LoginFly®

Intelligent and efficient horizontal band sawing machine 360B CNC Instruction

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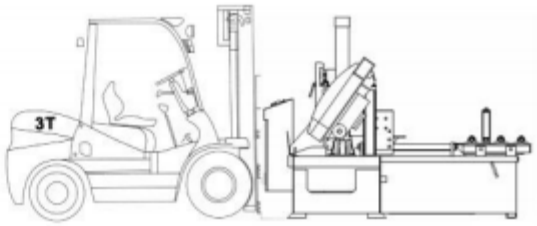
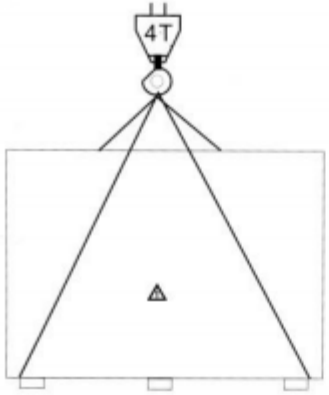
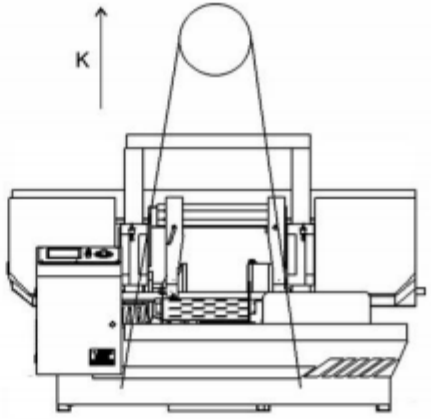
搬运和吊运 Transit and Lifting

叉车搬运 Forklift Handling



吊运 Lifting





警告WARNING

起吊绳至少能承受锯床2倍的重量，起吊平衡，并注意周围安全，以免发生危险。

Sling must can bear twice weight of machine. Must focus lifting balance and around safe.

注意CAUTION

在锯床和吊绳之间放置软性物品，以免损坏锯床油漆。

Place the soft cushion between the machine and sling to protecting damage paint of machine.

清洗 Cleaning

出厂前锯床的表面涂了一层防锈油，安装后，必须用煤油或清洗剂进行清洗。

Paint anti-rust oil in the su7rface of the machine, must clean it with kerosene or other cleaning agent after placing the machine.

注意CAUTION

不能用汽油或腐蚀性的溶剂清洗机床，并注意防火。

No with gasoline or other corrosive corrosive cleaning agent to cleaning the ,to preventing fire.

安置 Placing

在机器附近要有足够的空间可以帮助上料及下料；

There should be enough space or move workpiece.

当我们在保养或维修时，很容易穿越锯床中的任何部位，此时我们要确定所有的防护门或是配电盘在打开时不会发生干涉；

When doing maintenance, make sure all the protection gate and/or the distributor will not intervene when op0ened.

锯床固定板便于运输，起保护锯框的作用，所以在机器定位后，要将固定板拆除，并保存好，以便移机时用。

Fixer of Saw Frame to preventing the saw frame and to facilitate the transport, so please keep it carefully to use of moving machine.

调平 Horizontal Adjustment

当锯床吊放到地脚螺钉上以后，用水平仪按图示在锯床工作台导轨面上交替移动进行水平调整，并不断微调地脚螺栓，直至将锯床按说明书要求调平为止。

Adjust the level with the spirit level along the guide of work table according to the instruction manual after placing the machine, and the fix the foot bolt.

注意CAUTION

沿工作台导轨平面的纵向方向移动时，水平仪读数误差小于0.1/1000；
沿工作台导轨平面的横向方向移动时，水平仪读数误差小于0.1/1000；
锯床的水平对于切削时的一致性和准确性十分重要。

When vertical movement of the spirit level, the permissible error must less than 0.1/1000;
When lateral movement of the spirit level,the permissible error must less than 0.1/1000;
It is very important for cutting precision to adjusting level of the machine.

水平仪请选用读数值为0.02器框式水平或合像水平仪。

Please select and use the spirit level which the precision is 0.02mm/m.

Safety notice

Thank you for purchasing our products.

Please pay attention to:

Please read and understand the Operation Manual of the machine tool carefully before lifting, installing, operating and maintaining the machine tool. The machine tool can only be used after being familiar with its performance, safety information and relevant precautions.

■ Pay attention to the center of gravity during hoisting to prevent tilting, otherwise there may be unexpected danger.
■When lifting, no one is allowed under the machine
■When unpacking, be careful of the injury caused by the board, nails and other objects
■During installation, the circuit must have a good and reliable grounding device, otherwise there will be electric shock or more serious injury.
■ The power must be supplied according to the power parameters specified in the Operation Manual to prevent damage to the machine tool.
-It is forbidden to use the machine tool before commissioning.
■ This sawing machine is only suitable for cutting metal materials. Please do not use it to cut agricultural and fishery products, wood, food, combustible materials, and metals containing radiation.
.It is forbidden to remove the warning and instruction signs from the machine.
■Do not overload the machine
■ It is forbidden to change the safety device. This behavior will destroy its original function and will not protect the machine and personnel
■Operators must be trained and operate in a healthy state
■ Before the machine is running, all covers must be covered. Adjust the adjustable protective cover of the band saw blade as close as possible to the workpiece. Do not open the cover when running.
■Use safety protection equipment
■Do not put any tools on the machine. The tools should be put back into the tool box after use
.The workpiece must be completely fastened on the workbench
■Do not put your hand into the running part of the machine。
■Shut down the machine first when changing speed
■Shut down the machine before opening the safety protection cover on the machine
■When loading, unloading or replacing saw band and steel brush, the machine must be stopped and safety gloves must be worn for operation.
■ When the machine is running, it is forbidden to open any protective cover or touch the band saw blade
■ When changing the belt, the machine must be stopped, and then the motor cover can be opened to replace the belt.
■ When selecting band saw blade and cooling water, please refer to the instruction manual or relevant regulations.
■ Please keep the machine clean and remove iron filings and oil stains from the machine table。
■ Non- professional personnel are not allowed to carry out maintenance work related to the machine tool.
■The power supply must be cut off before maintenance.
■ The coolant may damage the skin of human body, and the operator shall pay attention to protection when cleaning or discharging
■ The cooling liquid shall not be directly discharged into the ground, and shall be treated according to environmental protection regulations.
■Operating environment: altitude ≤ 1000M Ambient temperature: 0-40 ℃ Humidity: < 85%

List

Chapter I Product Introduction

1.1 Specification Table 1
1.2 Pressure setting and value 1
1.3 Hydraulic oil 1
1.4 Coolant 1
1.5 Power supply 50HZ-380V 1

Chapter II Operating Instructions

2.1 replacing band saw blade 1
2.2 Operating instructions 1

Chapter III Maintenance and Lubrication

3.1 Daily maintenance 2
3.2 Weekly maintenance 2
3.3 Maintenance every six months 2
3.4 Annual maintenance 2
3.5 lubrication system 2

Chapter IV band saw blade Selection

4.1 Selection of tooth 3
4.2 Sawing data recommendations 3
4.3 Running-in period 3
4.4 Main reasons affecting service life 3
4.5 Selection of speed and cutting rate 3

Chapter V Main Structure and Related Parts List of Sawing Machine

5.1 Structure description 4
5.2 Hydraulic system 5
(1) List of hydraulic parts 5
(2) schematic diagram 5
5.3 Electrical operation 6
(1) circuit diagram 6
(2) electrical components 7
5.4 Mechanical transmission system 8

Chapter VI Troubleshooting

Form1 9
Form2 10
Form3 11

Chapter VII After-sales Service

Packing list 11
CNC operating instructions 12

Features and use

This band saw machine is a device for sawing metal materials with bimetal saw blade. It has the advantages of compact structure, fast sawing speed, high precision, narrow saw gap, low noise, and convenient operation. It is a new energy-saving product instead of circular saw and hacksaw machine. It is widely used for sawing various metal materials in various industries such as electromechanical, metallurgy, automobile, bridge, ship, etc.

