

6 数控齿条加工机床

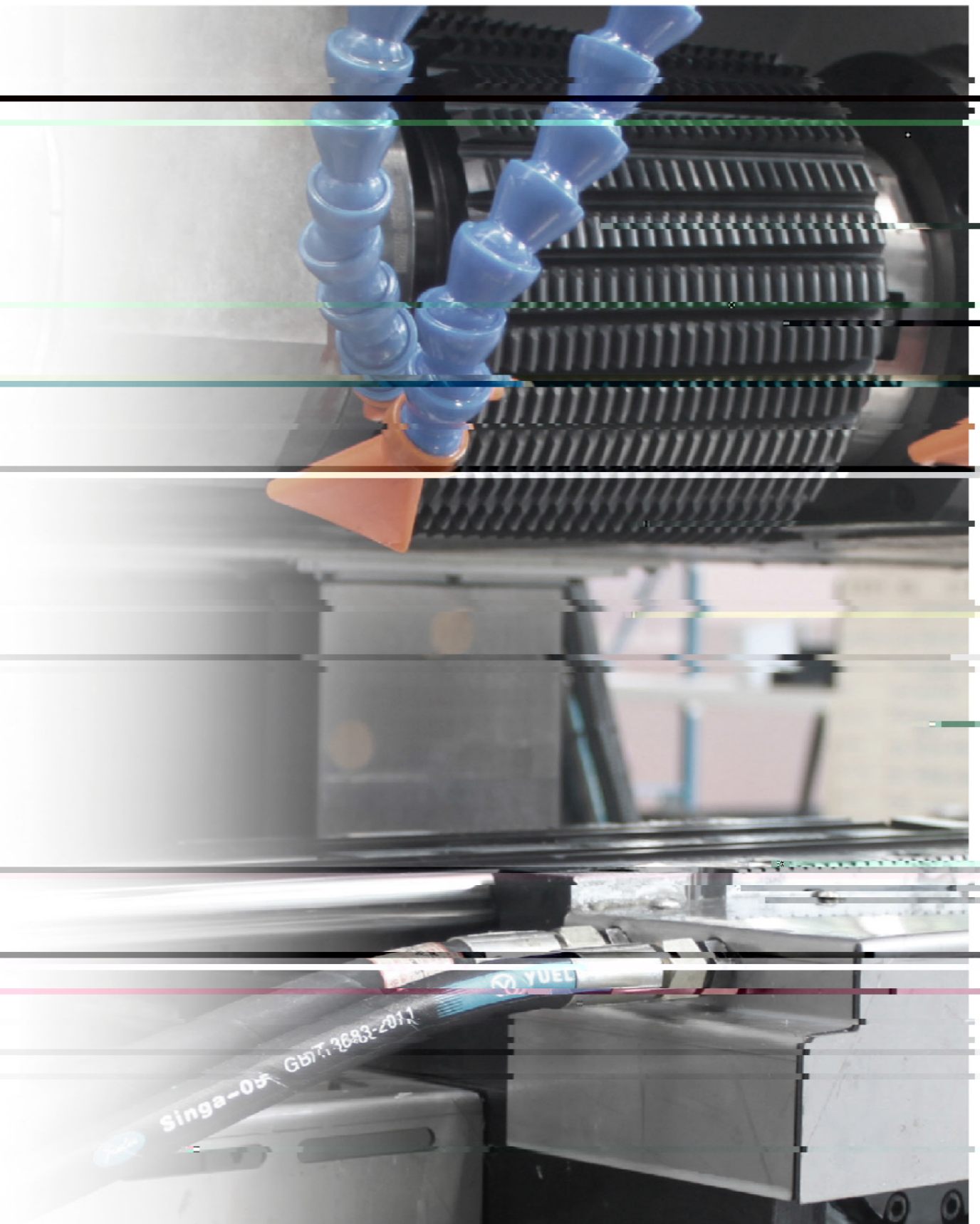
