

成线/成套 精密蜗杆加工设备
A Complete Line of worm processing Equipment

高精 高速 高效
High precision, high speed, high efficiency



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SK 6505

数控蜗杆铣床

CNC Worm Milling machine

机床主要用途

主要针对汽车行业用小蜗杆的高效加工而开发，还适用于减速机、医疗机械、仪器仪表等行业。主要用于加工直径 Φ 50mm，长度250mm以内的各种圆柱形蜗杆(ZA、ZN、ZI、ZK等齿形)。

Main usage

The machine is developed mainly to effectively machine small worms used widely in automobile industry, worm-gear reducers, medical machinery & instruments etc.

机床数控系统配置

- > 采用SIEMENS 828D数控控制系统，可实现六轴三联动。
- > 控制轴数:
 - C 轴:工件主轴回转运动
 - Z 轴:铣刀架纵向进给运动
 - X 轴:铣刀架横进给运动
 - A 轴:铣刀架螺旋升角调整运动
 - U 轴:工作台纵向进给运动
 - SP轴:铣刀主轴回转运动

CNC System

- > SIEMENS 828D,controlling 6 NC axes;
- > programmable axes description:
 - Axis C:Rotation of work spindle
 - Axis Z:Longitudinal movement of worktable
 - Axis X:Cross-feed of cutter rest
 - Axis A:Swiveling of helix angle
 - Axis U: Longitudinal movement of tailstock sleeve
 - Axis SP:Rotation of cutter spindle

机床工作精度

铣削圆柱蜗杆达到7级; 表面粗糙度: Ra1.6 μ m
 Working Accuracy
 Worm accuracy achieved by the machine:
 P7 (by GB standard);
 Roughness: Ra1.6 μ m



机床技术特点

- > 工件采用液压自定心卡盘夹紧,装夹在卡盘和尾架顶尖之间,使用托架作辅助支撑;
- > 刀具主轴采用交流伺服电机驱动,可实现刀具的无级调速;
- > 机床使用硬质合金铣刀,切削效率高;
- > 工作台沿前床身直线导轨作纵向运动,铣刀架沿垫板直线导轨作横向运动,平稳精确,轻便灵活;
- > 铣刀主轴螺旋升角的调整运动是由交流伺服电机通过高精度分度转台驱动实现, 液压自动锁紧,调整方便,准确度高;
- > 卧式布局,结构紧凑,全封闭大罩壳,造型美观;
- > 机床床身、拖板、铣刀架、头架主轴体壳等基础件均采用高强度优质铸铁材料铸造,吸震性能好,精度稳定。

Features

- > The workpiece is clamped between a hydraulic self-centering chuck and tailstock center, and supported by a steady rest.
- > Milling cutter spindle is driven by AC servo motor, so its speed can be regulated steplessly.
- > Milling cutter is made of cemented carbide material.
- > The worktable and milling cutter rest move on linear guide-wyas,steady and smooth.
- > Helix angle adjusting, swiveling and locking is controlled by machine soft program, very easy and precise.
- > The machine has a compact layout and smart appearance,enclosed with a modern full-closed housing.
- > Made by excellent cast-iron with high strength, the bed,carriage, milling cutter rest and work spindle housing are featured of sound shock absorption and stability.

机床主要规格参数

- > 最大安装直径 130mm
- > 最大顶尖距 250mm
- > 加工工件直径 6~50mm
- > 可加工螺纹最大长度 220mm
- > 可加工蜗杆模数 0.5~2.5
- > 可加工螺纹最大螺旋升角 $\pm 30^\circ$
- > 可加工螺纹头数 1~99 (任意)
- > 铣刀架快速进退速度 6000mm/min
- > 工作台快速进退速度 6000mm/min
- > 头架主轴转速 0.5~10r/min
- > 工件最大重量 4kg
- > 机床外形尺寸(长×宽×高) 2220×1720×2300mm
- > 机床重量约 4500kg

Main Specifications

- > Max. diameter mounted 130mm
- > Max.center distance 250mm
- > Milling diameter range 6~50mm
- > Max.milling length 220mm
- > Module range 0.5~2.5
- > Helix angle $\pm 30^\circ$
- > No. of thread starts 1~99 (any)
- > Travel speed of milling cutter rest 6000mm/min
- > Travel speed of table 6000mm/min
- > Speed of work spindle 0.5~10r/min
- > Max.weight of workpiece 4kg
- > Overall dimension (Lx W x H) 2220×1720×2300mm
- > Weight approx.4500kg

SK 6520

数控蜗杆铣床
CNC Worm Milling Machine

机床主要用途

主要用于铣削各种圆柱形的蜗杆，如ZA、ZN、Z1、ZK等齿形，也可用于铣削转向器螺杆、滚珠丝杠和梯形丝杠，并可完成蜗杆出入口不完整齿倒角功能。

Main usage

The machine is used for milling various cylindrical worms with teeth form of ZA, ZN, Z1 & ZK etc, as well as steering screws, ballscrews and Acme screws. In addition, it can chamfer the incomplete thread tooth at either end of the workpiece.

机床数控系统配置

>采用FAGOR 8055i数控系统控制实现四轴三联动。

>控制轴数:

- C轴: 工件主轴回转运动
- Z轴: 工作台纵向进给运动
- X轴: 铣刀架横进给运动
- A轴: 铣刀架螺旋升角调整

CNC system

>FAGOR 8055iNC system,controlling 4 NC axes;

>Programmable axes descriptions

- Axis C: Rotation of work spindle
- Axis Z: Worktable longitudinal traverse
- Axis X: Cross feeding of cutter rest
- Axis A: Swiveling of helix angle



机床工作精度

铣削圆柱蜗杆达到7级; 表面粗糙度: Ra1.6 μm

Working Accuracy

Worm accuracy achieved by the machine:

P7 (by GB standard);

Roughness: Ra1.6 μm

机床技术特点

- >工件采用卡盘夹紧,装夹在卡盘和尾架顶尖之间,使用托架作辅助支撑;
- >刀具主轴驱动电机采用变频主轴电机,可实现刀具的无级调速;
- >机床使用硬质合金铣刀,切削效率高;
- >工作台沿前床身滑动导轨作纵向运动, 铣刀架沿垫板矩形导轨作横向运动, 平稳精确, 轻便灵活;
- >铣刀主轴螺旋升角的调整运动是由交流伺服电机通过高精度分度蜗轮杆副驱动实现, 调整方便, 准确度高。

Features

- > The workpiece is clamped between a chuck and center of tail-stock, and supported with a steady rest.
- > Milling cutter spindle is driven by AC servo motor, so its speed can be regulated steplessly.
- > Milling cutter is made of cemented carbide material.
- > The worktable and milling cutter rest move on sliding rails, steady and smooth.
- > Helix angle adjusting, swiveling and locking is controlled by machine soft program, very easy and precise.

机床主要规格参数

- >最大安装直径 200mm
- >最大顶尖距 750mm
- >最大加工工件直径 200mm
- >可加工螺纹最大长度 700mm
- >可加工蜗杆模数 0.5-6
- >可加工螺纹最大螺旋升角 ±40°
- >可加工螺纹头数 1-99 (任意)
- >铣刀架快速进退速度 6000mm/min
- 工作台快速进退速度 6000mm/min
- 头架主轴转速 0.5-10r/min
- >工件最大重量 25kg
- >机床外形尺寸(长×宽×高) 3680×2310×2400mm
- >机床重量约 7500kg

Main Specifications

- > Max. diameter mounted 200mm
- > Max.center distance 750mm
- > Max.Milling diameter range 200mm
- > Max.milling length 700mm
- > Module range 0.5-6
- > Helix angle range ±40°
- > No. of thread starts 1-99 (any)
- > Travel speed of milling cutter rest 6000mm/min
- Travel speed of table 6000mm/min
- Speed of work spindle 0.5-10r/min
- > Max.weight of workpiece 25kg
- > Overall dimension (Lx W x H) 3680×2310×2400mm
- > Weight approx.7500kg



机床主要用途

主要用于减速机厂，机床制造厂及其它机械厂用来磨削各种圆柱形蜗杆如ZA、ZN、Z1型。也可用来磨削梯形丝杠。

Main usage

This machine is designed to grind cylindrical worms such as ZA, ZN, Z1 profile, and to grind trapezoidal screws as well.

