Product Model: SWZ700A

Product Name: CNC H Beam Drilling Machine

OPERATION MANUAL

(Mechenical)

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Item

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SWZ700A (three axis) CNC H Beam drilling sawing production line hydraulic principle diagram

SWZ700A (three axis) CNC H Beam drill saw the production line of pneumatic coolingprinciple diagram

Foreword

The production line is used for metal structure building, bridge, garage andspace industry in the production of drilling.

With independent pneumatic, hydraulic, electrical system of the NC production line.

The CNC production lines fully take into account the man-machine coordination,monitoring interface design is very reasonable, comprehensive and accuratefault tips, the operators only need to operate the computer input parameters on the workpiece in a simple programming language, to perform the automatic procedure, the workpiece will be automatically finish machining.

The production line is a combined processing production line, in addition to the hydraulic control system for production line, custom, all the other parts into a whole, can according to customer needs free exchange of production lines, tomeet the various needs of customers. In addition, the whole control system of hydraulic introduction, sections are described in detail in this paper.

The hydraulic system of NC production line control each working position throughthe solenoid valve action, simple structure, convenient use, convenient repair.

This production line has the advantages of fast drilling speed, high drilling precision, good product quality etc.. In order to improve the machining efficiency and quality of H steel, we developed this set of production line.

Safety instructions

One, the customer before using this line, please read this manual carefully. And please operate strictly according to the relevant instructions.

Two, the production line is installed by the manufacturer, and debugging, and equipment installation and adjustment parts have been

The adjustment in place, users don't screw the adjusting screw, especially thepressure of the relief valve in the hydraulic system, please don't change.

Three, the production line material part will appear steel beyond space machine components, into the car and other chain will exceed the outer space, the machine starts up, nobody is allowed to enter the area. The user can in this region is arranged on the edge of a security guard or a line on the ground.

Four, the production line should be installed no rain in the fully closed shop, alsonot caused by the wind, dust or corrosive gas against. The ambient temperaturewhen the machine is running at 0 ~ 40 ℃, relative humidity should be less than 75%. All cables shall prevent the trauma.

Five,Voltage fluctuation, power supply line five shall be within 15% of the rated value,the frequency change shall be within 3% of the rated value. Compressed air source pressure should not be less than 0.5Mpa.

Six, Injection of N46 wear-resistant hydraulic oil six, the tank of the hydraulic systemin (according to local conditions to cold resistant hydraulic oil) import hydraulic oil or the same performance. Injection of hydraulic oil, should use the filter capacity of 20 μ m machine oil filter. Regularly check the liquid level, liquid level indication range should be standard in the oil, gas, should cover the air filter, prevent dirt into the

Seven, the operator should always check the following safety measures the production line is provided with is efficacious.

1 "emergency stop" button is a mechanical lock, must be rotated, to reset. In order to make the machine, you must press the manual reset button on the stage.

2 open the electrical cabinet, should be first machine stop.

3 check whether the effect of obstacles machine normal work, the timely removal.

4 check the drill bit blade, depending on its condition to decide whether to adjust the replacement.

5 check whether the normal work of drilling cooling.

6 check the limiting device shall be complete and in good condition.

7 check the electrical distribution box shall be closed firmly, good electricalgrounding.

8 check the hydraulic oil in the oil tank volume should accord with the regulations.

9 check the air pressure setting is correct.

10 check the lubrication system oil storage site shall comply with the requirements, according to instructions to add the lubricating oil lubrication system.

Eight, work conscientiously do:

1 often remove dust, dirt, keep the machine tool guideway surface, sliding surface, a positioning reference surface and the work surface clean.

2 machine especially the rail surface and the work surface, no direct placement tool, workpiece and other sundries.

The 3 time attention to the functioning of the machine, such as abnormalphenomenon action failure, shock, fever, crawling, noise, smell, touch, should immediately stop check, troubleshooting, may continue to work.

4 cutting tool, workpiece should be correct, secure fastening clamp.

5 keep drill bit blade sharp, such as wear and tear or split should be timelygrinding or replacement.

Adjust the pressure regulating valve is not permitted to 6 hydraulic system.

7 machine at the time of the accident shall immediately press the "stop" button,keep the scene of the accident, report to the relevant departments to analysis.

Electrical switch key can only be kept by one person, adjust the machine orreplace the drill bit, should cut off the power and take out the key, to prevent people from accidentally turn the power.

