

6 数控齿条加工机床

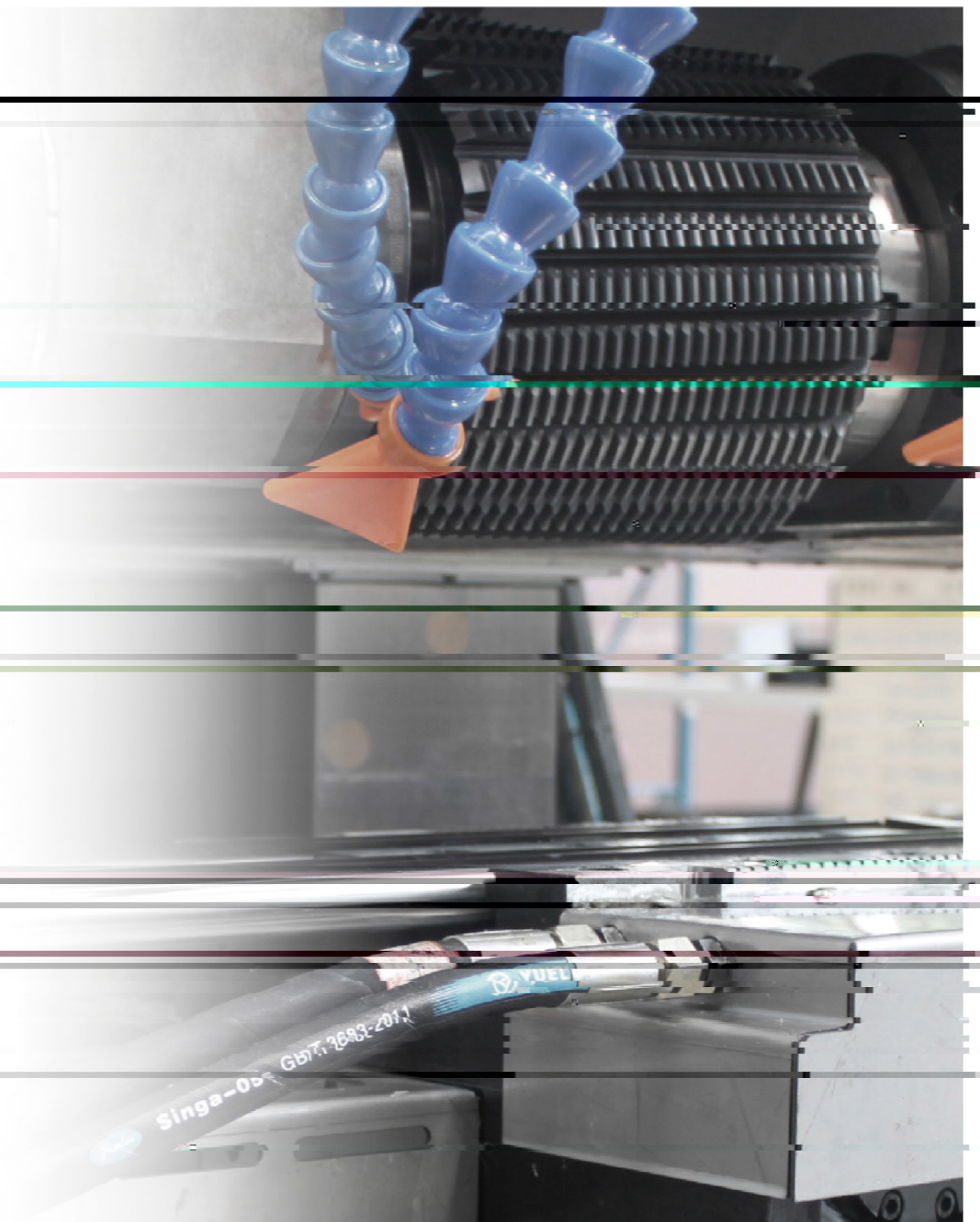
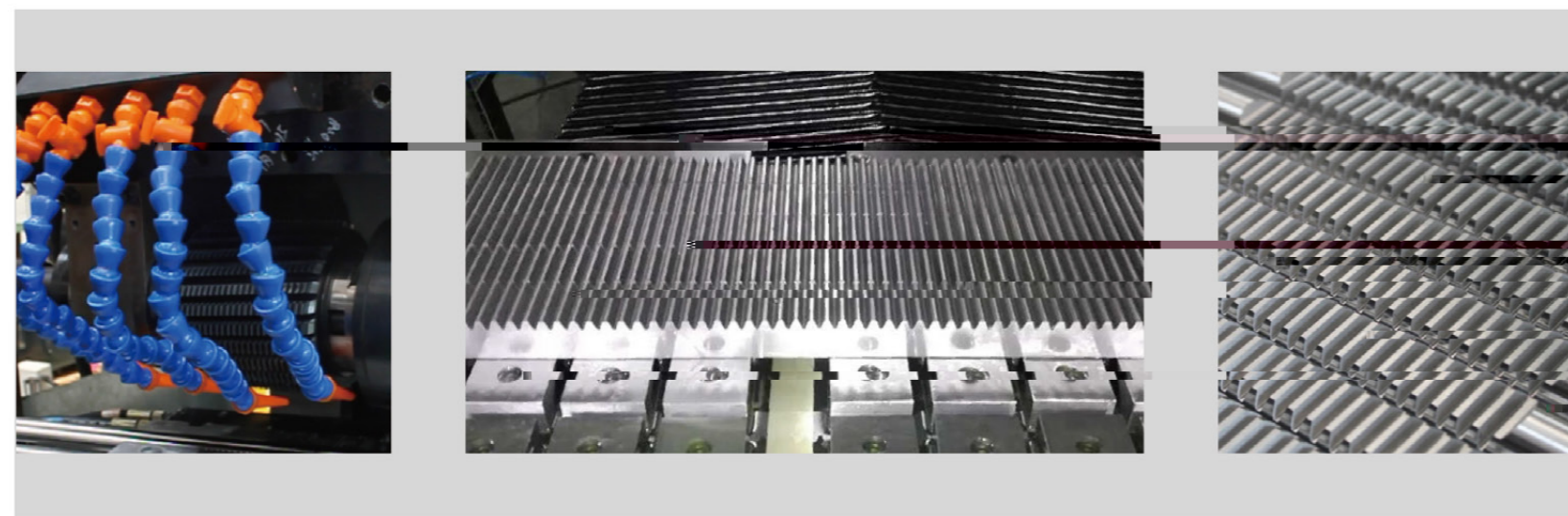
CNC RACK GEAR MACHINE SERIES

