

Recommend



H400 Inserts Grinder



S614 Forming surface grinder



F380/580 CNC lathe



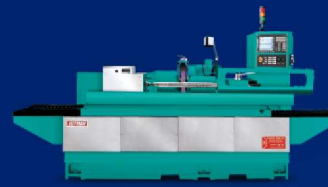
GP32 Camshaft Grinder



Traditional cylindrical grinder
FX27-60
P37



CNC cylindrical grinder (straight in)
FX27P-60CNC
E250 (Economical)
P39



CNC cylindrical grinder (straight in)
FX32P-60CNC
FX32P-75CNC
FX32P-100CNC
P40



Full cover cylindrical grinder
FX32A-35CNC
FX32A-50CNC
FX32A-75CNC
P42



Turret universal cylindrical grinder
W32-75CNC
P44



Cylindrical grinder with robot
P45



Cylindrical grinder with manipulator (line machining)
P46



Internal grinder
IG150/IG200
P47



Universal grinder
CG15/CG45
P50



Universal grinder
CG60
P53



Step down grinder
H2/H3
P29



Vertical grinder
Z850
P25



Microminiature inside/
outside diameter grinder
FX-01/02SP
P70



Centerless grinder
FX-12S
FX-18S
P58



Forming centerless grinder
FX12CNC
FX-18CNC
P59



CNC centerless grinder
FX-20CNC
P64



CNC centerless grinder
FX-24CNC
P65



CNC centerless grinder
ZY450
P67



CNC lathe
F380
P77



CNC lathe
F580
P78



Crankshaft grinder
G1
P01



Camshaft grinder
GP32
P10



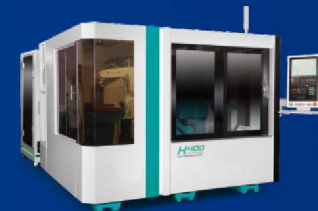
Camshaft grinder
J2
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Eccentric grinder
SOD31
P12



Thread grinder
TG380
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Inserts grinder
H350/H400
P13



Forming surface grinder
S614
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Gantry surface grinder
P2060
P18



Linear guide grinder
L4000L4000
P22



Milling mixing center
3C-6



Turn-milling complex center

Non-circular grinding

Tool grinding

Surface/gantry forming grinder

Milling mixing center

G1 Crankshaft Grinder Super grinding force

For air conditioning/refrigerator compressor crankshaft /Eccentric shaft/camshaft and similar parts

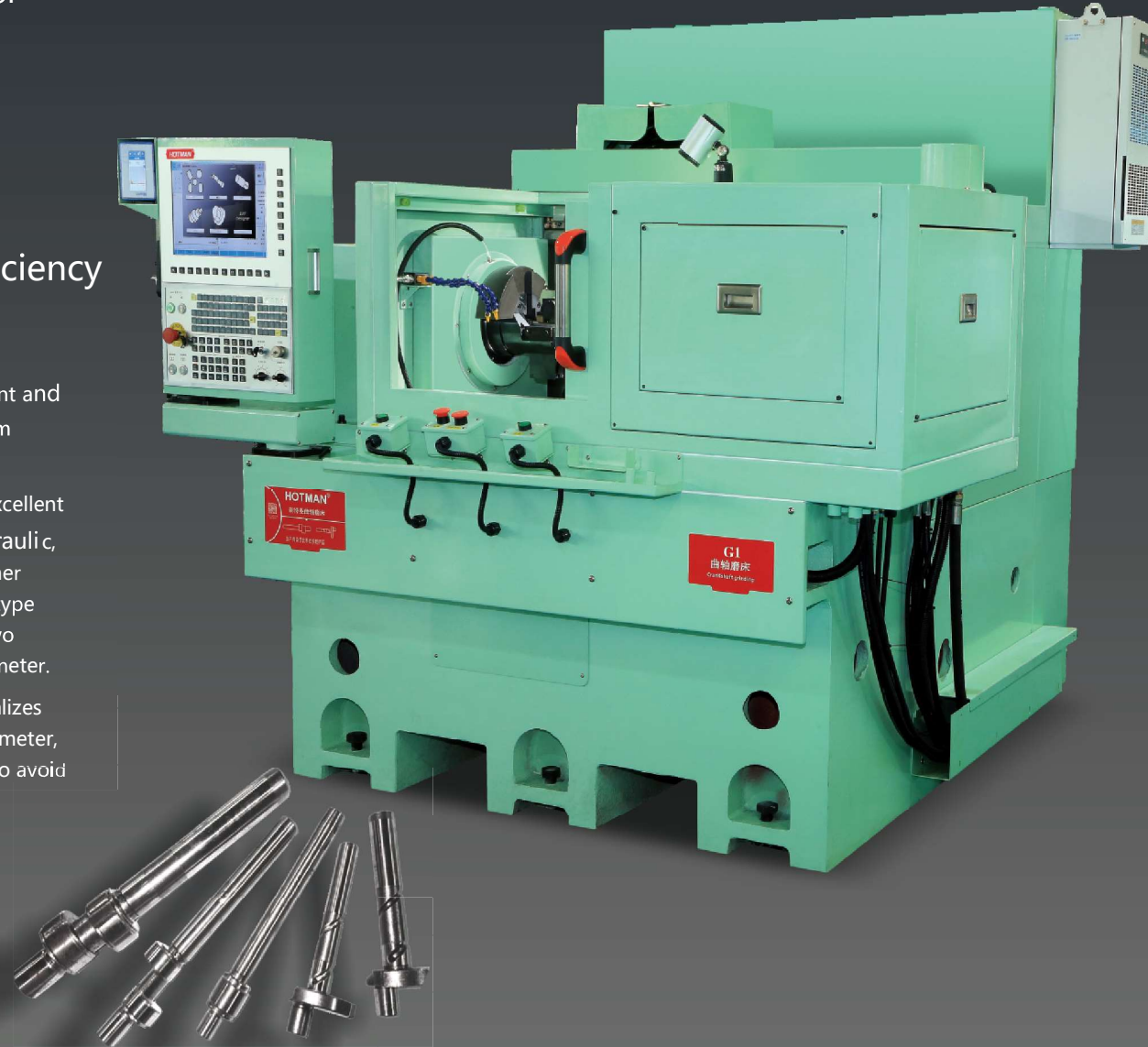
High precision, high rigidity, high efficiency

High stability during mass production

01

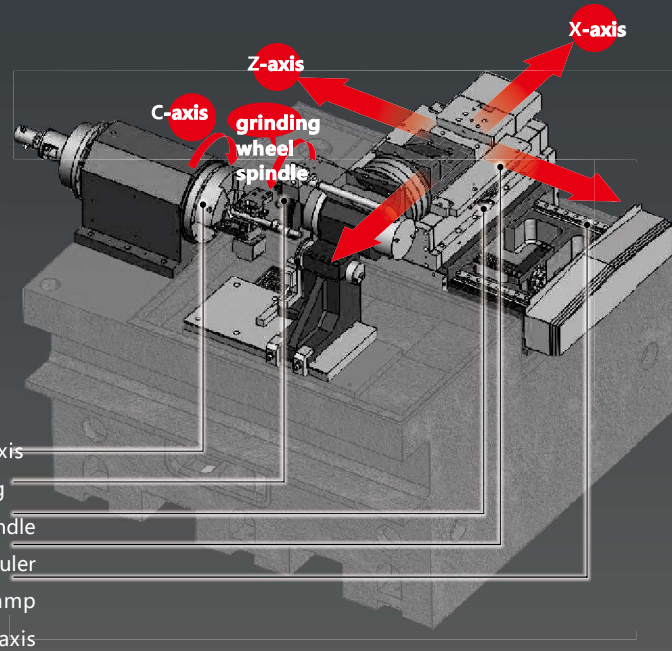
- The machine has been tested in the most rigorous environment and conditions, with outstanding accuracy retention, suitable for from Single piece to mass production requirements.
- The perfect combination of performance and efficiency and excellent flexible design, can be widely used in aviation, medical, hydraulic, mold, high-end automobile manufacturing, robot reducer and other industries of camshaft, crankshaft and drive shaft, eccentric shaft type workpiece precision grinding can achieve clamping, grinding two eccentric shaft outside diameter and more eccentric outside diameter.
- Using advanced numerical control system, the manipulator realizes automatic clamping, clamping grinding multi-eccentric shaft diameter, further improve the efficiency, shorten the grinding time, but also avoid the human tooling entrain precision error.
- Anti-collision of air elimination range and on-line detection system of grinding wheel make the machining accuracy of the equipment more stable and safer.

Minimum resolution of grating ruler	0.0001mm
X-axis positioning accuracy	0.012mm
X axis repeated positioning accuracy	0.011mm



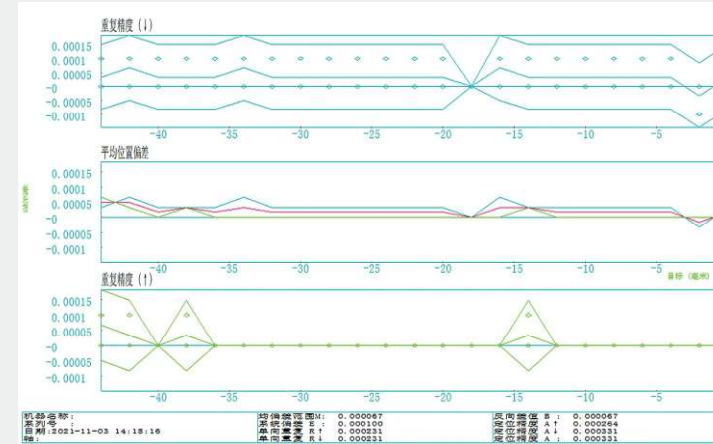
Basic composition Excellent performance

Excellent and reliable construction and configuration



- High rigidity and precision C-axis
- High rigidity high speed grinding wheel electric spindle
- X-axis linear motor and grating ruler
- Hydrostatic guide and clamp
- Screw feed Z axis

Hydrostatic guide (X axis) positioning accuracy and repeated positioning accuracy index Renishaw laser interferometer test data



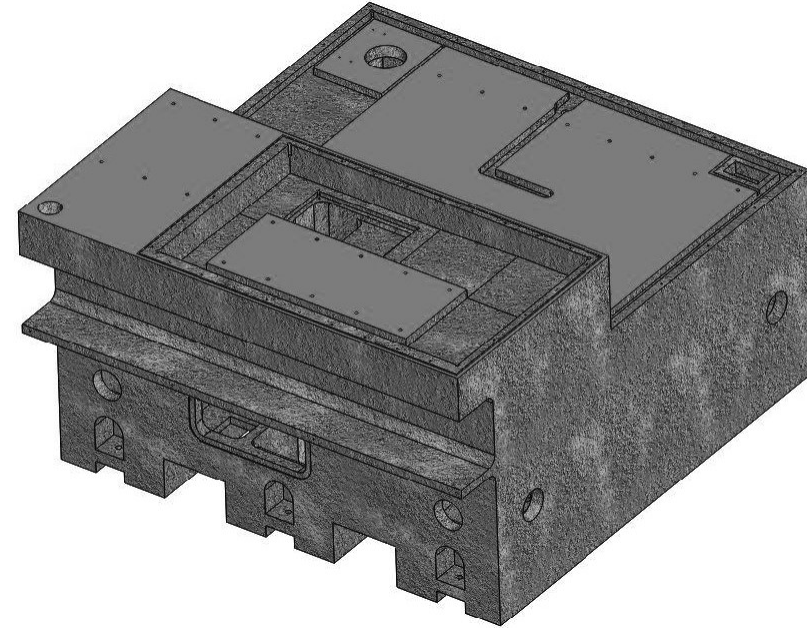
	5	-	-	-	-	-	-
单向均值偏差	0.000033	0	-0.000033	0	0.000033	0	0.000033
标准不确定度 Si	0.000038	0	0.000038	0	0.000038	0	0.000038
2Si	0.000115	0	0.000115	0	0.000115	0	0.000115
平均 12Si	-0.000082	0	-0.000149	0	-0.000082	0	-0.000082
平均 12Si	0.000149	0	0.000082	0	0.000149	0	0.000149
4Si	0.000231	0	0.000231	0	0.000231	0	0.000231
反向差值 Bi	-0.000033	0.000033		-0.000033		-0.000033	
双向重复精度 Ri	0.000231	0.000231		0.000231		0.000231	
双向均值偏差	0.000017	0.000017		0.000017		0.000017	
统计							
轴端偏差 (毫米)		单向定位 (I)	单向定位 (I)	双向定位			
反向差值 B		不用于此例	不用于此例	0.000067	(at i= 9)		
平均反向差值 B		不用于此例	不用于此例	-0.000026			
平均位置偏差 M		不用于此例	不用于此例	0.000067			
定位系统偏差 E		0.000100	0.000067	0.000100			
重复精度 R		0.000231 (at i= 1)	0.000231 (at i= 8)	0.000231	(at i=22)		
定位精度 A		0.000331	0.000231	0.000331			

- High rigidity and high stability bed structure
- High stability X-axis hydro static guide
- X axis linear motor and grating ruler
- High rigidity and precision workpiece motorized spindle
- Z axis high precision ball screw feed mechanism
- High rigidity high speed grinding wheel motorized spindle
- On-line detection system of anti-collision grinding wheel with air elimination range
- High precision universal side pressure fixture
- High precision hydrostatic guide oil supply system
- Independent oil cooling machine
- Professional follow up grinding software

High Rigidity Machine Base

High strength material

Excellent thermal stability



Machine tool:

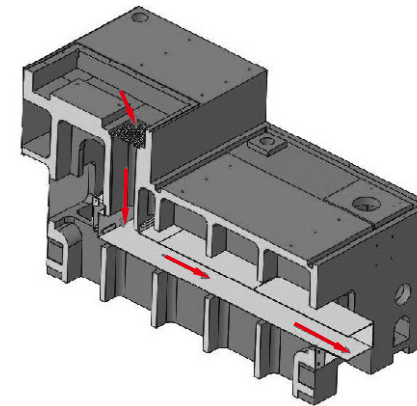
The high strength rigid integral cast iron bed structure designed by finite element analysis has excellent heat dissipation and vibration absorption ability, and maximizes the accuracy of the machine tool. Especially suitable for complex environmental requirements in mass production.

Component:

The key parts of the machine tool such as grinding wheel head, workpiece head, spindle and all bearing supporting components are made of high grade cast iron or steel material, to ensure a homogeneous, continuous and stable coefficient of thermal expansion between the machine tool bed and components. Any occasional short time thermal changes are compensated by the stable compound cast iron, providing a more stable working environment.

Rapid hollow drainage structure design:

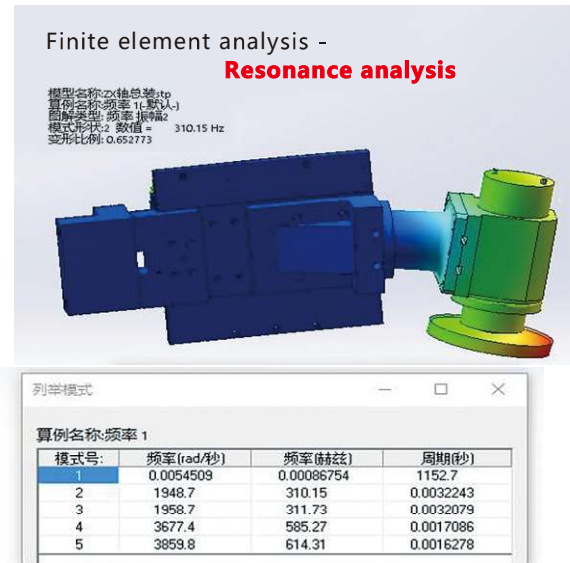
Unique drainage structure, the body work surface grinding area design inclined surface and hollow drainage structure, forming a drainage channel, oil sewage slag along the drain outlet into the embedded drainage tank, make full use of the body cavity, so that the grinding coolant timely and smooth discharge.



Hydrostatic guide Reliable configuration High precision/high wear resistance/high stability

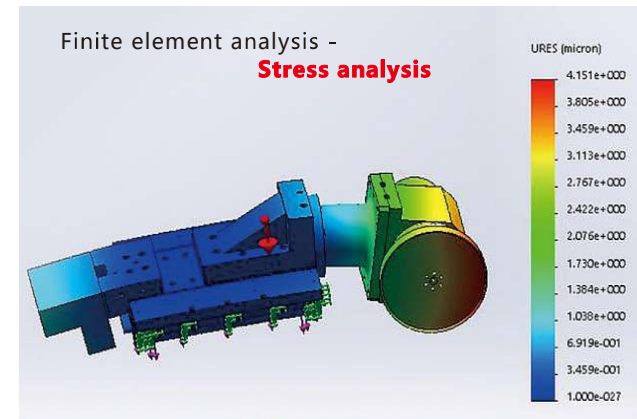
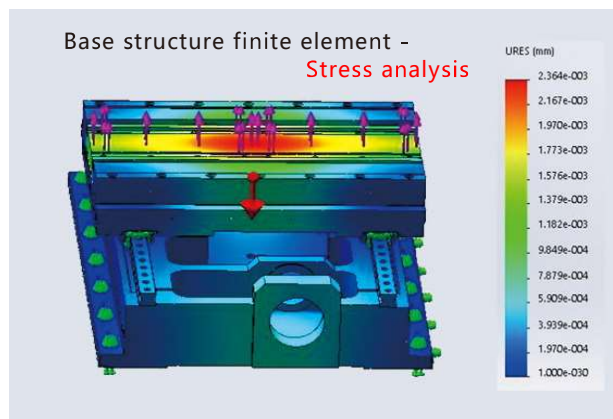
Hydrostatic guide using composite materials after heat treatment has ultra-high rigidity, corrosion resistance, wear resistance, high guideway surface in the state of pure liquid friction, smooth sliding, no wear, unlimited service life, speed movement does not produce any vibration, with cooling system, has ultra-high thermal stability, straightness $<0.1\mu\text{m}/500\text{mm}$.

Sand wheel shaft installation mechanism through finite element analysis, effective and reasonable design, greatly improve the rationality and reliability of the equipment, increase the service life of the mechanism, reduce the equipment failure rate in the process of use, improve the long-term operation of the equipment stability and processing accuracy.



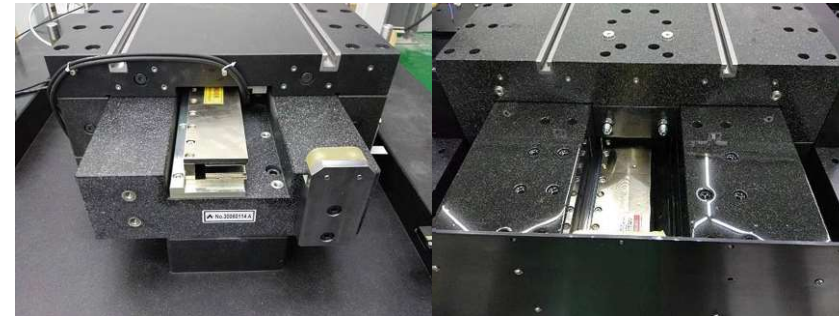
Non-circular grinding

04

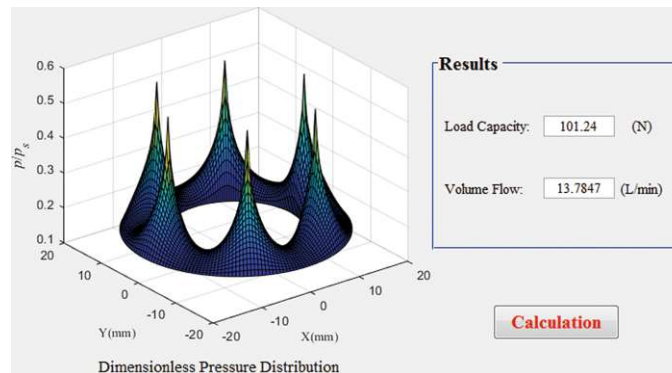


Hydrostatic guide

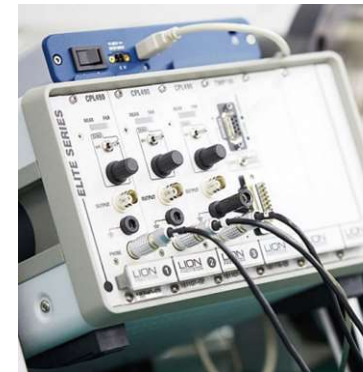
Improve accuracy and service life
 High wear resistance/high thermal stability



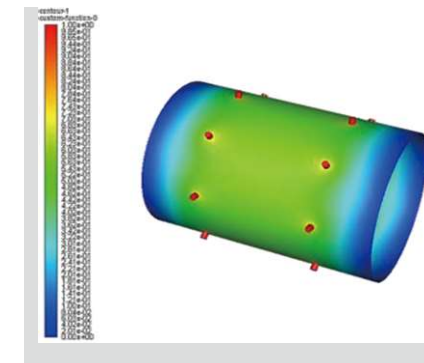
The hydrostatic guide is made of composite material with nitriding and cryogenic treatment, which has ultra-high rigidity. Work with Shadik Linear motor, Heideham grating ruler, with high stability, high positioning accuracy, fast response speed, sensitive High degree, safe and reliable, long service .



Professional and mature fluid calculation system, self-developed design software, for hydrostatic parts of the bearing, rigidity and thermal stability of the accurate calculation.



Rigorous detection and verification, detection accuracy, error analysis, static and dynamic stiffness testing, all aspects Detect.

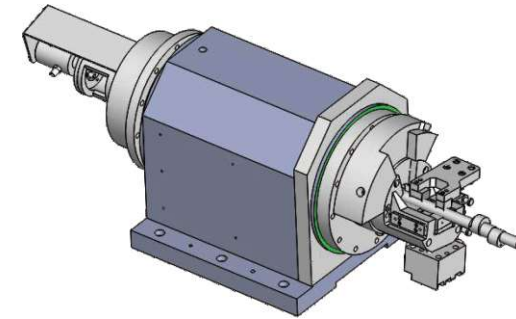


Fluid-solid - thermal - magnetic multi-physical field coupling analysis ability ,simulation calculation. Maximize the accuracy of the physical characteristics of the product.

Precision configuration

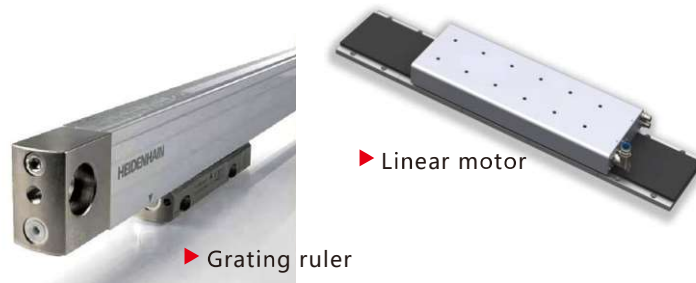
Reliable brand

Assembly quality monitoring throughout the process



High rigidity and precision workpiece motorized spindle

Workpiece shaft adopts high precision, high rigidity, high torque permanent magnet synchronous motorized spindle, built-in Renishaw circular grating ruler and encoder, fast response, high positioning accuracy. At the same time, it has excellent hard torque characteristics, and still has high speed stability under the condition of load fluctuation. It improves the machining surface precision and expands the range of precision grinding and low-speed strong grinding.



▶ Grating ruler

▶ Linear motor

X axis linear motor and grating ruler

Linear motor drive, simple structure, internal cooling structure, less mechanical contact, effectively reduce the mechanical transmission error and wear; Absolute grating ruler and encoder, without any intermediate device real-time measurement of machine tool position, output signal for digital pulse, full closed-loop control, online detection system, to achieve high speed, high precision, fast response.



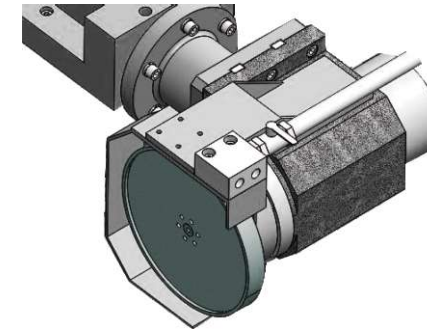
Linear motor

The feed shaft adopts the preloaded high-precision linear guide design, which can withstand the load in all directions. There is a lubrication reflux channel between the guide rail, and the guide rail moves smoothly, so that the friction coefficient reaches the minimum, eliminates the possibility of low speed crawling, reduces the wear of the guide rail to the greatest extent, increases the service life, and greatly improves the programming accuracy. C2 class ball screw has excellent accuracy retention.

Precision configuration

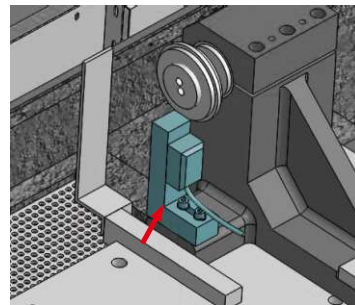
Reliable brand

Assembly quality monitoring throughout the process



■ High rigidity & High speed grinding wheel motorized spindle

Grinding wheel spindle adopts ball bearing motorized spindle, dynamic balance level G1, grease lubricated spindle bearing, maximum speed 8000rpm, shaft end radial runout and end runout W0.001, internal design cooling cycle, can quickly cool the spindle.



Marposs anti-collision system



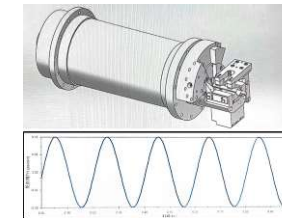
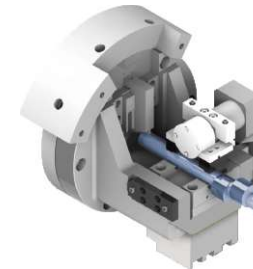
P1dAE Electronic measuring



Stationary AE sensor

■ On-line detection system for air clearance, collision prevention, grinding wheel dressing and outside diameter

The on-line monitoring of the anti-collision system of the air elimination range accurately defines the diameter of the grinding wheel, and has the functions of air range alarm and collision alarm, which makes the processing accuracy of the equipment higher, more stable and safer



Simulation of fixture dynamic balance

■ High precision universal side pressure fixture

Workpiece fixture design through the balance simulation optimization, reduce the impact of fixture on processing accuracy, fixture compatible with the characteristics of conventional crankshaft parts, high universality, floating pressing mechanism, greatly reduce the error brought by pressing, thus improving the qualified rate and processing accuracy.

High precision hydrostatic guide oil supply system

Centralized supply/rational layout/optimal configuration

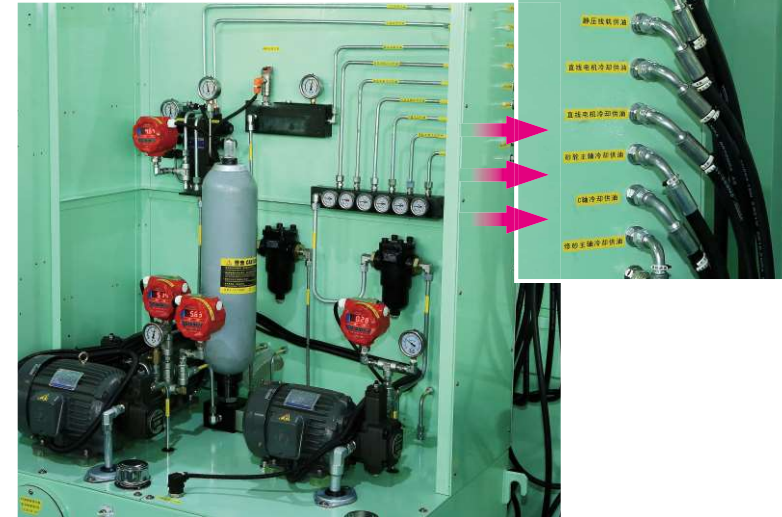
Clear and clean oil circuit layout

Make the maintenance of machine tools targeted, more efficient.