I. Production lineForm

This production line is composed of a SWZ700/3A type 3D NC drilling machine, a SWZXC1 type CNC trolley, a trolley track SWZGD2 type, SWZLD type of rollingmaterial, parts of the hydraulic power, electric control parts, air cooling system,lubrication system.

1, SWZXC1 NC car: by the servo motor through speed reducer through the rack and pinion drive, through the clamp type steel longitudinal feeding and positioning.

2, SWZGD2 type trolley track II: the bearing cart finish feeding function,according to the workpiece material length can be divided into a variety of specifications.

3, SWZLD type rolling material consisting of: feeding, responsible for the completion of the steel bearing and conveying function.

4, SWZ700/3A type CNC 3D drill: a total of three power head, each power head is provided with a spindle. About power head can move vertically on the precise positioning, the power head can move left and right radial precise positioning,and complete the hole machining operations on steel.

5, parts of the hydraulic power: composed of oil tank, pressure pump, cooler, the main valve group and the other control valve group.

6, the electric control part: refer to electrical system manual.

II. Production line and technical specifications

Name		Unit	Parameters	Remarks
Work piece parameters	Maximum width	mm	700	
	Minimum width	mm	150	
	The maximum height	mmm	400	
	The minimum height	mm	80	
	The maximum weight	kg	10000	
	Minimum automatic feeding length	mm	3000	

II. The production line is introduced in detail each part

1, SWZXC1 NC car

(1) equipment use

SWZXC1 NC car is special for steel processing special car, the car has the advantages of simple structure, firm and durable, walking with high precision, the clamp body with the clamping position adjustment characteristics.

(2) the equipment structure and configuration

SWZXC1 NC car is mainly composed of a car frame, composed of servo motor,reducer, gear shaft, gear, rotary encoder detection, lifting device, a lifting motor,ball screw, a clamp body, electromagnetic valve, switch etc..

Servo motor NC feeding trolley in the longitudinal feeding channel before and after the movement through the speed reducer, gear shaft drive. Rotary encoderreceives the detected position signal feeding trolley gear feedback, andfeedback control system, a closed loop control.

The trolley frame body is provided with two gear reducer, through rotating shafts and couplings with the servo motor are connected as a whole, two speed reducers are respectively connected with a gear shaft drive, can eliminate lateralgap rack and pinion gear. And is provided with an eccentric shaft driven geardrives in the front frame body, by adjusting the eccentric shaft so that the tooth surface meshing more fully, to run more smoothly role.

A lifting device is arranged side car frame, which is composed of a lifting framebody, asynchronous motor, ball screw, ball guide, the clamp body.

The lifting frame installed on the ball guide, provide guidance to the clamp bodylifting walking,

by asynchronous motor drives the ball screw to provide power for the clamp body, lifting.

The clamp body by the clamp rod, core rod, a lower claw, signaling, rod,clamping cylinder, the cylinder block. The clamping cylinder, a lower claw opened or closed, the type steel workpiece clamping or loosening of the core rod drive.

The lifting device. The clamp body rise or fall, one after the completion of workpiece processing, CNC cars back to a certain position, the clamp body rises.So, in the steel processing to the end, you can manually cut a steel to be processed into the longitudinal feed material, save the auxiliary processing time.NC feed after the car back to the set position, the clamp body falls, processing ofa steel.

The pneumatic and electric control system according to the machine tool toseparate configuration and subordinate and the machine itself gas system andelectrical control.

(3) the technical data of equipment

The technical parameters of XC1 type feeding dolly

No.	Name	Unit	Parameters	Remark
1	The clamp jaw opening range	mm	5-27	Two pairs of claws
2	The feeding speed	m/min	0～15	
3	Driving the biggest weight	吨	10	
4	Driving motor power	kw	5	
5	Lifting motor power	kw	1.5	
6	Dolly travel	m	16	
7	Lifting travel	mm	263	

2, SWZGD2 type trolley track II

(1) equipment use

The trolley track type SWZGD2 Ⅱ usually used in conjunction with the SWZXC1NC car, mainly used for carrying car finish feeding function. The trolley track has the advantages of simple and firm structure, convenient maintenance, in addition to general drive track configuration with a large bar, is also a test rack, whichmatched with the test gear SWZXC1 NC car on the formation of closed loop,improve the positioning accuracy.