1.1 Specification Table

Type			360BCNC
MAX. CUTTING CAPACITY	Round	mm	360
	Square WxH	mm	360x360
Wheel Diameter		mm	485
Saw blade	TxWxL	mm	1.1x34x4400
Blade Speed		m/min	20-80
Feeding Speed		m/min	Inverter
Motor	Main Motor	KW	5.5(4P)
	Hydraulic Motor	KW	0.75
	Coolant Pump	W	90
Tank	Hydraulic Oil	L	60
	Coolant	L	50
Machine Size		mm	2350*2250*1600

1.2 Pressure setting and value

Hydraulic press	Mpa	<3.5
Blade tension	N.m	30-40

1.3 Hydraulic oil

■ Before using the machine, the oil quantity in the oil tank must be checked. If not enough, add hydraulic oil or similar oil until the filter screen is completely immersed in the oil.

1.4 Coolant

■ Before packaging, we have cleaned the cooling water in the sawing machine to keep the water tank dry.

· When using, please add cooling water (5～8% saponified liquid, the rest is tap water), When adding cooling water, do not exceed the maximum water level of the water pump

· Clean the machine tool after work every day to avoid rusting; If it is not used for a long time, needs to be coated with anti-rust oil for protection

! Warning

The cooling water pump shall not be operated without cooling water, otherwise it will be damaged

• In winter, if the cooling water freezes and cannot be star ted, use warm water at about 10℃ to melt befo re star ting , other wise the cooling water pump will be damaged

1.5 Power Supply 50HZ/380V

①所有的配电都应该由专业的电气人员依照国家配电标准来进行配电工作。
②当我们要进行配电的工作时，应该先断开外接电源，以达到绝缘的效果。如果只是断开总开关，进线端到总开关之间的线路带电
③若要接电源时应该用适当的电缆来连接,确定我们所用的电线是适用的。
④机床安装好连接电源时,请务必将保护接地线连接到机床电气箱的保护接地专用接点!
⑤机床需检修时，请务必切断外接电源开关，在停止位置锁好并拿走钥匙, 以保证人身和设备安全!

2.1 replacing band saw blade

A Release the emergency stop.。
B Press the lifting switch of the saw frame to lift the saw bow.
C Open the left and right protective covers.
D Loosen tensioning device
E Take out the band saw blade between the guide head pliers.
F Take out the old band saw blade
G Place the new band saw blade on the two saw wheels.
H Put the saw band into the guide vane of the guide head.
I Place the back of the blade against the wheel edge of the driving wheel.
J Adjust tension device to tension the saw belt.
K Close the protective covers

! Attention

Please wear gloves

2.2 Operating instructions

A Install band saw blade
B Turn on hydraulic pump
C adjust the distance between the two guide arms to make the width slightly larger than the workpiece.
D saw frame rises
ELoosen the vise to greater than the width of the workpiece。
F Working objects are placed on the machine table
G Vise clamp
H Press the operation button, and the cooling water will spray out from the water gun on the right of the left guide arm and the copper pipe at the lower part of the driving wheel . A djust the flow of cooling water appropriately.
I Adjust the stepless speed when feed

! Attention

• When using a new saw band, it is necessary to run in the saw band first to ensure the service life of the saw band。
• After the completion of daily work , remove the material, lower the saw bow to the lowest position, and then loosen the saw band.

3.1 Daily maintenance

Before operating the machine, check the work according to the following procedures:

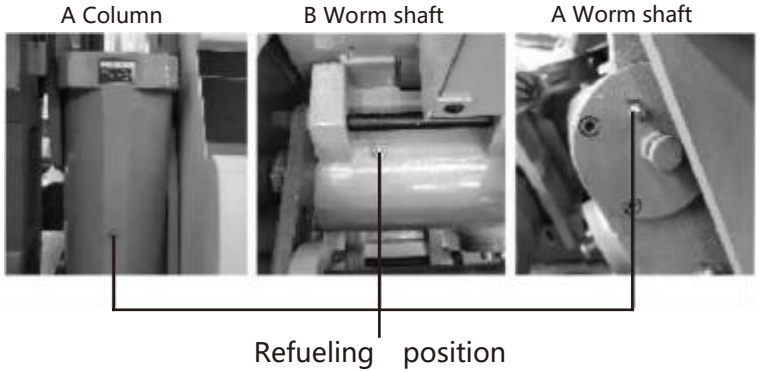
1 Check whether the hydraulic oil quantity exceeds the sieve. If necessary, add an appropriate amount of hydraulic oil.

2 Check the coolant, and add coolant appropriately if necessary

3 Check whether the saw band is located between the left and right saw band wheels and the front and rear tungsten alloy plates

3.1 Daily maintenance

Complete the following maintenance procedures, add proper amount of butter to the parts:



3.3Maintenance every six months

Replace gear oil

Type of gear oil:L-CKC220

3.4 Annual maintenance

Replace hydraulic oil

Type of hydraulic oil: L-HM46

! Warning

The first gear oil change must be carried out for the new machine after the first 240 working hours or one month.

The second replacement is after 720 working hours or three months

T hen, replace it every 1440 service hours or 6 months.

3.5 lubrication system

No	Part	Way	Period	Quantity	Recommend	
1	Worm gear box	unscrew the oil filling cap Fill oil to the oil level	Every six months		L-CKC22O	
2	Hydraulic oil tank	remove the shutter fill the oil until the sieve is completely immersed in oil.	Every six months	40L	L-HM46	
3	Driving wheel axle	Butter gun	Every six months		Grease	
4	Coolant tank	Add cold water	Add as needed	40L	5-8% saponification solution, the rest is tap water	When the coolant cannot be used, the waste coolant shall be drained, cleaned and filled with new coolant for future use.
5	Driven wheel Axle	Butter gun	Weekly		Mobil EPL LEVEL: NLGIL	
6	Guide arm	Butter gun	Weekly		Mobil EPL LEVEL: NLGIL	
7	Tensioning screw	Butter gun	Weekly		Mobil EPL LEVEL: NLGIL	
8	Feeding guide rail	oiler	Weekly		Mobil EPL LEVEL: NLGIL	
9	Any part not painted	Brush	Add as needed		N32 ∽N65 Mechanical oil	

4.1 Selection of tooth

					
Width mm		Diameter φ mm		Thickness mm	
	14/18T	1~5	14/18T	1~3	10/14T
6~7	10/14T	6-10	10/14T	4	8/12T
8^13	8/12T	11-16	8/12T	5-6	6/10T
14~16	6/10T	17-21	6/10T	1-3	5/8T
17*^25	5/8T	22-30	5/8T	10-18	4/6T
26-53	4/6T	31-69	4/6T	19-33	3/4T
54-114	3/4T	70-144	3/4T	>34	2/3T
115-205	2/3T	145-230	2/3T	-	-
206-321	L4/2.5T	231-321	L4/2.5T	-	-
>382	1/1.5T	>382	1/1.5T	-	-