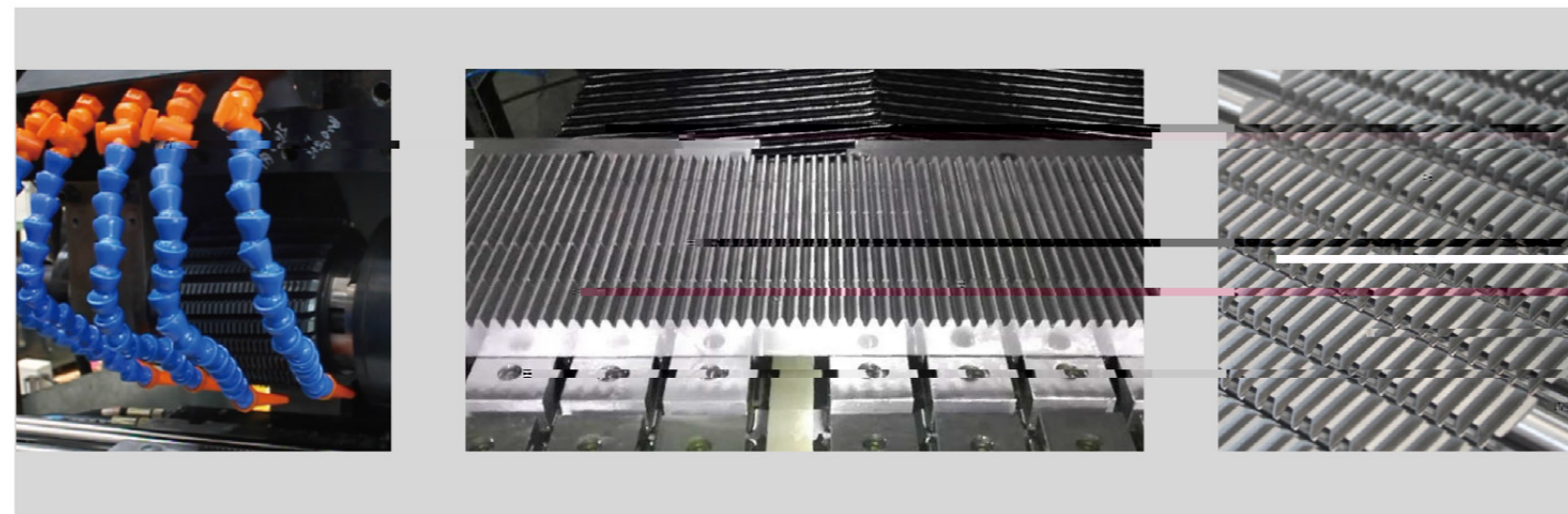
CNC RACK GEAR MACHINE SERIES

