CNC350 Numerical Control Machine

Operation Instruction

KANMEN MACHINE

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YUHUAN KANMEN MACHINE TOOL FACTORY

Content

II Application and feature of the lathe

CNC350, horizontal CNC lathe, adopts electromechanical integration design, good external appearance and reasonable structure, which is of wide application and easy operation.

The machine has automatic control and can carry out finish turning of internal and external rounds, end surface, cutting groove, any conical surface, ball surface, and english system circular cylinder, taper screw thread etc.. It is equipped with good S.T.M function with which it can generate and receive many signals as well as conduct automatic process.

The lathe guide way adopts flame hardening or supersonic frequency induction hardening. It is of good abrasion resistance, good precision maintenance. With advanced structure, the spindle system is of high turning precision, good anti-vibration performance, and high cutting turning performance. Ball screw on the vertical and lateral direction respectively has good dynamic respond, so the machine has low noise, and the worker can get good working environment.

The lathe has good adaptability to the parts processing of large, medium and small quantity of as well as various kinds. It shows high efficiency and stable and reliable equality especially in the processing of the parts with conical surface, ball surface etc.

III Main specification & parameter of the lathe

1. Main specification

Max diameter swing over the bed	Φ350mm
Maximum turning length	350mm

2. Processing scope:

1) Max. Diameter of work-piece

On lathe bed	Φ320mm
On tool holder	Φ180mm
Bar diameter	Φ40mm

2) Max. Length of work-piece in process 350mm

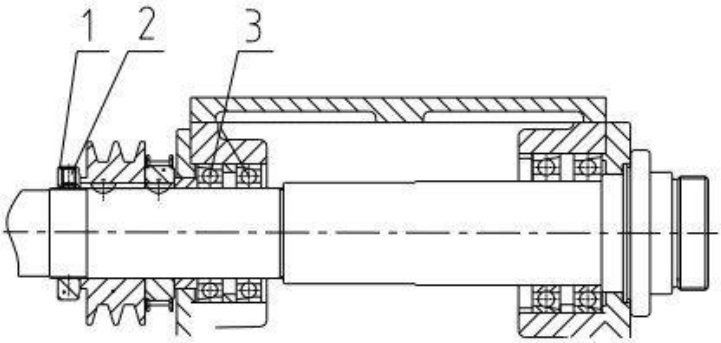
3) Screw thread	
Metric thread pitch	0.25-12mm
English system thread	28-3 1/2teeth/inch
3. The distance between centerline of the spindle and the surface of the guide way	210mm
4. Spindle	
1) Type of the spindle head	A_1-5
2) Spindle bore	Φ50mm
3) Max spindle speed	300-3000r/min
5. Tool holder	
1) Max. Stroke	
Longitudinal (Z axis)	350mm
Transverse (X axis)	250mm
2) Feed rate	
Longitudinal (in Z axis direction) (stepless)	10mm/min-2000mm/min
Transverse (in X axis direction) (stepless)	5mm/min-1000mm/min
3) Rapid traverse speed	
Longitudinal (in Z axis direction) (stepless)	8000mm/min
Transverse (in X axis direction) (stepless)	8000mm/min
4) Electric tool holder (for customer choose)	LD4B-CK6132
5) Sectional area	25mm×25mm
6. Tailstock	
1) Sleeve inner taper	Morse 4#
2) Sleeve max movement	90mm
3) Max movement in transverse	±5mm

V Structure and adjustment of the lathe bed

1. Adjustment of the spindle bearing

The turning precision of the lathe spindle is guaranteed through control of its longitudinal and axial movement (please refer to G4, G5 etc.). After long time operation of the lathe, the clearance between the bearings becomes large and can not guarantee the above mentioned precisions. In this case, adjustment has to be carried out according to the front and back bearings to reduce the clearance between the bearings. Please do not adjust the clearance between bearings too much to avoid abnormal phenomenon such as too high temperature of the spindle operation. Therefore, after the adjustment, high speed unloaded trial operation of the spindle should be carried out. After one hour, the measured temperature of the spindle bearing should be no more than 70℃ and the temperature rise should be no more than 40℃. Otherwise, readjustment must be carried out in following way:

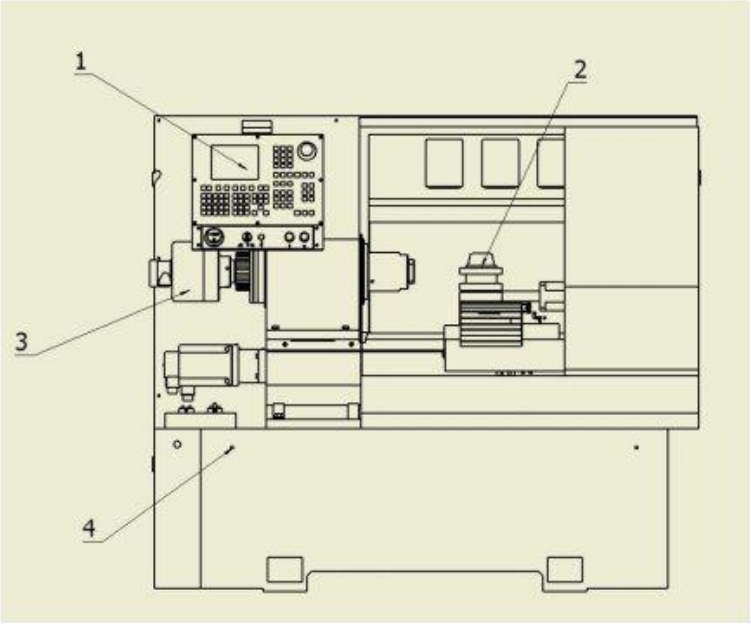
Please refer to the drawing2 for the assembly structure of the spindle and bearing. When the spindle needs adjustment, loose the bolt 1 first and then nut 2. Tighten bolt 1 when the clearance is proper after examination.



Drawing 2 spindle bearing adjustment

Ⅵ Operation of the machine

Refer to the drawing 3



(1) Controller

(2) Electric tool holder

(3) Hydraulic cylinder

(4) Ring for transportation

Drawing3 Operation system

Ⅶ Maintenance and lubrication of the machine

1. For the normal operation of the lathe please pay attention to the following matters:

1) Lubrication grease (oil) should be added periodically to the lathe.

2) All lubrication points are poured into by auto-lubricating pump. Make sure that whether the lubrication pump-box has oil or not.

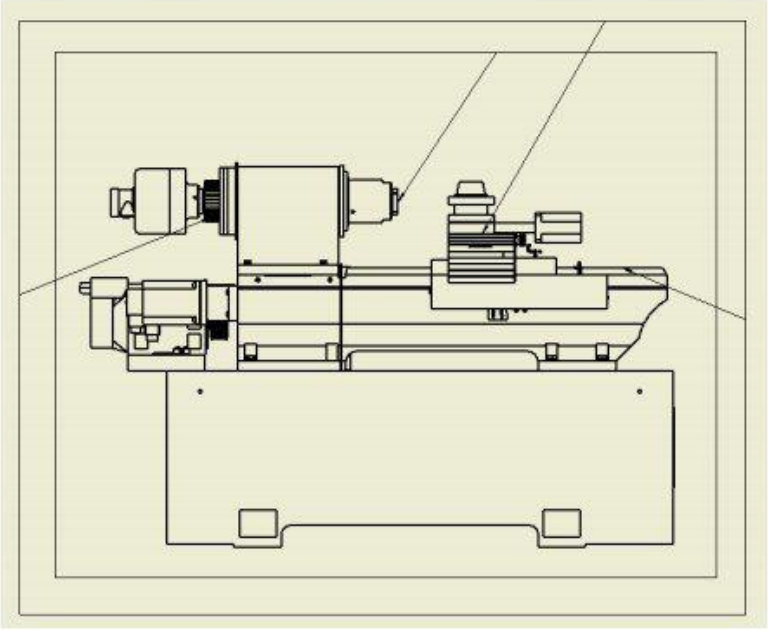
3) Keep the guide way of the lathe clean. Clean the iron scrap and cooling refrigerant, and add new lubricant oil after every work.

4) Before processing cast iron piece, clean the cooling refrigerant on the lathe bed. While after finish, it must clean the iron scrap.

2. Carry out lubrication periodically (please refer drawing 7) to ensure normal operation of the lathe. The lubrication of the lathe should follow the stipulation below:

1) No.30 machine lubrication oil is adopted for the lubrication of the lathe bed. The viscosity of which is 3.81-4.95 centipoises. The lubricant oil must be filtered before use.

2) Every lubricating point must be added with lubricant oil periodically.