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。是单件齿条加工，还是高效的齿条批量生产，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 industry, elevators, construction machinery, machine tools and other industries; whether it is single-piece processing, or efficient small-batch production, or high-volume precision production, we can provide customers with a full set of solutions.



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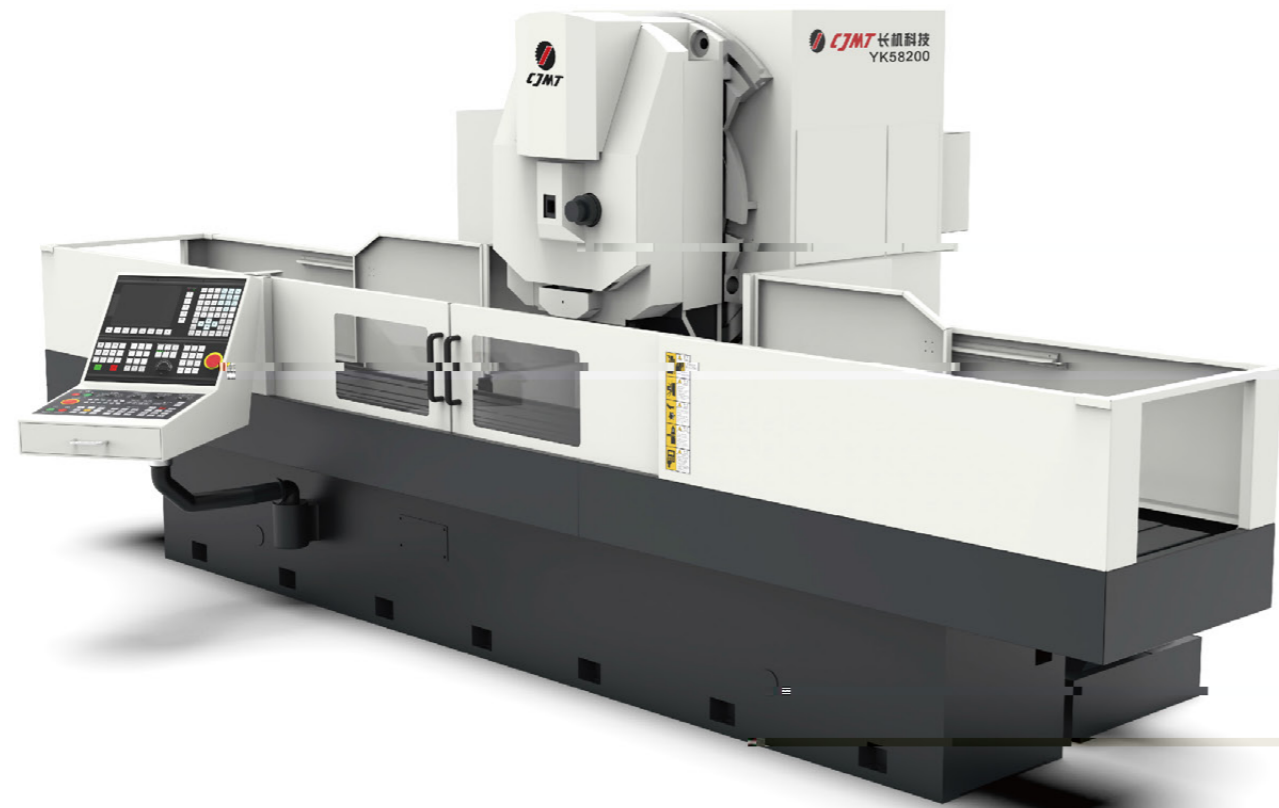
CNC RACK GEAR SHAPING MACHINE