(2) the equipment structure and configuration

The trolley track SWZGD2 type II is mainly composed of a rail frame, a gear rack,detection, guide plate, skirting etc..

Track frame with steel and steel plate welded structure, post weld aging treatment, strong integral rigidity, small deformation, firmness and reliability.

A large bar mounted directly on the rail frame, with the two driving gear feedingtrolley and a passive gear, used to provide the driving force of the mobile cart. In the gear side installs the test rack, with detection gear feeding trolley to form closed loop control, thus the actual value and the theoretical value of rotary encoder for real-time monitoring of walking control to control the car, the servo motor rotates positively or reversely adjust car position, eliminate the errorcaused by the gear rack and gear reducer intrinsic clearance, play to improve the precision of the vehicle location.

The guide plate is arranged on the track frame body, and the same side rack, bycar on the two rotating wheel extrusion two side guide plate and to the balance of the car to car weight, stable function.

(3) the technical data of equipment

The trolley track type SWZGD2 Ⅱ technical parameters

No.	Name	Unit	Parameters	Remark
1	Track length	m	18.6	

3, SWZLD type of rolling material

(1) equipment use

SWZLD type rolling material of the section material frame swap portfolio approach, its main role is to bearing steel and steel base.

(2) the equipment structure and configuration

SWZLD type rolling material mainly composed of 6 sections of 1.6 meters the rack body, lateral pushing device and the feeding roller is three kinds of materialcomponents and.

The rack is composed of channel steel and welded steel plate, after aging treatment, in order to reduce welding deformation. The main body is provided with a supporting roller, supported by the vertical mounted ball bearings, bearing capacity of strong, simple and quick replacement of maintenance, material support roller is made of thick wall hollow pipe supporting both sides of

shaft end of the welding, which greatly reduce the weight of the mechanism in the premiseof load capacity, save the purchasing cost.

Part of the feed frame with a side pushing mechanism, so as to push against theside of the steel rack, forming a side reference, in order to adjust the steel to a suitable position. Body side fixed vertical roller, a deep groove ball bearing installed roller, through vertical shaft bearing of impact force; the other side ispushing device, mainly composed of a side pushing oil cylinder, pushing claw, a tension spring, the side oil cylinder pushing pushing claw from horizontal tovertical position and then turned to the side, oil cylinder to move until the steel on the fixed roller side, this action to complete the rear oil cylinder retracts, thespring will be pushing claw back in place.

Anchor with circular foundation, the upper and lower double nut mutual position adjustment to the rack the rise and fall of objective, simple structure, convenient adjustment.

(3) the technical data of equipment

LD700 material technology parameter combinations

No.	Name	Unit	Parameters	Remark
1	Drilling at the feeding tract length	m	13.5	
2	Support the effective length of roller	mm	900	
3	the loading height	mm	810	
4	The side thrust	N	750	

4, SWZ700/3A type CNC 3D drilling machine

(1) equipment use

This machine is mainly used for drilling of H type steel, widely used in building,bridge, garage and space industry. Three point control shaft of the machine, aNC inspection shaft and three by frequency conversion stepless speed control of the drilling spindle unit, PLC control, has the characteristic such as high precision, convenient operation, so it is essential to ensure the quality of high performance steel structure manufacturing equipment.

(2) the equipment structure and configuration

The machine adopts machine tool workpiece fixed, mobile type structure. Mainly by the main frame, slide, CNC drilling spindle box, the side pressing device, a carriage, a material guide

device, detection system, air cooling system, chip iscomposed of several parts. The required hydraulic and electric control systemaccording to its subordinate production line equipped with unified, so the only in the state of.

The main frame adopts multi part assembly type structure, convenient disassembly and repair, is divided into two parts, the cross beam. The main frame of each part are made of steel and steel plate of enough strength welded together, and after aging treatment, removal of welding stress. Three dimensional drilling process, suitable for small H type steel or channel steel of this structure, and is suitable for continuous production, high degree of automation.

The machine consists of 3 digital control slipway, respectively is the fixed side NC slide, moving side NC slide and unit of numerical control slide. The three slidestructure is similar, the slide plate and servo drive system.

The machine consists of 6 NC axes, each slide into 2 NC axes, namely fixed side,mobile sideslip Taiwan their up and down and move around the direction of CNCaxis, moving direction of CNC axis unit slide level and below, each axis adoptsprecision linear rolling guide, AC servo motor + ball screw drive, to ensure thepositioning precision. In the vertical direction, the machine feeding mouth is provided with a pressing device under the direction of a group, to ensure thestability of the workpiece in drilling process.

