

6 数控齿条加工机床

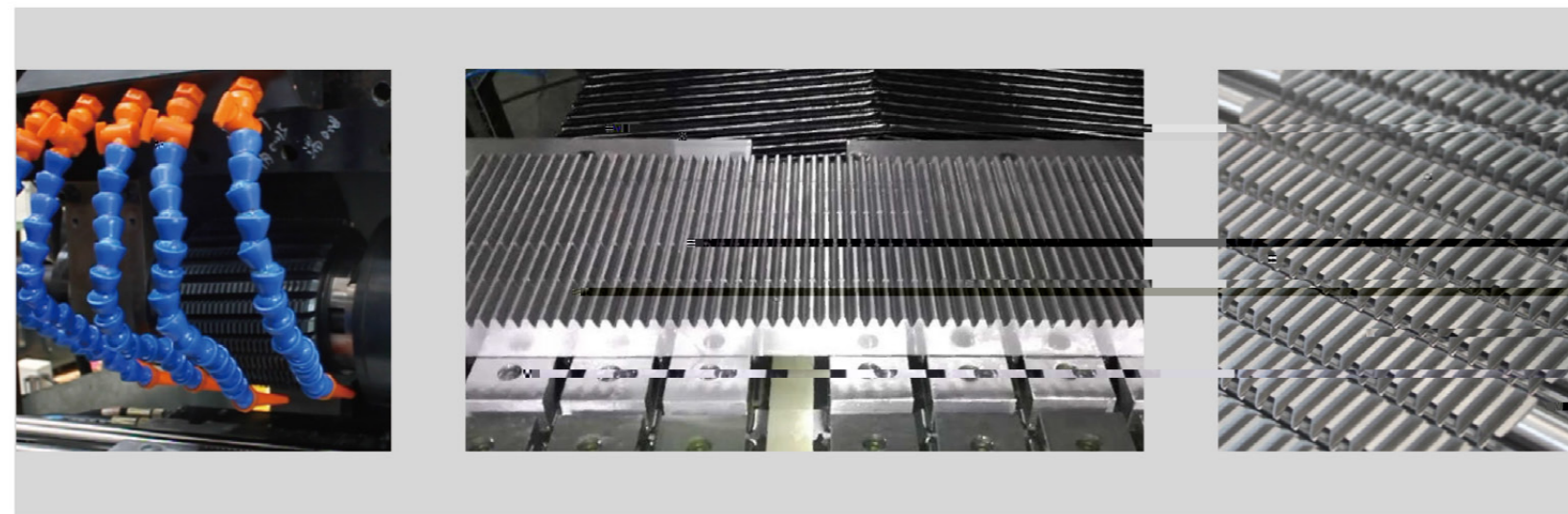
CNC RACK GEAR MACHINE SERIES

精密齿条制齿的全工艺制造机床 为客户提供全套解决方案

针对于汽车行业、电梯、工程机械、机床等行业的精密磨削加工。是单件加工或批量生产，亦或是大批量成型精密加工，我们都能全面为客户提供解决方案。

The whole process manufacturing machine for precision rack teeth provides customers with complete sets of solutions.

For precision rack processing in the automotive, elevator, engineering machinery, machine tools and other industries; whether it is single-piece processing, or efficient small-batch production, or high-volume precision processing, we can provide customers with a full set of solutions.



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CNC RACK GEAR MILLING MACHINE