■ Hydrostatic guide oil supply system

- The independent oil tank supplies the workpiece side pressure fixture, and the static pressure guide rail supplies oil; Equipped with triple filter the first filter accuracy is 100 μ m, the second filter 5 μ m, the third filter 2 μ m, and equipped with independent oil cooling machine.
- The centralized lubrication system is used to supply oil to ball screw rolling bearing and bed guide rail. The lubrication mode is inter break, the oil is not recovered, separated from the grinding fluid, and returned to the machine tool body back oil groove.
- The machine tool is cooled by high pressure and large flow. The grinding workpiece and grinding wheel dressing are washed and cooled. The flow of grinding fluid can be controlled by solenoid valve, and the high and low pressure can be switched during grinding.



■ Independent oil cooling machine

- Refrigerant gas leakage detection and alarm function:
When the refrigerant gas leaks (for example, when the cooling circuit fails), an alarm signal will be output.
- Oil temperature warning function:
When the oil temperature or air temperature exceeds the set range, the output warning signal.
- Automatic adjustment function:
This function greatly reduces the adjustment time during the trial run by automatically setting the gain when the oil temperature control is unstable in the factory setting state or needs optimization.
- Preventive maintenance functions:
When the air filter or condenser is clogged, a warning signal is output to inform the need for Maintenance.

Control system

- Graphical software is easy to learn
- Quick and convenient setup
- Mass storage
- No hard disk is more stable
- Multi-wheel data management
- Remote diagnosis and help
- Ethernet and RS232 interfaces
- USB and flash memory card storage
- Background editing function
- Set a security password
- Fully customized to provide cutting-edge user experience

Efficiency first software design

The purpose of reducing setup time is to reduce the cost of unit production and increase the volume of production. The concise page guides the user through a clear user graphical interface to enter relevant data. All programs and Settings are graphically displayed, and the operator does not need to enter complex code and subroutines, thus reducing the programming time. The system also fully supports ISO programs, and is easy to view and edit, but also can be used with other programs perfectly.



Easy to use operating system

Built-in Windows7 operating system, large capacity of static memory instead of hard disk to make the system more stable. Soft key input makes the work fast and efficient, large capacity of 1GB integrated flash memory can store a large number of parts program.

Camshaft Grinder

Strong dynamic and static spindle/grinding force

For eccentric shaft/crankshaft/
irregular long shaft grinding

GP32

GP32-CBN High speed grinding

High speed grinding
Efficiency is higher than
conventional grinding
Promotion **300%**



Excellent configuration: Higher precision/stronger grinding force

- The grinding wheel is driven by dynamic and static spindle, which has strong thermal stability, high rotation precision and strong grinding force.
- The working head adopts high precision DD rotating motor, high torque and high positioning accuracy.
- Compared with the mainstream parallel linear motor, annular linear motor can provide greater instantaneous thrust, offset the vibration when moving across the magnetic pole, and run more smoothly.
- Operation interface: Based on the human-machine interface developed by windows, the graphical software can edit the contour online, the operation is simpler.

Maximum rotating diameter of table Ø320mm

Maximum grinding diameter Ø320mm

The longest distance between the two tops 650mm

Maximum load 90kg(top heart)
20kg(working head)

Maximum linear speed of grinding
wheel shaft : 35~ 70m/s

J2 Camshaft Grinder

Excellent spindle technology

Higher moving and turning accuracy

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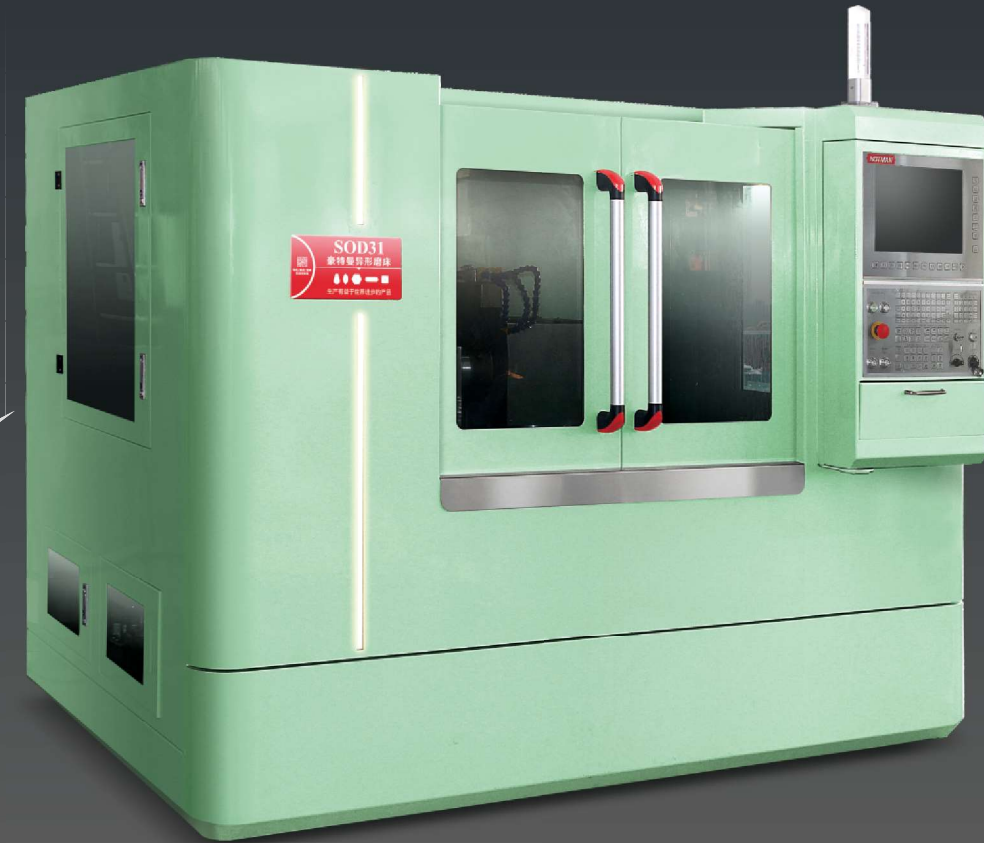
- Using CNC two-axis interpolation linkage, the grinding wheel feed axis (X axis) and workpiece rotation axis (C axis) are adjusted. Full closed loop feedback control, so as to achieve high efficiency and precision grinding of crankshaft workpiece.
- Grinding wheel spindle: hydrostatic liquid suspension motorized spindle, high rigidity, high speed, low Vibration, high grinding force.
- Ceramic CBN grinding wheel is directly driven by hydrostatic motorized spindle, with high rotation accuracy.
- Good precision retention, strong grinding force.

Maximum rotating diameter of table	Ø435/350mm
Maximum grinding diameter	Ø300mm
Maximum load	90 kg
Head frame (axis C) repeated positioning accuracy:	X/Z axis resolution:
0.002 deg	0.0001mm

SOD31 Eccentric Grinder

Adaptable to a variety of shapes/high

efficiency Special-shaped punch/special-shaped mold/
polygon/ellipse/CAM and other complex
polyhedral coordinate grinding models



Grinding
efficiency:
7 minutes /1 PCS

Yield:

≥95%



Expert in non-circular workpiece grinding

- Strong grinding force, high processing efficiency can greatly reduce the cost of irregular grinding. Excellent imported linear motor and torque motor applications, running more stable, accuracy can be maintained for a long time.
- Customized control system makes the operation more simple and efficient in irregular grinding.
- Through no backgap high speed and high precision feed due to the direct drive of the workpiece head frame.

Machining diameter range	Ø5~Ø300mm
Working length	150mm
Maximum stroke of X axis	370mm
Maximum z-axis stroke	270mm
Spindle speed of grinding wheel	50~3000rpm

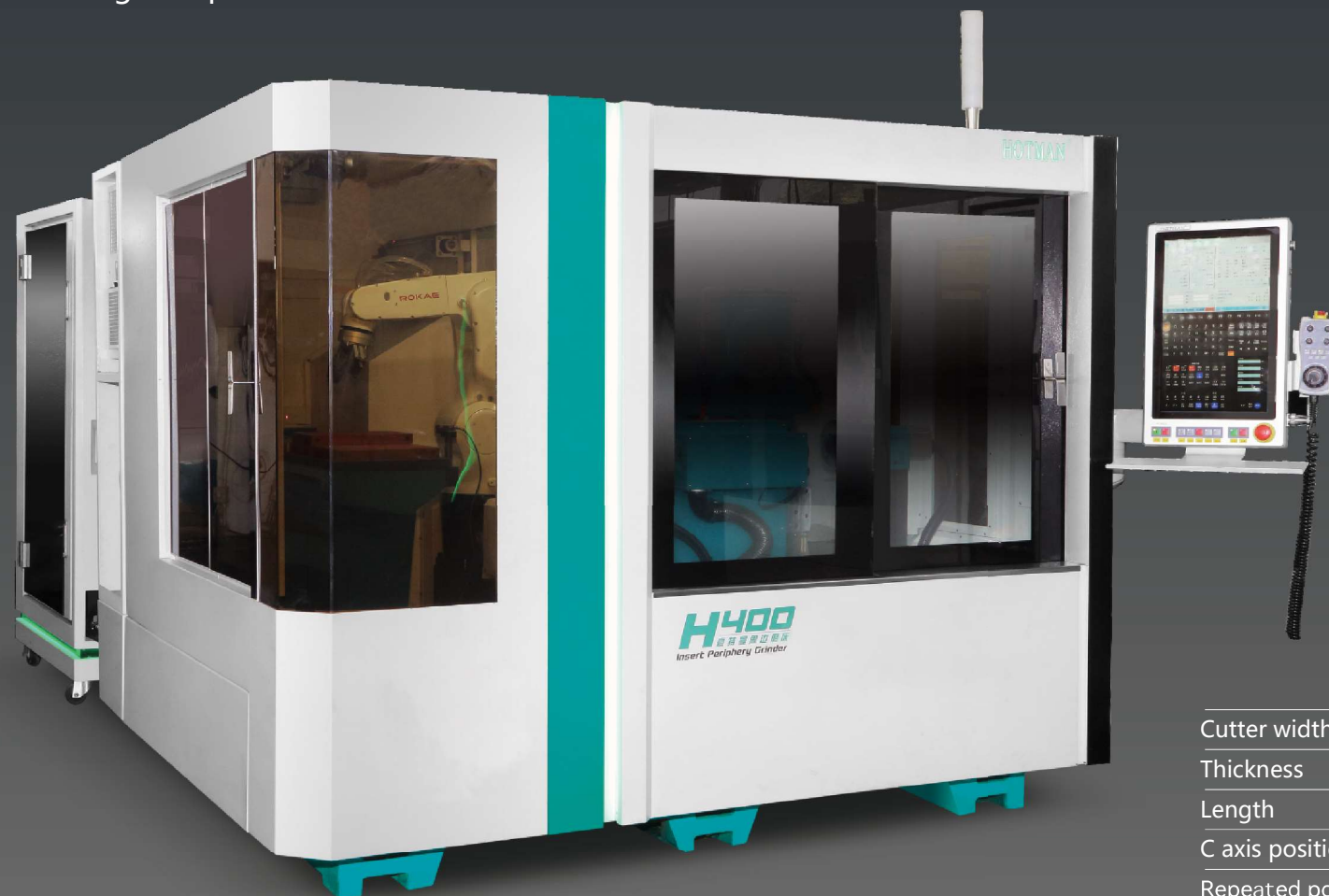
Minimum X/Z axis feed unit: 0.001mm
Automatic compensation for grinding
wheel dressing

6-axis

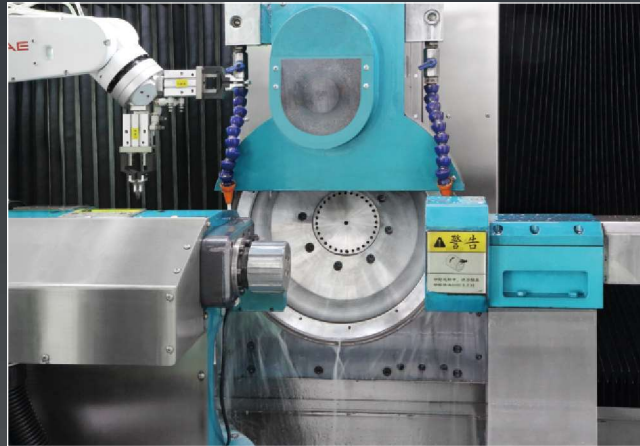
H400 Inserts Grinder Adapt to multiple shapes

Special for hard alloy/ceramic /CBN
Grinding of equal material blades

13



Cutter width	3 -15mm
Thickness	Max.20mm
Length	Max.30mm
C axis positioning accuracy	0.006deg
Repeated positioning accuracy of axis C	0.001 deg
X-axis stroke	120mm
Y-axis stroke	200mm

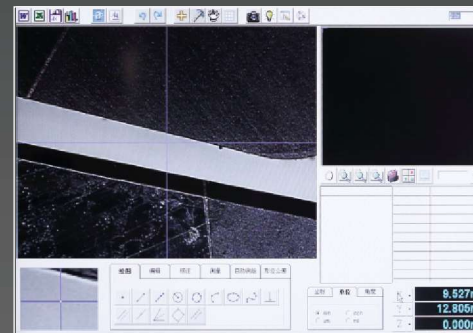


Processing case



Adapt to the grinding process of blades of different shapes

- This equipment belongs to the four-axis grinding center, which can fully process the periphery, negative chamfering Angle, back Angle and R Angle of the replaceable blade.
- The loading and unloading can be realized by the six-axis robot, which can realize the rotation at all angles, reduce the blade turnover process, further improve the efficiency and shorten the grinding time. Automatic clamping, automatic detection, automatic cleaning products, automatic grinding wheel dressing.
- Detection function can automatically regrind defective products, and automatically repair the next workpiece.
- Independently developed machining simulation software, can effectively prevent misoperation or collision.
- Various standard and non-standard cutting tools can be grinding by changing the tooling.



Microscope contour detection

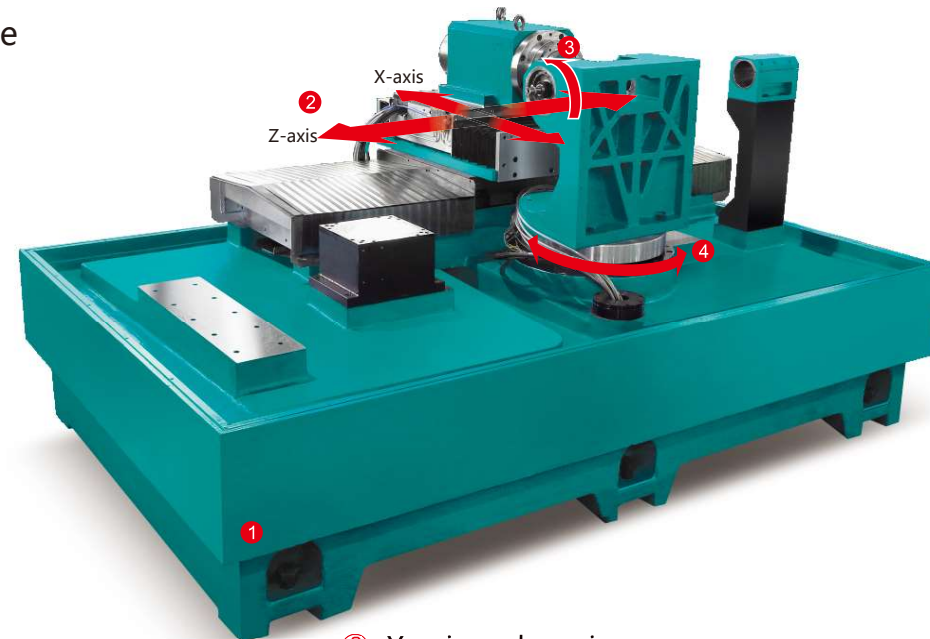
Inserts Grinder

Precision mechanism
Compact/highly rigid/reliable configuration



Grinding wheel spindle - Adopt high precision permanent magnet synchronous motorized spindle

- Stable operation high speed no vibration, low speed no crawling, spindle beating $\leq 0.002\text{mm}$
- High power, high torque. Rated power 10 kw, torque 52 nm, strong grinding performance
- Internal circulation cooling mechanism, ultra long time stable line.
- Front end gas seal device, effective dust-proof and waterproof.



① Machine tool

High rigidity integral dense baked cast iron bed structure designed by finite element analysis, With excellent heat dissipation and vibration absorption ability, maximize the accuracy of the machine tool.

The bed adopts inclined plane design, which is conducive to timely drainage of oil and avoid the phenomenon of leakage and oil leakage to keep the machine clean and tidy.

Z-axis base and bed integrated design avoids the accumulation error of traditional split assembly, makes the structure of the machine more reasonable, increases the rigidity and stability of the machine, and improves the water resistance.

③ C-axis

The workpiece rotation torque motor, rated torque 30Nm, positioning accuracy 7 arcseconds, maximum speed 120rpm, 360° rotation.

② X-axis and z-axis

Advanced linear motor direct drive technology reduces the error and wear caused by mechanical transmission, with the full closed-loop feedback brought by the grating ruler, to ensure the response speed of each shaft and high-speed operation, to achieve high precision and high efficiency.

Driven by an internal linear motor, the casting slide plate moves forward, backward, left and right through the roller guide rail to control the position of the grinding wheel, and then grinding the workpiece.

④ B axis

Torque motor of working head turntable, rated torque of 500Nm, positioning accuracy of 7 arcseconds, repetition accuracy of 2 arcseconds, rotation speed of 60~120rpm, protection class IP67, realize 360° rotation.

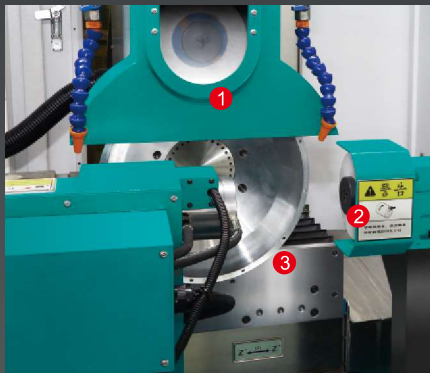
4-axis

H350 Inserts Grinder *Adapt to multiple shapes*

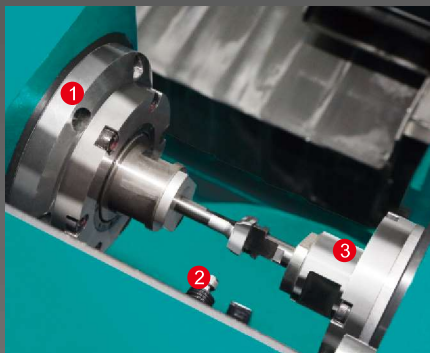
Special for hard alloy/ceramic /CBN
Grinding of equal material blades

▶ X-axis stroke: 100mm

▶ Z-axis stroke: 120mm



- ① **Online dressing device:** the grinding wheel can be dressed while grinding, the electric spindle drives the grinding wheel to repair sand automatically, and the screw servo drives the forward and backward feed.
- ② **Off-line dressing device:** It can realize the end face sand repair, the motorized spindle drive feed, and the maximum speed is 8000rpm.. **(H400 special)**
- ③ **Grinding wheel:** The material granularity should be changed according to different workpiece requirements. The spindle of grinding wheel is electric spindle, the maximum speed is 2000-400 0rpm, the power is 10KW and the torque is 52Nm.



- ① DD motor drives the spindle to rotate and control 360° rotation of the workpiece. It can grind the workpiece in all directions, and the rotation Angle is precisely controllable.
- ② "Cylinder type" Keenes contact sensor without driving device provides online detection; To achieve the same level of ultra-high precision, precision 3μm, resolution 0.5μm. It can stably carry out high precision measurement, and detect the allowance before rough grinding of various shapes of products; After grinding size, and base compensation; The calculation function of thickness difference and height difference of different blades is provided.



- ③ Hydraulic cylinder automatic locking: hydraulic cylinder push charging The chuck compels the workpiece

TG380 Thread Grinder *Strong versatility*

Special thread for lead screw/tap
Grinding process of shovel grinding

- The spindle is equipped with high resolution encoder as position feedback, full closed-loop control.Simple assembly, short transmission chain, compact structure, good accuracy and stability.
- Equipped with CNC grinding wheel dresser, interpolated by two CNC axes W and V,High precision dressing of grinding wheel is carried out by diamond disc wheel driven by servo motor.
- Linear movement of workpiece is driven by linear motor and equipped with high resolution grating ruler.Ensure high precision machining.

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Center hole distance	300 mm
Center height	136 mm
Maximum workpiece size	Ø127*300 mm
X-axis stroke	200mm
Z-axis stroke	420mm

Minimum X/Z axis resolution:
0.0001mm



P2060 Gantry Surface Grinder

High rigidity/regrinding

Surface/contour/surface forming grinding

- High rigidity structure

The left and right moving guide rail of the workbench adopts double V hard rail structure design, and the lubrication of the guide rail adopts continuous forced lubrication to avoid friction loss, high motion accuracy and long service life.

The machine adopts C3 precision ball screw, which can be directly driven by servo motor to achieve high precision.

- Lubrication system

The high precision lubrication system makes the machine run more stable and can withstand regrinding. The precision feed system greatly improves the grinding efficiency.



P1540 Gantry Surfac Grinder

High rigidity/regrinding

Surface/contour/surface forming grinding

- **Workbench**

Table moving back and forth (X axis) slide rail, using double V structure design, continuous forced lubrication, avoid wear, high motion accuracy, high service life.

- **Ball screw**

The machine adopts C3 precision ball screw, which is directly driven by servomotor.



Grinder structure



Marble machine body



Steel guide



Welded steel beams

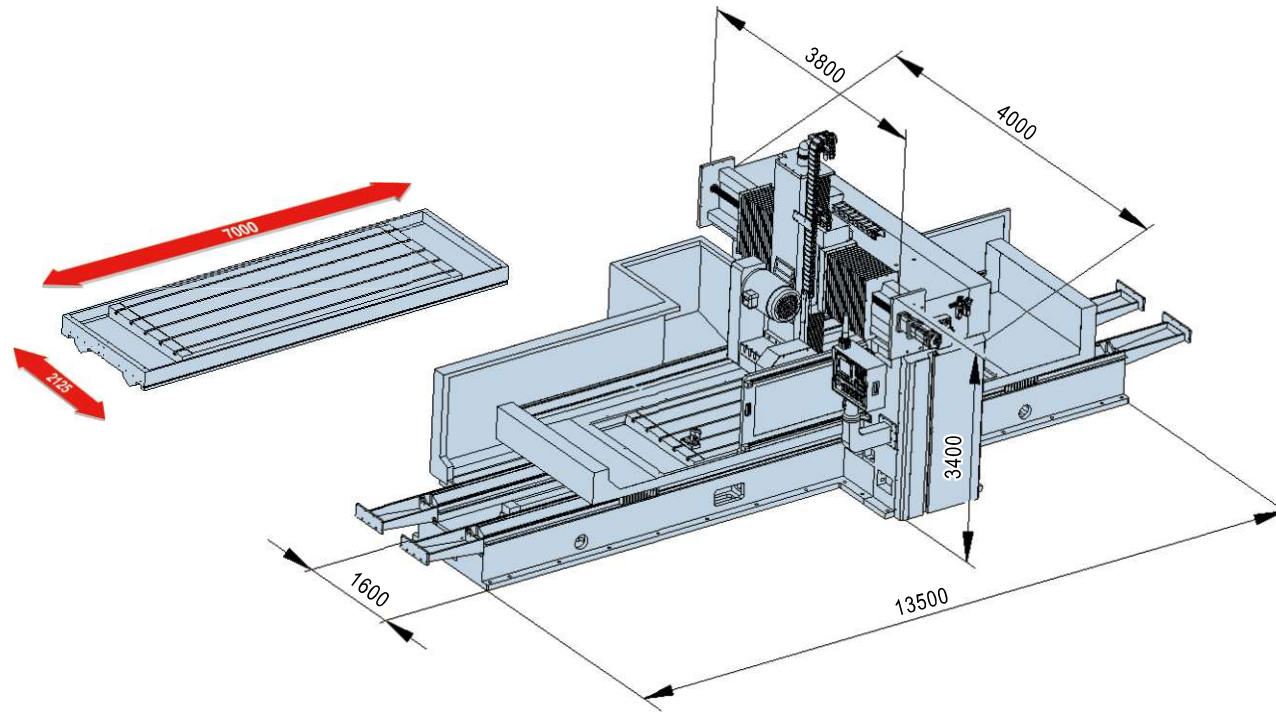
Precision spindle

The main shaft of the grinding wheel is made of nickel-chromium alloy steel, and the internal stress is eliminated through heat treatment, precision grinding and dynamic balance correction.



The grinding wheel mandrel adopts dynamic pressure composite lubrication design, which is easy to form a high oil film supporting pressure. When the working pressure is lower than the working pressure, the automatic pressure detection switch will prevent the start of the sand wheel shaft to avoid mutual wear between the mandrel and the copper bearing shaft, and the lubricating oil temperature control cooling device is attached to avoid the oil from reducing the viscosity due to high temperature, thus affecting the maintenance of pressure.

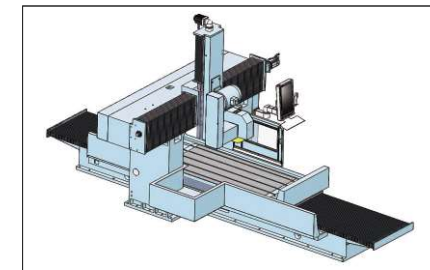
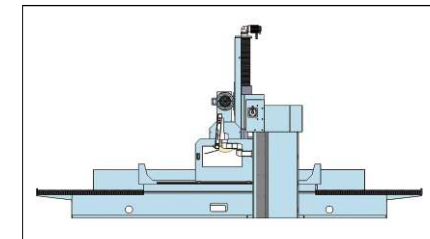
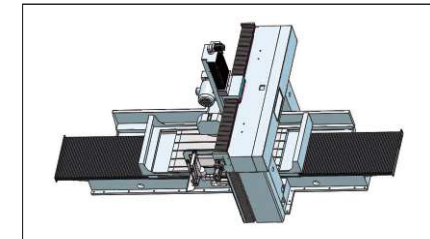
Grinder structure



Strong bending and torsional resistance, excellent thermal stability

- Excellent high rigid beam design, bending and torsional stress, in addition to ensure the quality of each casting body, relatively can improve the grinding efficiency and precision.