4.1 Selection of tooth

Material	GB	Jis	AISI	DIN	(m/min)	Rate (cm2/min)
mild steel	08	S10C	1010	CIO	50-75	70-80
	15	S15C	1015	CIS	50-75	70-80
Medium carbon steel	45	S45C	1045	C45	50-70	60-70
	55	S55C	1055	Ck55	50-70	50-60
Carbon tool steel	T10	Sk4	W1	C75W	40-50	25-45
	T12	Sk2	W1	C125W	40-50	35-45
	T8Mn	Sk2	W1	C125W	40-50	35-45
Alloy structural steel	40CrNi	SNC236	3140	40NiCr6	30-40	30-40
	40CrMoA	SCM440	4140	42CrMo8	40-50	35-45
	40CrNiMoA	SNCM439	4340	34CrMiMo8	35-45	30-40
high speed steel	W13Cr4V	SKH2	T1	S18-0-1	25-35	20-30
	W18Cr4VCo5	SKH3	T4	S18-1-2-5	20-30	15-25
Cold die alloy tool steel	CrI2MoV	SKD11	D2	X155CrVMol21	25-35	20-25
	CrWMn	SKS2	D7	lOSWCrG	20-30	15-20
	9SiCr	SKS3	DI	105WCr6	25-35	20-25
Hot die alloy tool	3Cr2W8V	SKD5	H21	X30CrV93	35-45	30-35
	4Cr5MoVlSi	SKD61	H13	X40CrMoV51	30-40	25-30
	SCkNIMd	SKT4	Lfi	XSSNiCrMoVfi	25-30	20-25
Alloy spring steel	SOCrVA	SUP10	6150	50CrV4	20-35	25-35
	SOCrMnVA	SUP10	6150	50CrV4	20-35	25-35
Bearing steel	Gcrl5	SUJ2	52100	lOOCi-6	35-45	30-40
stainless steel	Ocrl8Ni9	SUS304	304	X5CrNil810	35-45	20-30
	oCrl7Nil2Mo2	Su316	316	X5CiNiMol712	20-25	15-20
	lCrl7	Su430	430	X6Crl7	30-40	25-35

4.3 Running-in period

■When using a new blade, the cutting speed must be selected according to the material.

For example, when the diameter of 45 # is 200 mm, when sawing the first piece of material, adjust the feed speed to 0.2 times of the normal sawing; When sawing the second piece of material, adjust the feed speed to 0.5 times; When sawing the third piece of material, r will adjust the feed speed to 0.8 times; When sawing the fourth piece of material, it can reach the normal state.

Sawing hard materials shall be adjusted accordingly. If not used in this way, the efficiency of saw band will be seriously affected and the service life of saw band will be shortened.

■ The benefits of correct initial use are:

Long service life of saw band; Fast sawing speed: increase the sawing accuracy.

4.4 Main reasons affecting service life

■ band saw blade fracture: usually caused by excessive tension, sudden change at the entrance of the guide arm, etc

Fracture due to part fatigue:

. Band saw blade chipping and offset saw: generally due to improper selection of cutting conditions, such as excessive feed;

■ Vibration of the sawing machine may also cause tooth breakage of the saw belt:

■ The back of the workpiece contains impurities, which causes the saw band to bump into hard points during the cutting process, resulting in tooth collapse,

4.5 Selection of speed and cutting rate

JB/T4318.4-2002 test

■test piece #45 diameter 150mm, cutting speed < 70m/min

■Cutting rate (productivity) is 80cm2/min

■ Select appropriate saw band speed and cutting rate according to the material of the working object

■Cutting rate (cm2/min)=workpiece area (cm2)/cutting time (min)

after the saw belt speed is selected, adjust the flow adjustment knob on the operation panel to make the saw bow cut at a proper speed and cut the workpiece at a proper time

Chapter V Main Structure and Related Parts List of Sawing Machine

5.1 Structure description

The machine uses mechanical transmission to drive the saw blade to rotate, and hydraulic transmission to make the saw frame lift and clamp, and complete the whole sawing process through electrical control.

(1) Body and workbench

It is a multi-box structure integrating oil tank, water tank and electric box. The base is welded with high-quality steel plate. The worktable is a high grade casting, which is fastened on the base to carry the work of the workpiece and install other parts.

(2) Saw frame

The saw frame is a steel plate weldment. The saw frame is installed on the sliding sleeve and moves up and down along the column driven by the lifting cylinder. The driving gear rotates under the drive of the worm gear box. The guide beam is installed on the saw frame, and the left and right guide arms are suspended on the guide beam. Its guide bearing and carbide guide block ensure the stability and accuracy of the saw blade movement.

(3) Worm gear box

Located at the back of the saw frame, the motor, pulley and belt directly drive the pulley to rotate. By changing the position of the belt between the belt grooves, the four-speed saw belt speed can be obtained to meet the sawing of different materials. Stop the machine before shifting gears.

(4)Column

The main column is welded and grinded from 45 # seamless steel pipe. The outer surface is coated with wear-resistant chrome plating. The column sleeve is HT200 casting with oil-bearing wear-resistant sleeve inside. The auxiliary column is installed on the left side of the machine tool. The casting is used to balance the lifting motion of the saw frame

(5) Workpiece clamping

The hydraulic oil cylinder is used to drive the vise to clamp, and the stroke of the oil cylinder is 370mm.

A group of upper pressure oil cylinders are set above the jaw, which can be used for bundling sawing.

(6) Feeding device

The feed adopts the forward feed method of vise clamping. The roller is a free roller. The clamping vise moves on the circular guide rail under the action of the hydraulic cylinder. The feed length is detected by grating. The single feed stroke is 435 mm, and the feed can be repeated for many times.

(7) Hydraulic system

It is composed of sealed independent hydraulic station, pipeline, throttle valve, oil cylinder, etc. The hydraulic station is located on the left side of the machine body, mainly responsible for the lifting and lowering of the saw frame, the clamping and loosening of the front vise, the clamping and loosening of the rear vise, and the feeding and returning of the workpiece. In order to facilitate the operation of the throttle valve on the control box, the lowering speed of the saw frame can be controlled by operating the throttle valve.

(8) Electrical control system

The control box is on the left side of the machine tool, the operation panel is installed on the control box, and the control box is installed with transformers, contactors, thermal overload relays, etc. In order to ensure safety, interlock is set between each action. Specifically, the vice is not clamped, and the main drive cannot work; The vise shall not be loosened during sawing; All actions are controlled by PLC programmable controller, touch screen and buttons are used, and multiple groups of different feeding values and times can be set at one time. The feeding values and times can be directly displayed on the touch screen.

(9) coolant system

It is composed of water tank, water pump, pipeline, valve, water nozzle, etc., which is used to fully cool and lubricate the saw blade, to improve the sawing efficiency and accuracy, extend the service life of the saw blade, and at the same time, remove the sawdust on the sawtooth to ensure the normal operation of the sawtooth.

(10) Blade tension device

Saw blade tensioning and band breaking protection device: the tensioning wheel is installed on the left end of the saw frame. After the saw blade is installed on the driving wheel and tensioning wheel, the saw band is tensioned or loosened by the hand screw rod. The tensioning force is adjusted according to the torque wrench. A proximity switch is installed at the rear of the tensioning wheel. When the saw belt is broken or overloaded, the proximity switch cannot receive the signal of the saw wheel, and the machine tool automatically stops to ensure the safety of the equipment and personnel

(11) Chip convayor

In order to facilitate customers to clean up the chips and reduce the working intensity of workers, a spiral hydraulic chip removal machine is installed at the right end of the base.

(12) No material detection device

A photoelectric switch is installed behind the fixed vise of the feeding vise seat. When the material is sawed to the last section, the photoelectric switch cannot detect the material, indicating the need to reload. At this time, the machine tool stops working, and the touch screen prompts that there is no material. The height of the photoelectric switch needs to be adjusted according to the size of the material.

(13) Bundle clmap

In order to facilitate the bunching sawing of small size bars, the upper pressure cylinder is installed above the main vise and feeding vise, and its action is consistent with the horizontal clamping action of the relative vise, so as to realize the bunching sawing of small size materials.