机床特点

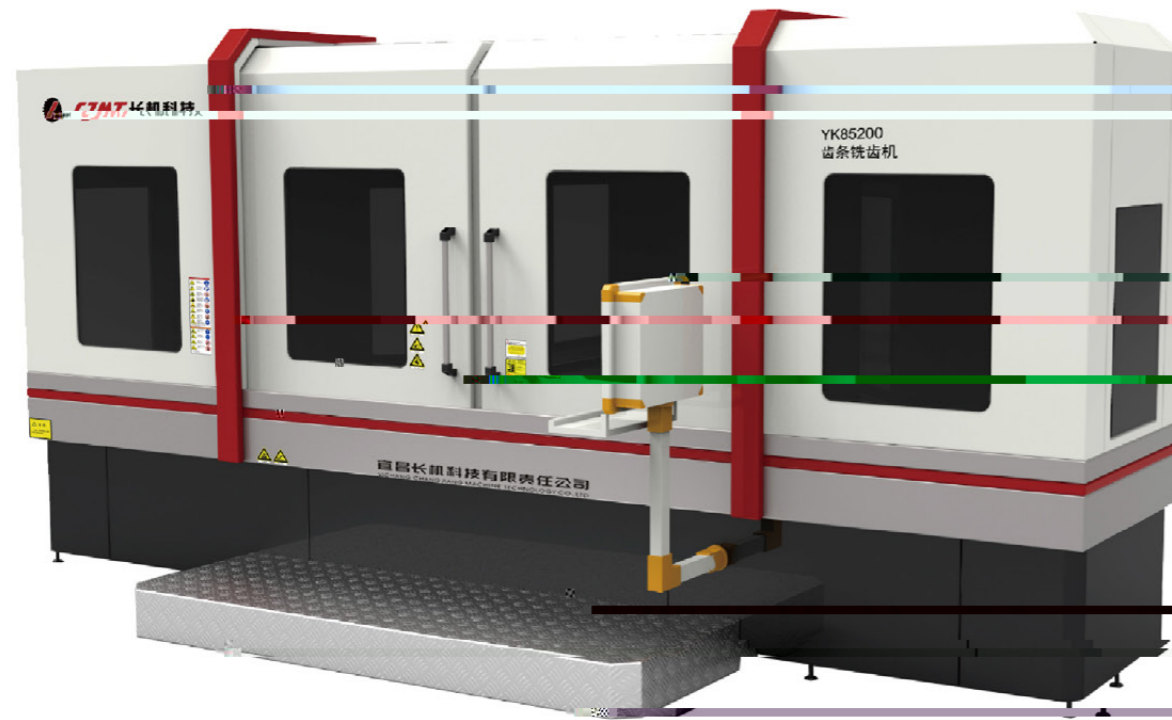
YK85125A和YK85200A是大改进机型，精度更稳定和效率提高50%；

1. 机床刚性好：机床铸件采用高强度铸件，拓扑优化设计；镶钢导轨，随动锁紧；刀具主轴轴承选用进口品牌，静压型主轴，SKF/MNS伺服电机驱动，传动精度高；
2. 机床精度高：工作台全闭环，静压导轨，确保分度高精度；主轴驱动轮独立支撑，HSK刀柄定位，回转精度高；双AA级齿条铣刀，切削精度国标7级；
3. 机床切削效率高：机床主轴电机45KW(S3)，利用率可达85%；设计刀具保护和安全生产装置，确保高速加工安全；
4. 机床适配性：机床数控系统采用SIEMENS 828D；排屑系统配三级过滤净化、大流量冷却、冲屑；导轨防护大升级，确保大流量冲屑安全；全防护或半防护，确保机床冲洗、冷却充分；可选配夹具、单机自动上下料等。

MACHINE TOOL FEATURES

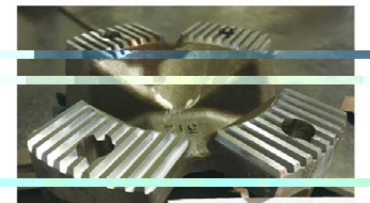
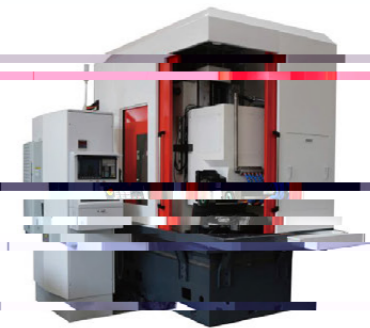
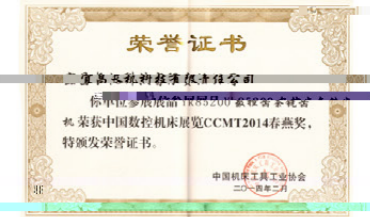
YK85125A and YK85200A are greatly improved models with more stable accuracy and 50% higher efficiency.