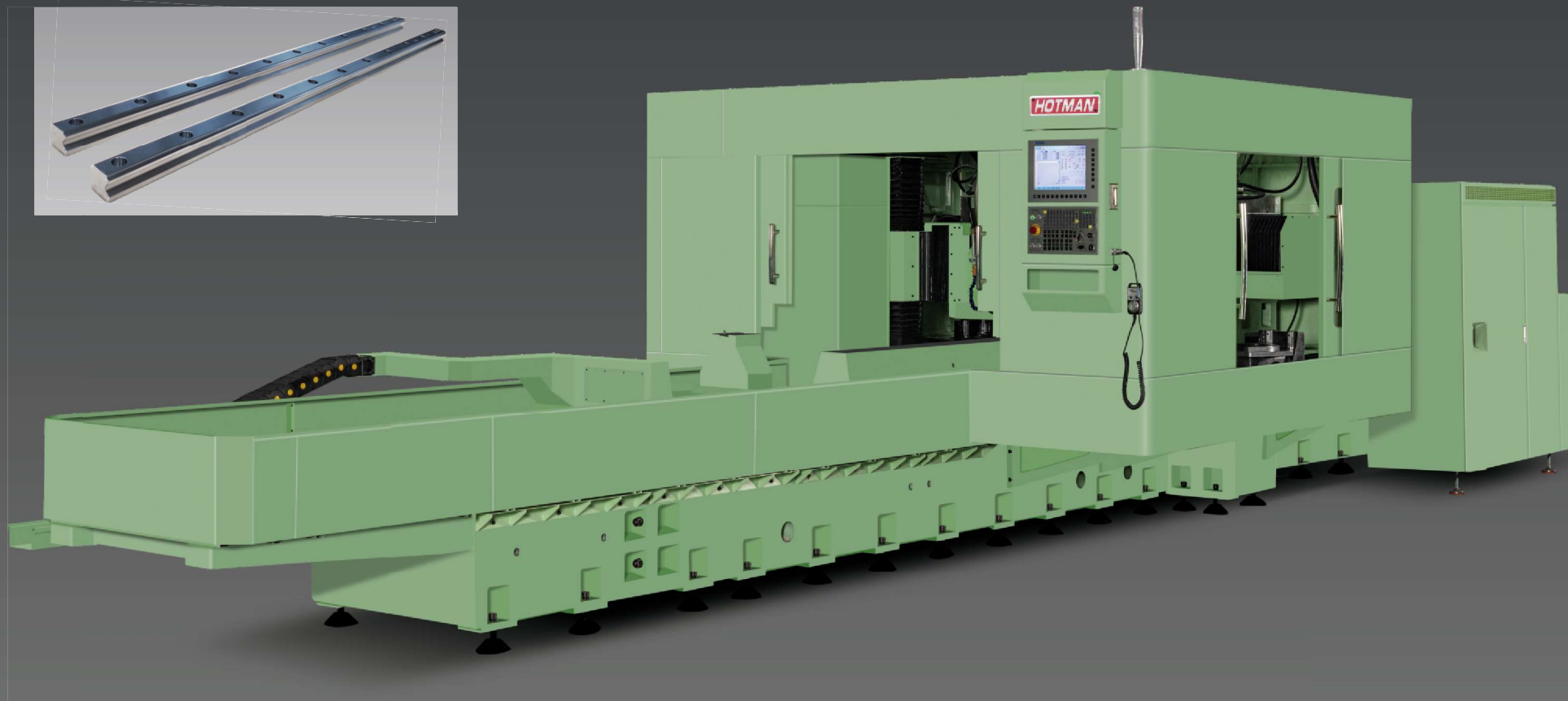
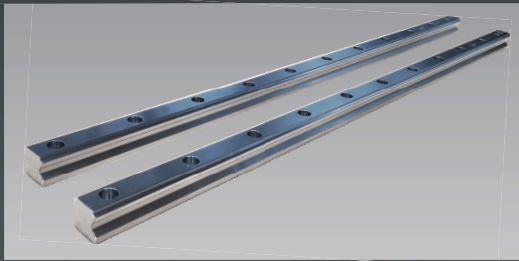
- Base, column, beam, table, slide seat and other key castings are made of high grade cast iron Finite element analysis and design of a firm bed structure, to meet the engineering needs of rigidity doubling and quality, and are treated by internal stress elimination, to ensure that no deformation for a long time, and has excellent bending and torsional resistance.



Key point

L4000 Linear Grinder

It can grind P and SP precision linear guides. The linear guide grinding machine is equipped with two groups of vertical grinding head and one horizontal grinding head. The whole machine adopts the rectangular design of door post, with good structural rigidity and stability. And with high precision optical ruler for closed circuit design, can achieve accurate positioning feed, ensure the stability of machining accuracy.



S614 Forming Surface Grinder

Super precision type

Surface/contour/surface forming grinding

Left and right linear motor

Fast moving speed and high precision

Replaceable spindle

Up to 4

23



Full cover type (optional)



Punch machining

- Convenient CAD data input
- Automatic multi - face machining of punch



CCD camera detection

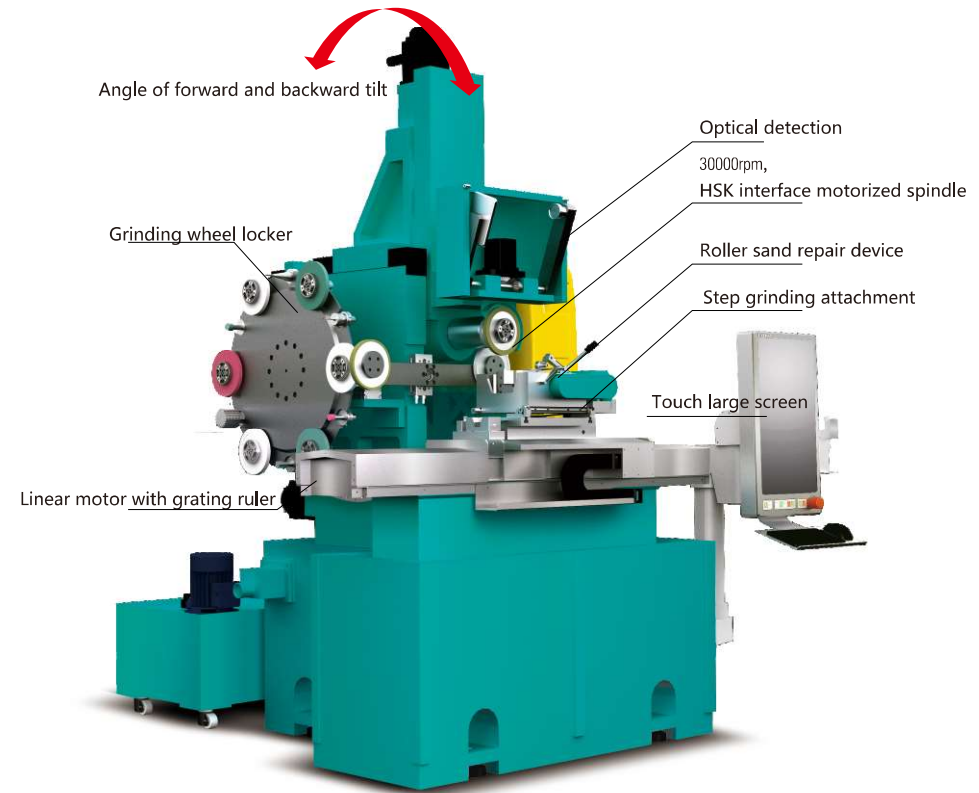
Through CCD camera measurement on , the machine tool,image processing system to realize the digitization of fine grinding,,Automation, the shape accuracy is greatly improved

Bench size	150*355mm
Max. stroke of table (Y-axis)	400mm
Max. stroke of table (X axis)	160mm
Max. stroke of table (Z-axis)	350mm
Y/X/Z axis resolution	0.0001mm

Forming Surface Grinder

Surface/contour/surface forming grinding

S614 Multifunctional upgrade



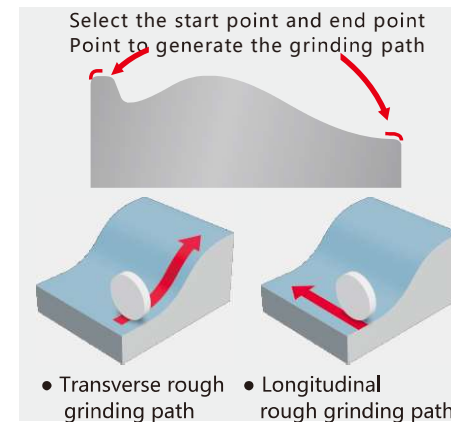
Surface forming
grinding series

24

High efficiency grinding center for complex parts

- Compact, flexible loading options for grinding wheels and other tools, complete grinding, milling and drilling with one clamp.
- Large capacity tool library, fast grinding wheel and dressing wheel
- Automatic switching device
- Excellent grinding performance and cooling performance
- Flexible and varied loading options

Simple and fast processing program editing



Flexible and varied loading options



Key point

Z850 Vertical Grinder

Compact/multi-surface grinding

Suitable for processing disk/short shaft/sleeve/ring and other parts

Once clamping can complete the grinding of the inner hole, outer circle, cone and end face of the parts

B axis double gear positioning turret

Inside/outside diameter grinding with 0° positioning, 22.5° positioning can be used to grind outside diameter and end surface efficiently.

Grating scale feedback

The X axis and Z axis are equipped with feedback control using grating ruler (Z axis is an option) to achieve high precision machining.

ATC grinding wheel library

Six grinding wheels of different specifications and shapes are equipped according to the machining needs. In the continuous machining of complex shapes, it is unnecessary to replace the grinding wheel frequently, which can realize online automatic dressing and size compensation.

Temperature management system

In continuous batch processing, you can control the temperature of the workpiece and machine tool body, to achieve higher precision processing.

Widely used

Working machinery parts such as spindle sleeve, engineering machinery parts such as bevel gear, reducer parts such as planet gear (for wind power generation), Marine parts engine CAM

25



Grinder structure

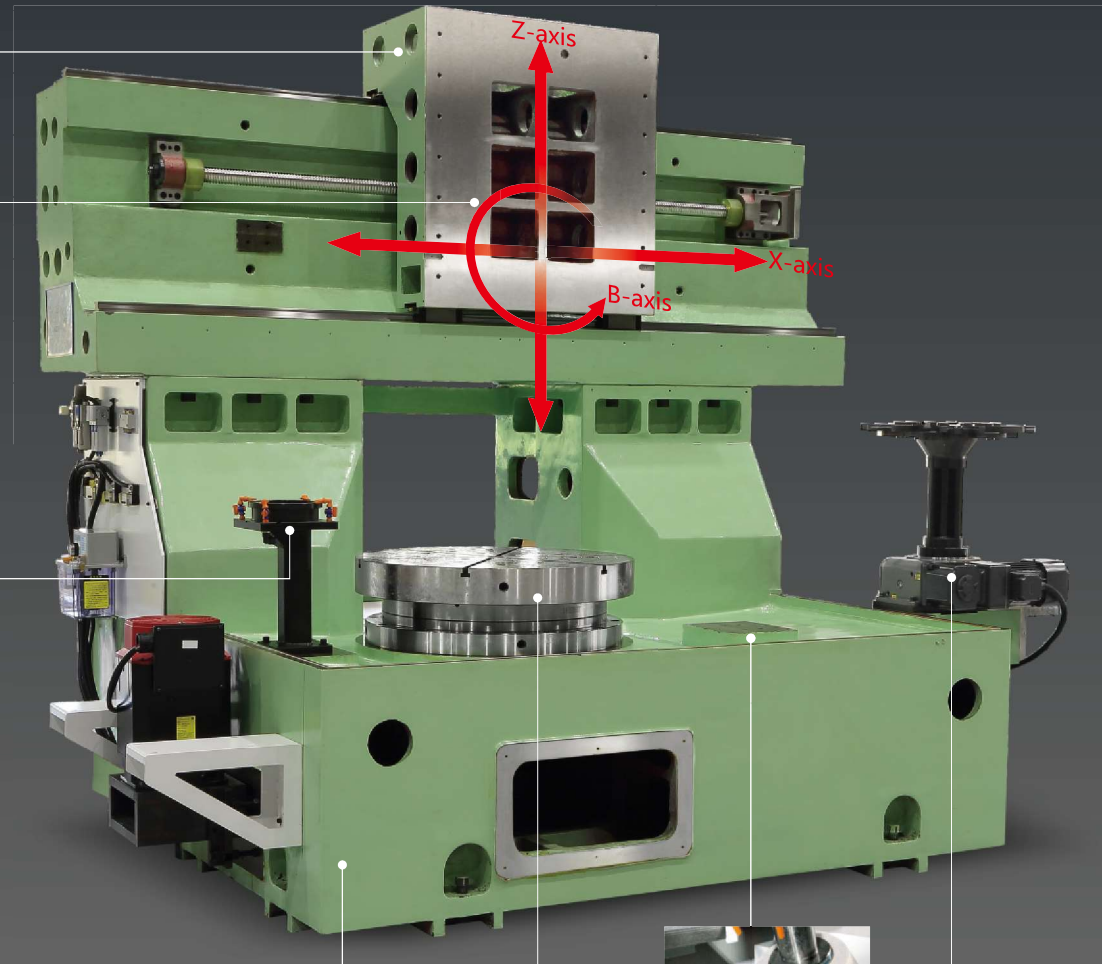
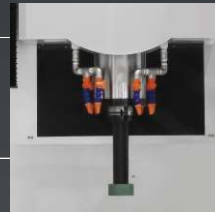
Side hanging pallet

B axis: Fixed at 0/22.5°

Spindle: Built-in motor drive, equipped with high precision rolling bearing, ensure the grinding head high precision work

W axis: with measuring

Standard gauge



One-piece bed column

High shock absorption, high thermal stability, can ensure the long-term stability of the machine is not easy to deformation

Buckle and hang slide seat

Can make the beam to slide seat and spindle gravity in the vertical direction to get better support.

Alignment accuracy of linear spool

X-axis positioning accuracy	3.70 μm
X axis repeated positioning accuracy	2.87 μm
Z-axis positioning accuracy	2.82 μm
Z-axis repeated positioning accuracy	2.13 μm

Bed post

Work table: Static pressure support, stable and reliable

Grinding wheel dresser

ATC: Grinding wheel library

Processing form



Internal machining



Cylindrical machining



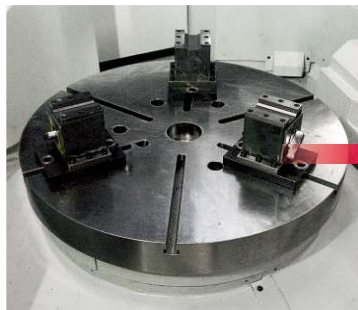
End face finishing

Processing case



Hydrostatic table

Select the appropriate fixture according to the workpiece shape/machining form



3 jaw chuck



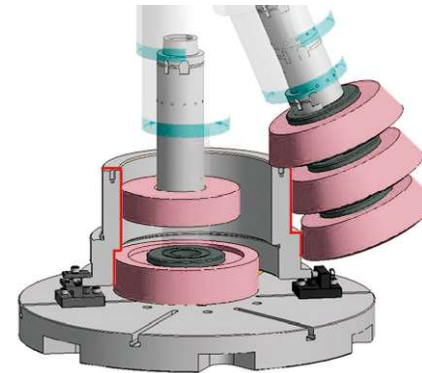
4 jaw chuck



Permanent magnet chuck



Disc clamp



Machining accuracy

Roundness	1.5 μ m
Coaxiality	2.5 μ m
Surface roughness	0.1 μ m

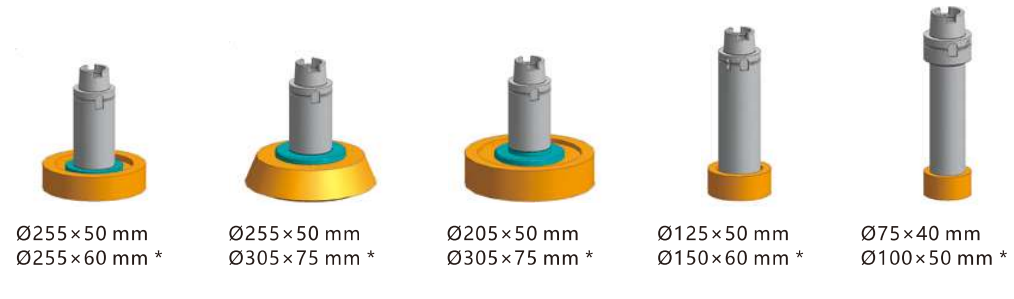
Processing capacity

Grinding max. outside diameter	860mm
Inner circle grinding diameter range	\varnothing 50~700mm
Max. grinding height	600mm
Max. load of table	800kg

Grinding machine configuration

ATC grinding wheel library

Grinding wheel (diameter x thickness)



Internal and external grinding

28



B axis

The B axis, which can be rotated by 22.5°, allows one wheel to finish the outer and end grinding more efficiently.



On-line measuring device

In mass production. Especially large diameter workpiece or deep hole workpiece, avoid manual measurement error, save processing time, realize automatic compensation.



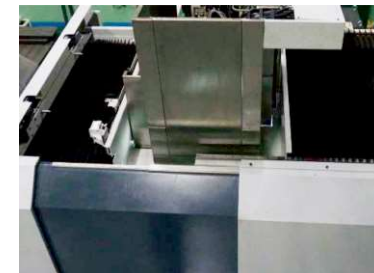
Grinding wheel dressing device

Effective for the use of CBN grinding wheel. A rotating diamond drum dresser with multiple diamond points is arranged on the rotating disc.



Cooling/filtration system

The two-stage filtration with magnetic roller and centrifugal separation is adopted. The filtration accuracy is 0.01mm to ensure that the cleaning of the backwater will not affect the grinding surface finish.



Fully enclosed guard

The patented fully enclosed telescopic shield can be conveniently opened when loading and unloading, and completely closed during cycle adding hours to reduce grinding noise and prevent the diffusion of water mist.

H3 Step Down Grinder

Intelligent grinding

Multi step height aspect ratio cylindrical component grinding tool

- Diameter range of grinding workpiece: $\varnothing 0.05 - 20.0\text{mm}$
- Maximum length of grinding workpiece: 200 mm

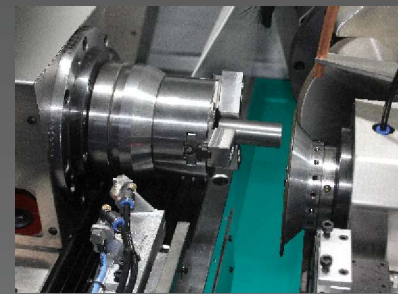
29



Grinding efficiency:
It'll be done in 40
minutes
Yield:
 ≥ 97

Intelligent grinding solution

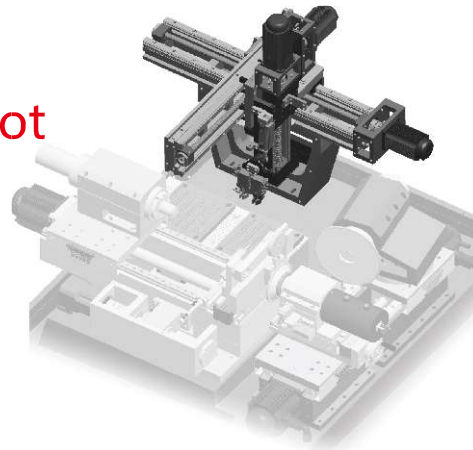
- Four-axis segment difference grinding machine is equipped with three-axis manipulator loading and unloading mechanism to realize batch processing of components.
- Online measuring system, to ensure the accuracy of long unattended.
- The first centering type workpiece clamping device in China, in the grinding process to obtain superior concentricity.
- Rough machining and finishing shaft effectively match through the diameter difference to get the best accuracy and surface finish.
- The control system and software independently developed by Hotman can realize the quick editing and creation of the workpiece.



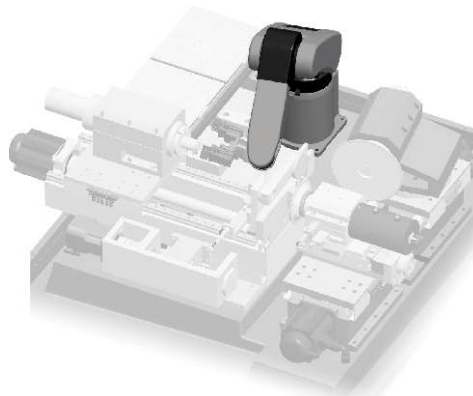
Three-jaw holding device (special accessories)

Automation

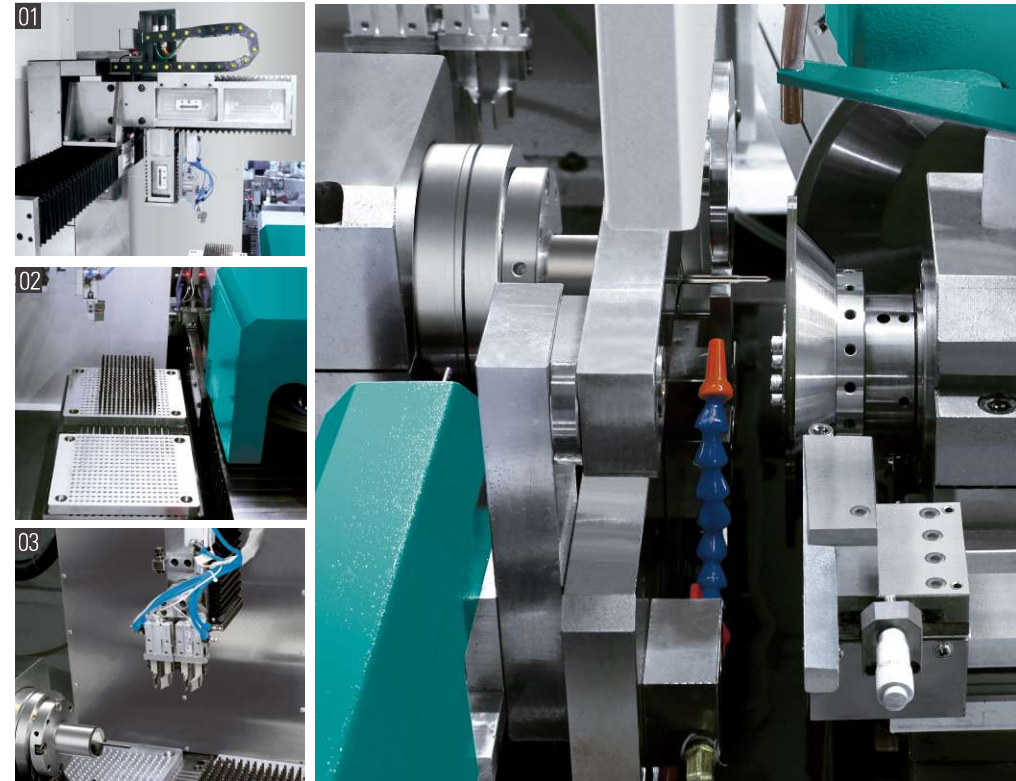
Manipulator/robot



Manipulator automatic scheme



Robot automatic scheme (optional)



01 Manipulator device

Automatic loading and unloading machine manual power supply of 3 ANCA servomotor, through the combination of precision rail and ANCA control system, in the process of feeding and receiving materials, can be efficient, accurate, convenient to complete the whole feeding and receiving process.

02 Tray device

The loading capacity of the material preparation tray and the closing closing is 340~510PCS. The operation is convenient and flexible. It only needs to be lifted and put back at the four holes.

03 Loading and unloading device

Using two pneumatic finger cylinders, unloading products. A rotating cylinder for Angle adjustment, adjustment Angle of 0~90°

Control system



Self-developed control system and software



High-level interface

Allows operators to seamlessly monitor and interact with the data being processed, providing a cutting-edge user experience.

Full customization

Using the latest technology, buttons and ICONS can be freely moved and rearranged to meet the business needs of different users.

Save time

Software brings you cutting edge technologies that bridge the gap between IDE developers and non-programming specialists.

19 inch digital LCD display

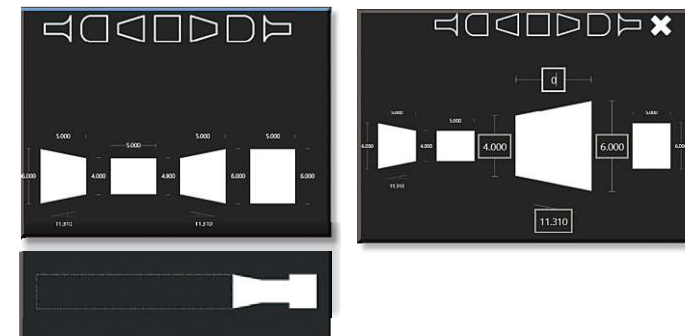
Capacitive multiplex industrial touch screen with full active display area, waterproof and oil proof.



After the workpiece file is opened, click the "Edit" button above, so that the operator can re-edit the cutter type according to the needs, as shown in the figure, and the operator can edit the cutter type and size quickly, as shown in the figure below. Click on each segment of the cutter type and edit the size of the spindle speed row.



The operator can also create a new tool shape. In the case of a T-shaped knife, the tool shape is created by adding it from left to right (as shown in the image above), with the tool face on the far right. According to the desired knife type, click the knife type at the top of the screen to add from left to right, and [X] on the far right is the delete button.



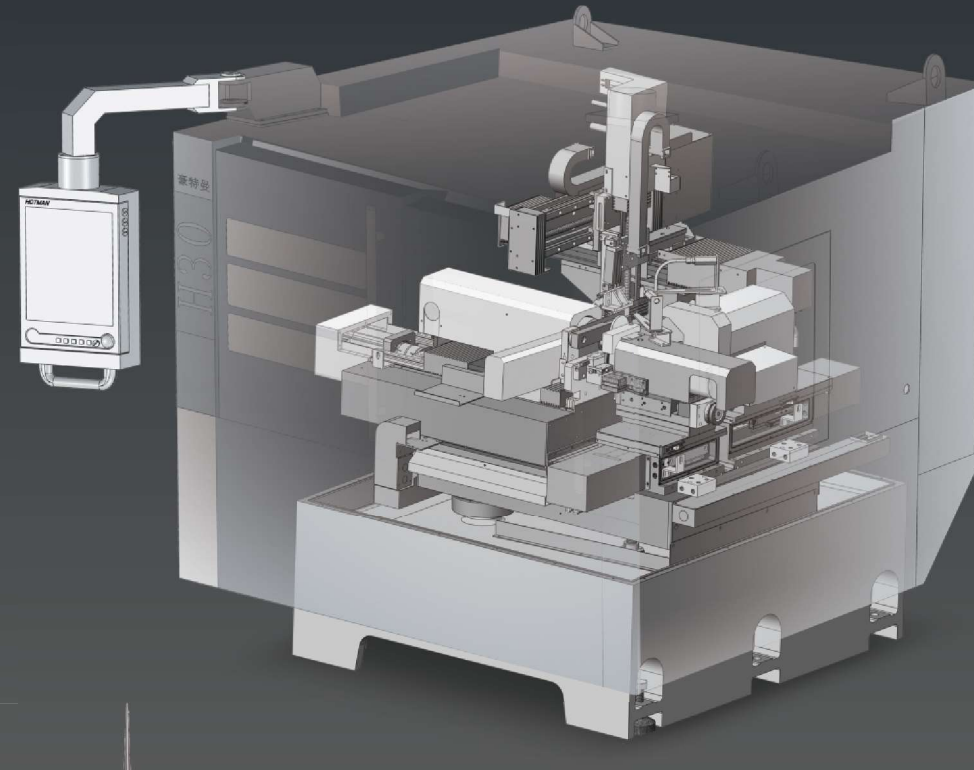
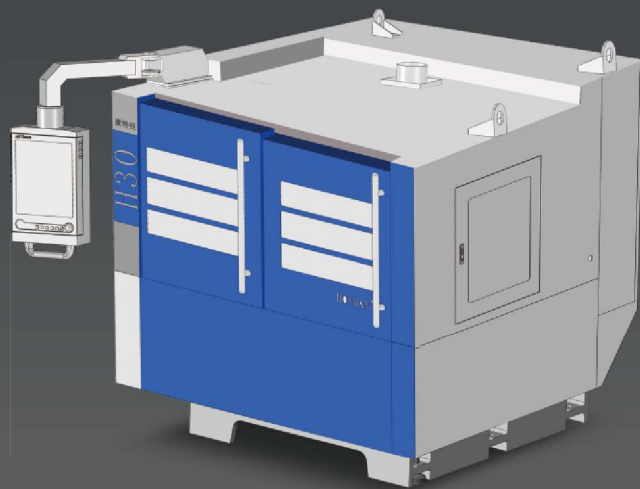
After setting the shape and size of each section, you can easily complete the editing of T-cutter, and set the spindle speed and feed speed of each grinding section.

