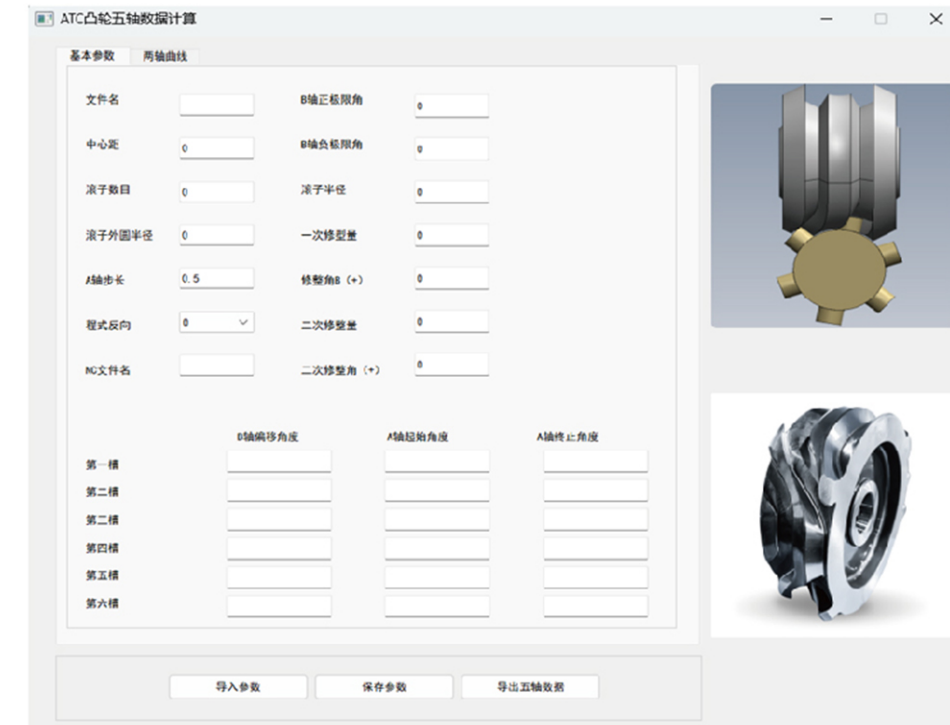
The workpiece can realise on-line grinding wheel profile dressing during the machining process to ensure that the grinding accuracy is always stable, and through the linkage of high-precision sensors and the CNC system, it can dynamically compensate for the wear of the grinding wheel, reduce manual intervention, avoid interruption of machining, and improve the production efficiency.

## 曲线设计软件

Curve Design Software

定制化的ATC凸轮曲线设计软件，可以根据客户不同需求，设计生成磨削软件加工时所需要的五轴曲线代码，并可以实现进出口区域修正。

The customized curved surface ATC cam curve design software can design and generate the 5-axis curve code required for grinding software processing according to different needs of customers, and can realize the correction of the entrance, as well as the exit area.



## 磨削软件

Software

自主开发的弧面凸轮磨削软件，与实际运行轨迹高度吻合，使用者只需在机床界面上输入工件的必要参数，软件就会自动生成磨削程序，可以实现五轴单边磨削，简便高效和高精度。

Innovative cambered cam grinding software, highly consistent with the actual running path. The user only needs to input the necessary parameters of the work piece on the machine interface, and the software will automatically generate the grinding program, 5 Axis single-side grinding can be realized easily and high efficiently.



## 可加工示例

Application Example



## 技术参数

Technical Data

数控系统 CNC control system		力士乐 Rexroth
轴行程 Axis travel		
X轴(前后轴)	X axis (Forward & Back)	550mm
Y轴(上下轴)	Y axis (Up & Down)	410mm
Z轴(左右轴)	Z axis (Left & Right)	1110mm
驱动 Drive		
C轴(工件轴) C axis (Work piece axis)	直驱电机 Direct drive motor	自动夹紧系统 BT50 (Automatic tightening system)
B轴(旋转轴) B axis (Rotation axis)	直驱电机 Direct drive motor	+95--195
主轴 Spindle		
高频旋转主轴	High frequency rotating spindle	7.5KW 最高转速 (Speed max.) 30000 rpm/min
主轴冷却	Spindle cooling	独立油冷 (Separate oil cooling)
自动加紧系统	Automatic tightening system	HSK40E
测量系统 Measurement system		
自动工件测量	Auto-tool measurement	标配 (Standard)
自动砂轮测量	Auto-wheel Grinding measurement	标配 (Standard)
机床尺寸 Machine dimensions		
长度/宽度/高度	Length / Width / Height	3150mm*2380mm*2362mm
重量	Weight	约 (Appr.) 6000kg
电源	Power supply	380V- 50HZ / 65A
压缩空气	Air supply	≥6bar

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