机床技术特点

- > 头架主轴采用死顶尖结构，排除了主轴精度对工作精度的影响，工作精度高；采用了变频调整技术，实现了工件的无级调速；工件分度可自动完成，工作效率高；
- > 磨削螺纹的螺距可通过交换齿轮来实现。工作台上装有校正尺，可以校正工件螺距的累积误差；
- > 工作台、砂轮架的移动导轨均采用平、V滚动导轨，具有摩擦系数小，移动平稳精确，轻便灵活等特点；
- > 砂轮主轴采用进口高精度滚动轴承，回转精度高，刚度好，维护方便；
- > 配有液压自动靠模砂轮修整器，可以实现ZA、ZN、Z1蜗杆的磨削；
- > 机床采用全封闭罩壳，配置空气净化器，工作环境良好，外形美观；
- > 本机床可选配数控砂轮修整器，方便实现ZA、Z1、ZN、ZK、ZC1型蜗杆的磨削。

Features

- > Work spindle speed is stepless due to appliance of frequency converting technology; Workpiece indexing is done automatically; Work spindle center is fixed or dead type to minimize the effect of work spindle accuracy.
- > Thread pitch change is done by exchange gears. A straightedge located at table side can correct accumulated pitch error.
- > Both work table and wheelhead travel along V-and-flat guideways to make a flexible and smooth running.
- > Grinding wheel spindle is supported by high-grade imported rolling bearings, having high rotary precision, good rigidity and convenient maintenance.
- > Wheel dressing is done with a hydraulic automatic wheel dresser, through profile modeling, dressing grinding wheel into ZA, ZN and Z1 worm profiles.
- > A full-closed cover and an imported oil-mist extractor are provided with the machine to improve working environment.
- > If a CNC wheel dresser adopted, the machine can realize ZA, Z1, ZN, ZK and ZC1 worm profiles.

机床主要规格参数

- > 最大安装直径 $\Phi 200\text{mm}$
- > 最大顶尖距 750mm
- > 中心高 120mm
- > 最大可磨直径 $\Phi 200\text{mm}$
- > 最大可磨长度 500mm
- > 公制螺纹 1-24mm
- > 英制螺纹 3-24牙/吋
- > 模数螺纹 $1.2\pi - 12\pi$
- > 可磨螺纹最大导程 150mm
- > 可磨螺纹最大螺旋升角 $\pm 30^\circ$
- > 可磨螺纹的头数 1、2、3、4、5、6、8、10、12
- > 工件转速
 - 工作时 0.2-4, 0.8-16r/min
 - 快速时 1-5, 4-20 r/min
 - 分度时 4 r/min
- > 砂轮架横向移动量 150mm
- > 砂轮架快速进退量 30mm
- > 砂轮主轴转速 1670-2145r/min
- > 砂轮尺寸 $\Phi 300-400 \times 10, 20$
- > 机床外径尺寸(长×宽×高) 2600×1900×1800

Main Specifications

- > Max. diameter mounted $\Phi 200\text{mm}$
- > Max. center distance 750mm
- > Center height 120mm
- > Max. grinding diameter $\Phi 200\text{mm}$
- > Max. grinding length 500mm
- > Metric thread 1-24mm
- > Inch thread 3-24 Teeth/inch
- > Module thread $1.2\pi - 12\pi$
- > Max. thread lead 150mm
- > Helix angle range $\pm 30^\circ$
- > Thread start number 1、2、3、4、5、6、8、10、12
- > Workpiece speed
 - In grinding 0.2-4, 0.8-16r/min
 - In return 1-5, 4-20 r/min
 - In indexing 4 r/min
- > Wheelhead cross traverse 150mm
- > Wheelhead rapid traverse 30mm
- > Wheel spindle speed 1670-2145r/min
- > Wheel size $\Phi 300-400 \times 10, 20$
- > Overall dimension (L × W × H) 2600 × 1900 × 1800

机床工作精度

- 磨削蜗杆头数1时 5级
- 磨削蜗杆头数≥2时 6级
- 磨削螺距在6mm以内的梯形丝杠 6级

Working accuracy

- When thread start=1 Grade 5
- When thread start≥2 Grade 6
- When grinding ACME screw within 6mm pitch Grade 6





机床主要用途

主要用于磨削各种圆柱形蜗杆，如法向直廓蜗杆，轴向直廓蜗杆及渐开线蜗杆等，也可用于磨削梯形丝杠。适用于机床制造厂及其它机械厂磨削分度蜗杆或动力传动蜗杆。

Main usage

This machine is designed to grind various cylindrical worms such as straight sided normal worm (ZN-worm), straight sided axial worm (ZA-worm), involute helicoid worm (ZI-worm). It also can grind trapezoidal screws, suitable for machine tool works and factories to manufacture indexing worms and power transmission worms.

机床工作精度

磨削蜗杆头数1-2吋	5级
磨削蜗杆头数≥3吋	6级
磨削螺距在6mm以内的梯形丝杠	6级

Working accuracy

When thread start 1-2	Grade 5
When thread start ≥3	Grade 6
When grinding ACME screw within 6mm pitch	Grade 6

机床技术特点

- >采用高精度丝杠—螺母及齿轮传动副，保证工件达到很高的螺距精度；
- >本机床有自动分度机构，分度精度高，动作可靠，能方便的磨削单头或多头蜗杆；
- >本机床配有液压自动靠模砂轮修整器，可以实现ZA,ZN,ZI蜗杆的磨削；
- >砂轮主轴采用薄膜反馈式静压轴承，具有很高的回转精度和刚度，以保证高的生产效率及工作表面光洁度；
- >工件和工作台采用交流变频电机驱动，可实现无级调速；
- >机床采用全封闭罩壳，配置空气净化器，工作环境良好，外形美观；
- >本机床可选配数控砂轮修整器，方便实现ZA,ZI,ZN, ZK,ZC1型蜗杆的磨削。

Features

- >High precision screw-and-nut and gear pairs are used to achieve high pitch accuracy.
- >Automatic indexing mechanism can easily grind single or multiple-start worms in high precision and reliability.
- >Wheel dressing is done with a hydraulic automatic wheel dresser, through profile modeling, to dress grinding wheel into ZA, ZN and ZI profiles.
- >Grinding wheel spindle employs film-feedback hydrostatic bearings to get high productivity and fine finish of the workpieces.
- >Work spindle and table are driven by AC Servo motors.
- >A full-closed cover and an imported oil-mist extractor are provided with the machine to improve working environment.
- >If a CNC wheel dresser adopted, the machine can realize ZA, ZI, ZN, ZK and ZC1 worm grinding.

机床主要规格参数

>最大安装直径	Φ320mm
>最大顶尖距	1500mm
>中心高	180mm
>最大可磨直径	Φ200mm
>最大可磨长度	1000mm
>公制螺纹	3-24mm
>英制螺纹	2-6牙/吋
>模数螺纹	1.5π-20πmm
>可磨螺纹最大导程	300mm
>可磨螺纹最大螺旋升角	±40°
>可磨螺纹的头数	1、2、3、4、5、6、8、10、12
>工件转速	
工作时	0.2-4,0.8-16r/min
快速时	1-5, 4-20 r/min
分度时	4 r/min
>砂轮架横向移动量	155mm
>砂轮架快速进退量	50mm
>砂轮主轴转速	1340-1480r/min
>砂轮尺寸	Φ400-Φ500x25, 32, 40
>机床外径尺寸(长×宽×高)	4130×2227×1750

Main Specifications

>Max. diameter mounted	Φ320mm
>Max.center distance	1500mm
>Center height	180mm
>Max.grinding diameter	Φ200mm
>Max.grinding length	1000mm
>Metric thread	3-24mm
>Inch thread	2-6teeth/inch
>Module thread	1.5π-20πmm
>Max.thread lead	300mm
>Helix angle range	±40°
>Thread start number	1、2、3、4、5、6、8、10、12
>Workpiece speed	
In grinding	0.2-4,0.8-16r/min
In return	1-5, 4-20 r/min
In indexing	4 r/min
>Wheelhead cross traverse	155mm
>Wheelhead rapid traverse	50mm
>Wheel spindle speed	1340-1480r/min
>Wheel size	Φ400-Φ500x25, 32, 40
>Overall dimension (L × W × H)	4130×2227×1750



SK 7712

数控蜗杆磨床
CNC Worming grinding machine

机床主要用途

主要用于磨削各种圆柱形的蜗杆 (ZA、ZN、ZI、ZK、ZC1)。

Main usage

This machine is used to grind various cylindrical worms (ZA,ZN, ZI, ZK, ZC1 profiles).