The machine consists of 3 drilling spindle box (with a spindle each spindle box),namely on the unit, fixed side, moving side drilling spindle box, are respectively arranged in 3 digital control slipway, drilling horizontal and vertical directions,driven by a ball screw and servo motor of AC, can automatically to fast forward,rewind, feed conversion, no air travel consumption, convenient operation, and further improve the efficiency of. Drilling spindle box can run separately, but alsocan complete the drilling operations at the same time, greatly improving the efficiency. Drilling power head with high power spindle motor drive shaft through a synchronous belt, large torque at low speed, but also can be suitable forcemented carbide tool in high speed machining. The quick change system ofdrilling cutting spindle, tool replacement is very convenient, can be clampedcarbide drill bit and high speed steel Hemp flowers, and has crossed function.

The drilling spindle box spindle speed is adjusted by frequency converterstepless speed, feed speed is controlled by the numerical control system,according to the workpiece material factors, the hole diameter, quick adjustmentin a large range.

Press locking device is composed of a fixed clamping seat and a movable seat is composed of two parts, a fixed clamping seat is directly arranged on the bed, so that the whole structure is compact, beautiful and practical results; a movableseat is arranged on the carriage.

Material guide device is arranged in the machine tool import, side and below thematerial guiding role. The device is switched to more high roller, the overall structure is more solid, which play a role in steel to prevent bending machine,steel and damage to the inner machine.

In the processing of H steel, the wing surface hole according to the general webcenter line as the benchmark, ventral holes on the wing plate side as the base,influence the precision bending deformation and steel blank itself on the hole, sothe machine is provided with a detection device.

Detection device is divided into two parts the ventral detection and wing surfacedetection, using the wire encoder, simple structure design, mechanism is firm anddurable. Ventral detection is installed in the pressing column, pressing actionmeasure the steel flange width by detecting, and calculated by a numerical control system, so as to measure the ventral position, and passed to the PLC,and then the corresponding compensation according to the error. The wing surface is detected by the wire encoder, direct and side pressure device linkage,through the actual stroke measuring pressure feed device, so as to detect the corresponding error.

Machine drilling using aerosol cooling, by high pressure water air + to achieve,and has the advantages of less amount of coolant, cost saving, environmental protection, reduce the bit wear etc.. The flexible nozzle is installed on the spindlebox, spray nozzle can conveniently adjust the position, make it always in a drill bitat the end of the surface.

Control system of this machine is composed of computer, photoelectric encoder,PLC. Only need to input the size of workpiece, automatic generation of processing program, can at any time by part number storage, call, display and communication, can be realized CAD/CAM direct conversion, which eliminates thetedious operation program and input. Automatic generation of machining program, truly paperless processing equipment. In addition, the manual adjustment control of the machine tool can realize the processing parameters alone, automatic processing and can realize the whole process of the.

In order to ensure the reliability and durability of the machine, the machine to uselinear ball guide, servo motor, servo amplifier, hydraulic components, adopt international famous brand.

(3) the technical data of equipment

Name		Unit	Parameters	Remark
Workpiece parameters	Max. wide	mm	700	
	Min. wide	mm	150	
	Max. high	mm	400	
	Min. high	mm	80	
	Min. automatic feeding length	mm	3000	
	Max. feeding length	mm	12000	
	Max. weight	kg	10000	

Spindle	Nos of spindle	pcs	3	
	Each spindle speed range	r/min	100～2000	
	On the headstock spindle feed stroke	mm	360	
	fixed side headstock spindle feed stroke	mm	180	
	Move side headstock spindle feed stroke	mm	790	
	hole diameter range	mm	¢5～¢36	
	spindle forms		Quick changer	
	Morse taper		4#	
Workpiece Clamping	The maximum horizontal clamping force	kN	27.6	
	The maximum vertical clamping force	kN	4.4×4	
Motor Power	spindle	kW	3x7.5	
	Up unit axis	kW	2x2	
	Left unit axis	kW	2x2	
	Right unit axis	kW	2x2	
	Hydraulic system	kW	1x3	
Machine Size	Main machine（LxWxH）	mm	About 4500x2050x2845	

IV, hydraulic system

1 check before starting

● examination unloading valve, confirmed in the unloading state.