1. Good rigidity of machine tool: machine tool castings adopt high strength castings and Topology optimization design; inlaid steel guide rail, follow-up locking; tool spindle drive chain full clearance, bearing static pressure double support, SIEMENS servo spindle motor, drive good torque characteristics;
2. High accuracy of the machine tool: full closed-loop workbench, static guide to ensure high precision indexing; Spindle drive wheel independent support, HSK tool & blanking, high rotation accuracy; Double AA grade rack milling tool, cutting accuracy reaches national standard 7;
3. The cutting efficiency of the machine tool is high: the spindle motor of the machine tool is 45KW (S3), and the utilization rate can reach 85%; design tool protection and safety protection devices to ensure the safety of high-speed machining;
4. Machine tool adaptability: the CNC control system of the machine tool is SIEMENS 828D; chip removal system is equipped with three-stage filtration, large flow cooling, chip punching and cooling of the machine. The guide rail protection is greatly upgraded to ensure the safety of large flow chip punching; fully-guarded or semi-guarded to ensure adequate flushing and cooling of the machine.



技术参数 THE MAIN PARAMETERS

名称 Description		型号 type	
		YK85125A	YK85200A
最大加工工件长度(直齿) Max. workpiece length (straight teeth)	mm	1250	2000
最大加工模数 Max. module	mm	30	30
加工斜齿条角度范围 Max. helix angle	°	±25	±25
最大加工宽度 Max. workpiece width	mm	400	400
工作台最大承重 Max. load on worktable	kg	3000	5000
工作台尺寸 Worktable diameter	mm	600 x 1250	805 x 2900
铣刀最大尺寸 Max. size of milling cutter	mm	Φ320~180+2倍齿深	Φ320~180+2倍齿深
最大装刀宽度 Max. mounting width of cutter	mm	300	300
主轴电机功率 Main spindle motor power	kW	37 (S1)	37 (S1)
主轴转速 Main spindle speed	r/min	40~350	40~350
主轴装刀直径 Max. diameter of spindle cutter holder	mm	Φ60	Φ60
刀具纵向进给速度 Speed of cutter longitudinal feed	mm/min	5500	5500
刀具垂直进给速度 Speed of cutter vertical feed	mm/min	2000	2000
工作台横向进给速度 Speed of worktable transverse feed	mm/min	10000	10000
机床重量 Total weight	t	约17	约21
主机外形尺寸(长×宽×高) Main Machine Dimension	m	3.56x4.7x3.1	3.72x7.3x3.1



- 注：
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2. 外观防护分半防护、全防护，用户可根据实际需要进行选择；
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, the actual product shall prevail;
2. The appearance protection of the 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 product in this manual will be continuously optimized.

数控齿条磨齿机

CNC RACK GEAR GRINDING MACHINE

机床特点

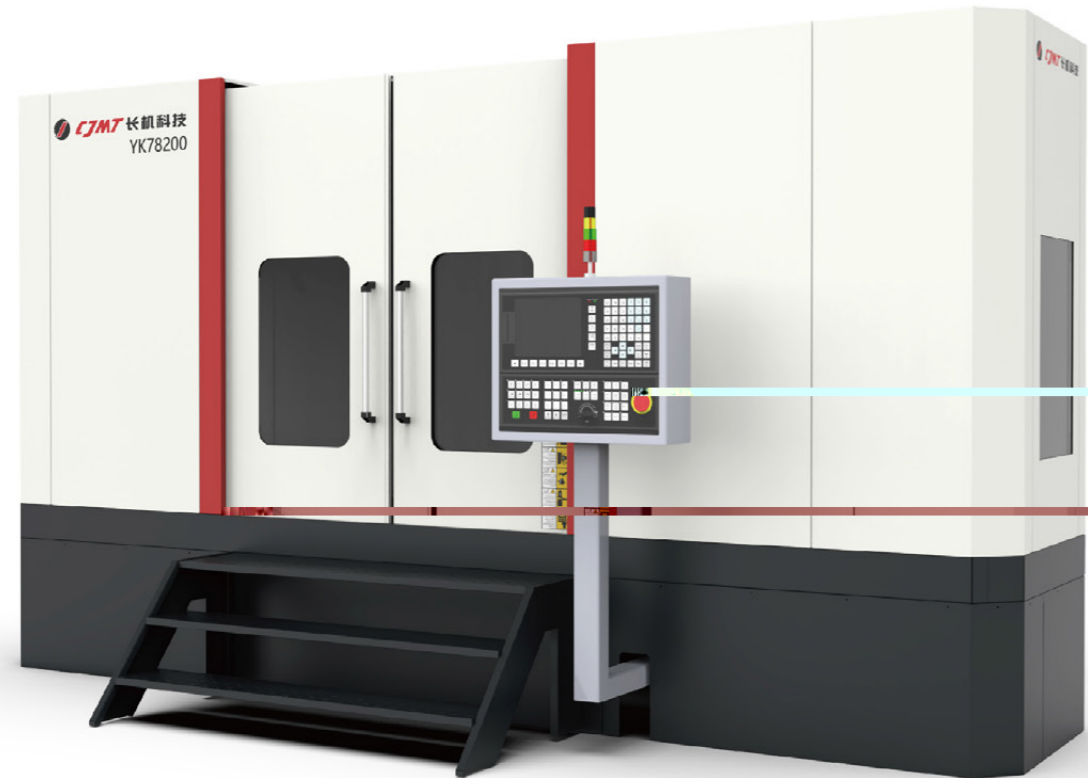
适用于各类直、斜齿条齿面的磨削加工，特别适合于各种精密齿条硬齿面的磨削。机床主要技术特点：