机床数控系统配置

> 采用SIEMENS 828D数控系统，控制实现四轴三联动。

> 控制轴数：4轴

Z轴:工作台纵向进给运动	配光栅尺	全闭环控制
X轴:砂轮架横向进给运动	配光栅尺	全闭环控制
C轴:工件主轴回转运动	配角度编码器	全闭环控制
A轴:砂轮架螺旋升角调整运动	配角度编码器	全闭环控制

CNC System

> SIEMENS 828D system,controlling 4 NC axes

> No.of programmable axes: four

Axis Z: Table longitudinal traverse
(With grating scale) full close-looped

Axis X: Wheelhead cross feed
(With grating scale) full close-looped

Axis C: Rotation of work spindle
(With angle encoder) full close-looped

Axis A: helix angle swivel
(With angle encoder) full close-looped

机床工作精度

蜗杆头数Z=1~2, 精度可达到4级

蜗杆头数Z≥3, 精度可达到5级

Working Accuracy

The working accuracy for cylindrical worms (GB):

When thread start=1~2 Grade 4

When thread start≥ 3 Grade 5



机床技术特点

> 砂轮修整采用金刚碟轮数控修型，修型精度高，柔性好；

> 砂轮电机采用内装式永磁同步电机直接驱动，功率强劲，振动小；

> 螺旋升角调整采用伺服调整、自动锁紧，调整精度高、速度快；

> 金刚碟轮电机采用交流伺服电机驱动，速度稳定、振动小；

> 配置半自动砂轮动平衡系统，更换砂轮快捷方便、无需静平衡；

> 配置手动对刀装置，适用于蜗杆的批量加工；

> 可根据用户需求选配在线自动对刀装置和自动上料装置；

> 机床采用全封闭罩壳，配置空气净化器，工作环境良好，外形美观。

机床主要规格参数

>最大安装直径	125mm
>最大顶尖距	350mm
>最大可磨直径	100mm
>最小可磨直径	5mm
>可磨螺纹最大长度	250mm
>可磨蜗杆模数	0.5~4
>可磨螺纹最大螺旋升角	± 30°
>可磨螺纹头数	1~99 (任意)
>可磨螺纹最大导程	150mm
>头架主轴转速	0.5~60r/min
>砂轮最大线速度	45m/s
>砂轮尺寸	
外径x内径x厚度	400 × 203 × 10mm
外径x内径厚度	400 × 203 × 16mm
>工件最大重量	15kg
>机床外形尺寸(长x宽x高)	2600 × 2350 × 2600mm
>机床重量	约4000kg

Features

>With a diamond disc, grinding wheel is dressed into required thread profile.

>Wheel spindle is powered directly by a built-in permanent magnet synchro-nous motor(PMSM), featured high power and low vibration.

>The adjustment of helix angle is done and locked automatically by machine soft program, precise and fast.

>Diamond disc is driven by AC servo motor, ensuring a constant speed and low vibration.

>With a semi-auto dynamic balancing system, it is convenient to change a new wheel without a need of static balance.

>With a manual alignment device provided to match the pre-cut workpiece off-line, it is suitable for batch manufacturing.

>On-line aligning device and automatic loading mechanism are available as optional accessories;

>A full-closed housing and an oil-mist extractor are provided with the machine to improve working environment.

Main Specifications

>Max. diameter mounted	125mm
>Max.center distance	350mm
>Max.grinding diameter	100mm
>Min. grinding diameter	5mm
>Max.grinding length	250mm
>Module range	0.5~4
>Helix angle range	± 30°
>Thread start number	1~99 (any)
>Max.thread lead	150mm
>Work spindle speed	0.5~60r/min
>Max. wheel peripheral speed of grinding wheel	45m/s
>Wheel size	
O.DxI.D x Width	400 × 203 × 10mm
O.DxI.Dx Width	400 × 203 × 16mm
>Max.workpiece weight	15kg
>Overall dimension (L × W × H)	2600 × 2350 × 2600mm
>Machine weight	appro.4000kg

SK 7720B

数控蜗杆磨床

CNC Worming grinding machine

机床主要用途

主要用于磨削各种圆柱形的蜗杆 (ZA、ZN、ZI、ZK、ZC1)，也可用于磨削梯形丝杠。

Main usage

This machine is used to grind various cylindrical worms (ZA,ZN, ZI, ZK, ZC1), and also can be used to grind trapezoidal screws.

机床数控系统配置

> 采用SIEMENS 828D数控系统，控制实现六轴三联动。

> 控制轴数:6轴

Z轴:工作台纵向进给运动	配光栅尺	全闭环控制
X轴:砂轮架横向进给运动	配光栅尺	全闭环控制
C轴:工件主轴回转运动	配角度编码器	全闭环控制
A轴:砂轮架螺旋升角调整运动	配角度编码器	全闭环控制
V轴:修整器滑座垂直运动		
W轴:修整器拖板水平运动		

CNC System

>SIEMENS 828D system,controlling 6 NC axes

>No.of programmable axes: six

Axis Z:Table longitudinal traverse	
(With grating scale)	full close-looped
Axis X:Wheelhead cross feed	
(With grating scale)	full close-looped
Axis C:Rotation of work spindle	
(With angle encoder)	full close-looped
Axis A: Helix angle swivel	
(With angle encoder)	full close-looped
Axis V:Vertical feed of dresser	
Axis W: Horizontal feed of dresser	

机床工作精度

磨削圆柱蜗杆达到的精度为: Z=1 ~ 2, 4级; Z≥3, 5级;
磨削梯形丝杠能达到的精度为: 6级;

Working Accuracy

When thread start=1~2, the accuracy is up to grade 4.
When thread start≥ 3, the accuracy is up to grade 5(by GB standard).
Trapezoidal screws: The accuracy is up to grade 6(by GB standard).



机床技术特点

- >砂轮修整采用双金刚碟轮数控修型,修型精度高,柔性好;
- >砂轮电机采用大功率内装式永磁同步电机直接驱动,动力强劲,振动小;
- >螺旋升角采用伺服调整,自动锁紧,调整精度高,速度快;
- >金刚碟轮电机采用交流伺服电机驱动,速度稳定,振动小;
- >配置手动对刀装置,适用于蜗杆的批量加工;
- >可根据用户需求选配砂轮动平衡系统和在线自动对刀装置;
- >机床采用全封闭罩壳,配置空气净化器,工作环境良好,外形美观。

机床主要规格参数

>最大安装直径	200mm
>最大顶尖距	750mm
>最大可磨直径	200mm
>最小可磨直径	10mm
>工作台最大行程	700mm
>可磨蜗杆模数	1~12
>可磨螺纹最大螺旋升角	± 40°
>可磨螺纹头数	1~99 (任意)
>可磨螺纹最大导程	150mm
>头架主轴转速	0.5~45r/min
>砂轮最大线速度	45m/s
>砂轮尺寸	
外径×内径×厚度	400×203×10mm
外径×内径×厚度	400×203×20mm
>工件最大重量	25kg
>机床外形尺寸(长×宽×高)	3300×2350×2600mm
>机床重量	约6000kg

Features

- >With double diamond discs, grinding wheel is dressed into required thread profiles.
- >Wheel spindle is driven directly by a high-powered built-in permanent magnet synchronous motor (PMSM) to get a high power and low vibration.
- >The adjustment of helix angle is done and locked automatically, precise and fast.
- >The two diamond discs is driven by AC servo motor, ensuring a constant speed and low vibration.
- >With a manual alignment device provided for pre-cut thread match, it is suitable for batch manufacturing.
- >A dynamic balancing system and an on-line automatic aligning device can be provided if optional by the user.
- >A full-closed cover and an oil-mist extractor are provided with the machine to improve working environment.