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，是单件的加工，还是高效的中小批量生产，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 tool of precision rack teeth provides customers with complete sets of solutions.

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



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1

2

3

4

5

6

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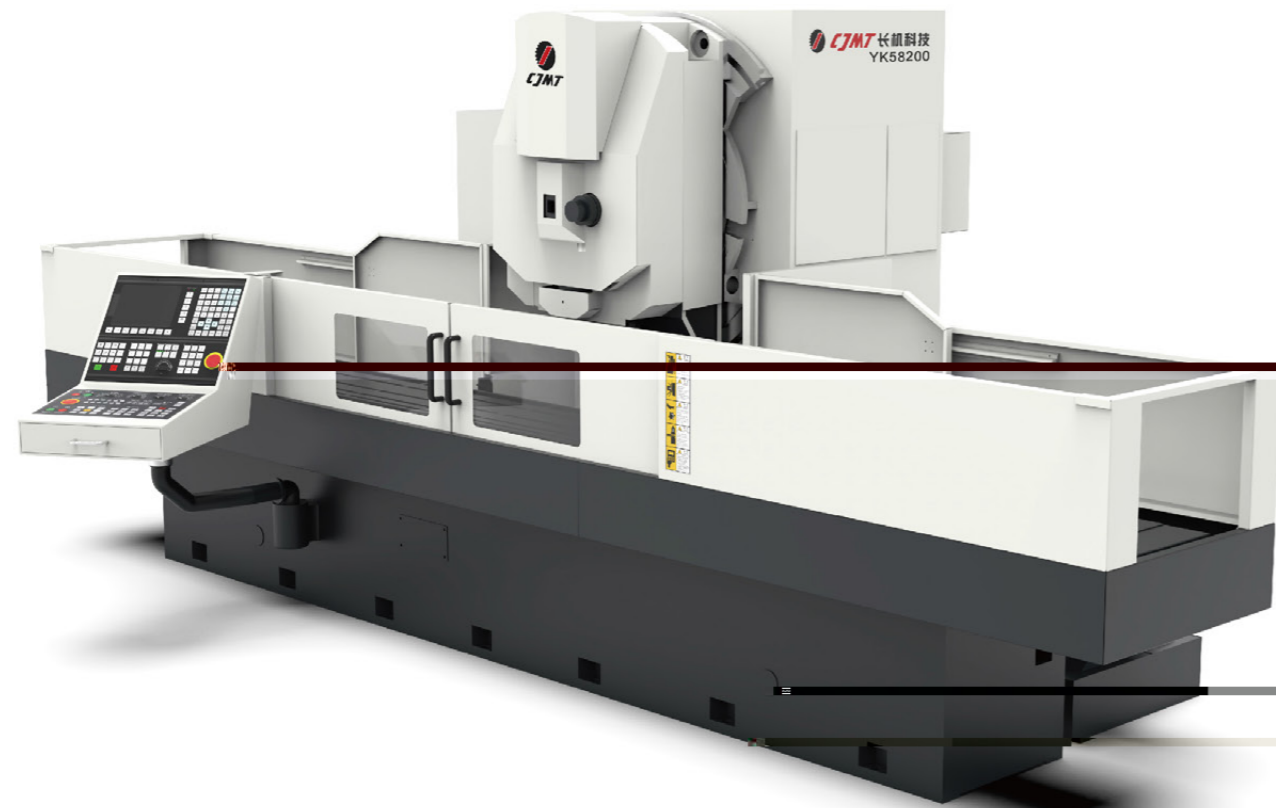
CNC RACK GEAR SHAPING MACHINE

机床特点

1. 机床刚性好: 机床铸件采用优质铸铁, 接合面高精度刮研联接; 导轨采用TF软带减摩滑轨, 抗振性好; 大直径刀轴和短的主轴传动链, 圆周吃刀深度大;
2. 机床精度高: 刀架旋转调整螺旋角, 直齿刀具加工斜齿, 斜齿刀具加工直齿, 受导程高精度刀架转动副, 带隙电机驱动轴系, 刚性强, 精度高; 精密刮研导轨副, 刚性高; 双V级精密插齿刀, 切削精度国标2级;
3. 机床切削效率高: 机床主轴电机11KW, 主轴冲程线速度30m/min, 圆周吃刀量大; YKR5832机床配静压刀架体, 主轴冲程线速度可达40 m/min; 设有安全保护装置, 确保加工安全;
4. 机床适配性: 机床数控系统采用SIEMENS 828D; 大流量冷却, 确保冷却充分; 可选配夹具、单机自动上下料等。

MACHINE TOOL FEATURES

1. The machine rigidity is good: the machine casting is made of high quality cast iron, high precision scraping joint connection, TF soft belt sliding guide rail with good vibration resistance; Large diameter tool shaft and short spindle driving chain, large circumference cutting depth;
2. High precision of machine tool: the tool holder rotates to adjust the spiral angle, the straight tooth tool processes the helical tooth, and the structure is simple; variable lead high-precision turret worm gear pair and servo motor coaxially drive high-precision gear pair, with high general accuracy; precision scraping guide rail with high rigidity; double A A grade rack gear shaper cutter, and the cutting accuracy reaches national standard 2;
3. The cutting efficiency of the machine tool is high: the spindle motor of the machine is 11KW, the line speed of the spindle shaft is 30m/min, and the amount of cutting in the circumference is large; YKR5832 machine tool is equipped with static pressure tool holder, and the linear speed of the spindle shaft can reach 40m/min, ensuring processing safety;
4. Machine tool adaptability, The CNC system of machine tool adopts SIEMENS 828D; Large flow cooling liquid, ensure adequate cooling; optional machine automatic loading and unloading, etc.