1. 机床砂轮机械主轴由西门子主轴伺服电机驱动，内置动平衡仪，自动监测并实现砂轮的自动平衡，砂轮恒线速度磨削；
2. 机床配AE自动对刀系统；
3. 砂轮修整金刚滚轮采用电主轴直驱，回转精度高，可靠性强；
4. 配备了高灵敏性高精度的在位检测系统；
5. 机床排屑系统实现了磨削油温度的恒温控制；
6. 机床具有断电自动回退功能，确保机床运行的安全。

MACHINE TOOL FEATURES

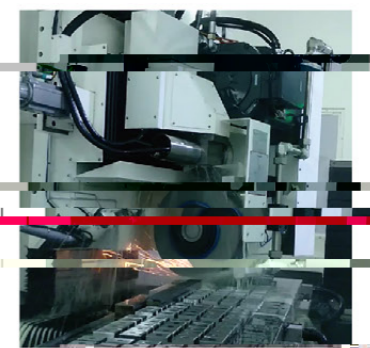
CNC rack gear grinding machine is widely used to the grinding process of all kinds of spur and helical rack gears, it is especially suitable for grinding various of precision hard rack gears. Machine tool main technical Feature:

1. The Spindle is driven by Siemens servo motor, built-in dynamic balancing instrument to automatically monitor and realize the automatic balance of grinding wheel. And keep Constant linear grinding speed.
2. Machine with AE automatic cutter match system.
3. Grinding wheel dressing diamond roller adopts direct drive by motorized spindle with high rotation accuracy and reliability.
4. Equipped with high sensitivity and high precision in place measurement system.
5. The chip conveyor realizes the constant temperature control of grinding oil.
6. Automatically retract function with power-off to ensure the machine safety.



技术参数 THE MAIN PARAMETERS

名称 Description	型号 Type
	YK78200
最大加工模数 Max. module	18
最大加工工件长度 Max. workpiece length	2000
加工斜齿条最大角度 Max. helical angle	±20
主轴电机功率 Spindle motor power	15
砂轮主轴转速 Grinding wheel spindle speed	12000
最大砂轮宽度 Maximum grinding wheel width	105
砂轮直径 Grinding wheel diameter	φ220~400
砂轮轴安装直径 Mounting diameter of spindle grinding wheel	φ152.4 (6英寸)
金刚滚轮直径 Diameter of diamond roller	φ200
X轴最大行程 Max. stroke of X-axis	500
X轴最大进给速度 Maximum feed speed of X-axis	600
Y轴最大行程 Max. stroke of Y-axis	2000
Z轴最大行程 Max. stroke of Z-axis	400
Z1轴最大行程 Max. stroke of Z1-axis	100
Y1轴最大行程 Max. stroke of Y1-axis	125
机床总功率 Total machine power	约110
机床重量 Total weight	约23
主机外形尺寸(长×宽×高) Main Machine Dimension	5.98x3.77x2.34



- 注:
1. 重量仅供参考，具体以实物为准；
 2. 外观防护分半防护、全防护两种，用户可根据需要选择；
 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:
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2. The appearance protection of the 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 will be updated for reference only. If you have any inquiry, please contact us for the update.