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: 刀架转速调整螺旋角, 直齿刀具加工斜齿, 结构简单; 变导程高精度刀架蜗轮副、伺服电机副驱动高刚性滚珠丝杠工作台, 展成精度高; 精密研导向套, 副齿; 双A级齿条插齿刀, 副齿精度等级;
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; 设计安全保护装置, 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 which has 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 rigidity ball screw lead screw, with high general accuracy and high precision double A grade rack gear shaper cutter, and the cutting accuracy reaches national standard 7.
3. The cutting efficiency of the machine tool is high: the spindle motor of the machine is 11KW, the main shaft stroke line speed is 30m/min, the circumferential cutting depth is large; YKR5832 machine tool is equipped with static pressure tool holder, the main shaft stroke line speed can reach 40 m/min, designed with safety protection device to ensure processing safety;
4. Machine tool adaptability, The CNC system of machine tool adopts SIEMENS 828D, large flow cooling, ensure cooling sufficient; optional fixture, single machine automatic loading and unloading, etc.

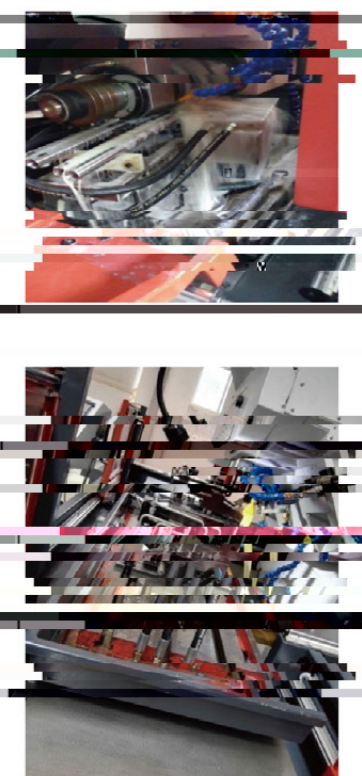


技术参数 THE MAIN PARAMETERS

名称 Description	型号 Type	型号			
		YKR5832	YK58125	YK58200	YK58300
最大模数 Max. module	mm	4	12	12	12
最大加工工件倾斜角 Max. max. angle of tilt	°	±20°	±30°	±30°	±30°
插齿刀最大冲程长度 Max. cutter stroke length	mm	100	160	160	160
插齿刀冲程数 Cutter stroke		125, 125	60, 200	60, 200	60, 200
插齿刀行程位置调整量 Adjusting amount of cutter travel	mm	30°	30°	30°	30°
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
插齿刀安装端至工作台平面距离 Distance cutter mounting surface/worktable surface	mm	170-300	160-310	160-310	160-310
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. 外观防护分半防护和全防护, 可根据实际需要选择;
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:
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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CNC RACK GEAR MILLING MACHINE