H3 Step Down Grinder

Intelligent grinding

Multi step height aspect ratio cylindrical component grinding tool

- With greater grinding capacity and flexibility, the H30 machine is not only used for processing cylindrical products, but also for non-cylindrical products.
- Especially suitable for machining multi-plane and non-round punches. The chuck of the loading device is now interchangeable and easy to adjust and replace.



Processing case

H2 Economical Step Down Grinder

Multi-step height-length-diameter ratio cylindrical component grinding tool

Peculiarity

- Grinding diameter range: 1~32mm, super power high-speed motorized spindle, hopper type feeding mechanism, with fast and accurate clamping structure.
- The use of core type two-axis linkage grinding mode, high grinding precision, high production efficiency.
- The on-line end measuring system can compensate for the errors caused by the loading of the workpiece in the mass production process.
- Small space can be barrier-free optimization, flexible processing, low energy consumption, low maintenance cost, cost-effective.

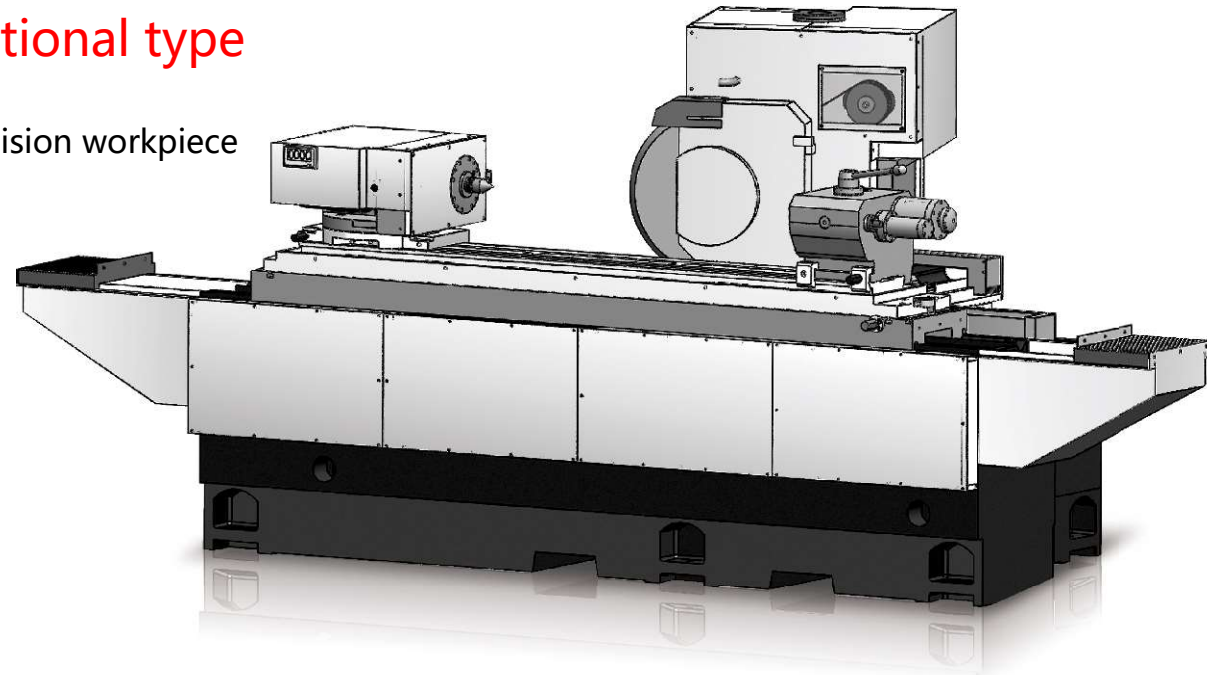
33



Grinding workpiece diameter range	Ø1~32mm
Clamping workpiece diameter range	Ø2~34mm
Grinding length	80mm
Grinding wheel spindle speed	8000RPM
X / Z axis resolution	0.001mm

Cylindrical Grinder **Traditional type**

Suitable for processing medium precision workpiece



New design concept, low cost and simple operation

- Frame structure, using high-grade cast iron (FC30), low center of gravity design, the latest finite element computer aided analysis, the rigidity design is more than 108N/m, the lowest natural frequency design is more than 150HZ.
- This the excellent structure design makes the machine fully shockproof and shock-absorbing, ensuring its high rigidity and maximum damping performance, thus prolonging the service life of the machine.

Bed displacement and feeding mode

- The left and right displacement of the table and the feeding of the grinding wheelhead are all done by hand Dynamic operation.
- The bed displacement is driven by oil pressure, and the grinding wheelhead feed is manually operated.
- The bed is driven by oil pressure, the grinding wheelhead is sent and returned longitudinally, and the feed is operated manually
- The bed displacement is driven by oil pressure, the grinding wheelhead longitudinal fast feed and fast return, automatic feed operation.
- Add automatic measuring device.

Cylindrical Grinder

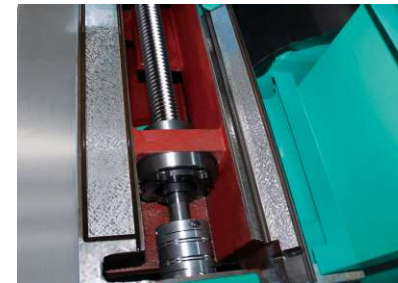


Static spindle

Static pressure bearing oil film, from starting to stop always work under the support of oil film, very low wear. Long service life, high rotation accuracy, oil film stiffness, the machine can maintain accuracy for a long time.

Motorized spindle

High speed, low vibration, low noise, smooth movement. High processing efficiency, low roughness and good precision.



C3 class ball screw

Due to static lubrication features, friction interaction can be reduced, and can increase rigidity and positioning accuracy. Small feed in $1\mu\text{m}$. (CNC machine configuration)



Guide rail

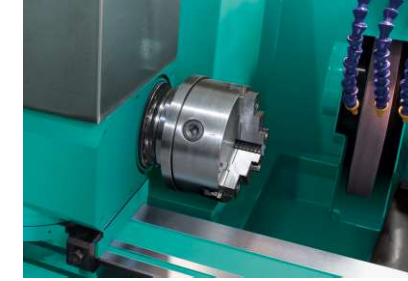
- V-flat rail combination design, to ensure the stability of grinding.

Hand spatula

The contact surface of the guide rail is reduced by precision hand-shoveling and lubricating oil system to ensure high precision and wear resistance of axial movement.



Roller type grinding wheel repairing device (optional for CNC series)



Spindle head

Three jaw chuck can be installed, and can be matched with different working chuck design to facilitate the research of different workpiece. The grinding spindle has the function of centering and simultaneous movement, and the user can make quick conversion in the top machining and three claw clamping machining (special accessories).

Cylindrical grinder **Traditional type**

Specially designed grinding wheel spindle

FX27-60



Economical type

- Compact structure, simple operation, easy to maintain, easy to install
- Add frequency converter, line speed can be adjusted from 35m/s to 60m/s
- In grinding tungsten steel, ceramics and other superhard parts of the efficiency has been greatly improved.

Minimum feed of digital display optical ruler:

0.001mm

FX27-60

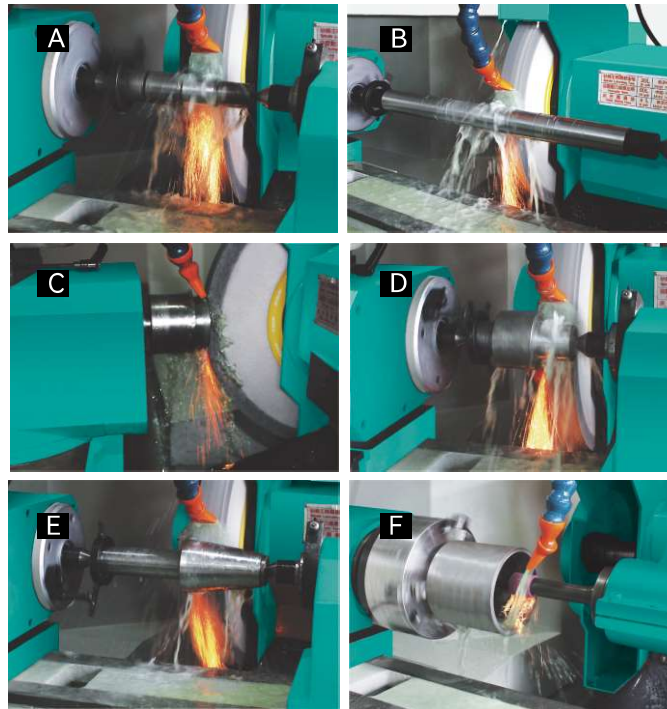
Max.rotating diameter of table	270mm
The longest distance between the two tops	600mm
Max. grinding diamete	ø270mm
Grinding wheel speed	1650rpm

FX32-100

Max.rotating diameter of table	320mm
The longest distance between the two tops	1000mm
Max. grinding diamete	ø320mm
Grinding wheel speed	1570rpm

Grinding Form

Can deal with shaft parts grinding



A Straight in grinding

Small production, automatic feed with no spark timer, can get good grinding quality mass production, add automatic outside diameter measuring device (special accessories), can provide the best yield and grinding effect (CNC models).

B Transverse grinding

Automatic intermittent feed and hydraulically driven table enable the most efficient transverse grinding of the work object.

C End grinding

Remove the rotating cover of the working spindle head and replace it with a three or four claw chuck. Change the position of the positioning tip to make the chuck rotate, and fix it at the position of 90° for end grinding.

D Shoulder grinding

When the outer diameter of the working object and its shoulder are grinding to be completed at one time, the working object is supported by the two top center and the grinding wheel is refitted on the right side of the grinding wheel head and rotated at an Angle to grind.

E Oblique grinding

The working object can be supported by the chuck or the two top center, and the table and the grinding wheel head can be rotated and adjusted easily.

F Inner diameter grinding

Inner diameter grinding accessories (special accessories) Grinding inner diameter, as long as the inner diameter grinding spindle is pulled down and fixed in the grinding position can be grinding.

Inner hole grinding device (optional)

Rotational speed	Inside diameter range	Max. depth
20,000rpm	Φ25~45mm	100mm
30,000rpm	Φ 12~25mm	60mm

FX27P-60CNC Full cover

Cylindrical Grinder CNC straight in

Compact structure, cost-effective, mass production type



FX27P-60CNC (Half cover)



E250 Economical

Automatic compensation/can be automated

- Grinding wheel dressing device can be selected to achieve accurate CNC dressing, suitable for ordinary outer surface, conical surface, formed outer surface R surface and groove grinding.
- Equipped with imported or domestic active measuring device to realize the full closed-loop control of grinding processing.
- Full range of control functions such as fault self-diagnosis and abnormal alarm.
- Can be equipped with manipulator automation system, can realize fully automatic flow operation.

FX27P-60CNC

Max. rotating diameter of table	270mm
The longest distance between the two tops	600mm
Max. grinding diameter	Ø270mm
Grinding wheel speed	1650rpm

E250

Max. rotating diameter of table	250mm
The longest distance between the two tops	500mm
Max. grinding diameter	Ø250mm
Grinding wheel speed	1570rpm

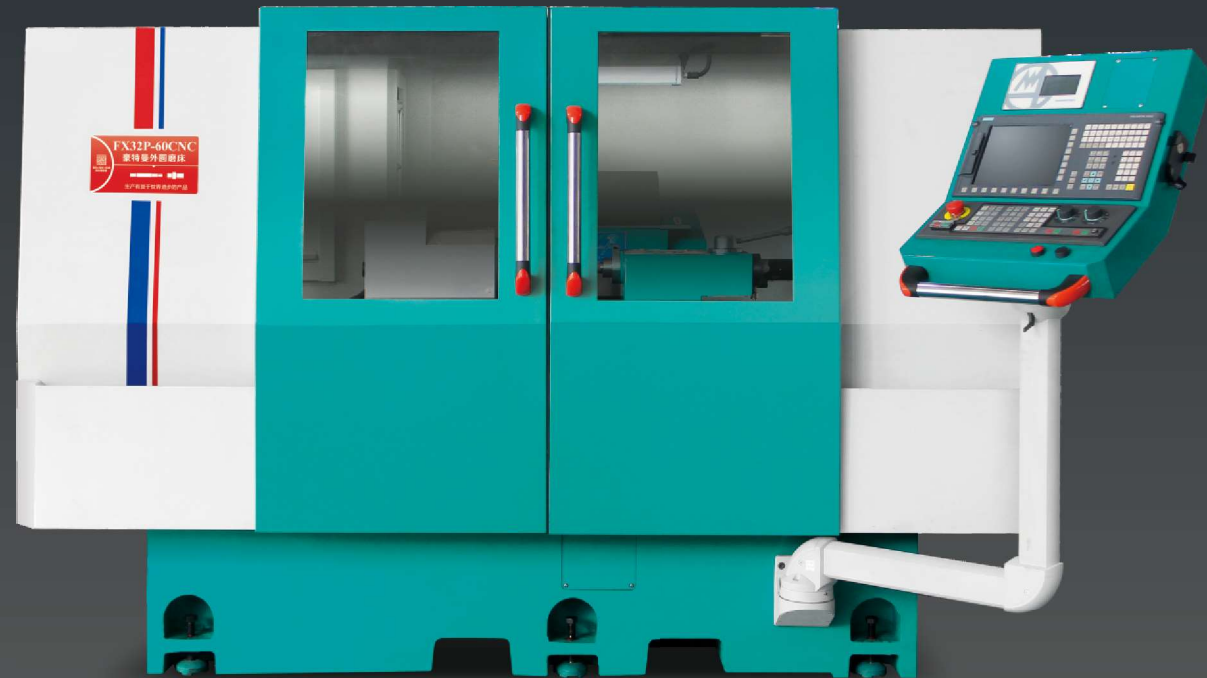
FX32P-60CNC

Full cover

Cylindrical Grinder

CNC straightin

High-end configuration to meet higher precision requirements



40

Meet higher precision requirements

- Grinding wheel dressing device can be selected to achieve accurate CNC dressing, suitable for ordinary outer surface, conical surface, formed outer surface, R surface and groove grinding.
- Equipped with imported or domestic active measuring device to realize the full closed-loop control of grinding processing.
- Full range of control functions such as fault self-diagnosis and abnormal alarm.
- Can be equipped with manipulator automation system, can realize fully automatic flow operation.
- Full cover sheet metal, make the workshop more clean, environmental protection. Oil mist collector, clean air, suitable for air conditioning workshop

Max. rotating diameter of table	320mm
The longest distance between the two tops	600mm
Max. grinding diameter	Ø270mm
Grinding wheel speed	1650rpm

Minimum feed:0.001mm

Cylindrical Grinder **CNC straight in**

Very suitable for long axis machining

FX32P-100CNC



FANUC
Control system (optional)



Automatic face detection
device (optional)



Automatic outside diameter
measuring device (optional)

Grinding shaft workpiece length up to:
1,000mm

Minimum feed:
0.001mm

- Easy to grind and process shaft workpiece with length less than 1000, Multi-step high precision grinding is realized by program setting.
- Equipped with imported or domestic active measuring device to realize the full closed-loop control of grinding processing.
- Full range of control functions such as fault self-diagnosis and abnormal alarm.

Max. rotating diameter of table	350mm
The longest distance between the two tops	1000mm
Max. grinding diameter	Ø320mm
Grinding wheel speed	1570rpm

Cylindrical Grinder CNC Bevel forward

Oblique cutting greatly optimizes the grinding process

FX32A-35CNC

FX32A-50CNC

Full cover

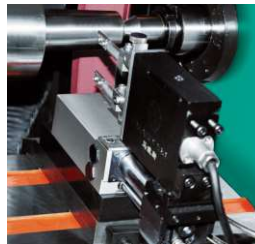


Cylindrical grinding

42

Extended grinding function

The perpendicularity of oblique cut grinding is less than: **0.005mm**



Automatic outside diameter measuring device



Automatic end detection device

- Oblique cut grinding can be used for diameter/shoulder/cone and chamfer grinding.
- The grinding wheel spindle has the characteristics of high rigidity, high precision, high life, low vibration and low friction.
- The spindle has the function of centering and simultaneous movement, and the user can quickly change between the core processing and chuck clamping processing.
- It has extremely high repetitive positioning accuracy, long track life, high rigid strength and smooth reciprocating motion characteristics.
- It can be equipped with end face measurement, outer diameter/thickness measurement, grinding wheel empty range anti-collision and on-line dynamic balancing device.

FX32A-35CNC

Maximum rotating diameter of table	320mm
The longest distance between the two tops	450mm
Maximum grinding diameter	Ø300mm
Grinding wheel speed	1650rpm

FX32A-50CNC

Maximum rotating diameter of table	320mm
The longest distance between the two tops	600mm
Maximum grinding diameter	Ø300mm
Grinding wheel speed	1650rpm

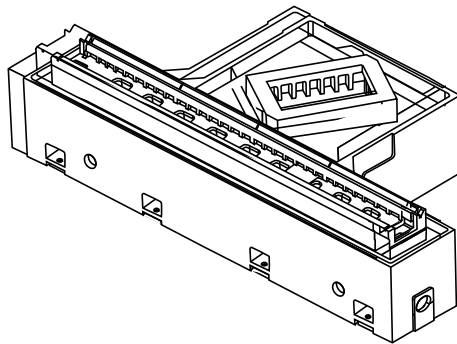
Minimum feed: **0.001mm**

Cylindrical Grinder **CNC Bevel forward**

Oblique cutting greatly optimizes the grinding process

FX32A-75CNC

Full cover

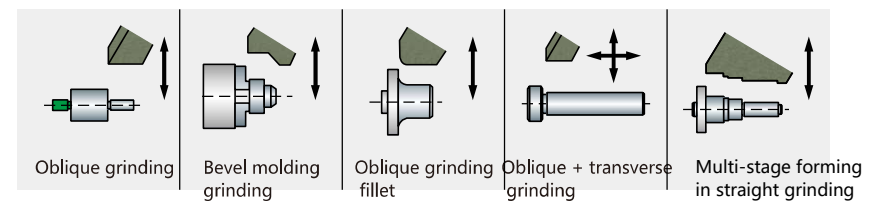


Bed and table forming in one

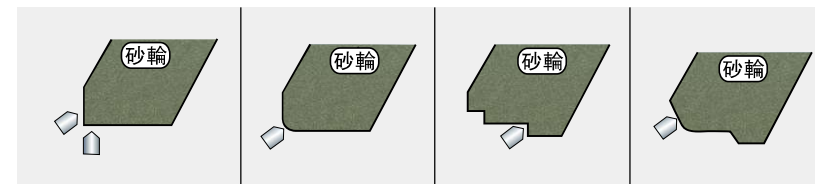
- The bed is made of Meehanna cast iron. After braising, the material is stable and rigid.
- The bed provides excellent cushioning and shock absorption, ensuring unmatched surface quality for grinding parts.
- The bed has rapid cooling and drainage characteristics, which can avoid thermal deformation and affect the accuracy.

Maximum rotating diameter of table	320mm
The longest distance between the two tops	800mm
Maximum grinding diameter	∅300mm
Grinding wheel speed	1520rpm

Grinding mode



Grinding wheel forming dressing



W32-75CNC

Turret universal cylindrical grinder

The turret working head makes the grinding process more flexible

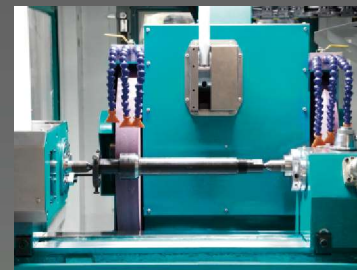
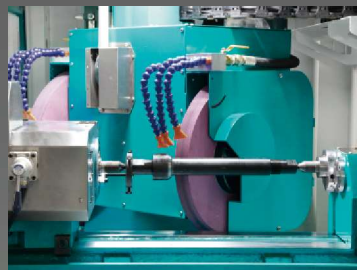
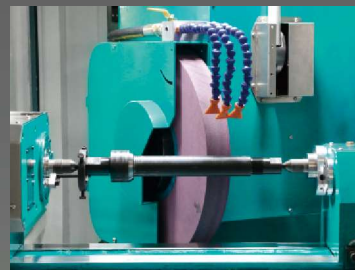
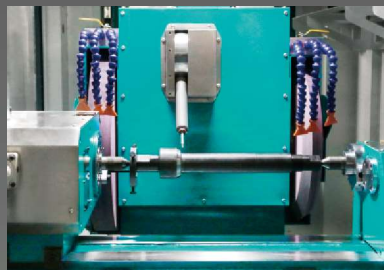
Industry application:

Precision multi-step complex shape shaft/flange parts of a single clamping grinding

Machine features:

- Turret universal grinding wheel head holder, available in a variety of grinding spindle configurations.
- Equipped with CNC B-axis, driven directly by torque motor.
- Dual center and chuck processing can be quickly switched, and the outer circle can be completed in a single clip. Grinding of inner holes, end faces, cones and complex profiles.

Height of center	170mm
Maximum turning diameter	Ø339mm
Maximum grinding diameter	Ø320mm
Two-center length	750mm



Cylindrical grinder automation

with a robot unit



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SIEMENS

SINUMERIK 828D Control System

- 3D simulation function is more intuitive and convenient
- Rich, convenient and user-friendly connections
- Outstanding drive and motor technology
- Reliable and intelligent safety integrated system functions



Cylindrical grinder automation

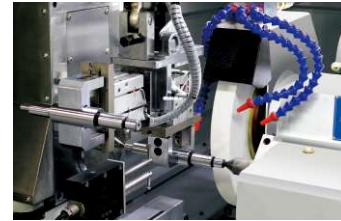
with a robot unit

Realize one person multi-machine management

An industrialized production line that integrates cylindrical grinders, automatic measurement, and manipulators to minimize labor costs and increase production capacity.

The manipulator system can adapt to the processing of workpieces of different shapes and specifications, and effectively maintain accuracy and consistency.

The overall structure of the grinding system is compact, maximizing the use of workshop space and excellent overall cost performance.



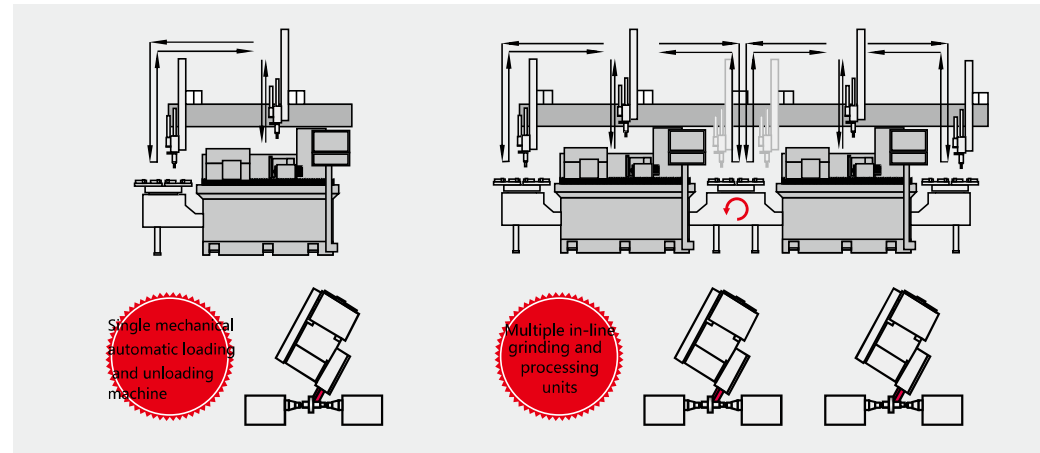
Robot loading and unloading mechanism



Online measurement mechanism



Automatic end face detection device (optional)



Single machine robot
Fully automatic loading and unloading



Dual-machine/multi-machine in-line grinding processing



IG150 Internal Grinder

IG150-1 Extended worktable



47

system/clamping/spindle all are optional

Fully automatic grinding: rough grinding, dressing, fine grinding, no sparks

Grinding cycle action

Optional permanent magnet synchronous electric spindle can output higher torque and achieve powerful grinding
The dressing mode is CNC automatic dressing:

(1). If using diamond grinding wheel or CBN grinding wheel, the dressing mode without correction can be selected.

(2). For workpieces that are difficult to grind, multiple correction and trimming modes can be selected to ensure the best processing quality. During mass production, automation units such as manipulators and robots can be added.

Different clamping methods can be selected to adapt to different shapes of workpieces.

Inner grinding diameter	Ø6~150mm
Max. grinding depth	150mm
Max worktable travel	540mm
Grinding wheel spindle speed	20,000rpm/ elec.(optional)

One-piece spindle, maximum grinding depth 300mm

Extended worktable, grinding depth 200mm



The extended worktable and center frame make clamp length reach up to 800mm.

IG200 Internal Grinder

Applicable for large size/excess vol. workpieces

High-rigidity structure/graphical software



High rigidity

The high-rigidity designed bed, grinding wheel frame, workpiece headstock, feeding mechanism, etc. provides guarantee for processing the internal grinding of large size, excess volume and high hardness products.

High efficiency

Different grinding spindles are optional to adapt to the processing of products with different apertures. In addition to diamond pen, roller dressing is also provided for dressing. Ceramic CBN grinding wheels can be used for efficient grinding. Marposh internal diameter gauges can be used for online internal diameter measurements.