● if liquid level in the range of standard oil, when the first before the start, or repair of hydraulic parts, oil is not full of pipeline and oil cylinder, the oil should reach the highest line. The machine is started, and then observe the liquid level,should not be less than the central line, otherwise, should be added to gasoline.

● check whether the pipeline oil plug or connector is not tightened, especially in the overhaul, forget a joint recovery.

Electromagnet ● check each electromagnetic valve is inserted and fixed.

2 start the oil pump

● driven oil pump motor of motor is turned to the right, from the observation ofmotor fan side, should be clockwise rotation.

● the bolt adjusting pressure relief valves, full release, counter clockwise to the maximum. Start motor for oil pump idler 5 ~ 10 minutes, check the connectionpipe, fittings and valve plate connecting interface whether there is leakage.

The people at the same time to observe the pipeline without leakage, pay attention to timely stop the pump.

● the low-pressure valve pressure to 5.5Mpa.

● sequentially manipulation of the cylinder, and hold for 5 seconds, check whether there is oil leakage.

The establishment of 3 system pressure

According to the hydraulic principle diagram (see the figure), system of hydrauliccomponents and accessories mainly have marked. Hydraulic station system for providing hydraulic power, to establish and control the system pressure, filtering and cooling oil; mobile drill feed, power balance, pressing and correspondingcomponent. These parts work together to ensure the smooth, hydraulic power ofthis production line in the working process, the implementation of components of normal work.

Following are the main working principle of the system: start the hydraulic station,the motor drives the double pump operation, 2 ~ 3 seconds, the system loadstep-up, low pressure system. When the pressure reaches the set pressure(5.5MPa), accumulator enough oil, oil pressure set. The principle of the oilcylinders are using low-pressure oil. Detailed action of each oil cylinder see tableaction sequence of hydraulic schematic diagram of the.

The system is equipped with an accumulator, ensure the stable pressure cylinder, and speed up the cylinder speed the low road. Repair machine,hydraulic oil to drain the energy storage, to pay particular attention to this point,is to shut down the pump motor, manual and unscrew the two cut-off valve until the pressure meter display zero.

The hydraulic system is precision components should be correct, reasonabledebugging operation and careful maintenance can be satisfied with the work efficiency and to improve its service life, otherwise it would run counter to one's desire. Therefore, we hope that you are using the hydraulic system of themachine tool in the strict implementation of instructions, be sure to Caution!Operation regulations. In reading the instructions, please control the appendix of the hydraulic principle diagram data.

The main performance parameters

The tank volume of about 150L

Motor power 3KW

Motor speed 1440r/min

Pump flow 16.7ml/r

Working pressure (low pressure) 5.5MPa

4 pressure regulation system

The system pressure adjustment divide up the steps:

(1) low pressure pipeline pressure adjusting: start the oil pump, the overflow valve tightening (as a safety pressure), pressure adjusting bolt for adjustingelectromagnetic unloading valve (clockwise rotating counterclockwise, Buck),pressure time gradually adjusted to 5.5MPa (observe the accumulator pressure gauge), and observe the leaks the phenomenon, such as normal, low pressureadjustment;

Note: the system pressure regulation in debugging, suggestions don't pressure regulating system.

5 replacement of hydraulic oil

Hydraulic station must use filter oil filter, filtering accuracy satisfy at least 20 μ M. In the appendix lists some foreign manufacturers recommended oil, viscosity ISO VG46. Cleanliness level working medium is 17/16 ~ 19/16

According to the local climate with 46# anti-wear hydraulic oil or hydraulic oil coldtype

Every 2000 hours of operation, the hydraulic oil in the system completely replaced once. You should do:

● clothes into the oil should be purchased from the formal channels of brand newoil right, and not with the regeneration oil. Whether the hydraulic system, safetyand economic operation, is heavily dependent on the quality of the used hydraulic oil. In any operation and load conditions, the hydraulic oil must not onlymeet the good lubrication, and hydraulic oil should not affect the sealing, alsowon't produce any foam. Hydraulic oil should be also ageing resistance,corrosion

resistance, under the different temperature viscosity change should not be too big. If possible, try to use the following brand oil:

Mobil Oil Corp DTE-25

Japanese oil companies SUPER HYRAND -46

Mitsubishi Co 435EP

● when let go of the old oil, should be thoroughly clean the oil tank. Remove allresidue and accumulation therein. Do not wipe off the tank surface with cotton,should use is not easy to drop wool fabric to wipe. Finally, using the dough sticks to walk the fine particles, especially the root angle.