Main Specifications

>Max. diameter mounted	200mm
>Max.center distance	750mm
>Max.grinding diameter	200mm
>Min.grinding diameter	10mm
>Max.distance of table travers	700mm
>Module of worm to be machined	1~12
>Max.helix angle	± 40°
>Thread start	1~99 (any)
>Max.thread lead	150mm
>Work spindle speed	0.5~45r/min
>Max. wheel peripheral speed	45m/s
>Wheel size	
O.D×I.D× Width	400×203×10mm
O.D×I.D× Width	400×203×20mm
>Max.workpiece weight	25kg
>Overall dimension (L×W×H)	3300×2350×2600mm
>Machine weight	appro.6000kg

SK 7720D

数控蜗杆磨床
CNC Worming grinding machine

机床主要用途

本机床主要用于磨削各种圆柱形的蜗杆 (ZA、ZN、ZI、ZK、ZC1) , 也可用于磨削梯形丝杠。

Machine Application

SK7720D is designed to grind various cylindrical worms (ZA, ZN, ZI, ZK, ZC1) and ACME screws.

机床数控系统配置

采用SIEMENS 828D数控系统, 控制实现四轴三联动;

控制轴数:4轴

Z轴: 工作台纵向进给运动	配光栅尺	全闭环控制
X轴: 砂轮架横向进给运动	配光栅尺	全闭环控制
C轴: 工件主轴回转运动	配角度编码器	全闭环控制
A轴: 砂轮架螺旋升角调整运动	配角度编码器	全闭环控制

CNC System

SIEMENS 828D, controlling 4 NC axes, 3 of which in linkage.

NX axis details:

Axis z : Table reciprocating	linear scale provided;
Axis x : Wheelhead cross feeding	linear scale provided;
Axis c : Work spindle rotating	rotary encoder provided;
Axis A : Wheelhead auto swiveling	rotary encoder provided;

机床工作精度 Machine Working Accuracy

磨削圆柱蜗杆达到的精度为: Z=1~2, 4级; Z≥3, 5级;

磨削梯形丝杠能达到的精度为: 6级;

磨削工件表面光洁度: ≤Ra0.32.

For cylindrical worms

when Z=1~2, class 4;

when Z≥3, class 5;

For ACME screws, class 6;

Roughness: ≤Ra0.32



机床技术特点

- > C、Z轴分别采用力矩电机、直线电机无间隙直接驱动;
- > 砂轮电机采用大功率内装式永磁同步电机直接驱动;
- > 螺旋升角伺服自动调整、自动锁紧;
- > 砂轮修整采用金刚石碟轮精确修整;
- > 机床采用全封闭罩壳, 配置油雾处理器;
- > 可选配金刚石笔砂轮修整器进行干涉修型;
- > 可选配离线手动对刀装置;
- > 可选配砂轮在线动平衡系统和在线自动对刀装置。

机床主要技术参数

> 最大安装直径	200mm
> 最大顶尖距	750mm
> 最大可磨直径	200mm
> 最小可磨直径	10mm
> 工作台最大行程	900mm
> 可磨蜗杆模数	1~12
> 可磨螺纹最大螺旋升角	±40°
> 可磨螺纹头数	1~99 (任意)
> 可磨螺纹最大导程	150mm
> 头架主轴转速	0.5~45r/min
> 砂轮最大线速度	45m/s
> 砂轮尺寸/外径×内径×厚度	500×203×10, 20mm
> 机床外形尺寸(长×宽×高)	3400×2200×2200mm
> 机床重量	约6000kg

Technical Features

- > Work spindle rotating(C axis) and table reciprocating (Z axis) driven directly by torque motor and linear motor respectively with no transmission chain and reverse clearance.
- > Wheel spindle driven by a built-in permanent magnet synchronous motor featured in strong power and small vibration.
- > Auto setting and locking of helix angle giving rise to good and fast operation.
- > Wheel dressing done by a diamond disc, powered by servo motor.
- > A full-closed machine housing provided, along with an efficient oil-mist extractor, to ensure a good working environment.
- > By diamond pen to dress grinding wheel is optional for interference dressing.
- > For batch production, manual wheel aligning apparatus available as an option, to do off-line wheel aligning operation.
- > On-line wheel auto balancing system and auto aligning device can be opted.

Main Specifications

> Max. diameter mounted	200mm
> Max. center distance	750mm
> Max. grinding diameter	200mm
> Min. grinding diameter	10mm
> Max. table stroke	900mm
> Module range	1~12
> Helix angle range	±40°
> Thread start number	1~99 (any)
> Max. lead	150mm
> Work spindle speed	0.5~45r/min
> Max. wheel peripheral speed of grinding wheel	45m/s
> wheel dimension (O.D x I.D.x W)	500×203×10, 20mm
> Overall machine dimension	3400×2200×2200mm
> Machine net weight	appro.6000kg

SK 7732A×15

数控蜗杆磨床

CNC Worming grinding machine

机床主要用途

主要用于磨削各种圆柱形的蜗杆 (ZA、ZN、ZI、ZK、ZC1)，也可用于磨削梯形丝杠。

Main usage

This machine is used to grind various cylindrical worms (ZA,ZN, ZI, ZK, ZC1), and also can be used to grind trapezoidal screws.

机床数控系统配置

> 采用SIEMENS 828D数控系统，控制实现五轴三联动。

> 控制轴数: 5轴

Z轴: 工作台纵向进给运动	配光栅尺	全闭环控制
X轴: 砂轮架横向进给运动	配光栅尺	全闭环控制
C轴: 工件主轴回转运动	配角度编码器	全闭环控制
V轴: 修整器滑座垂直运动		
W轴: 修整器拖板水平运动		

CNC System

>SIEMENS 828D system,controlling 5 NC axes, 3 of which is in a gang;

>No.of programmable axes: five

Axis Z:Table longitudinal traverse (With grating scale)	full close-looped
Axis X:Wheelhead cross feed (With grating scale)	full close-looped
Axis C:Rotation of work spindle (With angle encoder)	full close-looped
Axis V:Vertical feed of dresser	
Axis W: Horizontal feed of dresser	

机床工作精度

磨削圆柱蜗杆达到的精度为: Z=1~2, 优于5级; Z≥3, 6级;
磨削梯形丝杠能达到的精度为: 6级;

Working Accuracy

When thread start=1-2, the accuracy is up to grade 5.
When thread start≥ 3, the accuracy is up to grade 6.
Trapezoidal screws: The accuracy is up to grade 6.



机床技术特点

- >砂轮修整采用双金刚石砂轮数控修型,修型精度高,柔性好;
- >砂轮电机采用交流变频电机,通过变频器实现无级调速;
- >螺旋升角调整为人工手动调整,手动锁紧;
- >金刚石砂轮电机采用交流伺服电机驱动,速度稳定,振动小;
- >可根据用户需求选配砂轮动平衡系统和在线自动对刀装置;
- >机床采用全封闭罩壳,配置空气净化器,工作环境良好,外形美观。

机床主要规格参数

>最大安装直径	320mm
>最大顶尖距	1500mm
>最大可磨直径	250mm
>最小可磨直径	20mm
>工作台最大行程	1400mm
>可磨蜗杆模数	2~18
>可磨螺纹最大螺旋升角	±40°
>可磨螺纹头数	1~99 (任意)
>可磨螺纹最大导程	300mm
>头架主轴转速	0.5~30r/min
>砂轮最大线速度	45m/s
>砂轮尺寸	
外径×内径×厚度	500×305×25mm
外径×内径×厚度	500×305×32mm
外径×内径×厚度	500×305×40mm
>工件最大重量	100kg
>机床外形尺寸(长×宽×高)	5300×2300×2455mm
>机床重量	约8500kg

Features

- >Wheel dressing is done by two diamond discs moving simultaneously;
- >The wheel spindle is driven by an AC servo motor, and the speed can be regulated steplessly.
- >The adjustment of helix angle is done and locked manually.
- >An AC servo motor drives directly the two diamond discs, ensuring a constant speed and low vibration.
- >A dynamic balancing system and an in-line automatic aligning device are available as optional accessories for users to choose.
- >A full-closed housing and an oil-mist extractor are provided with the machine to purify working environment.