High stability

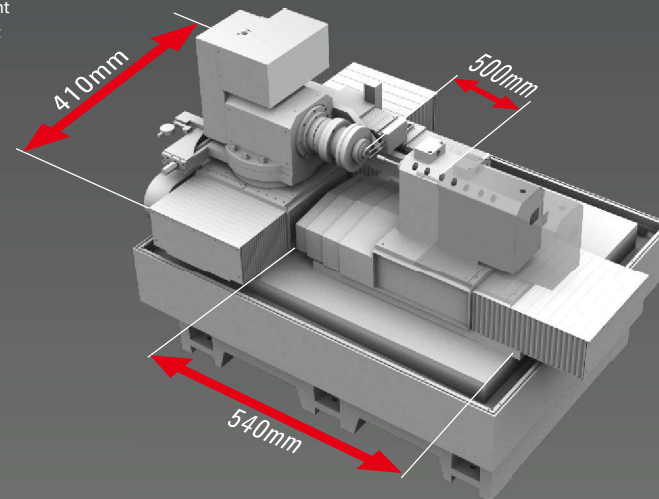
The key components of the machine tool are selected from top international brands to ensure reliability and accuracy stability in its service life.

High convenience

Graphical software design allows operators to input parameters through a user-friendly interface to quickly generate workpiece grinding, grinding wheel dressing, online measurement and other related programs.

High safety

The fully enclosed machine tool guard and high-grade tempered glass observation window, emergency stop, one-key retreat, safety door interlocking and other designs provide safety protection for operators.



Inner grinding diameter	Ø6~200mm
Max. grinding depth	170mm
Max worktable travel	500mm
Grinding wheel spindle speed	0~32000rpm
X/Z axis feed min. resolution	0.001mm

Internal Grinder

optional accesories

Flexible options for various kinds of works



Hydraulic three-jaw chuck (speical accessory)

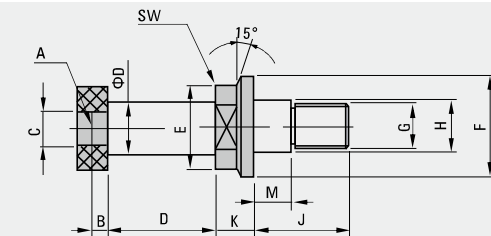


Diamond roller (speical accessory)



Disk type workhead (speical accessory)

Grinding wheel spindle



SNCM-8
HRC = 52 ~ 54
渗碳深 Cementation: 1mm

注: 最佳研磨工件的孔径与研磨长度比为1:3, 最大研磨长度为150mm.



FANUC

FANUC control system (optional)

The control is flexible and flexible, making it easy to add and change functions.
Exception history records and troubleshooting instructions improve the efficiency and quality of after-sales service.
Digitize processing, improve accuracy, establish standardization, and ensure stable and consistent product quality.

Optional motorized spindle (special accessories)

	hole Φ	g.w speed (r.p.m)	size										
			A	B	C	D	E	F	G	H	J	K	SW
s p i n d l e s	80-150	6,000	M8	12	12	$\Phi 40 \times 50$ $\Phi 40 \times 106$	50	57	M26 \times 2.0P	28	42	16	18
	40-80	10,000	M8	10	10	$\Phi 20 \times 50$ $\Phi 25 \times 70$ $\Phi 30 \times 90$	32	38	M16 \times 1.5P	17	29	15	12
	25-40	20,000	M6	8	8	$\Phi 16 \times 40$ $\Phi 20 \times 58$ $\Phi 24 \times 80$	24	32	M14 \times 1.5P	15	27	10.5	11
	16-25	30,000	M4	8	6	$\Phi 10 \times 25$ $\Phi 13 \times 30$ $\Phi 16 \times 40$	21	26	M10 \times 1.5P	10.5	21	9.5	9
	13-16	40,000	M4	/	/	$\Phi 8 \times 25$ $\Phi 10 \times 30$ $\Phi 12 \times 40$	17	23	M8 \times 1.25P	8.5	19	8.5	7
	8-13	50,000	M4	/	/	$\Phi 6 \times 20$ $\Phi 7 \times 25$ $\Phi 8 \times 30$	15	20	M7 \times 1.0P	7.5	18	7	7

CG45 Compound Grinder

CG45-I can grind inner and outer taper

Internal grinding wheel spindle travel: 0~470mm

External grinding wheel spindle travel: 0~365mm



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Comprehensive features

- It can realize one-time clamping and complete the integrated grinding of inner circle, inner cone, outer circle, outer cone and end face.
- Provide high-precision and complex grinding solutions suitable for processing small and medium-sized workpieces.
- An automatic feeding and receiving system can be installed to meet the needs of industrial mass production.
- The external/internal grinding modules can be flexibly combined as needed to adapt to different grinding form and process.
- The control system is friendly and easy to learn, allowing for rapid workpiece grinding. Grinding wheel dressing is programmable, online measuring device can be installed.

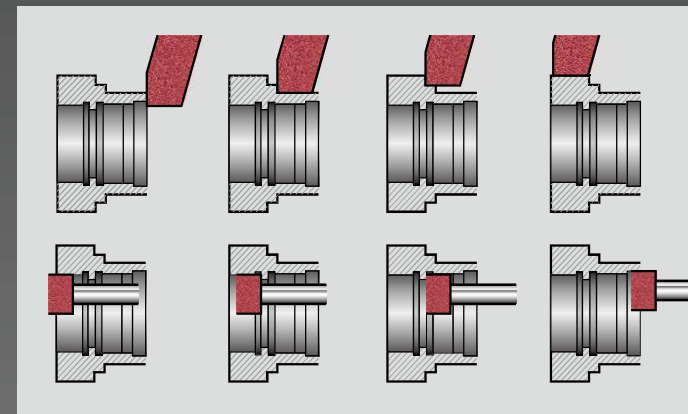
CG45

Max. grinding O.D.	Ø400mm
Max. length of O.D grinding	200mm
I.D grinding range	Ø6~200mm
I.D max. grinding depth	200mm

CG45-1

Max. grinding O.D.	Ø320mm
Max. length of O.D grinding	150mm
I.D grinding range	Ø6~100mm
I.D max. grinding depth	100mm

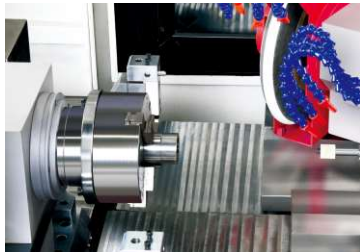
Grinding method



Compound Grinder **Modular Combination**

Create a new revolution in compound grinding

grinding wheel head combination



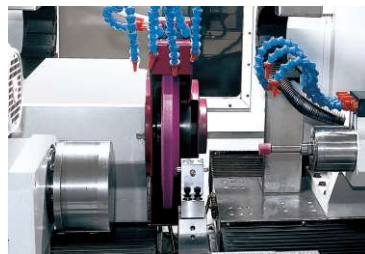
incline cylindrical grinding wheel
+Internal grinding wheel



double cylindrical grinding wheel



double bore grinding wheel

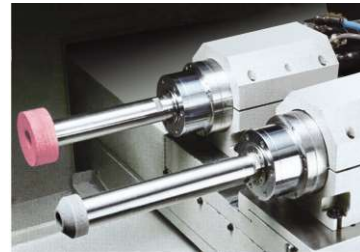


straight cylindrical grinding wheel
+Internal hole grinding wheel

special accessories



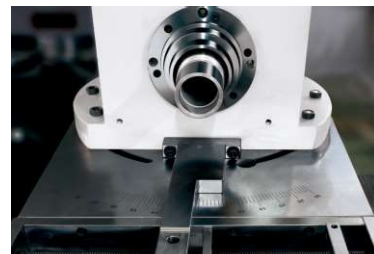
online measurement device



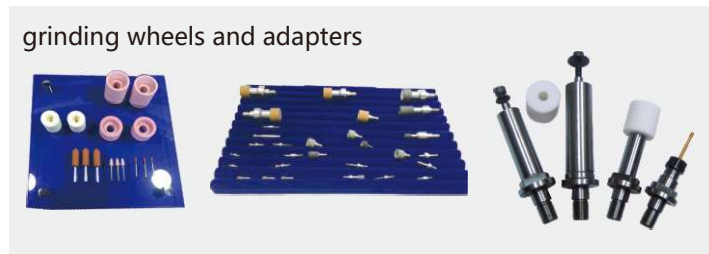
inner circle double spindle



hydraulic three-jaw chuck
(special configuration)



spindle rotary table manual angle
adjustment device



grinding wheels and adapters

CG15 Compound Grinder

Modular Combination

China's first small compound grinder

Small component processing tool

IG 15

Various clamping methods are available:

- Three-jaw clamping
- Collet type clamping

Applied industries:

- Collet industry
- Gear industry
- Guide bushings, automobile/ motorcycle parts
- Hydraulic/pneumatic drive bushing
- Mold parts
- medical instruments

Workpiece diameter	Ø3~200mm
Max workpiece length	100mm
Grinding dia.(Inner)	Ø6~80mm

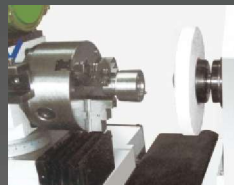
Internal grinding wheel spindle
10,000 / 50,000rpm optional

OD 15

Workpiece diameter	Ø200mm
Max workpiece length	150mm
Grinding dia.(outer)	Ø6~100mm



IG model(internal grinding)



OD model
(outer grinding)



CG model (II three-claw
compound grinding)



CG model (II collet type
compound grinding)



CG model (IO compound grinding)

CG60 Compound Grinder

- Guide bushings, automobile/motorcycle parts
- Hydraulic\pneumatic transmission bushing
- Mold parts
- Medical instruments

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double internal grinding spindle

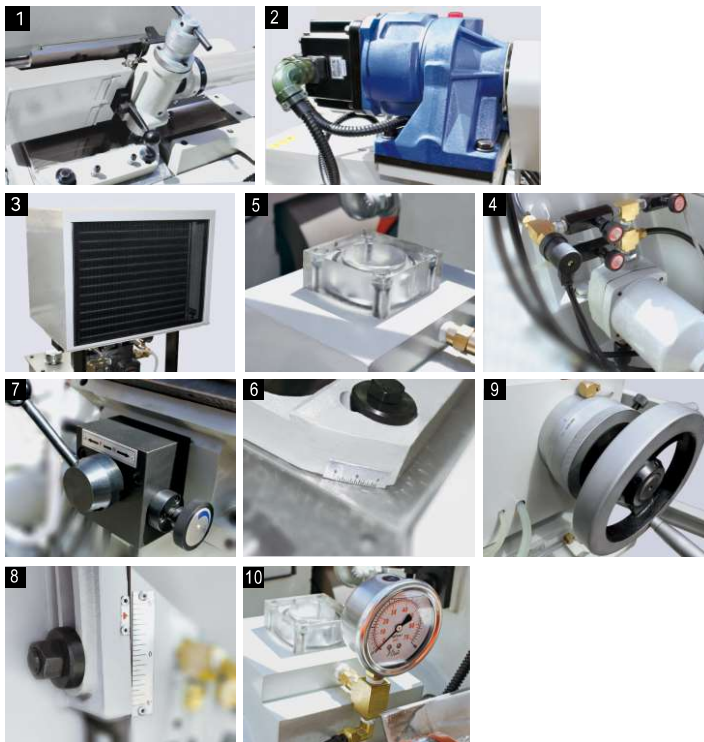
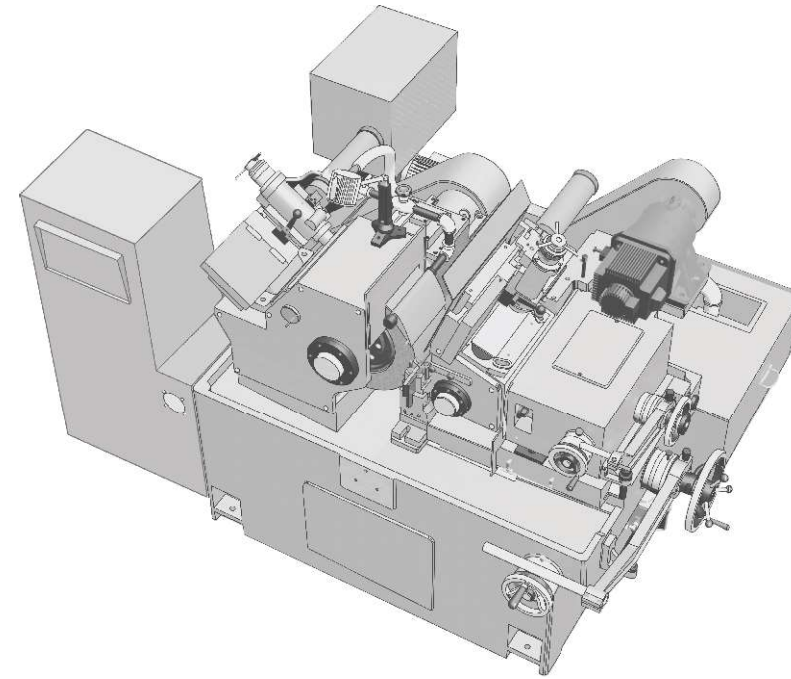
Workpiece diameter	Ø200mm
Max workpiece length	100mm
grinding range	Ø6~80mm(inner)
Spindle speed	50,000rpm
workhead speed	0~600rpm



Structure

High rigidity structure

High-quality parts/excellent assembly technology



01 Dressing device

The dressing device of the grinding wheel and adjusting wheel is driven by hydraulic pressure. The dressing seat is made of special alloy cast iron, which has been roasted and processed with manual precision scraping. It has high rigidity and low wear to ensure that the accuracy of the dressing device is maintained for a long time.

02 The adjusting wheel is driven by a servo motor

The adjusting wheel spindle is directly driven by a servo motor synchronous belt, which can be adjusted to the appropriate rotation speed according to processing needs. It has no vibration and high rotation accuracy, allowing the workpiece to easily obtain excellent roundness and smoothness.

03 Cooling fan

It can effectively prevent the temperature rise of the spindle lubricating oil, reduce thermal deformation, extend the service life of the spindle, oil seal and alloy bearings, and greatly reduce maintenance costs.

04 Pressure switch

The grinding wheel spindle uses a lubricating oil pressure switch to ensure safe operation. When the oil pressure does not reach the rated value, the spindle motor is prevented from starting or will automatically stop running immediately to prevent the spindle from drying out and causing rapid damage.

05 Grinding wheel spindle circulating oil mirror

Use an intuitive way to detect whether the circulating oil has deteriorated or become clogged to ensure the normal and safe operation of the spindle.

06 Adjusting wheel for dressing R angle

During grinding, the grinding accuracy of the workpiece can be effectively corrected by adjusting this angle.

07 Oil pressure switch

Used to change the grinding wheel or adjust the dressing direction and speed of the wheel.

08 Adjust wheel incline angle

The axial advancement speed of the workpiece is adjusted by changing the inclination angle.

09 Enter the fine adjustment handwheel

Amount of feed per scale:0.001mm

10 Spindle oil pressure gauge

It prompts the spindle to work under the normal circulating oil pressure value, and automatically shuts down for protection when the pressure exceeds the standard.

Structure

High rigidity structure

High-quality parts/excellent assembly technology



Base

The body and components are cast in one step using honeycomb high-grade cast iron. They undergo artificial normalization heat treatment and then undergo natural aging treatment for more than six months. Reasonable mechanical design and excellent materials ensure that they will never deform and are strong and wear-resistant during use.

Component processing Using world-class equipment such as YASDA, MITSUISEIKI, TOSHIBA, and ELB for one-time clamping processing, the precision dimensions can reach the micron level, ensuring high precision of the basic components of the equipment.



Adjustment wheel drive system

The adjusting wheel spindle is directly driven by a servo motor synchronous belt. When the outer diameter changes, the rotation speed can be adjusted to achieve the optimal linear speed to ensure the accuracy and smoothness of the processed workpiece. When grinding, the inclination angle of the adjusting wheel can be appropriately adjusted to keep the two pulleys parallel at all times. It overcomes many adverse effects caused by inertia superposition caused by the multi-section chain transmission of the old centerless grinder, and eliminates the need to frequently replace the chain and zipper spring.



Feed slide

- It uses advanced casting materials to eliminate internal stress, has high strength and has low deformation affected by temperature differences.
- The contact surface is precision manually scraped, and the slide plate is fully lubricated by the lubrication system, making it highly wear-resistant.
- Stable horizontal movement accuracy, the feed accuracy can reach μm level during grinding and processing.

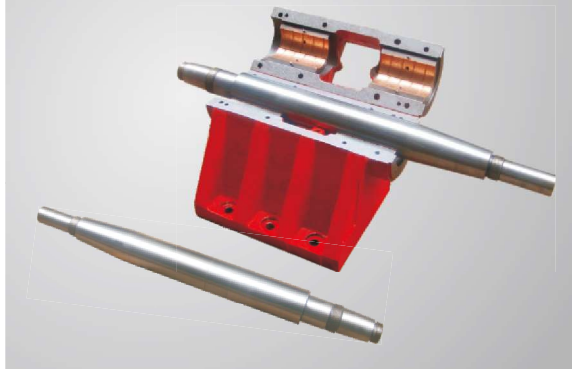
Precision lead screw

- The feed screw uses a ball screw with high positioning accuracy. Excellent friction characteristics and reversibility, achieving μm -level positioning accuracy.
- After sufficient lubrication during movement, the movement will be smooth. The track contact surface is manually scraped, so the movement resistance is small and the machine accuracy can be maintained for a long time.

Structure **High rigidity structure**

High-quality parts/excellent assembly technology

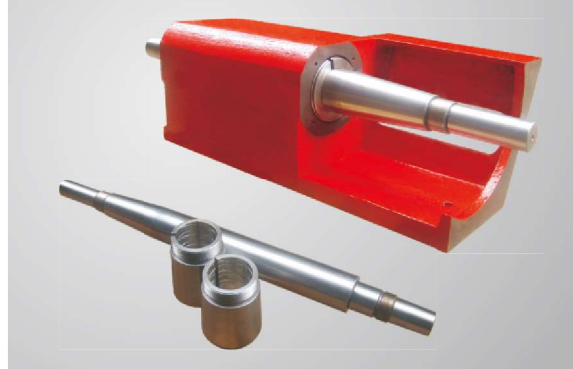
Precision grinding wheel spindle and alloy bearings



Grinding wheel spindle seat assembly

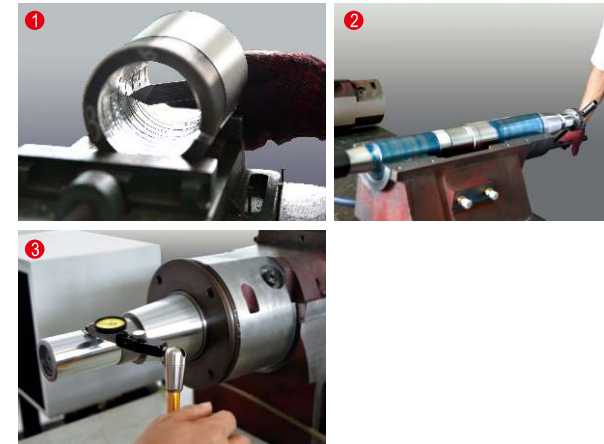
- The spindle is made of Japanese high-grade SNCM-21H alloy steel. After quenching and tempering, carburizing heat treatment and then computer-controlled cryogenic treatment, its surface hardness reaches above HRC-62°, and the effective hardened layer on one side exceeds 1.5mm. Afterwards, it undergoes multiple precision Grinding, high precision and good rigidity.
- The automatic lubrication circulation system uses high-grade spindle oil, which is treated at a constant temperature in the oil tank, filtered by two oil filtering devices and equipped with a pressure controller, so that the spindle can rotate at the opposite angle. Work under stable oil pressure to ensure spindle life and accuracy.

Precision adjusting wheel spindle and alloy bearing



Adjustment wheel spindle seat assembly

- The spindle is made of Japanese high-grade SNCM-21H alloy steel. After quenching and tempering, carburizing heat treatment and then computer-controlled cryogenic treatment, its surface hardness reaches above HRC-62°, and the effective hardened layer on one side exceeds 1.5mm. Afterwards, it undergoes multiple precision Grinding, high precision and strong rigidity.
- The spindle rotation runout is controlled within 2 μm. The spindle is directly driven by a servo motor. The rotation speed can be set arbitrarily. The grinding process is adjusted to the optimal linear speed to grind high-precision products.



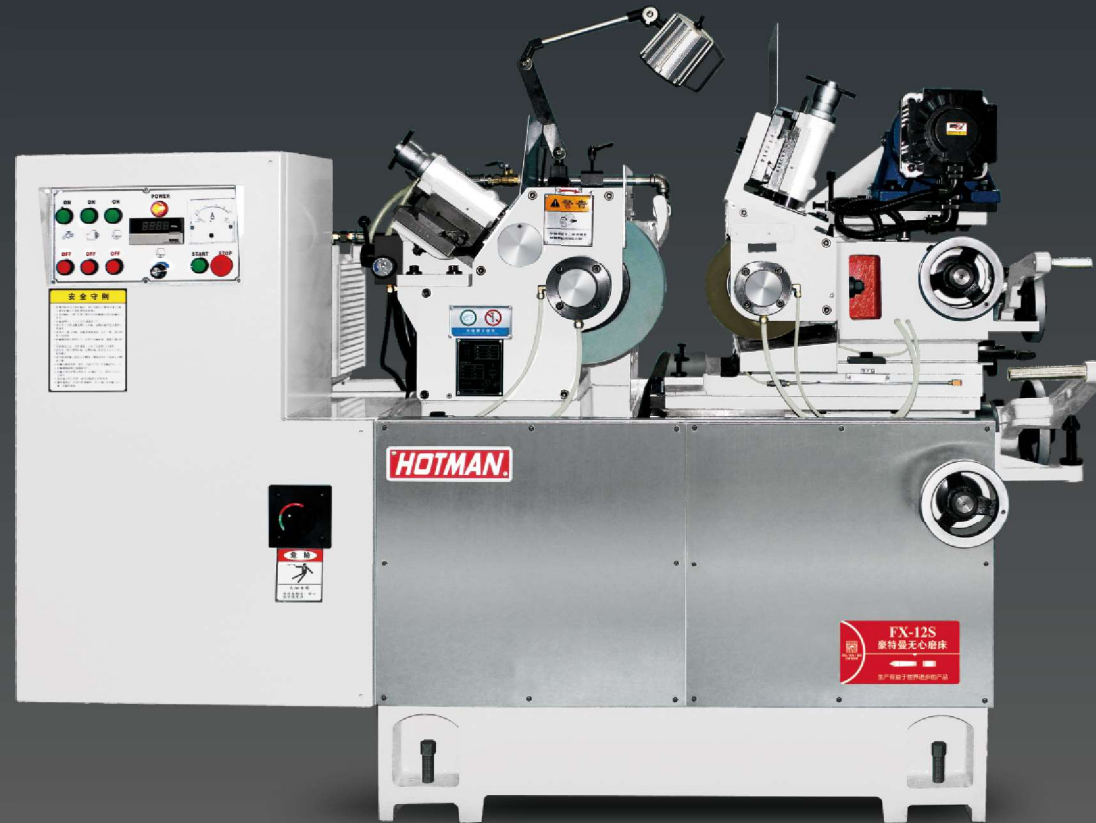
- 1 Alloy copper tile bearing precision scraper
- 2 The spindle and alloy bearings are precisely assembled to obtain the best grinding accuracy, which is also the prerequisite for the service life of the spindle.
- 3 Spindle rotation runout accuracy test, the runout is required not to exceed 2μm

FX-12S Centerless Grinder *high precision type*

Best choice for grinding small parts



Full-cover type (dedicated to pass-through grinding, oil mist recovery device can be installed)



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Best value for money

- Small footprint and low operating costs
- Highly rigid structure, achieving extremely high roundness and smoothness
- Precision manual scraping ensures long-term accuracy and stability of processing

micro feed amount

0.001 mm

Special customized machine

processing diameter
Ø0.05~0.5mm

Standard worktable diameter Ø0.5~40mm

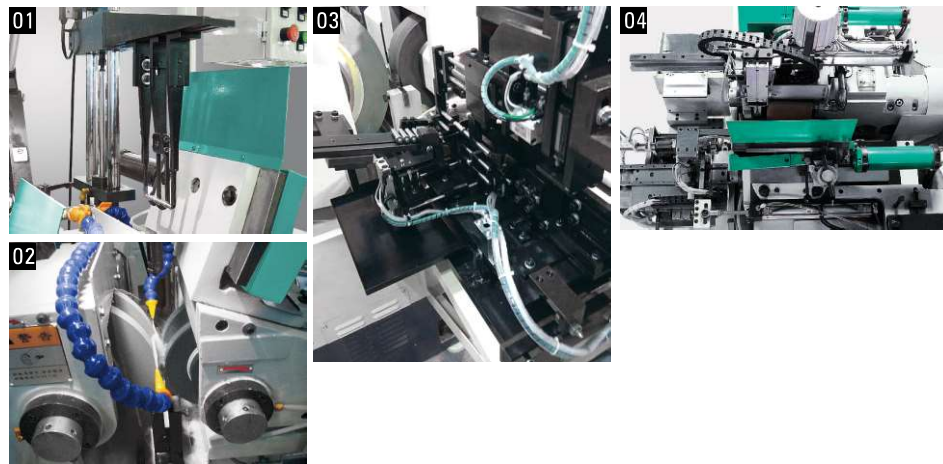
Grinding wheel size (OD*W*ID) Ø305*150*Ø120mm

Grinding wheel speed 1950rpm

Centerless Grinder

Form grinding
Excellent performance in form grinding of small parts

FX-12CNC-1 1axis
FX-12CNC-3 3axis



special device

- 01 The lifting and grinding device can design the workpiece robot arm according to the workpiece requirements.
- 02 Profile grinding wheels and guide wheels
- 03 Automatic forming grinding loading and unloading device
- 04 Robot automatic feeding and receiving mechanism

Standard worktable diameter	Ø0.5~40mm
Grinding wheel size (OD*W*ID)	Ø305*150*Ø120mm
Grinding wheel speed	1950rpm

micro feed amount
0.001mm

FX-18S/AS Centerless Grinder

FX-18HS / Hydrostatic spindle

High precision/super strong grinding force



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Highly rigid structure with stable precision

- Cast iron eliminates internal stress through normalized heat treatment, so the grinder can maintain long-term thermal stability and maintain stable accuracy.
- Strong grinding force can greatly shorten the processing time during rough grinding. It has more advantages when grinding extra-long round materials with the through-type grinding machine.
- Using grinder connection to achieve unattended and fully automated processing can greatly increase output.

Standard worktable diameter $\varnothing 1.0 \sim 60\text{mm}$

Grinding wheel size (OD*W*ID) $\varnothing 455 * 205 * \varnothing 228.6\text{mm}$

Grinding wheel speed 1520rpm

Long material feeding device
Grinding length up to:3000mm



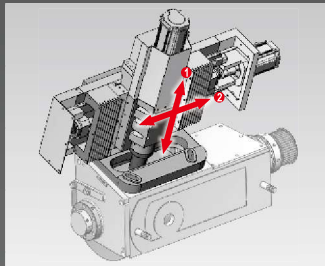
Centerless Grinder **Form grinding**

Excellent performance in form grinding of small parts

- FX-18CNC-1** 1axis
- FX-18CNC-3** 3axis
- FX-18CNC-5** 5axis
- FX-18CNC-7** 7axis

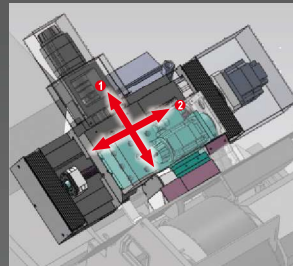


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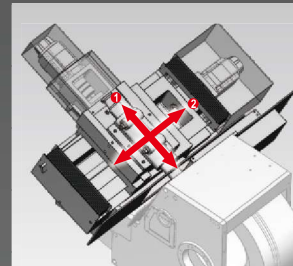


Guide wheel dressing part (double-axis servo drive)

The reciprocating motion and radial feed of the dresser are fed by a ball screw servo motor. The feed guide rail is a high-precision linear guide rail. The servo has a correction and compensation function. The grinding wheel has high molding accuracy and fast dressing speed.