(14)CNC

The stepper motor is used to control the speed regulating valve of the saw blade feed. At the same time, the load of the saw blade is read in real time through the communication between the programmable control and the main motor frequency converter. When sawing round bars, empty tubes and profiles, the load of the saw blade at different cutting positions will change; The intelligent speed control system automatically adjusts the feed speed control valve according to the real-time load to ensure that the load of the saw blade is stable at an optimal value, thus improving the sawing efficiency and the service life of the saw blade.

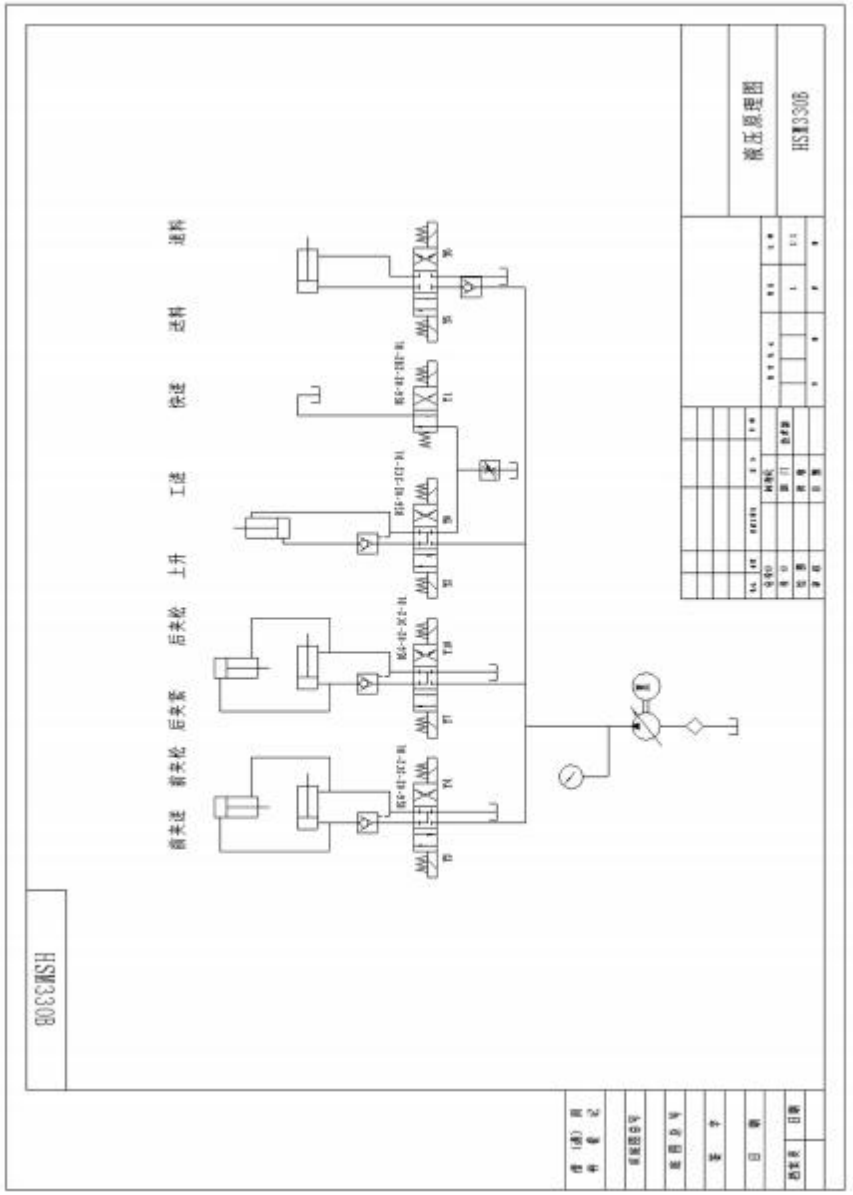
5.2Hydraulic transmission system

The hydraulic circuit composed of hydraulic pump, valve, oil cylinder, oil tank, pipeline and other components completes the lifting of saw frame, clamping of work and feeding of workpiece under electrical control. The stepless adjustment of the feed speed of the saw frame can be realized through the throttle valve, thus ensuring the need for sawing different materials.