Main Specifications

>Max. diameter mounted	320mm
>Max.center distance	1500mm
>Max.grinding diameter	250mm
>Min.grinding diameter	20mm
>Max.distance of table traverse	1400mm
>Module of worm to be machined	2~18
>Max.helix angle	±40°
>Thread start number	1~99 (any)
>Max.thread lead	300mm
>Work spindle speed	0.5~30r/min
>Max. wheel peripheral speed of grinding wheel	45m/s
>Wheel size	
O.D×I.D× Width	500×305×25mm
O.D×I.D× Width	500×305×32mm
O.D×I.D× Width	500×305×40mm
>Max.workpiece weight	100kg
>Overall dimension (L×W×H)	5300×2300×2455mm
>Machine weight	appro.8500kg

SK 7732B×15

数控蜗杆磨床

CNC Worming grinding machine

机床主要用途

主要用于磨削各种圆柱形的蜗杆 (ZA、ZN、ZI、ZK、ZC1)，也可用于磨削梯形丝杠。

Main usage

This machine is used to grind various cylindrical worms (ZA,ZN, ZI, ZK, ZC1), and also can be used to grind trapezoidal screws.

机床数控系统配置

> 采用SIEMENS 828D数控系统，控制实现六轴三联动。

> 控制轴数:6轴

Z轴:工作台纵向进给运动	配光栅尺	全闭环控制
X轴:砂轮架横向进给运动	配光栅尺	全闭环控制
C轴:工件主轴回转运动	配角度编码器	全闭环控制
A轴: 砂轮架螺旋升角调整运动	配角度编码器	全闭环控制
V轴:修整器滑座垂直运动		
W轴:修整器拖板水平运动		

CNC System

>SIEMENS 828D system,controlling 6 NC axes, 3 of them in a linkage.

>No.of programmable axes: six

Axis Z:Table longitudinal traverse (With grating scale)	full close-looped
Axis X:Wheelhead cross feed (With grating scale)	full close-looped
Axis C:Rotation of work spindle (With angle encoder)	full close-looped
Axis A: Helix angle swivel (With angle encoder)	full close-looped
Axis V:Vertical feed of dresser	
Axis W: Horizontal feed of dresser	

机床工作精度

磨削圆柱蜗杆达到的精度为: Z=1~2, 优于5级; Z≥3, 6级;
磨削梯形丝杠能达到的精度为: 6级;

Working Accuracy

When thread start=1-2, the accuracy is up to grade 5.
When thread start≥ 3, the accuracy is up to grade 6.
Trapezoidal screws: The accuracy is up to grade 6.

机床技术特点

- > 砂轮修整采用双金刚石碟轮数控修型,修型精度高,柔性好;
- > 砂轮电机采用大功率内装式永磁同步电机直接驱动, 动力强劲, 振动小;
- > 螺旋升角调整采用伺服调整, 自动锁紧, 调整精度高、速度快;
- > 金刚石碟轮电机采用交流伺服电机驱动, 速度稳定, 振动小;
- > 可根据用户需求选配砂轮动平衡系统和在线自动对刀装置;
- > 机床采用全封闭罩壳, 配置空气净化器, 工作环境良好, 外形美观。

Features

- > Grinding wheel is dressed into various thread profiles by two diamond discs moving simultaneously.
- > A powerful built-in permanent magnet synchronous motor (PMSM) is employed to drive wheel spindle.
- > The adjustment of helix angle is done and locked automatically, precise and fast.
- > An AC servo motor drives directly the two diamond discs, ensuring a constant speed and low vibration.
- > A dynamic balancing system and an in-line automatic aligning device can be provided to the machine at extra cost.
- > A full-closed housing and an oil-mist extractor are provided with the machine to purify working environment.

机床主要规格参数

>最大安装直径	320mm
>最大顶尖距	1500mm
>最大可磨直径	250mm
>最小可磨直径	20mm
>工作台最大行程	1400mm
>可磨蜗杆模数	2~18
>可磨螺纹最大螺旋升角	±45°
>可磨螺纹头数	1~99 (任意)
>可磨螺纹最大导程	300mm
>头架主轴转速	0.5~30r/min
>砂轮最大线速度	45m/s
>砂轮尺寸	
外径×内径×厚度	500×305×25mm
外径×内径×厚度	500×305×32mm
外径×内径×厚度	500×305×40mm
>工件最大重量	100kg
>机床外形尺寸(长×宽×高)	5300×2300×2455mm
>机床重量	约8500kg

Main Specifications

>Max. diameter mounted	320mm
>Max.center distance	1500mm
>Max.grinding diameter	250mm
>Min.grinding diameter	20mm
>Max.distance of table traverse	1400mm
>Module of worm to be machined	2~18
>Max.helix angle	±45°
>Thread start number	1~99 (any)
>Max.thread lead	300mm
>Work spindle speed	0.5~30r/min
>Max. wheel peripheral speed of grinding wheel	45m/s
>Wheel size	
O.D×I.D× Width	500×305×25mm
O.D×I.D× Width	500×305×32mm
O.D×I.D× Width	500×305×40mm
>Max.workpiece weight	100kg
>Overall dimension (L×W×H)	5300×2300×2455mm
>Machine weight	appro. 8500kg



SK 7732x20

数控蜗杆磨床

CNC Worming grinding machine

机床主要用途

主要用于磨削各种圆柱形的蜗杆 (ZA、ZN、ZI、ZK、ZC1)，也可用于磨削梯形丝杠。

Main usage

This machine is used to grind various cylindrical worms (ZA,ZN, ZI, ZK, ZC1), and also can be used to grind trapezoidal screws.

机床数控系统配置

> 采用SIEMENS 828D数控系统，控制实现五轴三联动。

> 控制轴数: 5轴

Z轴:工作台纵向进给运动	配光栅尺	全闭环控制
X轴:砂轮架横向进给运动	配光栅尺	全闭环控制
C轴:工件主轴回转运动	配角度编码器	全闭环控制
A轴:修整器滑座垂直运动		
W轴:修整器拖板水平运动		

CNC System

> SIEMENS 828D system, controlling 5 NC axes

> No. of programmable axes: five

Axis Z: Table longitudinal traverse
(With grating scale) full close-looped

Axis X: Wheelhead cross feed
(With grating scale) full close-looped

Axis C: Rotation of work spindle
(With angle encoder) full close-looped

Axis V: Vertical feed of dresser

Axis W: Horizontal feed of dresser

机床工作精度

磨削圆柱蜗杆达到的精度为: Z=1~2, 优于5级; Z≥3, 6级;
磨削梯形丝杠能达到的精度为: 6级;

Working Accuracy

Cylindrical worms: When thread start=1-2, the accuracy is superior to grade 5; When thread start ≥ 3, the accuracy is grade 6;
Trapezoidal screws: The accuracy is grade 6.