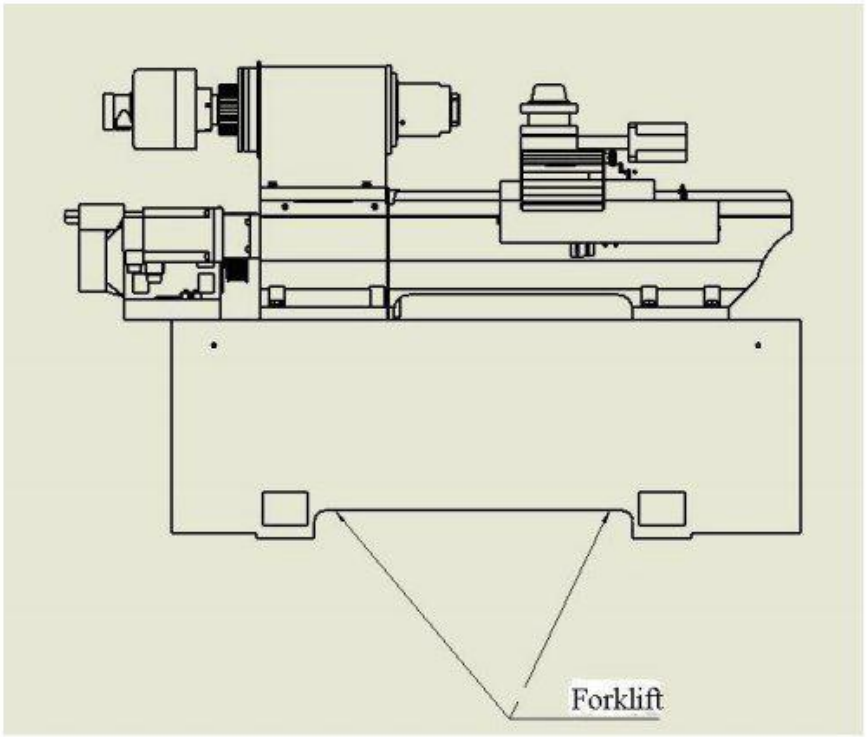


Drawing 4 Lubrication

Ⅷ Transportation, installation and trial operation of the machine

1 Transportation

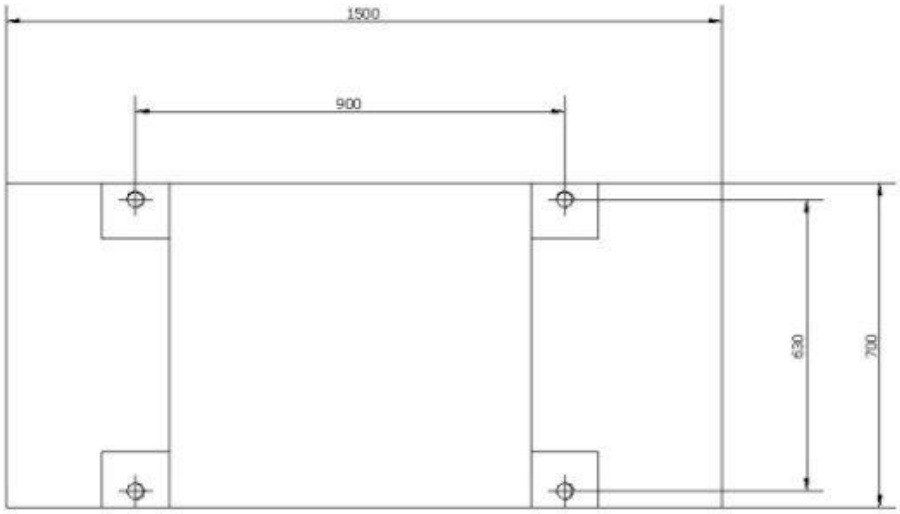
When lifting and moving the lathe in case, we should arrange the steel wire as per the lifting mark on the case referring to the drawing 5. In any case, in order to avoid the impaction and shaking during the lifting and moving, it's better not to keep the case slope and upside down.



Drawing 8 Transportation

2. Erection of the lathe

The lathes are adjusted comprehensively and given the cutting test before they are sent out the plant. Otherwise, improper erection of the lathe will influence the function and degree of accuracy. Make sure that the lathe is erected and fixed on the form base by anchor bolt to ensure stable operation. Please refer to drawing 9 for the foundation dimension. The depth is determined according to the local geography condition, which is usually about 400 mm.



Drawing 6 Foundation

There are four pads for supporting the machine for the balance. Put the level instrument on two ends of the guide way, which should not excess 0.06/1000.