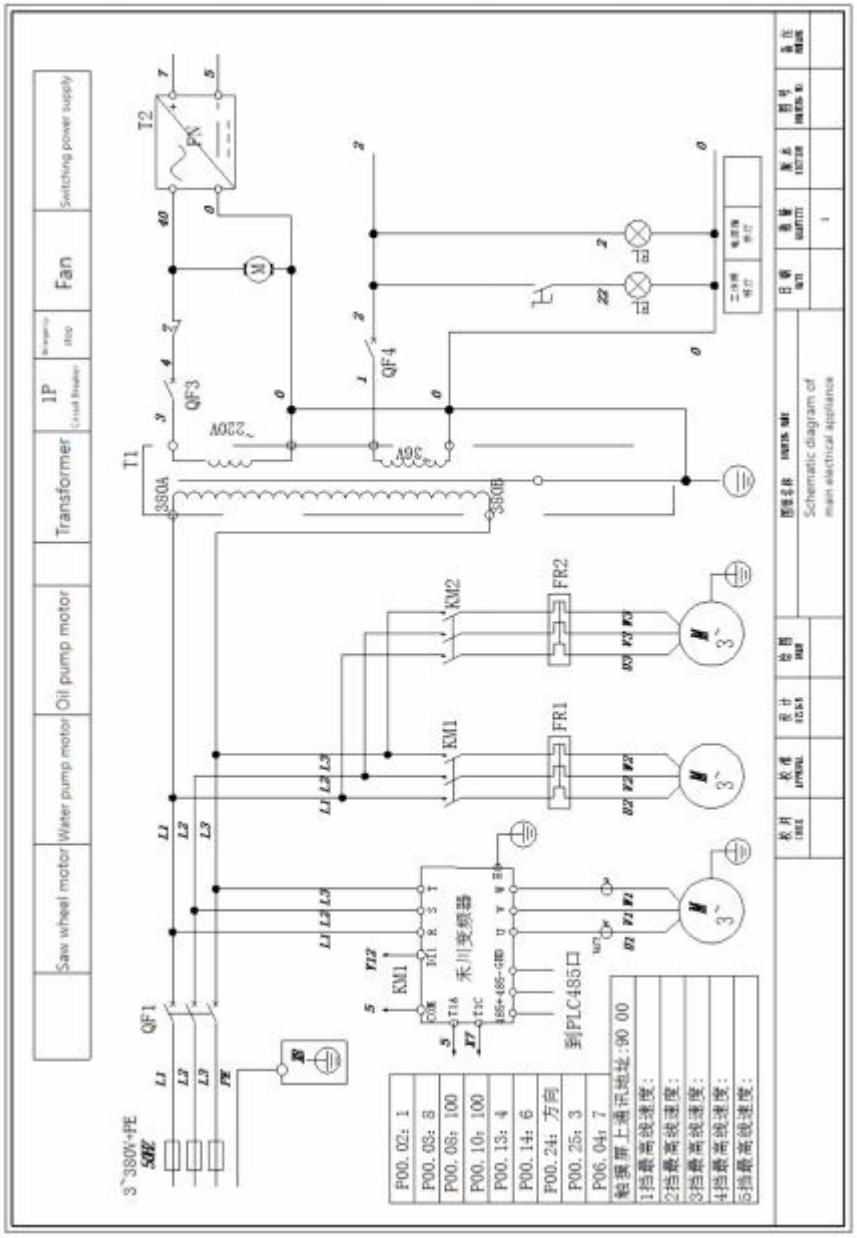
(1)List of hydraulic parts

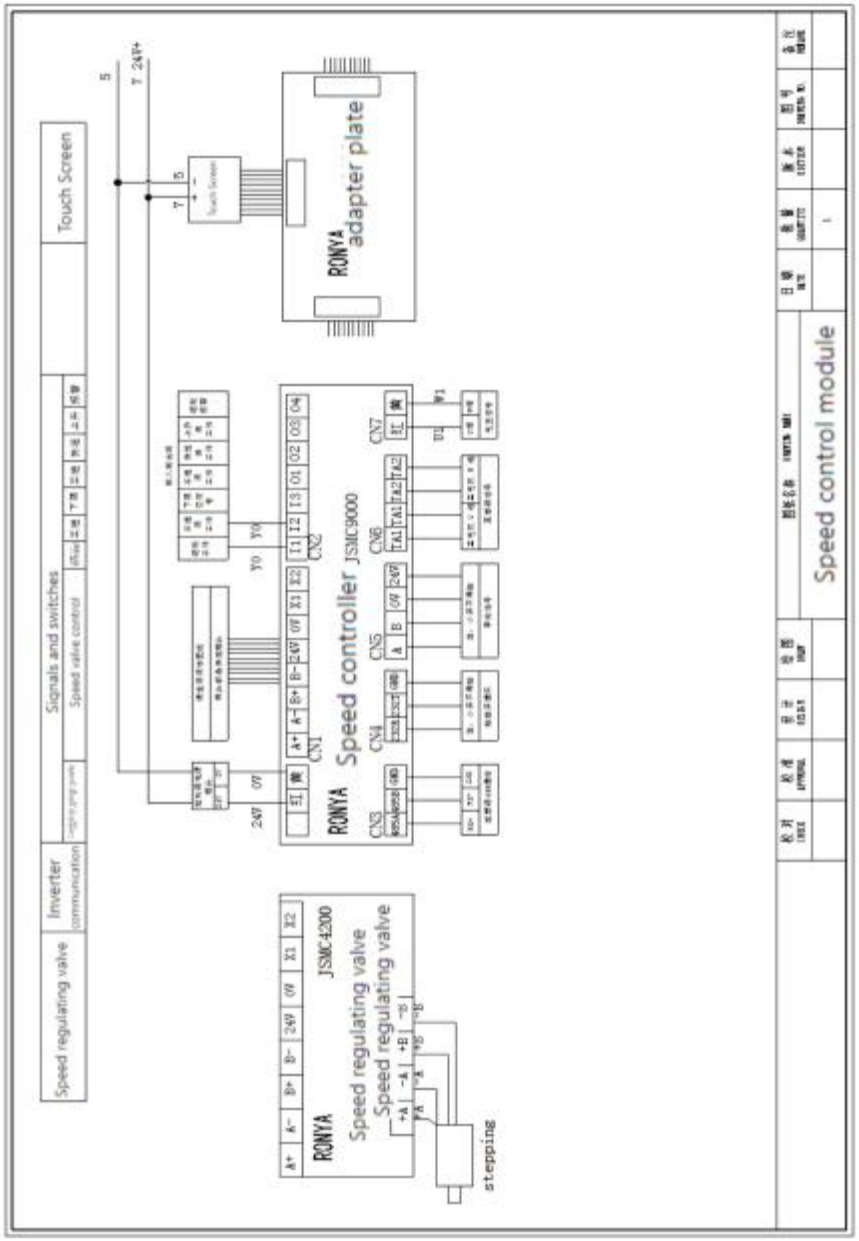
No	Name	Model	Quantity
1	Oil pump	VP-15F-70	1
2	One-way speed control valve	PZSV-01B	1
3	Three-position four-way solenoid valve	02-3C2	4
4	Two-position four-way solenoid valve	02-2B2	1
5	pressure gage	10MPa	2
6	filter screen	HY37-25	1
7	Hose joint	Dia 10	1
8	Lifting cylinder	80X390	1
9	Front clamping cylinder	70X370	1
10	Rear clamping cylinder	80X360	1
11	Feeding cylinder	80X440	1
12	Inching cylinder	90X6	2
13	Up clamp cylinder	63X50	2