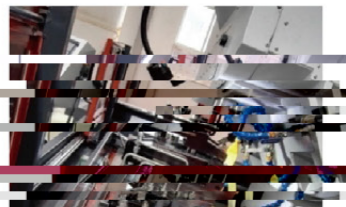
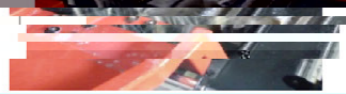
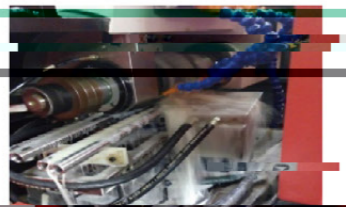


技术参数 THE MAIN PARAMETERS

名称 Description	型号 Type			
	YKR5832	YK58125	YK58200	YK58300
最大加工圆周吃刀量 Max. machining depth (circumference) mm	300	1250	2000	3000
最大模数 Max. module mm	4	12	12	12
最大加工工件倾斜角 Max. angle of inclination °	±20	±30	±30	±30
插齿刀最大冲程长度 Max. cutter stroke length mm	100	160	160	160
插齿刀主轴冲程数 Cutter stroke mm	100-150	60-90	60-90	60-90
插齿刀行程位置调整量 Adjusting amount of cutter travel mm	30	50	50	50
工作台切向进给速度 Tangent feed speed of worktable mm/min	0~3000	0~1000	0~1000	0~1000
插齿刀让刀量 Cutter relieving mm	0.3	≥0.5	≥0.5	≥0.5
插齿刀安装轴径直径 Cutter arbor diameter mm	31.743	31.743	31.743	31.743
工作台面尺寸 Worktable size mm	740x400	1350x490	2150x490	3150x490
插齿刀轴线至工作台中心平面距离 Center distance cutter/worktable mm	-	-110-270	-110-270	-110-270
插齿刀安装端面至工作台面距离 Distance cutter mounting surface/worktable surface mm	110-300	160-370	160-370	160-370
机床总功率 Total power kW	约8.5	约30	约30	约30
机床重量 Total weight t	约6	约11	约13	约15
主机外形尺寸(长×宽×高) Main Machine Dimension m	2.73x1.9x2.3	2.4x4x3	2.4x6x3	2.4x9x3

- 注:
1. 重量仅供参考, 实际产品以实物为准;
 2. 外观防护分为半防护和全防护, 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 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 update.



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1

2

3

4

5

6

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数控齿条磨齿机

CNC RACK GEAR GRINDING MACHINE

机床特点

- 适用于各类直、斜齿条磨削的精密磨齿机，特别适用于各种精密齿条及齿圈的磨削，且安全环保。
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，回程精度高且无抖动；
 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。

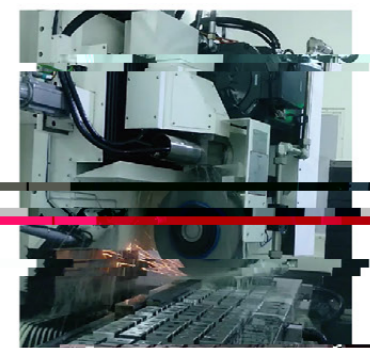
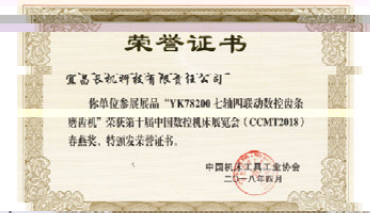
MACHINE TOOL FEATURES

- CNC rack gear grinding machine is widely used for precision processing of various precision rack gears, it is especially suitable for grinding various of precision 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 return accuracy and stability.
 4. Equipped with high sensitivity and high precision in place measurement system.
 5. The Chip conveyor realizes the constant temperature control for grinding oil.
 6. Automatically retract function when power is 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
砂轮修整速度 Grinding wheel speed	10000
最大砂轮宽度 Maximum grinding wheel width	105
砂轮直径 Grinding wheel diameter	Φ152.4(6inch)
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	6000
Y轴最大行程 Max. stroke of Y-axis	125
Z轴最大行程 Max. stroke of Z-axis	400
Z1轴最大行程 Max. stroke of Z1-axis	105
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	5.98×3.77×3.34



- 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，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升级。

Note:
1. The weight is for reference only, and 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 series of products in this manual are 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: 主轴驱动轮独立支撑, 主轴回转精度高; 双AA级齿条铣刀, 切削精度6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、全封闭的或半封闭的排屑系统, 排屑方便, 无飞溅, 安全可靠, 工人可操作。