数控强力齿条铣齿机

CNC POWER RACK GEAR MILLING MACHINE

机床特点

1. 机床刚性好: 机床铸件采用高强度铸件、拓普优化设计; 镶钢导轨、随动锁紧; 刀具主轴传动链全消隙, 轴承、静压双支撑, SIEMENS伺服主轴电机驱动, 力矩特性好。
2. 机床精度高: 主轴驱动轴轮齿支撑, 主轴回转精度高; 双AA级齿条刀具, 切削精度6级, 加工精度0.01mm。
3. 机床切削效率高: 机床主轴电机45KW(S3), 利用率可达85%; 设计刀具保护和全保护装置, 确保高速加工安全;
4. 机床适配性: 机床数控系统采用SIEMENS 828D; 排屑系统配三级过滤净化、大流量冷却、冲屑; 全防屑罩的防护, 确保操作人员的安全; 刀具自动换刀, 实现无人值守加工。

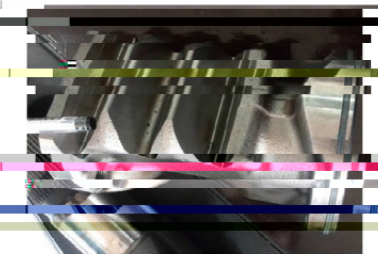
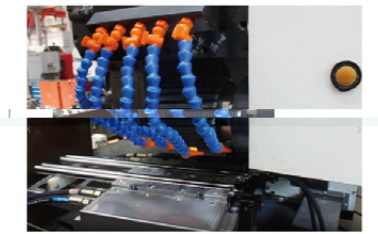
MACHINE TOOL FEATURES:

1. Good rigidity of machine tool: machine tool castings adopt high strength castings and Topology optimization design ; inlaid steel guide rail, follow-up locking; tool spindle drive chain full clearance, bearing, static pressure double support, SIEMENS servo spindle motor drive, good torque characteristics;
2. High precision of the machine tool: the spindle drive wheel is independently supported, and the spindle rotation precision is high; double AA rack milling tool, and the cutting accuracy reaches national standard 6.
3. The cutting efficiency of the machine tool is high: the spindle motor of the machine tool is 45KW (S3) and the utilization rate can reach 85%; design tool protection and safety protection devices to ensure the safety of high-speed machining;
4. Machine tool adaptability ; the CNC system of machine tool adopts SIEMENS 828D ; and the chip removal system is equipped with three-stage filtration, large flow cooling and chip punching. The guard罩 protection is fully equipped to ensure that the machine is protected and cooled adequately, ensure the safety of the machine automatic loading and unloading, etc.



技术参数 THE MAIN PARAMETERS

名称 Description	型号 Type
	YK8532A
最大加工模数 Max. Module	mm 12
最大加工工件长度 Max. Work Length	mm 300
加工斜齿条最大角度 Max. Helix Angle	° ±25(夹具保证)
主轴电机功率 Main Motor	kW 37
主轴转速 Spindle Speed	r/min 40-350
最大刀具宽度 Max. Cutter Width	mm 300
铣刀外径直径 Milling Cutter Diameter	mm $\phi 180$ 2倍刀深 $\phi 320$
主轴装刀杆直径 Milling Cutter Arbor Diameter	mm $\phi 60$
X轴最大进给速度 Max. Feeding speed of X Axis	mm/min 1200
X轴最大行程 Max. Travel range of X Axis	mm 500
Z轴最大行程 Max. Travel range of Z Axis	mm 400
Z轴最大进给速度 Max. Feeding speed of Z Axis	mm/min 500
机床总功率 Total power	kW 约51
机床总重量 Total weight	t 约10
主机外型尺寸(长X宽X高) Main Machine Dimension	mm 3.3X2X2.8



注:
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Note:
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数控强力齿条磨齿机