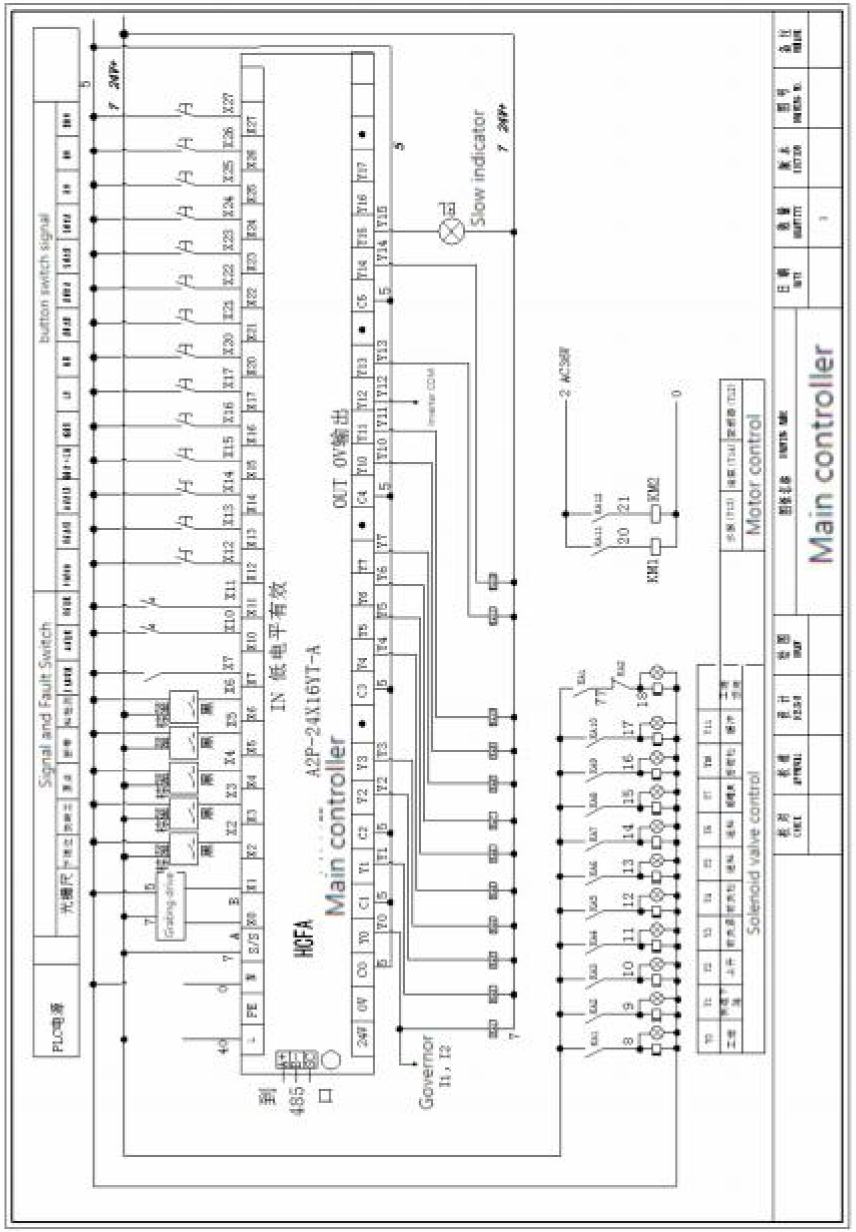
(2)schematic diagram

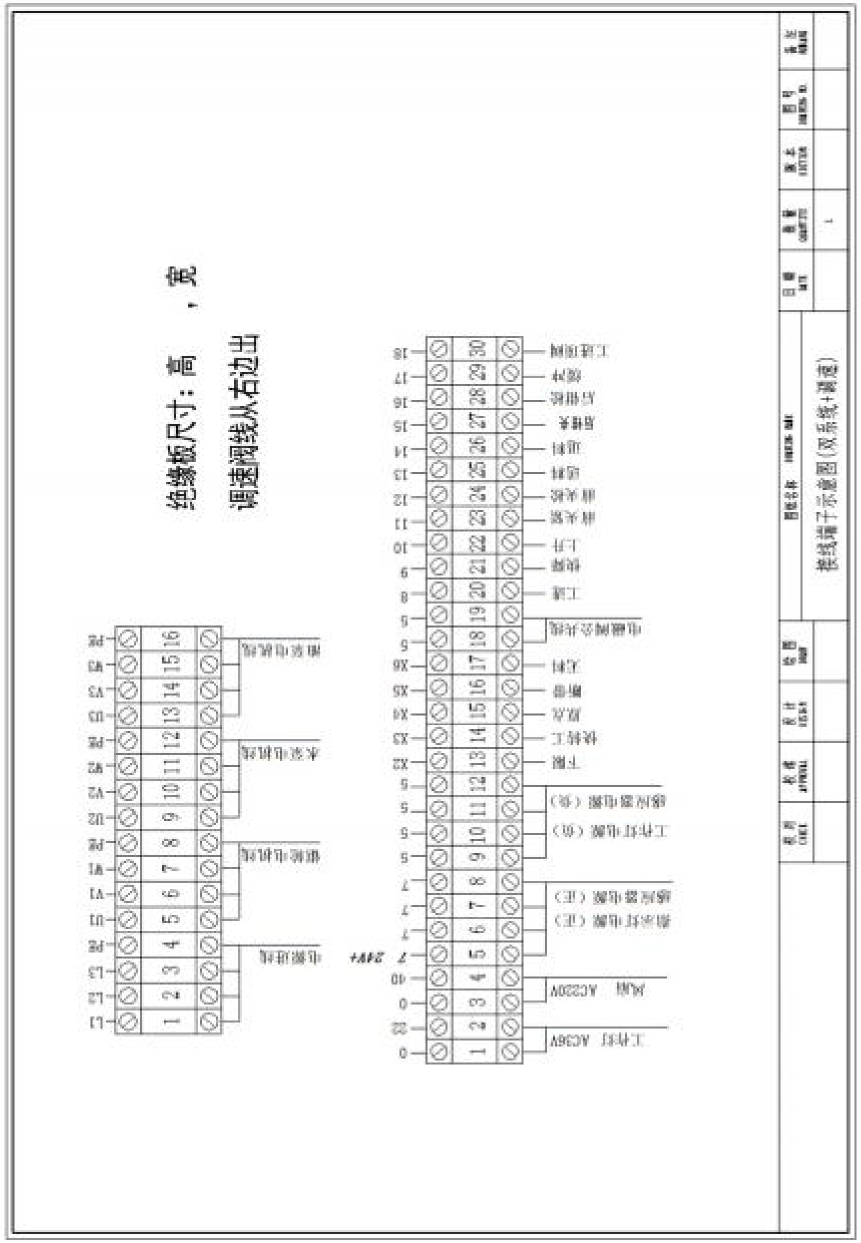


(1)Circuit diagram






Signal and Fault Switch
button switch signal
Main controller
A2P-24X16YT-A
HOFA
Slow indicator
Governor
Motor control
Solenoid valve control
Main controller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调速阀线从右边出

(2)Main electrical components

Please refer to the operation manual for the operation of the man-machine interface.

No	Name	Model	Quantity
1	Miniature circuit breaker	NXB-63 3P 20A	1
2	Miniature circuit breaker	NXB-63 1P 6A	2
3	AC contactor	NXC-12 AC36V	2
4	PLC	HCA2P-24X16Y	1
5	Touch screen + network module	FE6070C+FLINK-4G	1
6	Small relay	Schneider RXM2LB2BD+Base	12
7	Ratings	WTB5-0600	1
8	Inverter	E380-3.7G3BE-01	1
9	Switching power supply	LRS-150-24	1
10	Tianzheng transformer	BK250	1
11	Speed regulating valve	PZSV-01B	1
12	Pulse handwheel	SBD-24E-100B	1

5.4 mechanical transmission system

1. The main transmission of this machine tool adopts worm gear and worm transmission, and its transmission route is as follows:
Motor-driving pulley-driven pulley-worm-worm gear-driving wheel-saw blade-passive wheel
By changing the position of the belt between the belt grooves, many different speeds can be obtained. In order to meet the sawing needs of different specifications and different materials.

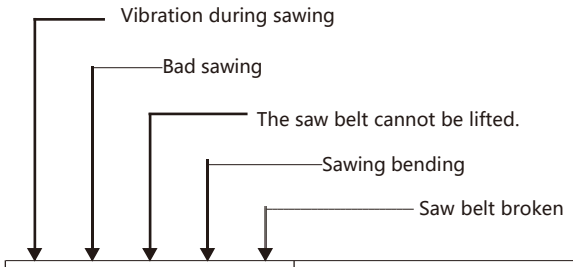
2 bearing schedule

List of 360B Bearings and Sealing Seals

No	Name	Model	Specifications	Quantity	Installation site
1	Deep groove ball bearing	6200-2Z	10x30x9	4	Guide head
2	Deep groove ball bearing	6201-2Z	24x40x17	2	Guide head
3	Deep groove ball bearing	6205-2Z	25x52x15	6	Feeding Shaft
4	Deep groove ball bearing	6203-2Z	40x17x12	2	Chip cleaning cylinder
5	Single row tapered roller bearing	30209	85X45X20.25	2	Driven wheel
6	Single row tapered roller bearing	30213	120x65x23	1	Worm gear box
7	Cylindrical roller bearing	NJ213	120X65X23	1	Worm gear box
8	Single row cone pair bearing	30307	80X35X21	1	Worm gear box
9	Single row tapered roller bearing	30211	100X55X21	1	Worm gear box
10	Single row tapered roller bearing	32208	80x40x23	1	Worm gear box
11	Skeleton oil seal	85X65X10		1	Worm gear box
12	Skeleton oil seal	35X52X10		1	Worm gear box

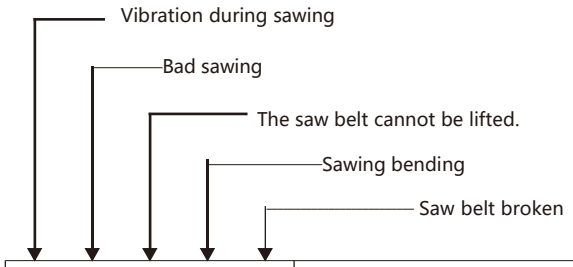
Chapter VI Troubleshooting

Form 1



Fault					Cause	Exclusion
●	●	●			Sawing pressure is too low	Adjust the pressure knob to reduce the sawing pressure.
●	●	●	●	●	The saw belt stopped running.	Restart the motor
■		●	■	●	Sawing speed is too high	Reduce saw belt speed
●	●	●	●		Sawing speed is too low	Increase saw belt speed
●		●	●	●	The saw belt descends too fast.	Adjust the control knob to reduce the speed.
●	●				The saw belt descends too slowly.	Adjust the control knob to speed up
●		●	●		Saw band tension is too low	Adjust to proper tension
■		●	■	●	The copper wire brush is not in the correct position.	Adjust the position or replace the copper wire brush.
●		●	●		WISCO's improper clamping saw belt	Check and call correction
●	●	●	●	●	Improper clamping of workpieces	Re-clamp
●	●	●	●		The surface of the workpiece is too hard	Softening the sawing surface
	●	●			The workpiece is not annealed	Replace annealed workpieces
■		●	■	●	Insufficient or deteriorated cutting fluid	Add or replace coolant
●		●	●	●	Being close to other machines causes vibrations.	Vibration prevention