机床技术特点

- > 砂轮修整采用双金刚石砂轮数控修型，修型精度高，柔性好；
- > 砂轮电机采用交流变频电机，通过变频器实现无级调速；
- > 螺旋升角调整为人工手动调整、手动锁紧；
- > 金刚石砂轮电机采用交流伺服电机驱动，速度稳定、振动小；
- > 可根据用户需求选配砂轮动平衡系统；
- > 机床采用全封闭罩壳，配置空气净化器，工作环境良好，外形美观。

Features

- > Wheel dressing is made by 2 diamond discs moving simultaneously;
- > The wheel spindle is driven by an AC servo motor, and the speed can be regulated steplessly.
- > The adjustment of helix angle is done and locked manually.
- > An AC servo motor directly powers the two diamond discs, ensuring a constant speed and low vibration.
- > A dynamic balancing system is available as optional accessory if required by the user.
- > A full-closed housing and an oil-mist extractor are provided with the machine to purify working environment.

机床主要规格参数

> 最大安装直径	320mm
> 最大顶尖距	2000mm
> 最大可磨直径	250mm
> 最小可磨直径	20mm
> 工作台最大行程	1800mm
> 可磨蜗杆模数	1.5~20
> 可磨螺纹最大螺旋升角	± 40°
> 可磨螺纹头数	1~99(任意)
> 可磨螺纹最大导程	300mm
> 头架主轴转速	0.5~50r/min
> 砂轮最大线速度	45m/s
> 砂轮尺寸	
外径X内径X厚度	500x305x25mm
外径X内径X厚度	500x305x32mm
外径X内径X厚度	500x305x50mm
> 工件最大重量	150kg
> 机床外形尺寸(长x宽x高)	6200x2550x2555mm
> 机床重量	约11500kg

Main Specifications

> Max. diameter mounted	320mm
> Max. center distance	2000mm
> Max. grinding diameter	250mm
> Min. grinding diameter	20mm
> Max. distance of table traverse	1800mm
> Module of worm to be machined	1.5~20
> Max. helix angle	± 40°
> Thread start number	1~99(any)
> Max. thread lead	300mm
> Work spindle speed	0.5~50r/min
> Max. wheel peripheral speed of grinding wheel	45m/s
> Wheel size	
O.D × I.D × Width	500 × 305 × 25mm
O.D × I.D × Width	500 × 305 × 32mm
O.D × I.D × Width	500 × 305 × 50mm
> Max. workpiece weight	150kg
> Overall dimension (L × W × H)	6200 × 2550 × 2555mm
> Machine weight	appro. 11500kg



SK 7732A×20

数控蜗杆磨床

CNC Worming grinding machine

机床主要用途

主要用于磨削各种圆柱形的蜗杆 (ZA、ZN、ZI、ZK、ZC1)，也可用于磨削梯形丝杠。

Main usage

This machine is used to grind various cylindrical worms (ZA,ZN, ZI, ZK, ZC1), and also can be used to grind trapezoidal screws.

机床数控系统配置

> 采用SIEMENS 828D数控系统，控制实现六轴三联动。

> 控制轴数: 6轴

Z轴:工作台纵向进给运动	配光栅尺	全闭环控制
X轴:砂轮架横向进给运动	配光栅尺	全闭环控制
C轴:工件主轴回转运动	配角度编码器	全闭环控制
A轴:砂轮架螺旋升角调整运动	配角度编码器	全闭环控制
V轴:修整器滑座垂直运动		
W轴:修整器拖板水平运动		

CNC System

>SIEMENS 828D system,controlling 6 NC axes, 3 of them in a linkage.

>No.of programmable axes: six

Axis Z: Table longitudinal traverse (With grating scale)	full close-looped
Axis X: Wheelhead cross feed (With grating scale)	full close-looped
Axis C: Rotation of work spindle (With angle encoder)	full close-looped
Axis A: Hhelix angle adjusting (With angle encoder)	full close-looped
Axis V: Vertical feed of dresser	
Axis W: Horizontal feed of dresser	

机床工作精度

磨削圆柱蜗杆达到的精度为: Z=1 ~ 2, 优于5级; Z≥3, 6级;
磨削梯形丝杠能达到的精度为: 6级;

Working Accuracy

When thread start=1-2, the accuracy is up to grade 5.
When thread start ≥ 3, the accuracy is up to grade 6.
Trapezoidal screws: The accuracy is up to grade 6.

机床技术特点

- > 砂轮修整采用双金刚石碟轮数控修型,修型精度高,柔性好;
- > 砂轮电机采用大功率内装式永磁同步电机直接驱动,动力强劲,振动小;
- > 螺旋升角调整采用伺服调整、自动锁紧,调整精度高、速度快;
- > 金刚石碟轮电机采用交流伺服电机驱动,速度稳定、振动小;
- > 可根据用户需求选配砂轮动平衡系统;
- > 机床采用全封闭罩壳,配置空气净化器,工作环境良好,外形美观。

Features

- >Grinding wheel dressing is made by two diamond discs moving simultaneously.
- >A powerful built-in permanent magnet synchronous motor(PMSM) is adopted to drive wheel spindle.
- >The adjustment of helix angle is done and locked automatically,pricise and fast.
- >An AC servo motor drives directly the two diamond discs,ensuing a constant speed and low vibration.
- >A dynamic balancing system is provided as an optional accessory at extra cost.
- >A full-closed housing and an oil-mist extractor are providedwith the machine to purify working environment.

机床主要规格参数

- >最大安装直径 320mm
- >最大顶尖距 2000mm
- >最大可磨直径 250mm
- >最小可磨直径 20mm
- >工作台最大行程 1800mm
- >可磨蜗杆模数 1.5~20
- >可磨螺纹最大螺旋升角 ±45°
- >可磨螺纹头数 1~99 (任意)
- >可磨螺纹最大导程 300mm
- >头架主轴转速 0.5~45r/min
- >砂轮最大线速度 45m/s
- >砂轮尺寸

外径 × 内径 × 厚度	500 × 305 × 25mm
外径 × 内径 × 厚度	500 × 305 × 32mm
外径 × 内径 × 厚度	500 × 305 × 40mm
外径 × 内径 × 厚度	500 × 305 × 50mm
- >工件最大重量 300kg
- >机床外形尺寸(长×宽×高) 6200 × 2550 × 2555mm
- >机床重量 约12500kg

Main Specifications

- >Max. diameter mounted 320mm
- >Max.center distance 2000mm
- >Max.grinding diameter 250mm
- >Min.grinding diameter 20mm
- >Max.distance of table traverse 1800mm
- >Module of worm to be machined 1.5~20
- >Max.helix angle ±45°
- >Thread start number 1~99 (any)
- >Max.thread lead 300mm
- >Work spindle speed 0.5~45r/min
- >Max. wheel peripheral speed of grinding wheel 45m/s
- >Wheel size

O.D × I.D × Width	500 × 305 × 25mm
O.D × I.D × Width	500 × 305 × 32mm
O.D × I.D × Width	500 × 305 × 40mm
O.D × I.D × Width	500 × 305 × 50mm
- >Max.workpiece weight 300kg
- >Overall dimension (L × W × H) 6200 × 2550 × 2555mm
- >Machine weight appro.12500kg



SK 7732x30

数控蜗杆磨床

CNC Worming grinding machine

机床主要用途

主要用于磨削各种圆柱形的蜗杆 (ZA、ZN、ZI、ZK、ZC1) , 也可用于磨削梯形丝杠。

Main usage

This machine is used to grind various cylindrical worms (ZA,ZN, ZI, ZK, ZC1) , and also can be used to grind trapezoidal screws.

机床工作精度

磨削圆柱蜗杆达到的精度为: Z=1 ~ 2, 5级; Z≥3, 6级;
磨削梯形丝杠能达到的精度为: 6级;

Working Accuracy

When thread start=1-2, the accuracy is up to Class 5.
When thread start ≥ 3, the accuracy is up to Class 6.
Trapezoidal screws: The accuracy is up to Class 6.