CNC POWER RACK GEAR GRINDING MACHINE

机床特点

1. 机床刚性好: 机床结构采用典型强力磨床结构, 高强度铸铁, 桥式优化, 双导轮导轨系统, 恒线度磨削; 确保安全; 修整主轴等轴径设计, 驱动、定位分离设计, 确保修整无侧让。
2. 机床精度高: 机床导轨采用直线导轨和静压阻尼块组合方式, 提高导轨抗振性; 全闭环设计, 确保定位高精度; 电机外置水冷, 大流量冷却液, 确保电机寿命。
3. 机床切削效率高: 机床配最大电机功率115KW, 利用率高达90%; 适用于深齿磨齿工艺; 配备断屑回温功能, 确保安全; 配静式油雾分离器, 大流量冷却液, 冲屑, 流量开关保护, 确保冷却可靠。
4. 机床适配性: 机床数控系统采用SIEMENS 828D或840DSL; 根据加工工件的不同, 配不同磨削软件; 配置台置式修整器, 可选配顶置式修整器; 能满足在线修整要求; 主切削罩设计, 配静式油雾分离器; 可选配夹具、单机自动上下料等。

MACHINE TOOL FEATURES.

1. Good rigidity: The machine tool adopts a typical power grinding machine structure, high-strength cast iron, bridge-type optimization, double guide rail system, constant linear grinding ensure the safety of the machine; dressing spindle isometric diameter design, drive and positioning separation design, ensure dressing without side clearance.
2. High precision of machine tool: The guide rail of machine tool adopts the combination of linear guide rail and static pressure damping block to improve the vibration resistance of guide rail. The closed-loop design to ensure high positioning accuracy; external motor or water cooling, large flow constant temperature cooling, to ensure the thermal stability.
3. The cutting efficiency of machine tool is high: the maximum motor power of machine tool is 115KW, and the utilization rate is up to 90%. Suitable for deep tooth grinding process, equipped with power-off back function to ensure safety, with suction circulation belt filter chip removal system, large flow cooling liquid, chip removal, flow switch protection, to ensure reliable cooling.
4. Machine tool adaptability; the CNC system of machine tool adopts SIEMENS 828D or 840DSL, according to the different processing workpiece, equipped with different grinding software; configure the table-mounted dresser, optional top-mounted dresser; can meet online dressing requirements; main cutting cover design, with electrostatic oil mist separator, optional fixture, single machine automatic loading and unloading, etc.



技术参数 TECHNICAL PARAMETERS

名称 Description	型号 Type	YK7832		YKA7832	
最大加工模数 Max. Module	mm	20		12	
最大加工齿长 Max. tooth length	mm	550		550	
主轴电机功率 Spindle motor power	kW	110		30	
SP1轴转速 SP1 Shaft speed	r/min	1~11000		1~11000	
SP2轴转速 SP2 Shaft speed	r/min	4~1500		4~1500	
最大砂轮宽度 Max. Grinding wheel width	mm	740		740	
最大砂轮直径 Grinding wheel diameter	mm	Φ600		Φ500	
主轴砂轮孔安装直径 Mounting diameter of spindle grinding wheel hole	mm	Φ203.2mm (8inch)		Φ203.2mm (8inch)	
X轴最大行程 Max. Travel range of X-axis	mm	1700		1700	
X轴最大进给速度 Max. Feeding speed of X-axis	m/min	10		10	
Y轴最大行程 Max. Move Distance of Y-axis	mm	480		480	
Y轴最大进给速度 Max. Feeding speed of Y-axis	m/min	5		5	
Z轴最大行程 Max. Move Distance of Z-axis	mm	450		450	
Z轴最大进给速度 Max. Feeding speed of Z-axis	m/min	10		10	
金刚砂轮直径 Emery wheel diameter	mm	160		160	
砂轮中心至工作台面距离 Distance from grinding wheel center to worktable	mm	200-680		200-680	
工作台面安装尺寸(长度X宽度) Workbench mounting dimension (length X width)	mm	1250X375		1250X375	
移动工作台最大承重 Maximum load-bearing capacity of mobile worktable	kg	1500		1500	
机床总重量 Total weight	t	约12		约12	
主机外型尺寸(长X宽X高) Main Machine Dimension	m	3.15X2.2X2.24		3.15X2.2X2.24	

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