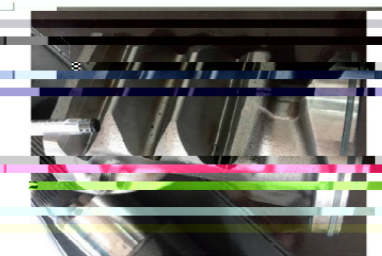
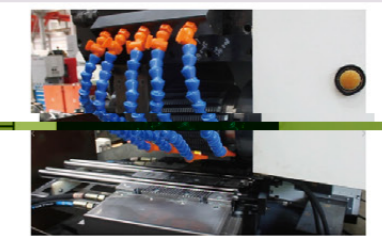
MACHINE TOOL FEATURES

1. Good rigidity of machine tool: machine tool castings adopt high strength castings and Topology optimization design ; inlaid steel guide and 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 purification, large flow cooling and chip punching. The chip removal system is greatly upgraded to ensure that the machine is flushed and cooled adequately; optional fixture, single machine use, 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 40-3000
最大铣刀宽度 Max. Cutter Width	mm 300
铣刀外径直径 Milling Cutter Diameter	mm Φ180+2铣刀深~Φ320
主轴装刀杆直径 Milling Cutter Arbor Diameter	mm Φ60
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:
1. 重量仅供搬运起重时参考, 具体以实物为准;
2. 外观防护分为半防护和全防护, 用户可根据实际需要进行选择;
3. 公司持续创新, 新研发产品与旧产品参数对比, 参数将持续优化。

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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: 机床结构采用典型重载结构, 强度高, 刚度好, 使用寿命长; 加倍设计, 确保设计精度; 采用平床导轨, 使用寿命长; 大功率水冷伺服电机, 确保加工精度; 采用全闭环控制系统, 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, 确保修整高刚性;
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; 电机外置或水冷, 大功率恒温冷却, 确保机床精度;
3. 机床切削效率高: 机床配最大电机功率115KW, 利用率高达90%; 适用于深齿磨削工艺; 配有断屑回温功能, 确保安全; 配有循环冷却过滤系统, 大流量恒温冷却冲屑, 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; 配有台架式修整器, 可选配顶置式修整器; 能满足在线修整要求; 主轴防护罩设计, 配静电式油雾分离器; 可选配夹具、单机自动上下料等。

MACHINE TOOL FEATURES

1. Good rigidity of machine tool: The machine tool adopts a typical heavy-duty structure with high strength and stiffness, long service life; double design to ensure design accuracy; flat bed guide rail with long service life; high power water-cooled servo motor to ensure processing accuracy; closed-loop control system for constant line grinding; safety protection; spindle and positioning design to ensure high rigidity dressing;
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; closed-loop design to ensure positioning accuracy; external motor or water cooling for high constant temperature cooling to ensure the machine 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 groove grinding process, equipped with power-off back function to ensure safety, with suction circulation belt filter chip removal system, large flow constant temperature cooling and 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; it can meet the requirements of online dressing, full gear dressing with electrostatic oil mist separator, optional fixture, single machine automatic loading and unloading, etc.



技术参数 THE MAIN PARAMETERS

名称 Description	单位	型号 Type	
		YK7832	YKA7832
最大加工模数 Max. Module	mm	20	12
最大加工轴径长度 Max. Axle Diameter	mm	820	820
主机电机功率 Ind motor power	KW	110	50
SP1轴转速 SP1 Shaft speed	r/min	~3100	~3100
SP2轴转速 SP2 Shaft speed	r/min	4500	4500
最大砂轮宽度 Max. Grinding wheel width	mm	740	740
最大砂轮直径 Grinding wheel diameter	mm	Φ500	Φ500
主轴砂轮孔安装直径 Main spindle hole diameter	mm	Φ203.2mm (8inch)	Φ203.2mm (8inch)
X轴最大行程 Max. Travel range of X-axis	mm	1250	1250
X轴最大进给速度 Max. Feeding speed of X-axis	m/min	5	5
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	200-600	200-600
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	3.15X2.3X2.4	3.15X2.3X2.4

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