机床特点

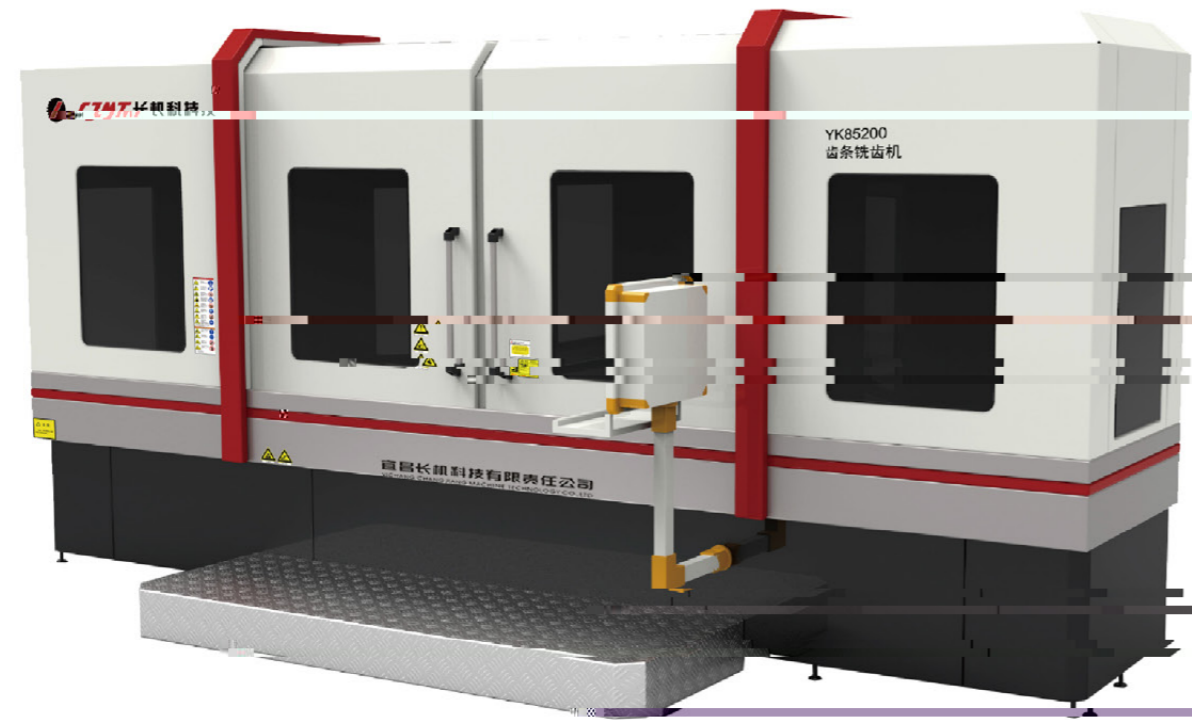
YK85125A和YK85200A是大改进机型，精度更稳定和效率提高50%；

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；刀具主轴链传动进给，静压导轨支撑，HSK刀柄定位，回转精度高；双AA级齿条铣刀，切削精度达到国际先进水平。
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，切削精度达到国际先进水平。
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；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

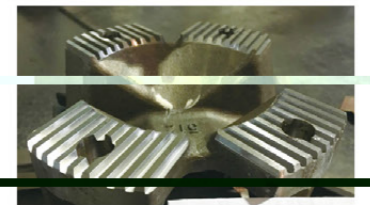
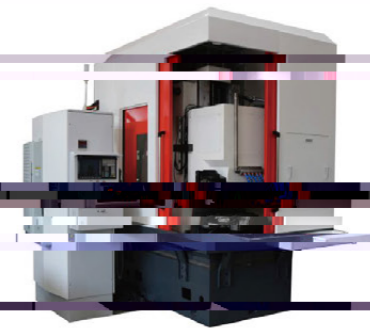
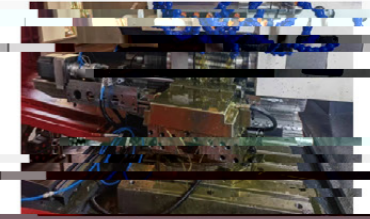
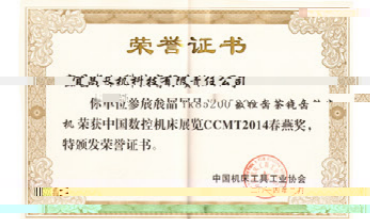
YK85125A and YK85200A are greatly improved models with more stable accuracy and 50% higher efficiency.

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 positioning accuracy, 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 machine tool CNC system adopts SIEMENS 828D; chip removal system is equipped with three-stage filtration and large flow cooling and chip punching. 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; optional fixture, single machine automatic loading and unloading, etc.