Form 2



Fault					Cause	Exclusion
	●	●	●		The cooling water level is too low	Increase coolant to specified height
●		●	●		There is air in the cylinder.	Release the air
■	●	●	■	●	Use inappropriate saw belts	Replace the appropriate saw band
●	●	●	●	●	Excessive voltage variation	Fixed voltage
●		●	●		The left guide arm is too far away from the workpiece.	Close range
●		●	●	●	Guide arm lock too tight	Appropriate locking
		●		●	Iron filings are blue or purple	Reduce cutting rate
■		●		●	Iron filings accumulate on tungsten steel sheet	Clean it up
●	●	●	●	●	The upper tungsten steel sheet is worn or damaged.	Replacement
●			●		Inappropriate contact of saw belt on tungsten steel sheet	Adjust to proper contact
●		●	●		Improper arrangement of sawing workpieces	Rearrange
●		●		●	The edge of the saw belt touches the main and passive wheels	Reserve proper clearance
■	●	●			The surface of the workpiece is uneven.	Use other methods to make the surface flat
●	●	●	●		Sawband serration damage	Replace the saw belt
●		●	●		Sawing pressure is too high	Adjust the pressure knob to reduce the sawing pressure.

Form 3

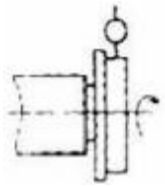
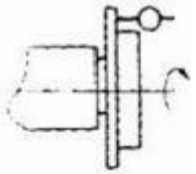
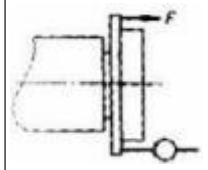
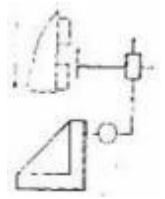
No.	Alarm content	Cause	Solution
1	The current processing task has been completed, please re-enter!		Re-enter the data
2	The oil pump is not started, please start the oil pump first!		Start the oil pump newly and perform other operations.
3	The saw blade is broken or slipping, please check!	1. The saw blade is not tensioned, stuck or the saw blade is broken 2. The broken belt detection sensor is broken	1. Re-check the saw blade, tension or replace the saw blade 2. Replace the sensor
4	Long time unmanned operation, system shutdown!		Turn the knob to "automatic gear" before proceeding.
5	The current state is manual, clear first"Automatic gear "!	The external swing knob does not select the automatic mode	The operation of returning to the origin or starting automatically
6	No material detection switch action, please reload the material!	1. Material sawing is completed 2. No material detection sensor is broken	1. Reload the material 2. Replace the sensor
7	The saw wheel motor is overloaded, please check!	1. Excessive sawing speed and excessive load lead to thermal relay protection action 2. Damage to Thermal Relay	1. Reduce the feed speed and select the appropriate linear speed gear 2. Replace the thermal relay
8	Oil pump motor thermal overload, please check!	1, the oil pump motor overloaded, thermal relay protection action 2. Damage to Thermal Relay	1, Check whether the oil pump motor is overloaded and whether the pressure is too high. 2. Replace the thermal relay
9	Processing data input error!	Incorrect input of processing size or processing quantity. The processing data group is not selected.	The input of processing size and processing quantity shall not be 0.
10	Before working automatically, clear first back to the origin!		
11	Water pump motor thermal overload, please check!	1,water pump motor overload, thermal relay protection action 2. Damage to Thermal Relay	1, Check whether the water pump motor is overloaded, the water pump motor is burned, etc. 2. Replace the thermal relay
12	Saw frame rise time overtime alarm!	1, fast forward transfer switch failure, back to the origin is not in place 2, the fast forward transfer switch failure, back to the origin is not in place	Check and replace the corresponding switch
13	Rear jaw back to the origin timeout alarm!	Origin switch failure	Check and replace the corresponding switch

Packing list

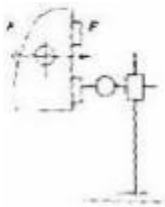
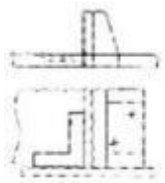
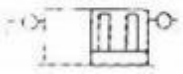
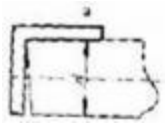
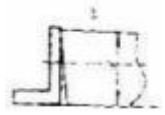
Name	Specifications	Unit	Quantity
Phillips screwdriver		Put	1
Flat-blade screwdriver		Put	1
Allen wrench	(4,5,6,8,10,12,14mm)	Set	1
Open-ended wrench	17-19	Put	1
adjustable wrench	10 inches	Put	1
Machine-attached saw blade	4400*34*1.1	Article	1
Tool bag		A	1
Instructions for Use		share	1
Certificate of Conformity		share	1
Warranty card		share	1
Attached rack		Set	1
Band sawing machine	360BCNC	Taiwan	1

Chapter VI Troubleshooting

精度检验记录单 检验方法参照 JB/T4318.3—2002
RecordSheetofAccuracyInspection ForinspectionmethodpleaserefertoJB/T4318.3-2002

序号 No	简 图 Schematic diagram	检验项目 nspection items	允 差 Allowable deviation			
		锯轮的径向跳动 Radial runout of sawwhee	最大锯削直径 Maximum sawing diameter			
			≤250	>250~400	>400~630	>630~1000
		主锯轮 Driving saw wheel	0.10	0.15	0.20	0.25
		实 测 Actual measurement				
		从锯轮 Droved saw wheel	0.10	0.15	0.20	0.25
		实 测 Actual measurement				
		锯轮的径向跳动 Radial runout of sawwhee	最大锯削直径 Maximum sawing diameter			
			≤250	>250~400	>400~630	>630~1000
		主锯轮 Driving saw wheel	0.20	0.30	0.40	0.50
		实 测 Actual measurement				
		从锯轮 Droved saw wheel	0.20	0.30	0.40	0.50
		实 测 Actual measurement				
		锯轮与轴的综合间隙引起的话轮位置变化(仅适用于最大锯削直径小于或等于500mm的机床) Displacement of saw wheels caused by comprehensive dearance batween saw wheel and ade (Only for the machina tool whose maximum sawing diameter is less than or equal to 500mm)	加力FN Apply the lorce of FN		100	
			主锯轮 Driving saw wheel		0.05	
			实 测 Actual measurement			
			从锯轮 Droved saw wheel		0.30	
			实 测 Actual measurement			
		锯架向下运动对试件理想诞断面的平行度 Parallelism of dowrard movement of saw log to ideal sawn surface of test piece	在100测量长度上为0.10 It is 0.10 at the measurement length of 100			
			实测: Actual measurement			

精度检验记录单 检验方法参照 JB/T4318.3—2002
RecordSheetofAccuracyInspection ForinspectionmethodpleaserefertoJB/T4318.3-2002

序号 No	简 图 Schematic diagram	检验项目 nspection items	允 差 Allowable deviation			
		锯架横向位置变化(仅适用于最大锯削直径小于或等于400mm铰链式结构的机床) Change in horizontal posillon ot the saw log (Just apply to the machine tool with chain stnucture in which the maximum sawing diameler is less then or equalM400mm)	加力F 100N 0.30 Stress application F 100N 0.30			
			实 测 Actual measurement			
		工作虎钳的固定面对带锯条侧面的垂直度 vertical degree of the flixed Surface to the band—saw prolile of the worioing vice	0.10/100			
			实 测 Actual measurement			
		送料机构的重复定位精度：a向前b返回(仅适用于自动型和数控卧式带锯床) Papositioning accuracyof the feed mechanismc a.Fonwad b.Back (just apply to aulomatic and numercal control horiaonta band sawing machine)	a 0.10 b0.20			
			实 测 Actual measurement			
		a.锯断件端面对其竖线的垂直度 a.Vertical degree of the forging face to its werticel Ine	允差 mm			
			最大锯削直径 Maximum sawing diameter	250	>250~400	>400~1000
		b.锯断件端面对其竖线的垂直度 b.Vertical degree of the forging face to Its vertical Ine	d(mm)	100	150	200
			/	0.40/100	0.50/100	0.60/100
			允差 mm			
	注：检验时允许选用其中一种方法。 Notes:In lest,alow to select one method ameng them					