Dual-axis roller automatic dressing
(dual-axis servo drive)

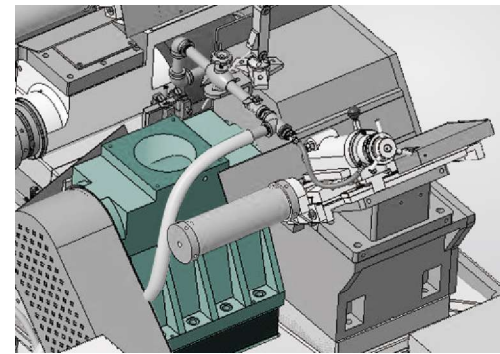
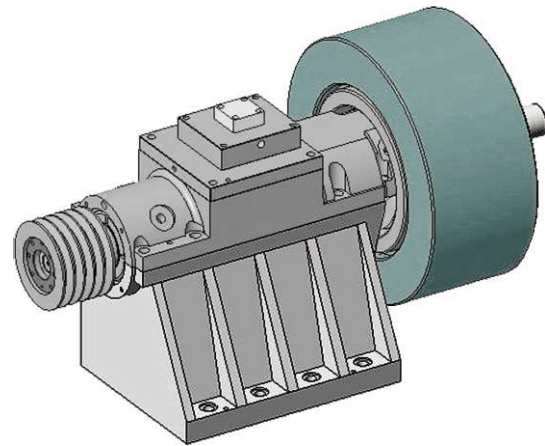


Dual-axis diamond pen automatic dressing
(dual-axis servo drive)

The reciprocating motion and radial feed of the dresser are fed by a ball screw servo motor. The feed guide rail can be a scraper hard rail or a high-precision linear guide rail. The servo has a correction and compensation function.

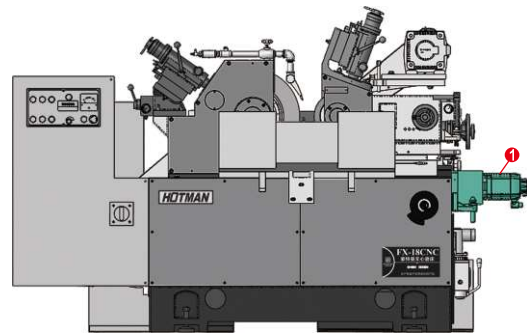
Hydrostatic Spindle **High precision**

Strong grinding power/long service life

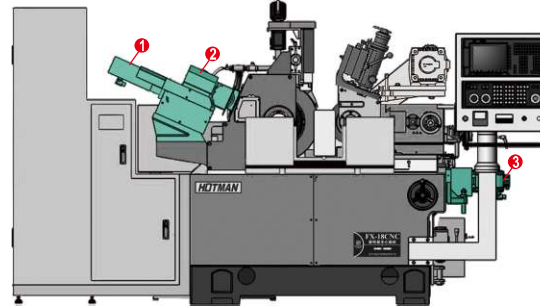


- The cone runout is less than 0.002, and the spindle axial movement is less than 0.002;
- The maximum spindle speed is 1500 rpm;
- The oil supply pressure is 2.5Mpa, and the hydraulic medium is No. 5. It has high rotation accuracy, excellent shock absorption, can carry super-heavy workpieces, and has super grinding force.
- Pure liquid friction has small friction resistance, low power consumption and high transmission efficiency.
- During normal operation and frequent startup, there will be no wear caused by direct contact between metals, with good accuracy retention and long life.
- Since the floating of the shaft diameter is achieved by relying on the pressure of external oil, it has a high load-bearing capacity under various relative motion speeds, and speed changes have little impact on the oil film stiffness.
- The lubricating oil layer has good anti-vibration properties and the shaft runs smoothly.
- The oil film has the function of compensating errors, which can reduce the influence of manufacturing errors of the shaft and bearing itself, and the shaft pedal rotation accuracy is high.

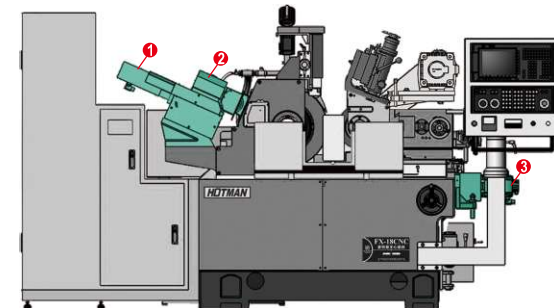
Servo drive axis **FX-18CNC**



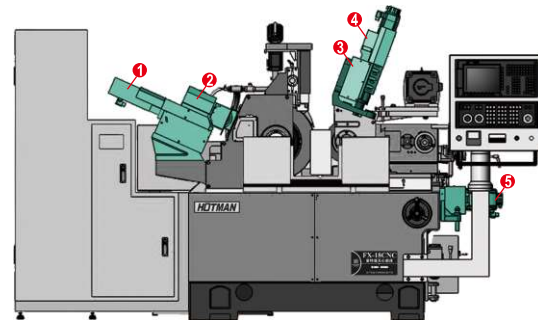
FX-18CNC-1 (axis)



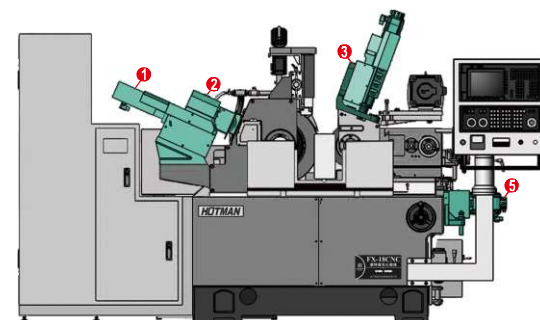
FX-18CNC-3 (axis)



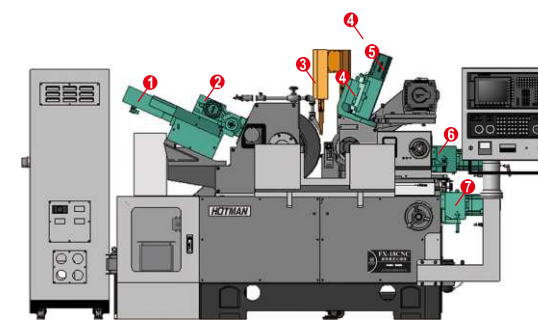
FX-18CNC-3 (axis)
Grinding wheel: hydrostatic spindle



FX-18CNC-5 (axis)



FX-18CNC-5 (axis)
Grinding wheel: hydrostatic spindle



FX-18CNC-7 (axis)

FX-20CNC-3 ^{3axis} Centerless Grinder

FX-20CNC-5 ^{5axis}

Form grinding tool / Super grinding force

- The grinding wheel spindle is a hydrostatic spindle
- The first choice for grinding large diameter workpieces
- Bearing type grinding wheel spindle



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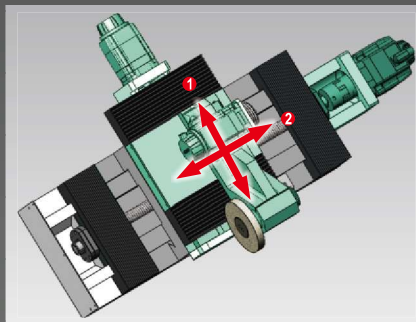
The first choice for grinding large diameter workpieces

- The low center of gravity design increases the stability of the grinding process and ensures the accuracy of the machine tool for a long time.
- Super grinding force, more suitable for processing large-diameter workpieces, greatly shortening processing time.
- It is very suitable for adding automation devices such as robot lifting and grinding/automatic material delivery and collection.

Standard worktable diameter $\varnothing 1.0 \sim 60\text{mm}$

Grinding wheel size (OD*W*ID) $\varnothing 610 * 305 * \varnothing 304.8\text{mm}$

Grinding wheel speed 1100rpm



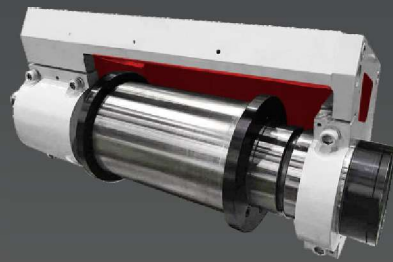
Grinding wheel dressing part

- The sand dressing system adopts two-axis linkage and cooperates with servo motor and ball screw drive. The grinding wheel has high molding accuracy and fast dressing speed.
- The roller dressing wheel can be quickly interchanged with the single-point dressing pen to achieve different types of grinding wheel dressing.
- Grinding tungsten steel long rods use rollers to dress and dress each other. The sand dressing efficiency is fast and the grinding wheel cutting surface is flat, which can make the grinding wheel contact surface larger and more uniform.

FX-24CNC Centerless Grinder

Form grinding tool
The first choice for grinding large diameter workpieces

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Spindle system

- The grinding wheel spindle adopts a bearing type spindle with front and rear double supports. High speed, stable operation and maintenance-free.
- The grinding wheel motor adopts 30KW high torque and high power motor.
- The spindle uses a 610mm outer diameter grinding wheel to increase the grinding effect. At the same time, according to demand, a grinding wheel with a maximum width of 400mm can be installed to meet the needs of different workpieces.
- A two-axis linkage grinding wheel dressing system is used to apply various types of workpieces.

- The low center of gravity design increases the stability of the grinding process and ensures the accuracy of the machine tool for a long time.
- Super grinding force, more suitable for processing large-diameter workpieces, greatly shortening processing time.
- It is very suitable for adding automation devices such as robot lifting and grinding, automatic feeding and receiving.

Standard worktable diameter	Ø1.0~60mm
Grinding wheel size (OD*W*ID)	Ø610*305*Ø304.8mm
Grinding wheel speed	1100rpm

full cover

FX-24CNC Centerless Grinder

Form grinding tool
The first choice for grinding large diameter workpieces



Features

- The low center of gravity design increases the stability of the grinding process and ensures the accuracy of the machine tool for a long time.
- Super grinding force, more suitable for processing large-diameter workpieces, greatly shortening processing time.
- The grinding wheel dressing is controlled by a servo two-axis linkage system. The reciprocating motion and radial feed of the dresser are fed by a ball screw servo motor, which has correction and compensation functions.
- The automatic sand dressing device can realize more complex step, arc and slope dressing. At the same time, according to different grinding wheel materials, the roller and diamond pen can be flexibly switched, making the processing more convenient.
- Full-covered sheet metal ensures a clean production environment and stable temperature, which is more conducive to high-precision processing.

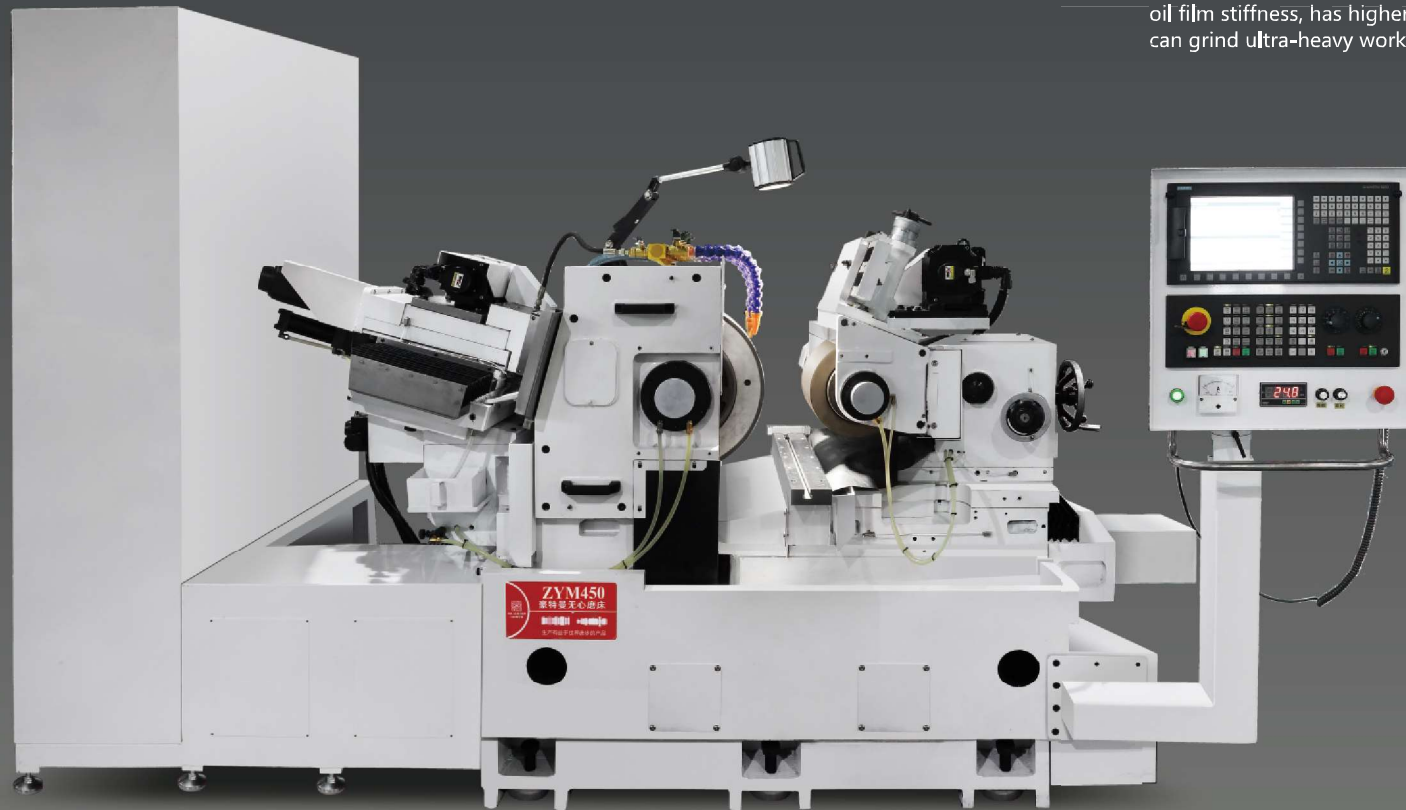
ZYM450 Centerless Grinder

The grinding wheel and adjusting wheel spindles are both hydrostatic spindles
Strong grinding power/long service life

Grinding wheel and adjusting wheel-
double hydrostatic spindle

- The main shaft is supported by the oil film, which has small friction resistance, low power consumption and higher transmission efficiency.
- The hydrostatic spindle has high rotation accuracy, excellent shock absorption, extremely low wear, good accuracy retention and long service life.
- The speed change of the hydrostatic spindle has little effect on the oil film stiffness, has higher bearing capacity and grinding force, and can grind ultra-heavy workpieces.

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Robot loading and unloading system

Achieve unattended operation, and can also realize multiple machines linkage

Electric box

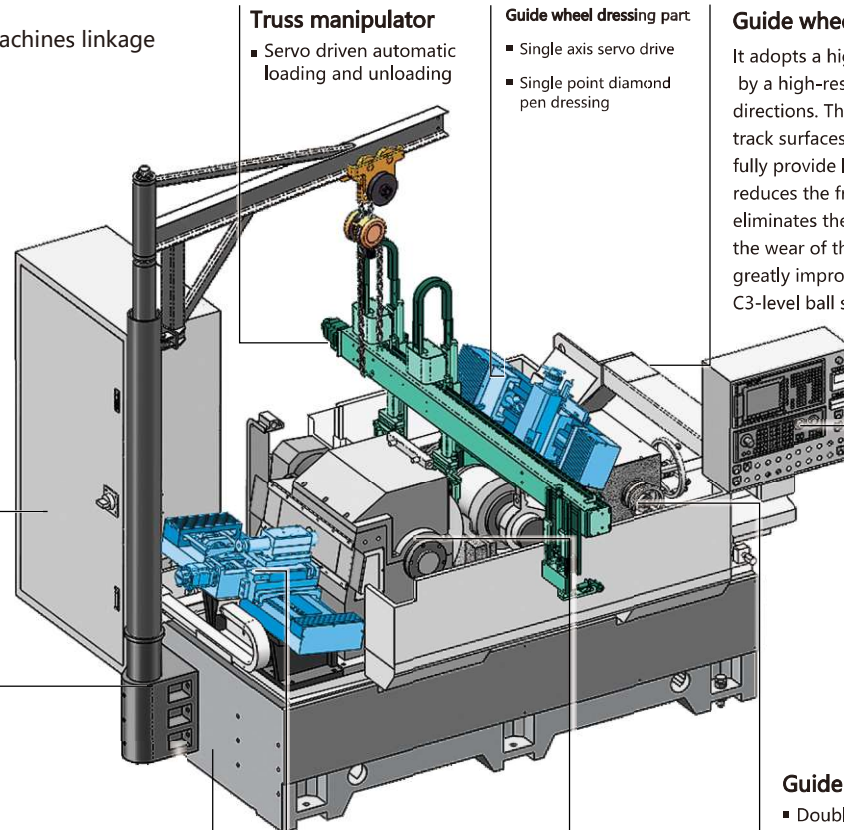
- A sealing strip is installed on the door frame of the electrical cabinet to ensure sealing and dustproofing.
- The appearance is smooth and beautiful, and the electrical cabinet is equipped with industrial air conditioning.
- All electrical components are products from regular manufacturers that have obtained international or national electrotechnical certification standards.
- The components in the electrical cabinet need to be arranged reasonably, with enough space between components to facilitate maintenance.
- The installation of electrical components is neat and standardized, with clear numbers, oil resistance, and not easy to fall off.
- The cables should be of appropriate length and beautiful layout in the electrical cabinet.

Hoist boom

- Disassemble and replace grinding wheel

body

The high-strength rigid integral densely baked cast iron FC30 bed structure designed through finite element analysis has excellent heat dissipation and vibration absorption capabilities, maximizing the accuracy of the machine tool. The temperature is reliable and is especially suitable for complex environmental requirements in mass production.



Truss manipulator

- Servo driven automatic loading and unloading

Guide wheel dressing part

- Single axis servo drive
- Single point diamond pen dressing

Guide wheel head screw feed

It adopts a high-precision ball screw pair design and is driven by a high-resolution servo, which can withstand loads in all directions. There is a lubricant return channel between the track surfaces, and a curved oil filling groove is designed to fully provide lubrication for the guide wheel feed slide, reduces the friction, enables fast and efficient feeding, eliminates the possibility of low-speed crawling, minimizes the wear of the track surface, increases the service life, greatly improves the programming accuracy, and makes the C3-level ball screw have excellent accuracy retention.

Operation panel

- Exquisite appearance
- Clear keys
- Sticker logo clear swing
- Angle 270°

Guide wheel head part

- Double support bearing spindle (optional)
- 330mm outer diameter guide wheel

Grinding wheel dressing part

- Dual axis servo drive
- Roller dressing (optional)
- Single-point diamond pen dressing (optional)
- The dresser and spindle are separate

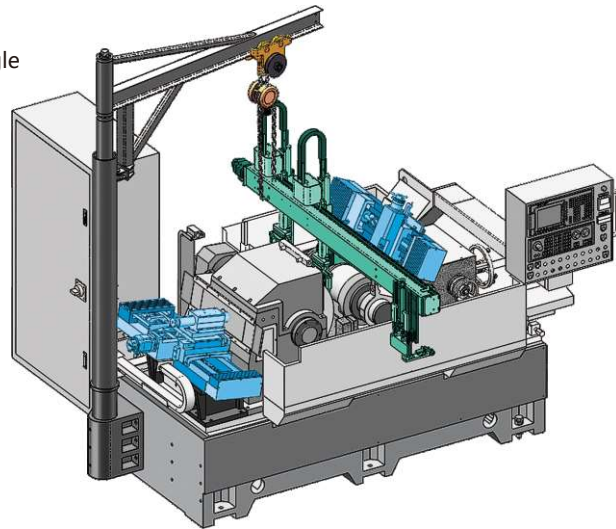
Grinding wheel head part

- Double support bearing spindle (optional)
- High rigidity, high speed
- 610mm outer diameter grinding wheel, high grinding efficiency hydrostatic spindle (optional)

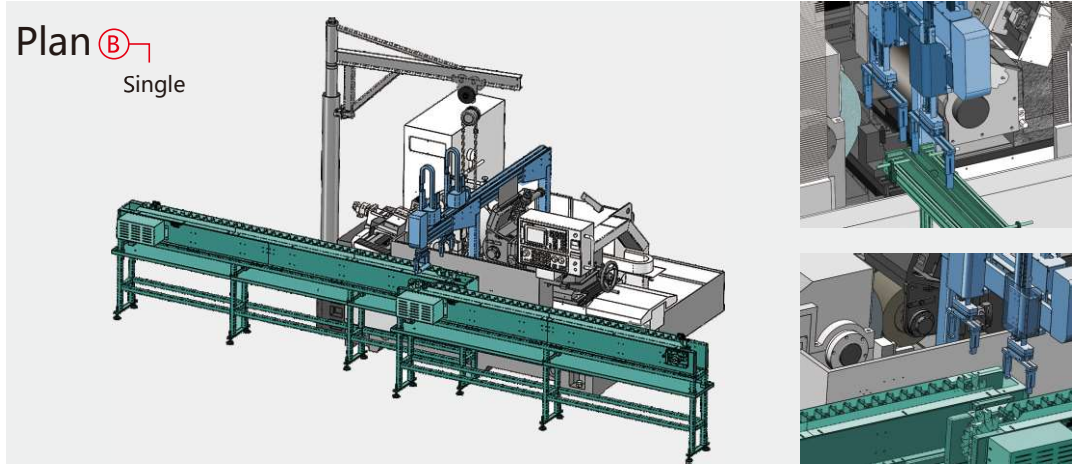
Automation Solution

Achieve unattended operation, and can also realize multiple machines linkage

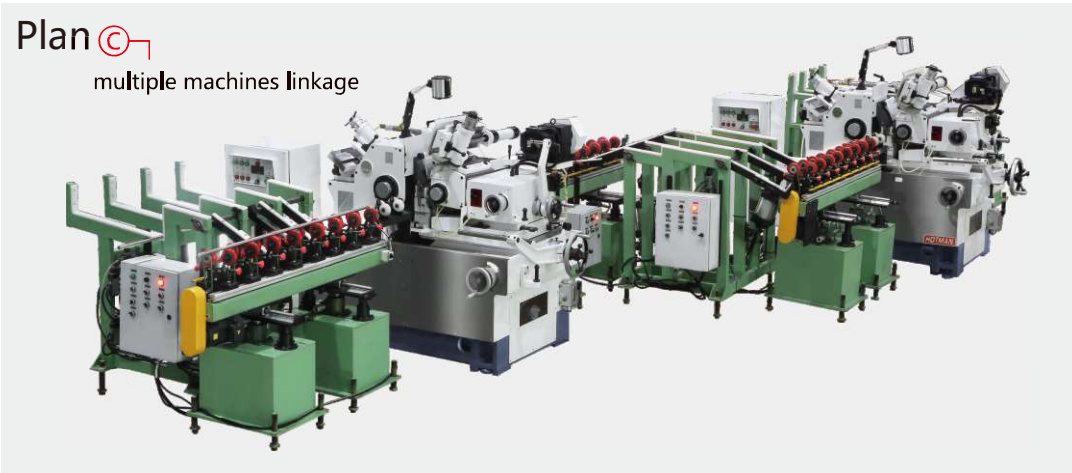
Plan **A**
Single



Plan **B**
Single



Plan **C**
multiple machines linkage



Precision micro cylindrical grinder

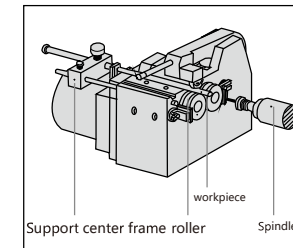
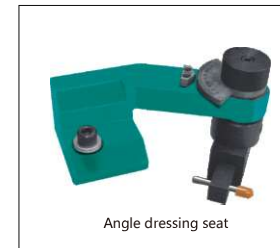
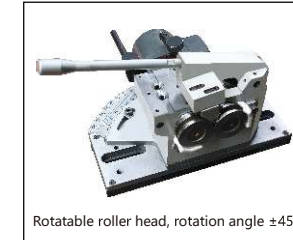
FX-01 / 01 SP

Standard accessories

1. Grinding wheel(Ø100×Ø 25.4 ×20 t)×1
- 2.Grinding wheel flange×1
3. Flange gasket×1
4. Tool box and accessories × 1 set
5. Arc and flat trimming holder

special accessories

- 1.Support center frame
(Note: Adding a support center frame can hold workpieces up to 400mm)
- 2.±45° rotating disk
- 3.Angle dressing seat
- 4.cooling device
- 5.Vacuum cleaner
- 6.Optical ruler
- 7.Quartz work light 1 set

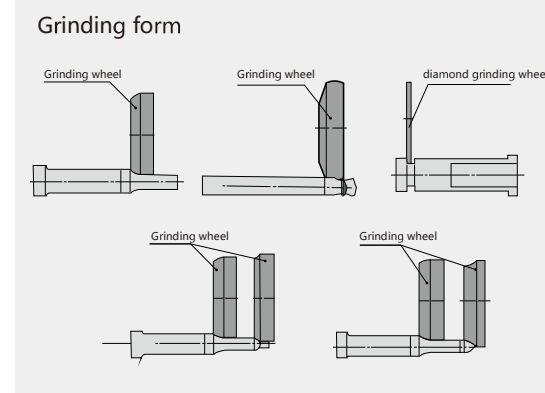


Machine specifications

Item	FX-01	FX-01 SP
Clampable workpiece diameter	Ø1.0-Ø25mm	Ø1.0-Ø25mm
Maximum travel	front-back	40mm
	left-right	70mm
Workhead speed	180rpm	180rpm
Workhead rotatory angle	± 5°	± 5°
Spindle speed	7500rpm	0~12000rpm
Spindle motor	3/4HP, 3Ø	3/4HP, 3Ø
Mechanical Dimensions(L×W×H)	900×700×1400mm	900×700×1400mm
Mechanical weight(appx)	160kgs	180kgs
Processing range(OD)	0.3~25mm	0.3~25mm

Applicable objects of this machine

- punch head
- nozzle
- micro spindle
- Related components micro outer diameter grinding



Precision micro internal grinder

FX-02SP



Standard accessories

- 1.∅3Flexible collet×1
- 2.∅6Flexible collet×1
- 3.nut(M14×P0.75)×1
- 4.Tool box and accessories × 1 set

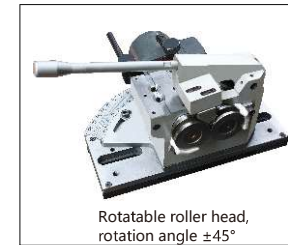
special accessories

- 1.Support center frame
- (Note: Adding a support center frame can hold workpieces up to 400mm)
- 2.±45° rotating disk
 - 3.Angle dressing seat
 - 4.cooling device
 - 5.Vacuum cleaner
 - 6.Optical ruler
 - 7.Quartz work light 1 set

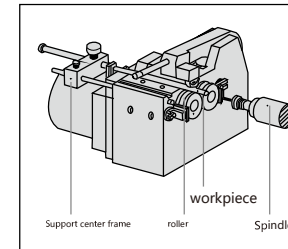


diamond grinding rod

Excellent cutting force performance, Products can be designed according to different grinding needs.