The filter cleaning filters, replace if necessary.

Use and maintenance of 6 system

The hydraulic system comprises a plurality of electromagnetic valve, check valve,relief valve, and the unloading valve, to ensure the stable operation of the system. Maintenance regularly, can increase the reliability of the system, reduce the failure rate, prolong the service life of the machine system and.

The high temperature will make the seal fast aging, low temperature will make the system running sluggish, difficult to start. Any abnormal temperature shows that the system has abrasion or control element of the pressure setting error.

The best temperature generally 46 anti-wear hydraulic oil is 45 ~ 55 ℃ (such aslocal climate with cold resistance of hydraulic oil, hydraulic oil, please follow thesupplier requires). The temperature of this system is generally not more than 65℃, should be down to check over time. If the weather is cold, the temperature is below 10 ℃, because the oil viscosity, the moving parts is not flexible, the lubrication conditions are poor, so can not immediately put into operation.Otherwise required in the case of no load of all components of the oil pump in thelubricating go fully continuous operation.

● system used for longer than two months, when used, should take appropriateintervals, starting a few minutes, so that all elements of the system are adequate lubrication.

● before stopping longer, the piston rod of the cylinder is retracted cylindershould be, or should be in its surface coated with preservative, the oil should be replaced to prevent corrosion of oil.

When serious leakage of hydraulic system, fault frequency, equipment should bean overhaul, overhaul, should replace all seals; to replace the piston rod guide sleeve, lapping the slight

wound surface.

7 fault diagnosis and exclusion

According to the long-term use of experience, we summarize the common fault of the equipment, the user can according to the trouble, the fault is only for reference, such as equipment failure beyond the range, can contact the company directly to me.

common faults	Possible causes	The proposed maintenance measures and Solutions
1.pipe joints leak	（1）joint nut loosening	Tighten the union nut
	（2）seal damage	Replace sealing rings for the same type of
2.hydraulic hose oil leakage	（1）hose wear	The replacement of rubber hose
	（2）the buckling pressing joint damage	The replacement of rubber hose
3.the pressure is too low or the pressure is lower than the normal value	（1）the relief valve setting error	Re set pressure
	（2）pump problem	See 5
	（3）within the vent is too big	A, cylinder seal damage, repair; B, valve worn or clogged, maintenance C, the oil viscosity is too low, the replacement of the new oil
	（4）blood pressure too big	Oil viscosity is too large, the movement of each cylinder
4. false action No action, the action is too slow	（1）The solenoid valve does not move	A, valve stuck, maintenance B, the supply voltage is low, the maintenance C, plug loose, tighten D,Electromagnetic coil aging, replacement

5.Pump fault The flow is too small or zero or without pressure	（1）the oil blocking	The oil suction pipe is blocked, cleaning
	（2） the air suction	A, the fluid level is low, add hydraulic oil B, inhaled foam oil, filter C, the oil inlet pipe interface, maintenance
	(3) drive fault	A, check coupling B,Too high or too low speed C, the direction of rotation error
	(4) pump internal fault	Repair or replace the new pump
	(5) pump wear	Repair or replace the new pump
	(6) the oil viscosity is too high	The replacement of low grade oil or heating
6.pump noise unusual or particularly large	（1） cavitation	A, the oil blocking see 5 B, viscosity is too high to see 5
	（2）the intake air	See 5
	（3）internal wear	The oil is contaminated with impurities, the replacement of the new oil
7.overheating The oil temperature higher than 60 ℃ or temperature is too big	（1）the highest pressure is too high	The valve set pressure is too high, reset
	（2）continue to overflow	Pressure setting is not correct, re set
	（3）without power	Overflow is too big or internal leakage is too large, repair or regulator
	（4）inadequate cooling	The cooler is not used, enable

V, maintenance and maintenance

1 in the handling, installation and use of the process should not rain, collisionand severe vibration.

2 regularly check the electrical lines are damaged, line joints have no loose, so as to avoid the equipment is not functioning properly.

The 3 system used for longer than two months, when in use, must take theappropriate interval, start a few minutes, so that all elements of the system areadequate lubrication.

4 work in some cases should always be attention and check. Change oil term,generally replaced once a year; in continuous operation, high temperature, high humidity, dusty place, need to shorten the cycle of oil.