机床数控系统配置

- > 采用SIEMENS 828D数控系统, 控制实现五轴三联动。
- > 控制轴数: 5轴
- Z轴:工作台纵向进给运动 配光栅尺 全闭环控制
- X轴:砂轮架横向进给运动 配光栅尺 全闭环控制
- C轴:工件主轴回转运动 配角度编码器 全闭环控制
- V轴:修整器滑座垂直运动
- W轴:修整器拖板水平运动

CNC System

- >SIEMENS 828D system,controlling 5 NC axes with 3 of them in a linkage.
- >No.of programmable axes: five
- Axis Z:Table longitudinal traverse (With grating scale) full close-looped
- Axis X:Wheelhead cross feed (With grating scale) full close-looped
- Axis C:Rotation of work spindle (With angle encoder) full close-looped
- Axis V:Vertical feed of dresser
- Axis W: Horizontal feed of dresser



机床技术特点

- > 砂轮修整采用双金刚碟轮数控修型,修型精度高,柔性好;
- > 砂轮电机采用交流变频电机,通过变频器实现无级调速;
- > 螺旋升角调整为人工手动调整,手动锁紧;
- > 金刚碟轮电机采用交流伺服电机驱动,速度稳定,振动小;
- > 可根据用户需求选配砂轮动平衡系统;
- > 机床采用全封闭罩壳,配置空气净化器,工作环境良好,外形美观。

Features

- >Wheel dressing is made by 2 diamond discs moving simultaneously;
- >The wheel spindle is driven by an AC servo motor, and the speed can be regulated steplessly.
- >The adjustment of helix angle is done and locked manually.
- >An AC servo motor directly powers the two diamond discs,ensuring a constant speed and low vibration.
- >A dynamic balancing system is available as optional accessory if required by the user.
- >A full-closed housing and an oil-mist extractor are provided with the machine to improve working environment.

机床主要规格参数

- >最大安装直径 320mm
- >最大顶尖距 3150mm
- >最大可磨直径 250mm
- >最小可磨直径 20mm
- >工作台最大行程 2980mm
- >可磨蜗杆模数 1.5~26
- >可磨螺纹最大螺旋升角 ±40°
- >可磨螺纹头数 1~99 (任意)
- >可磨螺纹最大导程 300mm
- >头架主轴转速 0.5~45r/min
- >砂轮最大线速度 45m/s
- >砂轮尺寸
 - 外径 × 内径 × 厚度 500 × 305 × 25mm
 - 外径 × 内径 × 厚度 500 × 305 × 32mm
 - 外径 × 内径 × 厚度 500 × 305 × 40mm
 - 外径 × 内径 × 厚度 500 × 305 × 60mm
- >工件最大重量 200kg
- >机床外形尺寸(长×宽×高) 7900 × 2350 × 2555mm

Main Specifications

- >Max. diameter mounted 320mm
- >Max.center distance 3150mm
- >Max.grinding diameter 250mm
- >Min.grinding diameter 20mm
- >Max.distance of table traverse 2980mm
- >Module of worm to be machined 1.5~26
- >Max.helix angle ±40°
- >Thread start number 1~99 (any)
- >Max.thread lead 300mm
- >Work spindle speed 0.5~45r/min
- >Max. wheel peripheral speed of grinding wheel 45m/s
- >Wheel size
 - O.D × I.D × Width 500 × 305 × 25mm
 - O.D × I.D × Width 500 × 305 × 32mm
 - O.D × I.D × Width 500 × 305 × 40mm
 - O.D × I.D × Width 500 × 305 × 60mm
- >Max.workpiece weight 200kg
- >Overall dimension (L × W × H) 7900 × 2350 × 2555mm

SK 7763x40

数控蜗杆磨床

CNC Worming grinding machine

机床主要用途

主要用于磨削各种圆柱形的蜗杆 (ZA、ZN、ZI、ZK、ZC1)，也可用于磨削梯形丝杠。

Main usage

This machine is used to grind various cylindrical worms (ZA, ZN, ZI, ZK, ZC1), and also can be used to grind trapezoidal screws.

机床工作精度

磨削圆柱蜗杆达到的精度为：
头数Z=1~2时：模数≤25，5级；模数>25，6级；
头数Z≥3时：模数≤25，6级；模数>25，7级；

Working Accuracy

The accuracy of worm ground can be obtained in accordance with the stipulation specified in the GB.
When starts Z=1~2, grade 5 (module ≤ 25) grade 6 (module > 25);
When starts Z ≥ 3, grade 6 (module ≤ 25) grade 7 (module > 25)

机床数控系统配置

采用SIEMENS 828D数控系统,控制实现五轴三联动。

控制轴数:5轴

Z轴:拖板纵向进给运动	配光栅尺	全闭环控制
X轴:砂轮架横向进给运动	配光栅尺	全闭环控制
C轴:工件主轴回转运动	配角度编码器	全闭环控制
V轴:修整器滑座垂直运动		
W轴:修整器拖板水平运动		

CNC system

>SIEMENS 828D system, controlling 5 NC axes, 3 of them in a linkage.

>No.of programmable axes: five

Axis Z: Carriage longitudinal traverse	(With grating scale)	full close-looped
Axis X: Wheelhead cross feed	(With grating scale)	full close-looped
Axis C: Rotation of work spindle	(With angle encoder)	full close-looped
Axis V: Vertical feed of dresser		
Axis W: Horizontal feed of dresser		



机床技术特点

- > 砂轮修整采用双金刚碟轮数控修型,修型精度高,柔性好;
- > 砂轮电机采用主轴电机,通过变频器实现无级调速;
- > 螺旋升角调整为人工手动调整,手动锁紧;
- > 金刚碟轮电机采用交流伺服电机驱动,速度稳定,振动小;
- > 可根据用户需求选配砂轮动平衡系统;
- > 砂轮架拖板纵向运动采用直线电机驱动,运动精度高;
- > 机床采用全封闭罩壳,配置空气净化器,工作环境良好,外形美观。

机床主要规格参数

>最大安装直径	630mm
>最大顶尖距	4350mm
>最大可磨直径	500mm
>最小可磨直径	50mm
>拖板最大冲程	4000mm
>可磨蜗杆模数	4~40
>可磨螺纹最大螺旋升角	± 40°
>可磨螺纹头数	1~99(任意)
>可磨螺纹最大导程	300mm
>头架主轴转速	0.5~30r/min
>砂轮最大线速度	45m/s
>砂轮尺寸	
外径×内径×厚度	600×305×25mm
外径×内径×厚度	600×305×32mm
外径×内径×厚度	600×305×40mm
外径×内径×厚度	600×305×60mm
外径×内径×厚度	600×305×80mm
>工件最大重量	1500kg
>机床外形尺寸(长×宽×高)	8300×2500×2300mm
>机床重量	约24吨

Features

- >Two diamond discs moving simultaneously to dress grinding wheel into required thread profiles.
- >The wheel spindle speed can be regulated steplessly
- >The adjustment of helix angle is done and locked manually
- >An AC servo motor directly drives the two diamond discs.
- >A dynamic balancing system can be provided to the machine at extra cost.
- >The longitudinal traverse of wheel head carriage is driven by a DC motor.
- >A full-closed housing and an oil-mist extractor are provided with the machine to purify working environment.

Main Specifications

>Max. diameter mounted	630mm
>Max. center distance	4350mm
>Max. grinding diameter	500mm
>Min. grinding diameter	50mm
>Max. stroke of carriage	4000mm
>Module of worm to be machined	4~40
>Max. helix angle	± 40°
>Thread start number	1~99(any)
>Max. thread lead	300mm
>Work spindle speed	0.5~30r/min
>Max. wheel peripheral speed of grinding wheel	45m/s
>Wheel size	
O.D × I.D × Width	600 × 305 × 25mm
O.D × I.D × Width	600 × 305 × 32mm
O.D × I.D × Width	600 × 305 × 40mm
O.D × I.D × Width	600 × 305 × 60mm
O.D × I.D × Width	600 × 305 × 80mm
>Max. workpiece weight	1500kg
>Overall dimension (L × W × H)	8300 × 2500 × 2300mm
>Machine weight	appro. 24 ton

SK 7732×15TP

数控包络环面蜗杆磨床

CNC Enveloping Toroidal worm Grinding machine

机床主要用途

主要用于磨削平面包络环面蜗杆和锥面包络环面蜗杆。

Main usage

The machine is mainly employed to grind plane & taper enveloped toroidal worm.