Rotatable roller head, rotation angle ±45°



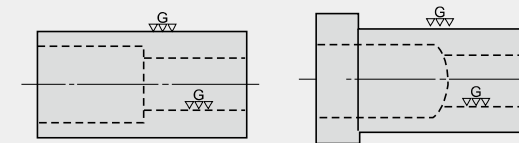
Machine specifications

Clampable workpiece diameter	∅1.0-∅25mm	Spindle speed	0~5500rpm
Max. clampable workpiece L.	120mm	motor	workhead 25W
Max. travel	front-back 40mm		Spindle 1HP
	left-right 65mm		front-back -
Front and rear feed indexing	0.005mm		left-right -
Workhead speed	0~380rpm	dimension(L×W×H)	900×700×1400mm
Workhead rotatory angle	±5°		
Feeding method	front-back Manual	weight(appx)	180kgs
	left-right Manual	work range(ID)	1~20mm

Applicable objects of this machine

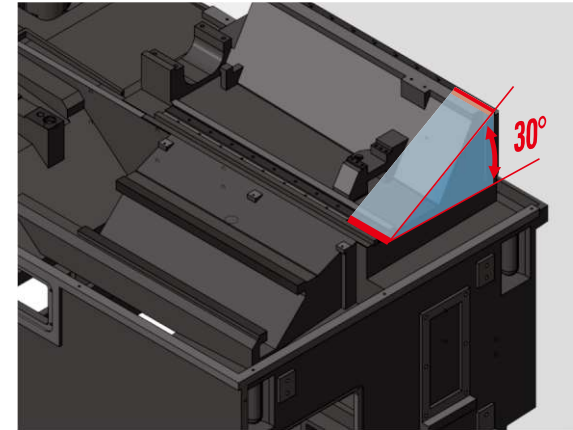
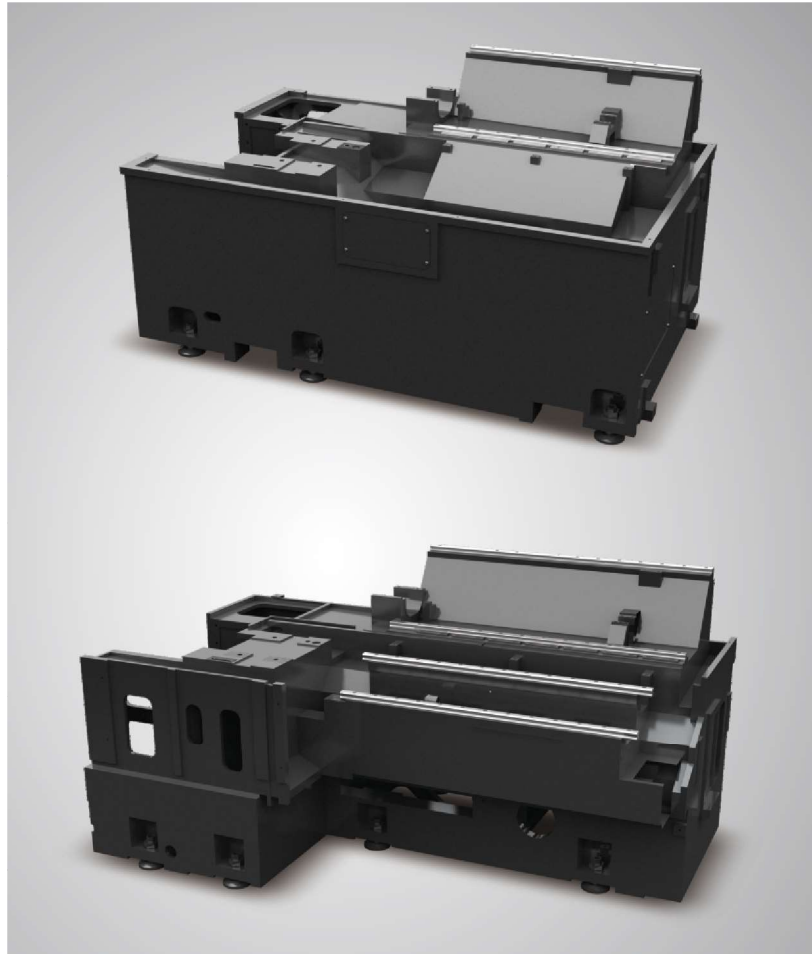
- Guide bush
- Industrial needle bar
- Home use needle stick
- Flexible collet
- Ceramic oil nozzle inner hole
- Ceramic guide bush
- Related components micro bore grinding

Grinding form



One-piece base

Thermal stable/anti-vibration/anti-deformation
Significantly improved turning stability



The designed 30° bending-resistant, torsion-resistant and high-rigidity integral inclined bed has a compact structure and reasonable rib shape. The main spindle box fixed surface and Z-axis guide rail surface are all processed in the same sequence, with higher precision. Stable, high-precision machining is achieved even during powerful cutting.

Features

The 30° hybrid italic bed structure enables the machine tool to have excellent rigidity and precision maintenance performance while achieving a minimum floor space. The stepped structure ensures that processing, assembly and actual use are in the same state. The main structure of the machine and key castings such as the bed, spindle box, sliding saddle, and turret box are optimized using the finite element analysis method, and undergo vibration aging treatment to eliminate internal stress, ensure the stability of the machine, reduce stress deformation, and improve Vibration resistance.

Turret

High torque/low noise
Excellent indexing accuracy

Servo Turret



Features

- The turret tooth plate adopts a large diameter arc tooth plate.
- The turret body, screw rod and guide rail are directly connected.
- The size of the cutter head is larger and thicker than that in the same industry, which increases the rigidity of the main structure of the cutter turret.

Acceleration

- High-precision servo control technology is used to realize high-speed X and Z-axis acceleration.
- Rapid feed rate:
X:30m/min, Z:36m/min.
- Using high-rigidity linear guide rails, the rapid feed speed reaches the highest level of this structural form.

Turret form	Servo turret
Tool capacity	12 pieces
Tool switching time (one/full)	0.2(0.5) sec.
External tool size	20mm
Boring tool holder diameter	Ø32mm

Dynamic Turret



Features

- Perfect structural design and centralized focus make it to achieve higher stability and higher precision.

- The powerful servo turret positioning and tool changing mechanism enables precise positioning in all directions.
- Equipped with Siemens system to realize intelligent and efficient processing of complex parts.

Repeatability up to: $\pm 2 \mu\text{m}$

The rotating indexing of the power cutterhead is driven by a special servo motor, and the power axis is driven by a servo spindle motor.

Tool capacity	12 pieces
Tool switching time (one/full)	0.2S (0.6Sec)
External tool size	25×25mm
Max. boring tool diameter	Ø40 mm
Max. dia. of milling tool	Ø16 mm
Max. power of milling spindle	6.2KW (S3-40%)
Max. speed of tool axis	5000 rpm

Integral Spindle

low temperature rise/high torque/smooth operation

High rigidity and strong turning force



The spindle has a compact structure and is assembled in a dust-free environment at a constant temperature of $20 \pm 1^\circ$. The bearing accuracy level is P4. The strict bearing preloading assembly process ensures the stability of the spindle runout accuracy within 0.002mm. The spindle servo motor has a rated power of 12KW, a maximum speed of 4500rpm/min, and a torque of 201N.m.

Spindle advantages

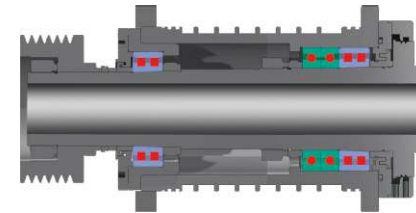
The spindle core is made of 20CrMo material and is quenched throughout. The bearing structure adopts an optimized design of angular contact thrust ball bearings and roller bearing combinations to ensure the spindle's high precision, high efficiency, high rigidity and impact resistance.

Front side: high-rigidity double-row cylindrical roller bearings, high-rigidity thrust angular contact ball bearings.

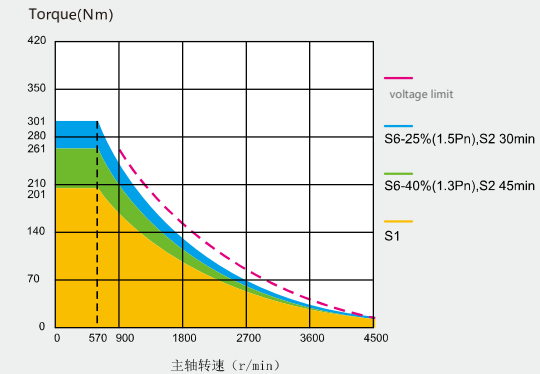
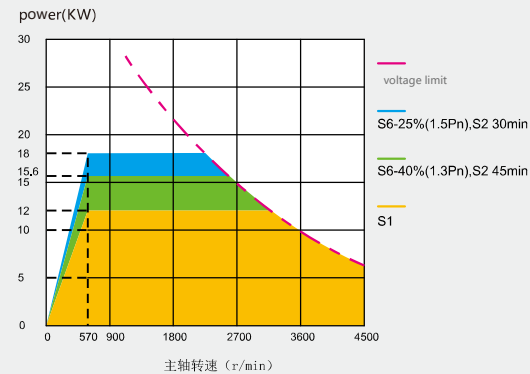
Rear side: Highly rigid double row roller bearing.

This bearing configuration has the best radial and axial stiffness, and is a bearing configuration with high rigidity.

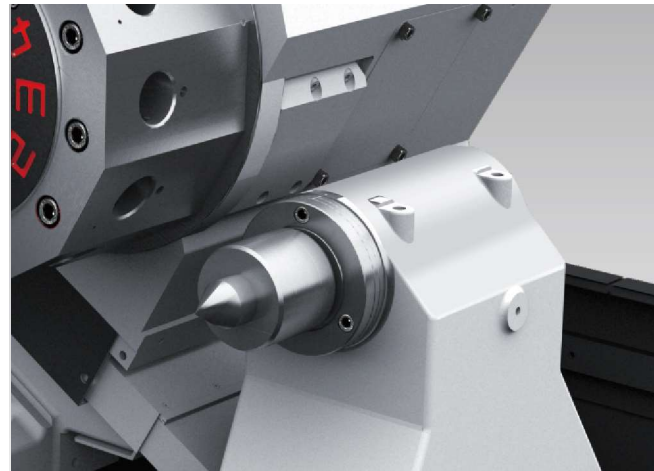
Use a coaxial encoder to reduce encoder measurement errors.



Spindle power torque diagram



Tailstock/Lead screw



tailstock

Programmable servo tailstock system. We provide users with multiple options for tailstock tightening force, which can meet customers' processing requirements for various parts. The rapid movement speed of 10m/min greatly shortens the tailstock movement time and saves auxiliary time. The intelligent tailstock does not need to adjust the operation preparation time. Compared with the conventional tailstock, the efficiency is increased by 90%.



screw guide

The FH series guide rails all use imported brand guide rails with an accuracy level of P. The X-axis screw adopts a fixed-fixed method, adopts a pre-stretched structure, and is directly driven by a servo motor. It ensures the high precision and stability of the transmission and effectively suppresses thermal displacement due to temperature rise, ensuring the accuracy of positioning accuracy and repeatable positioning accuracy. The X and Z axis rapid traverse speeds are 30m/min and 36m/min respectively, which are the fastest standards in the industry. It is also equipped with an absolute position motor and rigid coupling connection, which can quickly respond to cutting requirements.

F380 Fully functional CNC lathe

Powerful and heavy cutting
High rigidity spindle and turret



77



F380/580

- The high-rigidity and high-precision spindle design can easily achieve powerful and heavy cutting.
- High-rigidity turret with accurate indexing
- High-quality drive components achieve optimal dynamic characteristics
- High-rigidity structure, minimum floor space
- The world's leading Siemens/Kaindi CNC system
- High quality dense baked iron castings

Application areas

This series of machines is used in automobiles, engineering machinery and agricultural machinery, OEM products, energy industry, medical industry and large-volume parts machining industry. It can process straight cylinders, oblique cylinders, arcs and various threads, grooves and worms. and other complex parts, typical processed parts such as gear shafts, nozzles, pulleys, brake discs, pistons, filters, valve guides, fully protective accessories, etc.

F580 Fully functional CNC lathe

Powerful and heavy cutting
High rigidity spindle and turret



F580A Equipped with servo programmable tailstock

- The spindle bearing adopts imported preloaded high-precision angled ball bearings, which makes the spindle have high rigidity and high precision.
- Precisely indexed integrated turret, the turret and saddle castings are enlarged and weighted to increase the interference range and turret rotation radius during processing. Further enhances cutting performance.
- Widen the guide rail of the machine tool and increase the diameter of the screw rod to further improve the cutting rigidity of the machine tool, which is more conducive to heavy cutting processing.
- Servo programmable tailstock, standard movable clamping top (optional built-in rotating sleeve).

F580M Equipped with servo programmable tailstock/power turret

- BMT55 powered tool holder interface enables turning and milling combined processing.
- The spindle adopts a high-speed, high-precision built-in electric spindle, eliminating the intermediate transmission mechanism, reducing vibration and thermal displacement during high-speed operation, and ensuring machining accuracy and excellent surface roughness.
- An automated installation interface is reserved for quick and easy expansion into an automated production line.
- Fully enclosed protection, can be equipped with 70KG high-pressure water system.
- Servo programmable tailstock, standard live center (built-in rotating sleeve optional).
- The spindle is equipped with an encoder to achieve high-precision interpolation processing and highly reliable angular positioning.

Technical Parameters

G1 see machine details on P 01



Item	Parameter
The scope of work	
Max.grinding workpiece L.	300mm
Max. eccentric diameter	40
Maximum eccentricity	15
Clamping method	Pressure measuring fixture
Grinding accuracy	Cylindricity 1.0μm
Grinding wheel head part (electric spindle)	
Grinding wheel spindle type	Ball bearing electric spindle
Max. speed of g.w spindle	8000rpm
G.w max. linear speed	120m/s
G.w spindle cooling method	Oil cooler
CBN Grinding wheel size	250x20x25(ODxIDxW)
G.w spindle power	13KW
X-axis (Static pressure guide + linear motor + grating ruler)	
X-axis maximum travel	50mm
X-axis positioning accuracy	0.5μm
X-axis feed repeat positioning accuracy	0.3μm
X-axis grating ruler minimum resolution	0.0001mm
X-axis maximum acceleration	3m/s
Hydrostatic guide straightness	0.001/500mm
Hydrostatic guide straightness	Oil cooler
Hydrostatic guide rail supply system	
total fuel tank capacity	240L
Total power of hydrostatic system	5.2KW
Total cooling power of oil cooler	4.5KW
Hydrostatic guide pressure fluctuations	<2%
Oil (two types)	Mobil Velox No. 6/precision spindle oil
Level 3 filtering/accuracy	100μm/5μm/2μm

Item	Parameter
Headstock part (electric spindle)	
Max. speed of headstock spindle	600rpm
Minimum rotation angle	2arcsec
Repeatability accuracy	±2arcsec
Maximum torque	210NM
Headstock spindle power	12KW
Dressing part (electric spindle)	
Dressing spindle type	electric spindle)
Max. speed of dressing spindle	8000rpm
Dressing max. line speed	45m/s
Cooling method	Oil cooler
Diamond roller size	100x32(ODxID)
Dressing part power	0.6KW
Z-axis part (ball screw drive)	
Z-axis maximum travel	280mm
Z-axis positioning accuracy	3.0μm
Z-axis repeat positioning accuracy	2.0μm
Z-axis screw accuracy grade	C2
Z-axis maximum speed	15m/min
Z-axis motor power	3.0KW
Screw linear rail lubrication method	Grease lubrication
other	
Dimension (L x W x H)	3250X3000x2050mm
Equipment total supply voltage	AC380V
control loop voltage	AC110V/DC24V
Total equipment power	50KW
Total weight (gross approx.)	7000KG
Height from the ground to the center of the workpiece	1163mm (Does not include horns)

Standard accessories

● Ceramic CBN grinding wheel	1 piece
● Diamond roller	1 piece
● Standard fixture	1 set
● High-precision hydrostatic guide rail oil supply system	1 set
● Oil cooler	2 sets
● Standard hand tools and tool boxes	1 set
● Lubricating grease added for the first time	Screw Line Rail Grease

Special accessories

● Oil mist collector	1 set
● Marposs P1DAE anti-collision and grinding wheel online detection system	1 set
● Centralized filtration system	1 set
● Grinding fluid pressure control system	1 set
● Special oil for hydrostatic guide rails	200L/bar.
● Spare ceramic CBN grinding wheel	1 piece
● Spare diamond dressing roller	1 piece

Technical Parameters

GP32 see machine details on P 10

Item	GP32
Processing capacity	
Max. rotation dia. of worktable	320 mm
Max. grinding diameter	320 mm
Max. distance between two centers	600 mm
Max. load of two top centers, maximum grinding linear speed	90 (center) 20 (head) kg 45 m/s
Grinding wheel head	
Grinding wheel spindle	Dynamic and static pressure spindle
Grinding wheel specifications	450×127×50 or 405×127×50 mm
X-axis	
Linear motor thrust	1044 ~4272 N
Acceleration	≤0.2 G
Grating scale resolution	0.0001 mm
Positioning accuracy	0.0001 mm
Head stock	
Travel	
Max. headstock speed	260 mm 600 (DDR Rotating motor) rpm
Morse taper	MT-4
Min. rotation angle worktable	2 arcsec
Repeatability	
Worktable rotation angle	±2 arcsec +6/-9 deg
Tailstock	
Travel	
Sleeve stroke	600 mm 40 mm
Morse taper	MT-4
Other	
Machine size(L×W×H)	2600×1900×1690 mm
G.W(appx.)	5500 kg

SOD31 see machine details on P 12

Item	unit	SOD31
Processed product diameter range (standard type)	mm	Ø5~Ø200
Processing length (standard type)	mm	150
Clamping method		Manual three-jaw chuck
X-axis max. travel	mm	370
Z axis max. travel	mm	270
X-axis linear motor thrust (feed axis, workpiece headstock axis)	Nm	2800
Z-axis servo motor power (feed axis, grinding wheel frame axis)	KW	1.5
X-axis feedback device		HEIDENHAIN grating ruler
Minimum resolution of X-axis scale	mm	0.0005
Maximum instantaneous power of workpiece headstock spindle (electric spindle)	KW	3.6
Rated power of workpiece headstock spindle (electric spindle)	KW	1.8
Workpiece headstock spindle torque (maximum) (rated)	n	143(64.5)
Workpiece headstock spindle speed range	rpm	1~200
Minimum rotation positioning angle of workpiece headstock spindle	arc sec	2
Workpiece headstock positioning feedback device		Renishaw rotary encoders
Adjustment angle range of workpiece head frame mechanism (standard configuration manual adjustment)	Deg	±15°
Grinding wheel spindle speed (standard configuration electric spindle)	rpm	50~3000 (Motorized spindle)
Grinding wheel spindle power	KW	7.5
Installable grinding wheel size	mm	Ø405×40×127
Grinding wheel dressing method	auto	Automatic dressing and compensation
Maximum linear speed of grinding wheel	m/s	65
X-axis/Z-axis minimum feed unit	mm	0.001
X-axis/Z-axis minimum analytical unit	mm	0.001
Grinding wheel spindle runout accuracy	mm	≤0.0015
Workpiece spindle runout accuracy	mm	≤0.0015
X-axis repeat positioning accuracy (feed axis)	mm	≤0.0015
Z-axis repeatable positioning accuracy	mm	≤0.004
Machining accuracy (contour)	mm	≤0.01 (Standard test piece)
Machining accuracy (roughness)	mm	≤Ra0.4
Machine size (length × width × height)	mm	2230×1500×1950
G.W (appx.)	kg	5500

Accessories
Standard accessories
<ul style="list-style-type: none"> ● Toolbox and tools ● Deep groove ball bearing ● External grinding wheel calibration rod and nut ● Base balancer ● Operation Manual ● Inspection report /certificate

Technical Parameters

TG380 [see machine details on P 17](#)

Item	TG380
Center hole distance	300 mm
Center height	136 mm
Maximum workpiece size	Ø127×300 mm
Maximum workpiece weight	
- Weight between centers	25 Kg
- Chuck weight	15 Kg
Grinding wheel head sliding travel – along the X-axis	
Maximum shaft travel	200 mm
Maximum speed	10000 mm/min
Maximum acceleration	1m/s ²
Minimum resolution	0.0001 mm
AC motor power	7 Nm
Longitudinal worktable travel – along the Z axis	
Maximum shaft travel	420 mm
Maximum speed	10000 mm/min
Maximum acceleration	1 m/s ²
Minimum resolution	0.0001 mm
Angle of rotation	10°
AC motor power	12 Nm
Working head – along the C axis	
Speed range	1-750 rpm
Decoder positioning accuracy	3"
AC motor power (DC)	36 Nm
Shaft hole diameter	26 mm
Suitable top	A3 DIN 55 026/MT 4
Rotation angle	90°
Grinding wheel head – along the A axis	
Speed range	800-3000 rpm
Motor Power	7.4 kw
Grinding wheel size	Ø250×6~25×Ø127 mm
Circumferential speed	50 m/s
Min. worn grinding wheel outer diameter	200 mm
Rotation angle	±8°
Electricity	
Electricity supply	3×400V, 50Hz
Total installed power	20 kw
Machine size (length × width × height)	1950×2300×1700mm
G.W (appx.)	3500 kg

H350 [see machine details on P 16](#)

Item	unit	H350
C axis		
Travel	Deg	∞
Maximum speed	rpm	120
Positioning accuracy	Arcsec	7
Repeatability accuracy	Arcsec	2
X axis		
Travel	mm	100
Rapid feed rate	mm/min	10000mm/min
Cutting feed rate	mm/min	0~3600mm
Positioning accuracy	mm	0.005
Repeatability accuracy	mm	0.002
Minimum resolution	mm	0.0001
Z axis		
Travel	mm	120
Rapid feed rate	mm/min	10000mm
Cutting feed rate	mm/min	0~3000
Positioning accuracy	mm	0.01
Repeatability accuracy	mm	0.005
Minimum resolution	mm	0.0001
B axis		
Travel	Deg	-40°~+12°
Maximum speed	rpm	120
Positioning accuracy	Arcsec	7
Repeatability accuracy	Arcsec	2
Grinding wheel spindle parameters		
Grinding wheel diameter	mm	400
Rotating speed	rpm	0~2500
Power	Kw	12
Online dresser		
Grinding wheel diameter	mm	150
Max. speed	rpm	8000
Travel	mm	0~25
Dressing feed speed	mm/min	0~720
Sand dressing shaft power	Kw	0.8
Processing parameters		
Maximum thickness	mm	35
Maximum spin diameter	mm	Ø50
C-axis tooling clamping (can be increased depending on the product)		
Clamping force	N	2000~10000
Installed capacity		
Total power	KW	23.5
Machine size (length × width × height)	mm	2000*2400*1950
Oil cooling filter unit size (optional)	mm	1800*1200*1500
Machine net weight	kg	6500

Technical Parameters

H400 see machine details on P13

Item	unit	H400
C axis		
Travel	Deg	∞
Maximum speed	rpm	120
Positioning accuracy	Arcsec	7
Repeatability accuracy	Arcsec	2
X axis		
Travel	mm	115
Rapid feed rate	mm/min	10000mm/min
Cutting feed rate	mm/min	0~3600mm
Positioning accuracy	mm	0.005
Repeatability accuracy	mm	0.002
Z axis		
Travel	mm	600
Rapid feed rate	mm/min	10000mm
Cutting feed rate	mm/min	0~3000
Positioning accuracy	mm	0.01
Repeatability accuracy	mm	0.005
B axis		
Travel	Deg	-90°~+90°
Maximum speed	rpm	120
Positioning accuracy	Arcsec	7
Repeatability accuracy	Arcsec	2
Grinding wheel spindle parameters		
Grinding wheel diameter	mm	400
Rotating speed	rpm	0~4000
Power	KW	12
Offline dresser		
Grinding wheel diameter	mm	150
Maximum speed	rpm	8000
Power	KW	0.8
Online dresser (optional)		
Grinding wheel diameter	mm	150
Maximum speed	rpm	8000
Travel	mm	0~63
Dressing feed speed	mm/min	0~720
Dressing shaft power	KW	0.8
Processing parameters		
Maximum thickness	mm	35
Maximum spin diameter	mm	∅50
C-axis tooling clamping (can be increased depending on the product)		
Clamping force	N	200~2500
Installed capacity		
Total power	KW	25
Machine size (L × W × H)	mm	2920*4430*2000
Oil cooling filter unit size (optional)	mm	1800*1200*1500
Machine net weight	kg	7500

Standard accessories

CNC system	1 set
Circular grating	1 set
Electric spindle oil cooling device	1 set
Fully automatic oiler	1 set
Water pump drive motor	1 set
Lubricating oil device	1 set
Working head rotating motor	1 set
Level adjustment screws and pads	1 set
Electric control box refrigeration air conditioner	1 set

Special accessories

Outer diameter measuring device	1 set
Grinding dynamic and static pressure grinding wheel spindle	1 pcs
Centralized filtration system	1 set
Oil mist purifier	1 set
Thickness detection device	1 set

Z850 see machine details on P25

Precision	
Roundness	1.5μm
Concentricity	2.5μm
Surface roughness	0.1μm
Processing capacity	
Grinding max.outer diameter	860mm
Internal grinding dia. range	50~700mm
Grinding max. height	600mm
Max. load of worktable	800kg
Grinding wheel spindle	
Grinding wheel speed	2000~9000rpm
Grinding wheel diameter	40~305mm
Spindle taper hole	HSK-A100
worktable	
Worktable diameter	600mm
Worktable speed	5~200rpm
standard gauge	
Standard gauge inner diameter travel	159.999mm (22°)
X axis	
	300+1400mm
Z axis	600mm
W axis	650mm
Rapid traverse speed	24m/min
resolution	0.0001mm
B axis	0/22.5° (Hydraulic auto. control)
ATC tool stock	
Storage quantity	6pcs
Grinding wheel max. diameter	305mm
Grinding wheel Max. length	350mm
Grinding wheel dresser	
Diamond pen	3只
Roller	2800rpm
Roller diameter	120mm
Other	
Total power	65kw
Gross Weight	23T

Technical Parameters

S614 [see machine details on P 23](#)