Contact 5 clamp and the workpiece, long-term use and wear, should be replaced.

6 temperature must not exceed 60 ℃, otherwise the system will be damaged.

7 in the longer time before shutdown, should release the energy storage nitrogendevice, cylinder piston rod should shrink into the cylinder, or corrosion inhibitoron the surface coating, the oil replacement for the corrosion protection of oil.

8 regular checks to boot the system pipeline without leakage phenomenon, timelywill filter the condensed water valve in the discharge.

9 strictly to the machine lubrication: see the lubrication part.

CNC beam drilling machine troubles and troubleshooting

No.	common faults	Possible causes	The proposed maintenance measures and Solutions
1	Drill wear too fast	Speed or feed rate selection	Reduce speed or feed rate
2	When drilling without coolant	1. Insufficient cooling gas pressure	Check the air pressure, air pressure should not be less than 0.8MPa
		2. cooling gas path disconnect connector	Re connect the gas path
		3. cooling gas pipeline damage	The replacement of trachea
		4. cooling waterway disconnect connector	Reconnect the water
		5. cooling water blocking	Clean the cooling water channel
		6. cooling gas or water	Check the solenoid valve

		electromagnetic valve failure	
3.	Drilling power head abnormal noise	1.the headstock gear damage	The replacement of gear
		2.drill bit feeding quantity is too large	Reduce the amount of feed
		3.linear guide rail slider bad	Replace the slider
		4.bit damage	Replace the drill bit
4	Hydraulic solenoid valve does not work	1.cable fault	Replace the cable
		2.solenoid valve plug loose	Fastening plug screw
		3.Fuse	Replace the fuse
		4.terminal pine	Re wiring
		5.solenoid valve coil is bad	Replace the solenoid valve coil
5	The detection switch not signaling	1. signaling switch bad	Replace the transmitting switch
		2. signaling switch cable fault	Replacement
		3. terminal pine	Re wiring
		4. Induction of Kuai Song	Fastening bolts connecting the induction block
		5. The switch and the induction block distance too far	Adjusting sensing distance (normal hearing distance of 2mm)

No.	common faults	Possible causes	The proposed maintenance measures and Solutions
6	Press the "auto" button, the program is not running	"Automatically" do not have the condition	Take corresponding measures according to circumstances

7	Pressing is not complete	1.press the solenoid valve does not move	Same as no. 4
		2.material pressing completion detection switch is not signaling	Same as no. 5
		3.material pressing cylinder internal fault	Maintenance of pressure cylinder
8	Working unit. The hydraulic driving too slow	1.the accumulator valve does not open	Open the accumulator valve
		2.energy storage nitrogen is missing	Supplemental nitrogen
		3.piston seal leakage	Replacement of mechanical seals
		4.piston stuck	Maintenance equipment
9	Feeding blocked	1.raw material is too curved	Artificial feeding or changing raw materials
		2.head down the flash too high	Remove the flash down, restart
10	Quasi distance adjusting servo motor alarm	1.foreign body in straight guide	Clean foreign body, restart
		2.servo cable fault	The replacement of the new cable
		3.the balance cylinder fault	Check the balance cylinder
11	Quasi distance error	1.Problems pressing force	Adjustable high voltage or check accumulator
		2.Steel head flash too high	The stock before removing burr

		3.screw axial movement	Remove screw axial clearance
		4.screw damage	Replace the screw
2	1	Pitch error	1. feeding trolley clamp cylinder pressure is insufficient	Check the air pressure, the pressure valve pressure should not be less than 0.5MPa
			2.Fastening bolts loosening of the feeding trolley vertical device	Fastening bolt
			3.Progress bar and bolt clamp clamping cylinder loose	Fastening bolt
			4.Nut clamp cylinder below the loose	Fastening bolt
			5.The slider on the damaged car	Replace the slider
			6.The clamp body fastening pin shaft movement	Re adjustment, the fastening pin shaft bolt
			7.Its damage, not live clip material	Replace the front paws
			8.Vehicle detection encoder loose coupling	Tight coupling
			9.Detection of gear and rack space detection	Adjust the gap
			10.The detection of small gear wear	Replace pinion
			11.Detection of loose	Re adjust the rack

			and tighten

If the fault system. According to the above method still can not rule out, or malfunction of the system in this specification is not listed, please directly contact the manufacturer.