CNC System

- > The machine is controlled by a HNC CNC system with six programmable axes including four synchronous ones.
 - > The programmable axes are described as follows,
 - Axis X: Cross-feed of wheelhead with grating scale full close-looped
 - Axis Y: High speed adjustment of grinding attachment with grating scale full close-looped
 - Axis Z: Table longitudinal movement with grating scale full close-looped
 - Axis A: Adjustment of helix angle with angle encoder full close-looped
 - Axis B: Swivel of wheelhead with angle encoder full close-looped
 - Axis C: Rotation of work spindle with angle encoder full close-looped
- The flank grinding of worm can be carried out by the synchronous movement of the axes X,Z,B & C
Axis SP: Rotation of grinding wheel

机床数控系统配置

- > 采用华中数控系统，控制实现六轴四联动。
 - > 控制轴数: 6轴

X轴: 拖板横向进给运动	配光栅尺	全闭环控制
Y轴: 磨具高度调整运动	配光栅尺	全闭环控制
Z轴: 工作台纵向进给运动	配光栅尺	全闭环控制
A轴: 砂轮倾角调整运动	配角度编码器	全闭环控制
B轴: 砂轮架的回转运动	配角度编码器	全闭环控制
C轴: 工件主轴回转运动	配角度编码器	全闭环控制
- X、Z、B、C四轴联动实现蜗杆齿部的磨削。



机床主要规格参数

- > 最大安装直径: 320mm
- > 最大顶尖距: 1500mm
- > 可磨蜗杆外圆直径: 30~320mm
- > 可磨蜗杆中心距: 63~400mm
- > 可磨蜗杆齿根直径: 20~280mm
- > 可磨螺纹最大长度: 1000mm
- > 可磨蜗杆模数: 1.2~20
- > 砂轮最大倾角: ±45°
- > 可磨蜗杆头数: 1~12
- > 砂轮最大线速度: 45m/s
- > 砂轮尺寸: 外径 × 内径 × 厚度: 500 × 203 × 40mm
- > 工件最大重量: 500kg
- > 机床外形尺寸(长 × 宽 × 高): 6150 × 2800 × 2700mm
- > 机床重量: 约12000kg

机床技术特点

- > 采用虚拟中心距加工原理，通过参数设定实现中心距和基圆尺寸的调整；
- > 工件不需要调头，一次装夹即可完成两个齿面的磨削；
- > 调整运动均为伺服轴，调整速度快、精度高、快捷方便；
- > 转台回转伺服轴、砂轮倾角调整伺服轴采用力矩电机直接驱动，回转精度高，使用寿命长；
- > 砂轮轴由大功率内装式永磁同步电机直接驱动，通过砂轮动平衡装置精确平衡，动力强劲、振动小，磨削表面质量好；
- > 对刀测头自动确定环面蜗杆中心平面的轴向位置；
- > 砂轮修整采用金刚碟轮数控修整，可根据用户需求修整砂轮，修整精度高。

机床工作精度

磨削平面包络环面蜗杆达到的精度为: 7级; (GB/T 16445-1996)

Working Accuracy

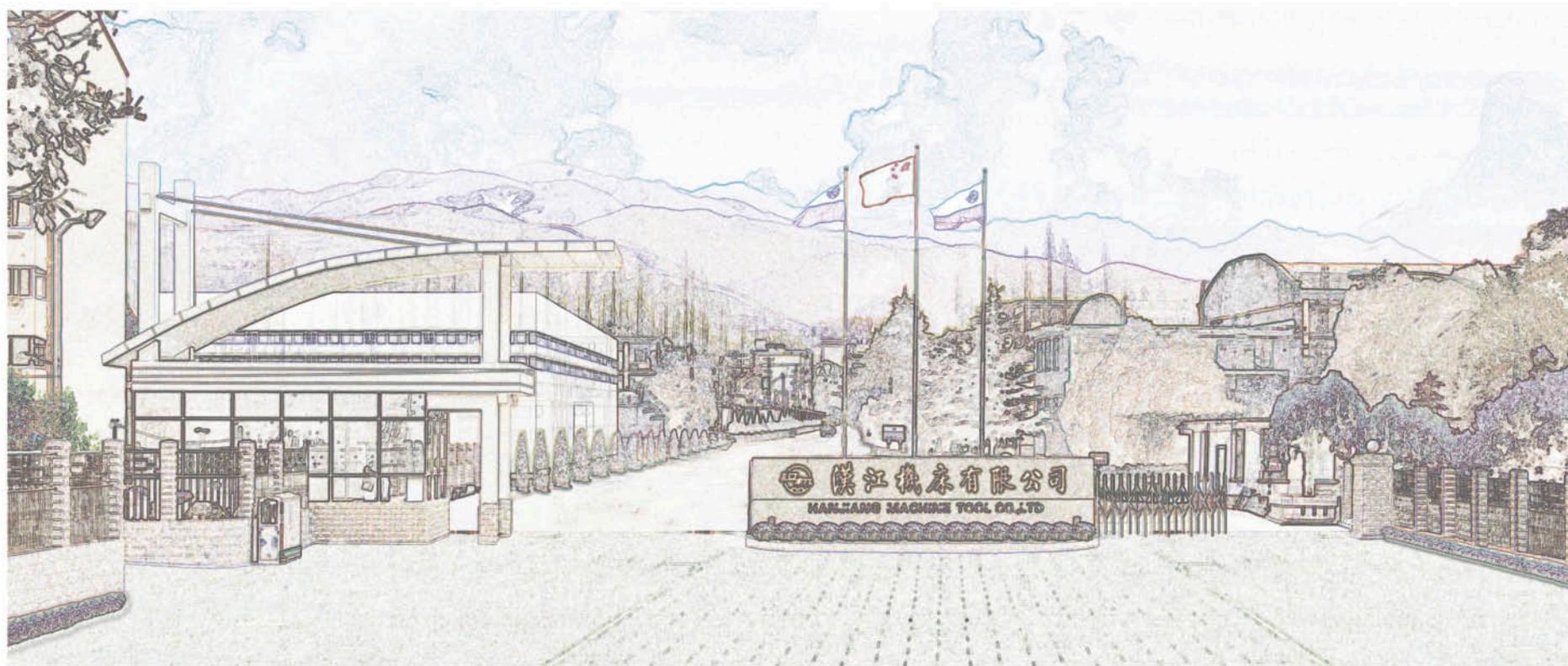
Accuracy of enveloped toroidal worm can be grade 7.

Main Specifications

- > Max.diameter mounted: 320mm
- > Max.center distance: 1500mm
- > Worm major diameter to be ground: 30~320mm
- > center distance (worm shaft and wheel): 63~400mm
- > Miner diameter to be ground: 20~280mm
- > Max. length of thread to be ground: 1000mm
- > Module of worm to be ground: 1.2~20
- > Max.helix angle of wheel: ±45°
- > No. of thread starts: 1~12
- > Max. wheel peripheral speed of grinding wheel: 45m/s
- > Wheel size: O.D. × I.D. × Thickness: 500 × 203 × 40mm
- > Max. weight of workpiece: 500kg
- > Overall dimension of machine (L × W × H): 6150 × 2800 × 2700mm
- > Machine weight: approx. 12000kg

Features

- > Applying the principle of virtual center distance, the adjustment of center distance and base circle can be done by setting parameters.
- > The two flanks can be ground in one setting-up.
- > All adjustments are conducted by machine soft program, rapid, precise and easy.
- > Turntable, helix angle change both are driven directly by torque motors, therefore, featured of precision & long life.
- > Thanks for a powerful wheel spindle with a built-in permanent-magnet motor, and a precise balancing of wheel, which featured of little vibration, an excellent surface quality is obtained
- > The axial position in the central plane of the toroidal worm is determined automatically with the help of an aligning probe.
- > Equipped with a CNC diamond disk dresser, the wheel can be dressed precisely to any profile on our customers' request.



 **陕西汉江机床有限公司**
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