Processing capacity	
Work surface size	600×230mm
Work surface movement dimensions	520×180mm
Grinding wheel up-down movement size	max. 350mm
Magnetic table size	400×150mm
Move left and right (Y axis)	
Maximum travel	520mm
Maximum speed	30000mm/min
Linear Motor	max. 1600N
resolution	0.0001mm
Move forward and backward (X-axis)	
Maximum travel	180mm
Maximum speed	12000mm/min
servo motor	1.8KW
Resolution	0.0001mm

Move up and down (Z axis)	
Maximum travel	350mm
Maximum speed	12000mm/min
Servo motor	1.5KW
Resolution	0.0001mm
grinding wheel	max. Ø205mm
Grinding wheel inner diameter	Ø31.75mm
Installed capacity	
Total power	10KVA
Mechanical lubrication	Timing automatic
Machine size (L × W × H)	1750×1800×2000mm
G.W (appx.)	3500kg

Gantry Surface grinder [see machine details on P 18](#)

Item	unit	P1020	P1030	P1040	P1050	P1060	P1530	P1540	P1550	P1560	P1580
Worktable area	mm	1000×2000	1000×3000	1000×4000	1000×5000	1000×6000	1500×3000	1500×4000	1500×5000	1500×6000	1500×8000
Max. grinding area	mm	1400×2300	1400×3300	1400×4300	1400×5300	1400×6300	2000×3300	2000×4300	2000×5300	2000×6300	2000×8300
Min. feed	mm	0,001	0,001	0,001	0,001	0,001	0,001	0,001	0,001	0,001	0,001
Distance from work surface to spindle center	mm	1000/1350	1000/1350	1000/1350	1000/1350	1000/1350	1350/1500	1350/1500	1350/1500	1350/1500	1350/1500

Item	unit	P2040	P2060	P2080	P20100	P20120	P2550	P2560	P2580	P251000	P251200
Worktable area	mm	2000×4000	2000×6000	2000×8000	2000×10000	2000×12000	2500×5000	2500×6000	2500×8000	2500×10000	2500×12000
Max. grinding area	mm	2500×4300	2500×3300	2500×8300	2500×10300	2500×12300	3000×5300	3000×6300	3000×8300	3000×10300	3000×12300
Min. feed	mm	0,001	0,001	0,001	0,001	0,001	0,001	0,001	0,001	0,001	0,001
Distance from work surface to spindle center	mm	1350/1500	1350/1500	1350/1500	1350/1500	1350/1500	1350/1500	1350/1500	1350/1500	1350/1500	1350/1500

H3 [see machine details on P 29](#)

Grinding range	
Workpiece diameter	Ø0.05~20.0mm
Workpiece clamping diameter	Ø0.05~20.0mm
Clamping workpiece length	max: 300 mm
Grinding workpiece length	max: 200 mm
Working head spindle speed	0~3000RPM
Control System	
CNC 4 axis	X/Y/Z ₁ /Z grinding station
CNC 3 axis	U/V/W Pick-up and drop-off station
X axis	travel: 350 mm/Min. unit: 0.001 mm
Y axis	travel: 100mm/Min. unit: 0.001 mm
Z axis	travel: 29mm/Min. unit: 0.001 mm
Z ₁ axis	travel: 90mm/Min. unit: 0.001 mm
C axis	travel: 0~3000RPM definition: 0.001°
Loading and unloading mechanism load	
Loading diameter	Ø1.0~10.0mm
Total length	15~100mm
Rough grinding electric spindle	
Coarse grinding wheel spindle motor	20KW
Coarse grinding wheel spindle diameter	Ø170mm
Max. linear speed of rough grinding wheel	70~90m/s
Rough grinding spindle speed	0~8500RPM
Grinding wheel size (OD × W × ID)	250×20×31.75 mm
Precision grinding electric spindle	
Precision grinding wheel spindle motor	5.0KW
Precision grinding wheel spindle diameter	Ø120mm
Max. linear speed of precision grinding wheel	70~90m/s
Precision grinding wheel speed	0~14000RPM
Grinding wheel size (OD × W × ID)	150×20×31.75 mm
Machine size (L × W × H)	2450×1980×1998 mm
G.W (appx.)	4800kg

Technical Parameters

Traditional cylindrical grinder [see machine details on P 29](#)

	Item	unit	FX27-60	FX32-100
Processing capacity	Surface rotation diameter	mm	270	320
	Distance between two centers	mm	600	1000
	Max workpiece weight(centers)	kg	60	150
	Max workpiece weight(single head)	kg	20	40
Grinding wheel head	Rotation angle (left/right)		±15°	±30°
	Standard grinding wheel size (OD× W ×ID)	mm	Ø405×32-50×Ø127	Ø510×50-80×Ø127
	Special grinding wheel size (OD× W ×ID)	mm	Ø355×32-50×Ø127	Ø610×60-100×Ø203
	Grinding wheel spindle speed	R.P.M	1650/1850/2100	1570/1742
	Moving distance	mm	270	320
	Rapid feed stroke (hydraulic automatic)	mm	40	40
	Spindle stroke (feed per revolution)	mm	20	20
	Spindle stroke (feed per differential)	mm	0.005	0.005
Headstock	Worker side rotation angle		30°	30°
	Grinding wheel edge rotation angle		90°	90°
	Spindle speed	R.P.M	50~300	10~500
	Ejector taper		MT-4	MT-5
	Spindle through hole diameter	mm	25	30
Tailstock	Spindle travel	mm	32	32
	Ejector taper		MT-4	MT-4
worktable	Worker side rotation angle		6°	4°
	Grinding wheel edge rotation angle		9°	9°
	Feed amount per revolution of hand wheel	mm	12.5	12.5
	Automatic feed speed	mm/min	50-4000/min	50-3000/min
Internal hole grinding device	Spindle speed	R.P.M	20,000(30,000)	20,000(30,000)
	Motor	KW(HP)	0.75(1)	0.75(1)
Motor	Grinding spindle	KW(HP)	3.75	5.5
	Working head spindle	KW(HP)	0.75	1.5
	Hydraulic power circulation oil pump	KW(HP)	0.75	1.5
	Hydrostatic spindle oil pump (optional)	KW(HP)	1.5	1.5
	grinding fluid pump	KW(HP)	0.37	0.37
Box capacity	Hydrostatic spindle oil tank (optional)	L	200	200
	Hydraulic power circulation tank	L	70	70
	grinding fluid tank	mm	200	200
other	Machine size (L × W × H)	kg	2700×1520×1650	4200×2330×1950
	G.W (appx.)		2500	5000

Accessories

Standard accessories

- Grinding wheel remover
- Grinding wheel balance rod
- Grinding wheel balancer
- Tungsten carbide full dome needle
- Lubricating oil device
- Grinding wheel dressing device
- bed rotation angle
- Hand tools and tool boxes
- Standard grinding wheel and flange
- Standard grinding fluid supply device
- Waterproof board
- Operation manual, parts manual, inspection report

Special accessories

- A Two-point stabilizing armrest
- B Three-point stabilizing armrest
- C Three-jaw chuck and face plate (6)''
- D Magnetic chuck and face plate(6)''
- E Magnetic grinding fluid chip removal device
- F Electromagnetic paper belt two-stage filter device
- G Grinding wheel angle dressing device
- H Grinding wheel arc dressing device
- I Spare grinding wheel flange
- J Tungsten Carbide Half Dome Needle
- K Automatic pulling tools (6 pieces/group)
- L Work support (2 pieces/group)

Technical Parameters

Straight forward cylindrical grinder see machine details on P35



	Item	unit	FX27P-60CNC	E250	FX32P-60CNC	FX32P-100CNC
Processing capacity	Surface rotation diameter	mm	270	250	320	350
	distance between two centers	mm	600	500	600	1000
	Max.grinding diameter	mm	270	250	320	320
	Max.load between two centers	Kg	60(cen.)/20(w.h)	60(cen.)/20(w.h)	60(cen.)/20(w.h)	150
	G.w size (OD×W×ID)	mm	∅405×32~50×∅127	∅405×32~50×∅127	∅455×32~50×∅127	∅510×50×∅127/∅610×100×∅127
	Grinding wheel speed	rpm	1650/1850/2100	1570	1650/1850/2100	1570/1742
	Max. linear speed	m/s	35	35	40	45
Headstock	Spindle speed	rpm	50~500	50~500	50~500	10~500
	Clamping top		M.T4	M.T4	M.T4	M.T5
Tailstock	Automatic telescopic distance	mm	40	40	40	40
	Clamping top		M.T4	M.T4	M.T4	M.T4
Worktable	Z-axis rapid movement speed	m/min	8	8	8	8
	Z axis minimum setting unit	mm	0.001	0.001	0.001	0.001
	Maximum moving range	mm	550	550	550	1000
	Rotation angle	Deg	+6/-9	+6/-9	+6/-9	+7/-7
Motor	Grinding wheel spindle motor	KW	3.75/5.5	3.75/5.5	3.75/5.5	7.5/11
	X-axis feed motor	KW	2.2	2.2	2.2	3.0
	Z-axis feed motor	KW	2.2	2.2	2.2	3.0
	Headstock spindle motor	KW	0.75	0.75	0.75	1.5
	cooling water motor	KW	0.75	0.75	0.75	0.75
	Tailstock oil pump motor	KW	0.75	0.75	0.75	0.75
	Lubricating oil pump	KW	1/4	1/4	1/4	1/4
Other	Machine size (L × W × H)	Kg	2800×2000×2000	2800×2000×2000	4000	7500
	G.W (appx.)	mm	3200	3200	2800×2000×2000	4800×3800×3000

Accessories

Standard accessories

- grinding wheel and flange
- Tungsten carbide clamping top(M.T5)
- Tungsten carbide clamping top(M.T4)
- Diamond pen (axe type) and holder
- Level adjustment screws and foot pads
- Semi-enclosed guard
- Tools and toolboxes
- Instructions and certification

Special accessories

- Hydraulic tailstock
- Grinding wheel dynamic balancing system
- End surface measuring device
- Automatic OD measuring device
- Three-jaw chuck(6")
- Four-jaw chuck(7")
- Magnet filter
- Hydraulic separator
- Electromagnetic paper belt water filter
- water tank cooler
- Balance table and balance rod
- Two-point center stand
- Three-point center stand

Technical Parameters

Incline forward cylindrical grinder [see machine details on P 42](#)

	Item	Unit	FX32A-35CNC	FX32A-50CNC	FX32A-75CNC
Processing capacity	Surface rotation diameter	mm	320	320	320
	distance between two centers	mm(in)	550	600	800
	Max.grinding diameter	mm(in)	300	300	300
	Min.grinding diameter	mm	4(centers) / 3(chuck clamping)	4(centers) / 3(chuck clamping)	4(centers) / 3(chuck clamping)
	Max.load between two centers	Kg(b)	60(centers) / 20(Only workhead)	60(centers) / 20(Only workhead)	100(centers) / 20(Only workhead)
	Effective grinding length	mm	350	500	750
	G.w size (OD×W×ID)	mm(in)	Ø510×50×Ø127	Ø510×50-80×Ø127	Ø510×50-80×Ø127/Ø610×50-80×Ø203
	Grinding wheel speed	rpm	1650	1650	1520
Max. linear speed	m/s	35	35	35	
Grinding wheel head	Grinding wheel dressing	mm(in)	Automatic	Automatic	Automatic
	Grinding wheel spindle type	Incline type	Hydrostatic suspension spindle	Hydrostatic suspension spindle	Hydrostatic suspension spindle
	X-axis minimum feed	mm(in)	0.001	0.001	0.001
	Feed angle	Deg	60	60	60
	Feed travel	mm	270	300	300
	X-axis rapid movement speed	mm/min	0-15.000	0-15.000	0-15.000
Headstock	Spindle speed	rpm	10-650	10-650	10-650
	Spindle form	High precision bearing spindle	moving or centering	moving or centering	moving or centering
	Ejection pin specification		MT-4	MT-4	MT-4
Tailstock	Telescopic distance	mm	0~40	0~40	0~40
	Ejection pin specification		MT-4	MT-4	MT-4
	Way of working		manual or hydraulic	manual or hydraulic	manual or hydraulic
Worktable	Z-axis rapid movement speed	mm/min	0-15.000	0-15.000	0-15.000
	Z-axis minimum feed	mm	0.001	0.001	0.001
	Maximum moving range	mm	550	550	750
	Rotation angle	Deg	+6/-9	+6/-9	+6/-9
Motor	Grinding wheel spindle motor	KW	5.5	5.5	7.5
	X-axis feed motor (servo)	KW	2.2	3.0	3.0
	Z-axis feed motor (servo)	KW	2.2	3.0	3.0
	Headstock spindle motor (servo)	KW	1.5	1.5	1.5
	Cooling water pump motor	KW	0.75	0.75	0.75
	Lube motor	KW	1/4*2	1/4*2	1/4*2
	Hydraulic tailstock oil pump motor (special)	KW	0.75	0.75	0.75
Other	X/Z axis guide rail/screw lubrication oil		Mobil 2 or equivalent grade oil	Mobil 2 or equivalent grade oil	Mobil 2 or equivalent grade oil
	Oil products for dynamic and static pressure grinding wheel spindles		Great Wall No. 5 spindle oil or Mobil No. 4 spindle oil	Great Wall No. 5 spindle oil or Mobil No. 4 spindle oil	Great Wall No. 5 spindle oil or Mobil No. 4 spindle oil
	Compressed air volume of end face online detection device	Mpa	≤0.4	≤0.4	≤0.4
	Machine size (L × W × H)	mm	3000×2700×2000	3500×3000×2000	3500×3000×2000
	G.W (appx.)	Kg	5000	5500	5500

Accessories

Standard accessories

- grinding wheel and flange
- Tungsten carbide clamping top(M.T5)
- Tungsten carbide clamping top(M.T4)
- Diamond pen (axe type) and holder
- Level adjustment screws and foot pads
- Semi-enclosed guard
- Tools and toolboxes
- Instructions and certification

Special accessories

- Hydraulic tailstock
- Grinding wheel dynamic balancing system
- End surface measuring device
- Automatic OD measuring device
- Three-jaw chuck (6")
- Four-jaw chuck (7")
- Magnet filter
- Hydraulic separator
- Electromagnetic paper belt water filter
- water tank cooler
- Balance table and balance rod
- Two-point center stand
- Three-point center stand

Technical Parameters

Parameters

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Internal grinder see machine details on P47

Item		unit	IG150	IG200	Accessories
Processing capacity	Grinding diameter range	mm	Ø6-Ø150	Ø6-Ø200	Standard accessories <ul style="list-style-type: none"> Grinding cooling device Diamond dressing pen Angle adjustment table Toolbox and tools Spindle grinding wheel adapter High speed grinding spindle basic adjustment block Special accessories <ul style="list-style-type: none"> Hydraulic three-jaw chuck 6" Chuck flange 6" 30000rpm Mechanical spindle, different speed electric spindle Automatic inner diameter measuring device
	grinding depth	mm	150	170	
	Max. outer dia. of grinding workpiece	mm	220	220	
	Work surface radius	mm	380	400	
	Installable chuck specifications		6" Hydraulic/manual chuck	6" Hydraulic/manual chuck	
	Bedside box rotation angle	Deg	Front 2/Back 15	Front 2/Back 20	
Grinding wheel spindle parameters	Internal hole grinding spindle power	KW	1.5	7.5	
	Internal hole grinding spindle speed	rpm	20000 Mechanical spindle	electric spindle speed Optional	
Headstock spindle parameters	Spindle speed	rpm	50-1500	50-1500	
	Spindle form		Sleeve structure bearing spindle	Sleeve structure bearing spindle	
	Taper hole specifications		MT-5	MT-5	
	Spindle drive method		Servo motor	Servo motor	
X axis (workpiece spindle)	X-axis feed travel	mm	410	410	
	X-axis rapid movement speed	mm/min	0.1-10	0.1-10	
	X-axis feed min. resolution	mm	0.001	0.001	
	X-axis servo motor power	kw	2.2	2.2	
Z axis (worktable)	Z-axis rapid movement speed	mm/min	0.1-10	0.1-10	
	Z-axis min. feed resolution	mm	0.001	0.001	
	Max. moving range	mm	540	410	
	Z-axis servo motor power	KW	2.2	2.2	
Motor	Grinding wheel spindle motor	KW	7.5	7.5	
	X-axis feed motor (servo)	KW	2.2	2.2	
	Z-axis feed motor (servo)	KW	2.2	2.2	
	Headstock spindle motor (servo)	KW	1.5	1.5	
	Cooling water pump motor	KW	0.75	0.75	
	Lube motor	KW	1/4	1/4	
Other	Machine size (L × W × H)	mm	2400×1930×1790	2400×1930×1790	
	G.W (appx.)	Kg	3500	4000	

Compound grinder see machine details on P 50

Item		CG45	CG45-I	Accessories
Processing capacity	Grinding max. OD	Ø400mm	Ø320mm	Special accessories <ul style="list-style-type: none"> Hydraulic chuck 6"/8" (medium solid, hollow) Roller type workhead Diaphragm chuck
	Grinding wheel size	Ø405*32~60*Ø127mm	Ø405*32~60*Ø127mm	
	Max. OD grinding length	200mm	150mm	
	ID grinding range	Ø6~200mm	Ø6~100mm	
	Max. grinding depth	200mm	100mm	
	Max. clamping length	260mm	200mm	
Workhead	Height from grinding wheel spindle to ground	1150mm	1150mm	
	Spindle speed	0~1000rpm	0~1000rpm	
Drive motor	Y-axis cylindrical grinding wheel motor	6.5KW	6.5KW	
	X, Y, Z axis slide feed (servo motor)	2.5KW	2.5KW	
	Workhead drive motor (servo motor) ⁴	1.5KW	1.5KW	
	Z-axis internal grinding wheel electric spindle	18000~60000rpm	18000~60000rpm	
	Hydraulic pump motor	100W	100W	
Other	coolant pump motor	0.37KW	0.37KW	
	Hydraulic tank capacity	2L	2L	
	Coolant tank capacity	200L	200L	
	Machine size (L × W × H)	2300×2200×2000mm	2300×2200×2000mm	
G.W (appx.)	7000kg	7000kg		

Compound grinder see machine details on P 52

Model CG15		Internal grinding range	Cylindrical grinding range	Accessories
Clampable workpiece diameter		Ø3~200mm	Ø200mm	Special accessories <ul style="list-style-type: none"> Hydraulic chuck 6"/8" (medium solid, hollow) Roller type workhead Diaphragm chuck
Max. clamping length		100mm	150mm	
Maximum travel	X axis	330mm	100mm	
	Z axis	150mm	330mm	
Minimum feed	X axis	0.001mm	0.001mm	
	Z axis	0.001mm	0.001mm	
Speed	X axis	0~10m/min	0~10m/min	
	Z axis	0~10m/min	0~10m/min	
Workhead speed		0~600rpm	0~600 rpm	
Spindle speed		10,000~50,000rpm Choose one	7,500rpm	
Motor	workhead	0.75KW	0.75KW	
	Spindle	1.1KW	1.1KW	
	X axis	1KW	1KW	
	Z axis	1KW	1KW	
Processing range		Ø6~80mm(inner)	Ø6~100mm(outer)	
Machine size (L × W × H)		1900×1650×1800mm	1900×1650×1800mm	
G.W (appx.)		3000kgs	3000kgs	

Technical Parameters

Centerless Grinder see machine details on P 55

Model	FX-12S/FX-12CNC	FX-18S/FX-18CNC	FX-18AS	FX-20S	FX-24CNC
Standard worktable diameter	Ø0.5~40mm Ø0.05~0.5mm(★customized)	Ø1~60mm	Ø1~60mm	Ø1~80mm	Ø1~80mm
Grinding wheel size (O D × W × ID)	Ø305×150×Ø120mm	Ø455× 205×Ø228.6mm	Ø455×255×Ø228.6mm	Ø510 x 205 xØ254mm	Ø610 x 305 xØ304.8mm
Guide wheel size O D × W × ID)	Ø205×150×Ø90mm	Ø255× 205×Ø111.2mm	Ø255×255×Ø111.2mm	Ø305 x 205 xØ127mm	Ø330 x 305 xØ203.2mm
Grinding wheel speed	1950 R.P.M	1520 R.P.M	1520 R.P.M	1350 R.P.M	1100 R.P.M
Guide wheel speed	0~320R.P.M	0~250 R.P.M	0~250 R.P.M	0~250 R.P.M	0~250 R.P.M
Grinding wheel drive motor	7.5HP	15HP	20HP	20HP	30KW
Steering wheel drive motor	2.0KW AC SERVO MOTOR	3.0 KW AC SERVO MOTOR	3.0 KW AC SERVO MOTOR	3.0KW AC SERVO MOTOR	3.0KW AC SERVO MOTOR
Hydraulic pump drive motor	1HP	2HP	2HP	2HP	2HP
Cooling pump drive motor	1/8HP	1/4HP	1/4HP	1/4HP	1/4HP
Guide wheel feed handwheel	3.5mm/r 0.02mm/scale	3.5mm/r 0.05mm/scale	3.5mm/r 0.05mm/scale	3.5mm/r 0.05mm/scale	3.5mm/r 0.05mm/scale
Fine adjustment hand wheel	0.1mm/r 0.001mm/scale	0.1mm/r 0.001mm/scale	0.1mm/r 0.001mm/scale	0.1mm/r 0.001mm/scale	0.1mm/r 0.001mm/scale
Worktable feed handwheel	7mm/r 0.05mm/scale	9mm/r 0.10mm/scale	9mm/r 0.10mm/scale	9mm/r 0.10mm/scale	Min. settingervo feed amt. 0.001mm
Worktable fine adjust.handwheel	0.2mm/r 0.001mm/scale	0.2mm/r 0.001mm/scale	0.2mm/r 0.001mm/scale	0.2mm/r 0.001mm/scale	Min. settingervo feed amt. 0.001mm
Dressing feed hand wheel	1.5mm/r 0.01mm/scale	2mm/r 0.01mm/scale	2mm/r 0.01mm/scale	2mm/r 0.01mm/scale	2mm/r 0.01mm/scale
Guide wheel tilt angle	+5°~-3°	+6°~-5°	+6°~-5°	+5°~-3°	+5°~-3°
Guide wheel rotation angle	±6°	±6°	±6°	±5°	±5°
Dimension (L ×W × H)	1800×1400×1450mm	2350×1960×1550mm	2350×1960×1550mm	2550×2050×1650 mm	2700×2350×1650 mm
Package Dim.(L ×W × H)	2350×1650×1770mm	2900×2400×1850mm	2900×2400×1850mm	3050×2500×1250 mm	3100×2600×2000 mm
Gross Weight(appx.)	1700kgs	2850kgs	2950kgs	3200kgs	6500kgs

Accessories

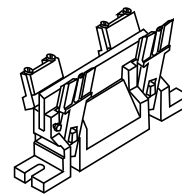
Standard config:

- Grinding wheel and flange (attached to the machine)/1 set
- Adjustment wheel and flange (attached to the machine)/1 set
- Stop tool holder and stop blade/1 set
- Through tool holder and through blade/1 set
- Diamond dresser (attached to the machine)/2 pieces
- Toolbox and tools/1 set

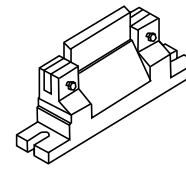
Special config:

- workpiece landing gear
- Return device
- Paper belt filter
- Magnet filter
- Cooler
- Guide rail and ball screw automatic lubricator(Standard configuration for CNC series)

Tungsten steel support blade



•Through grinding tool holder



•Stop grinding tool holder

working dia.	Blade thickness	working dia.	Blade thickness
1.5~2.5mm	1mm	8~10mm	6mm
2.6~4mm	2mm	10~16mm	8mm
4~5mm	3mm	12~20mm	10mm
5~7mm	4mm	15~30mm	12mm
7~8mm	5mm	25mm 以上	20mm

Technical Parameters

CNC lathe **see machine details on P 73**

Parameters

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Model		F380	F580	F580A	F580M	F680	F 1280
Processing range							
Max. rotatory diameter	mm	Ø500	Ø500	Ø580	Ø580	Ø720	Ø720
Max. processing diameter × length	mm	Ø350×360	Ø350×530	Ø350×470	Ø350×390	Ø420×639	Ø420×1239
Spindle through hole diameter	mm	Ø62	Ø62	Ø62	Ø62	Ø91	Ø91
Max. bar processing diameter 径	mm	Ø52	Ø52	Ø52	Ø52	Ø80	Ø80
Max. supported weight	kg	200	200	200	200	250	350
Spindle							
Spindle max. speed	r.p.m	4500	4500	4500	4500	4000 (Motorized spindle)	4000 (Motorized spindle)
Spindle end form	KAS	A2-6	A2-6	A2-6	A2-6	A2-8	A2-8
Spindle rotation indexing accuracy	deg	(360°) 0.001	(360°) 0.001	(360°) 0.001	(360°) 0.001	(360°) 0.001	(360°) 0.001
Chuck size	inch	8"mid empty(mid solid)	8"mid empty(mid solid)	8"mid empty(mid solid)	8"mid empty(mid solid)	10"mid empty(mid solid)	10"mid empty(mid solid)
Travel							
X-axis travel	mm	200	200	225	225	270	270
Z-axis travel	mm	380	580	480	450	680	1280
Feed							
X-axis rapid speed	m/min	30	30	30	30	30	30
Z-axis rapid speed	m/min	36	36	36	36	30	30
Accuracy							
positioning accuracy	mm	0.005 (Full travel)	0.005 (Full travel)	0.005 (Full travel)	0.005 (Full travel)	0.005 (Full travel)	0.005 (Full travel)
Repeat positioning accuracy	mm	0.002 (Full travel)	0.002 (Full travel)	0.002 (Full travel)	0.002 (Full travel)	0.002 (Full travel)	0.002 (Full travel)
cutter stock							
Total number of cutter	pcs	12 (opt8)	12 (opt8)	12	12	12	12
time for cutter changing	sec	0.2	0.2	0.2	0.2	0.2	0.2
Outter diameter tool holder height	mm	20×20 (opt25×25)	20×20 (opt 25×25)	25×25	25×25	25×25	25×25
Inner diameter tool holder max. dia.	mm	Ø32 (opt Ø40)	Ø32 (opt Ø40)	Ø40	Ø40	Ø40	Ø40
Max. speed of milling spindle		/	/	/	5000	/	/
Milling spindle motor power		/	/	/	6.2(S3-40%)	/	/
Tailstock							
Tailstock model	#	/	Servo programmable	Servo programmable	Servo programmable	MT5(fixed clamping top)	MT5(fixed clamping top)
Max. movement of tailstock	mm	/	540	540	540	/	/
Tailstock tapered hole form	#	/	MT4	MT4	MT4	/	/
Motor							
Control System	#	Siemens 828D	Siemens 828D	Siemens 828D	Siemens 828D	Siemens 828D	Siemens 828D
Spindle motor	KW	12	12	12	17.2	26.5	26.5
Axial servo motor X/Z	KW	1.15/2.2	1.15/2.2	2.2/2.2	2.2/2.2	3.55/2.9	3.55/2.9
Other							
Water tank capacity	L	140	120	120	120	120	120
Electricity demand	KVA	25	25	30	30	45	45
Net weight	Kg	3500	4200	4650	4700	6500	7700
Dimensions (length × width × height)	mm	2207×1712×1825	2435×1742×1815	2435×1862×1815	2435×1862×1815	3810×2022×2000	4445×2176×2000