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. helical 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
最大装刀直径 Max. size of miller cutter	mm	Φ120	Φ120
最大装刀宽度 Max. mounting width of milling 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
机床外形尺寸(长x宽x高) Main Machine Dimension	m	3.50x4.1x3.1	3.12x7.3x3.1



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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/斜齿条齿面的磨削加工, 特别适合各种精密齿条齿面的磨削。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, 回转精度高且稳定性高;
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

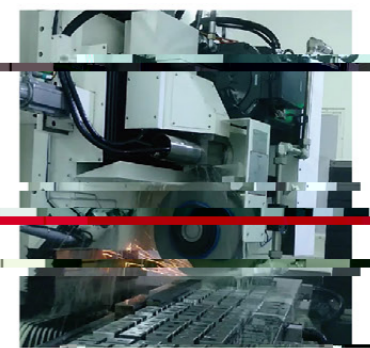
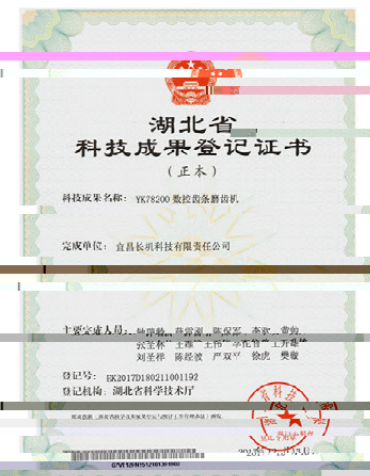
CNC rack gear grinding machine is suitable for grinding various precision rack gears, it is especially suitable for grinding various precision rack gears. Machine tool main technical Feature:

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 rotation accuracy and reliability.
4. Equipped with high sensitivity and high precision in-position detection system.
5. The chip removal system realizes the constant temperature control of grinding oil.
6. Automatically retract function when power is off to ensure the safety of machine.



技术参数 THE MAIN PARAMETERS

名称 Description		型号 Type	YK78200
最大加工模数 Max. module	mm		18
最大加工工件长度 Max. max. workpiece length	mm		2000
加工斜齿条最大角度 Max. helical angle	°		±20
主轴电机功率 Spindle motor power	kW		15
砂轮主轴转速 Grinding wheel spindle speed	r/min		1000
最大砂轮宽度 Maximum grinding wheel width	mm		105
砂轮直径 Grinding wheel diameter	mm		Φ220-400
砂轮轴安装直径 Mounting diameter of spindle grinding wheel	mm		Φ152.4 (6inch)
金刚滚轮直径 Diameter of diamond dressing wheel	mm		Φ200
X轴最大行程 Max. stroke of X-axis	mm		500
X轴最大进给速度 Maximum feed speed of X-axis	mm/min		6000
Y轴最大行程 Max. stroke of Y-axis	mm		2000
Z轴最大行程 Max. stroke of Z-axis	mm		400
Z1轴最大行程 Max. stroke of Z1-axis	mm		100
Y1轴最大行程 Max. stroke of Y1-axis	mm		125
机床总功率 Total machine power	kW		约110
机床重量 Total weight	t		约23
主机外形尺寸(长×宽×高) Main Machine Dimension	m		5.98×3.77×3.34



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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除, 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: 高精度滚珠丝杠、主轴回丝精度高, 双级滚珠丝杠, 切削力平稳;
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; 全防护或半防护; 排屑机床冲液、冷却充分; 可选配夹具、单机自动上下料等。

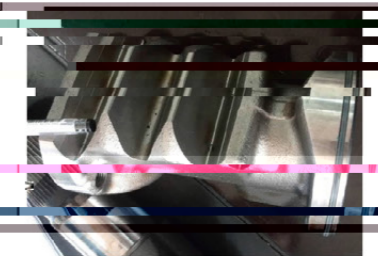
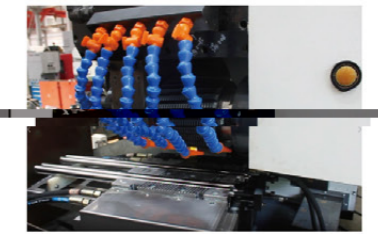
MACHINE TOOL FEATURES

1. Good rigidity of machine tool: machine tool castings adopt high strength castings and Topology optimization design ; inlaid steel guide rail 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 ball rack with high and the cutting force is smooth; 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 guide rail protection is directly supported to ensure that the machine is durable and accurate; optional fixtures and 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. 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
最大刀具宽度 Max. Cutter Width	mm 300
铣刀外圆直径 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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3. 公司将持续创新和提升产品品质, 产品参数将持续优化。

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