Instructions for Use of New Intelligent Speed Regulation System

1 Master screen

LOGO button to switch;
After the system is started, follow the first step, second step, third step, and fourth steps prompted on the screen to perform corresponding operations.
Main data description: 1. Working speed: the current rate of decline of the saw frame per minute;

2. Real-time sawing force: sawing torque of the current system;

3. Target sawing force: torque set by the operator during variable speed sawing

4. Linear speed: saw belt speed;

5. Cutting timing: statistics of the time from the beginning of feeding to the end of sawing for each workpiece;

6. Production beat: statistics of single cycle time for workpiece cutting.

The intelligent work operation flow is as follows

1. Step 1: Click the "Oil Pump Start" button to start the oil pump, click the "Return to Origin" button, wait for the sawing machine to return to the origin in place, and display "Origin Satisfied ".

2. Step 2: If there is a saw belt tensioning function, you need to go to "Main Control Page 2" and click the "Saw Blade Tensioning" button.

3. Step 3: Click the "Sawing Settings" button to enter the following interface to set cutting parameters

(1) Click to select the cutting method: constant speed or variable speed;

(2) Click to select "Material" and set the default "linear speed", "initial working speed" and "maximum working speed" by setting this option; You can also manually fine-tune "linear speed", "initial working speed" and "maximum working speed" according to the actual situation ";

(3)Click the button to select "material shape", and set this option to set the default "speed control valve acceleration" and "speed control valve deceleration-" to determine the sensitivity and response speed of the speed control valve; You can also manually fine-tune "speed control valve acceleration" and "speed control valve deceleration-" according to the actual situation -";

(4)After completing the above 3 steps, the sawing setting is completed. Click to enter the data setting interface and set the cutting length and other information; Or click to return to the "automatic mode" interface;

Instructions for Use of New Intelligent Speed Regulation System

Step 4: Click to perform automatic work

3. Intelligent workflow operation completed

4. Special function description

Click Line-Speed to enter the "material linear speed" setting interface

As shown in the following figure, you can set the linear speed corresponding to all materials and set the password to 12345678

(1) Special instructions: test saw, this function is used to determine the target sawing force

(1) The test saw function is used to obtain the appropriate target sawing force.

(2) Click Get Load to enter the saw test interface as shown in the following figure

(1) manually operate the sawing machine and adjust it to the appropriate working speed to try to cut once.

(2) when cutting to the maximum cross-sectional area (I .e. the maximum load position), click Get Load to obtain the current actual sawing force as the target sawing force, wait for the cutting to be completed and return

(2) Special instructions: working speed setting and speed control valve acceleration and deceleration setting

(1) Click Mild Steel the "Sawing Setting" screen to pop up the "Work Advance Speed" comparison table setting interface. As shown above, press the corresponding material button for 0.5 seconds to automatically set the "Initial Work Advance Speed" and "Maximum Work Advance Speed" parameters

(2) The interface can manually set the "initial working speed" and "maximum working speed" of each material, and set the password to "12345678". This parameter is only valid in variable speed operation, and there is no restriction in constant speed operation.

Instructions for Use of New Intelligent Speed Regulation System

1. Manual mode selection mode: A. If the panel knob is switched to "Manual", it will be forced to manual mode.

B. If the panel knob is switched to "Auto", you need to click the "Manual Confirm" button to enter the manual mode.

2. In manual mode, when the front pliers are released, the saw wheel is in jog mode. After the front pliers are clamped, click "Work Start", and the saw wheel motor will run continuously.

3. When the saw wheel is not started, only the quick-drop button can be pushed and the quick-drop button can be pushed. At this time, clicking the work-in button is invalid. After the saw wheel is started, click the work-in button to drop quickly and switch to work-in after contacting the material.

4. After clicking the "buffer" button, the feeding and returning are carried out slowly.

II Parameter setting screen

The parameter setting screen can set various parameters required by the system when running:

Description of main parameters: 1. Clamping time and release time of front pliers;

2. Clamping time and release time of the rear pliers;

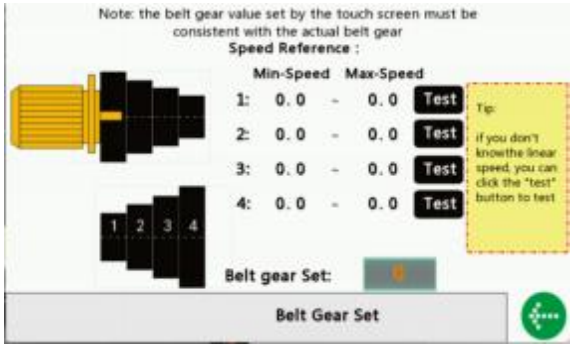
3. Material-free detection function: used to turn on and off the material-free detection function;

Important function description: belt gear

1. The parameter setting of the belt gear is extremely important, which directly affects whether the linear speed is correct

2. In-plant debugging can test the line speed of each gear; Or directly enter the line speed of each gear in the model parameters.

3. After changing the belt gear, the customer must set the corresponding belt gear in the interface, otherwise it will cause linear speed error and abnormal equipment operation.



III Advanced parameter screen

In the parameter setting screen, click 

and the password is "12345678" to enter the advanced parameter setting screen.

Description of main parameters:

1. Compensation for multiple feeding:

The second compensation eliminates the error caused by the inertia of the first feeding, generally -0.2 ~-0.3mm;

The third compensation eliminates the error caused by the inertia of the first and second feeding, generally -0.4 ~-0.6mm;

The fourth compensation eliminates the error caused by the inertia of the first, second and third feeding, generally -0.6 ~-0.9mm;

2. Saw wheel holding function: Select this function, and the saw wheel will not stop after sawing is completed during automatic work.

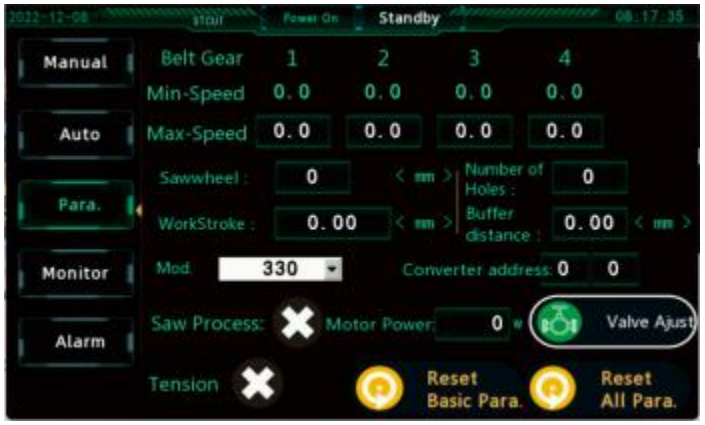
3. Automatic stop of oil pump: Select this function. After sawing is completed, the unmanned operating system will automatically stop and turn off the oil pump motor within the set time. Customers can set the time according to their actual needs.

4. Quick drop lever function: This option is used to distinguish whether there is a quick drop model or not; The customer sets the fast rewind delay time according to actual needs, and the first fast rewind time.

5. Broken belt detection function: used to turn on and off the broken belt detection function; Broken belt detection time: The broken belt detection switch cannot detect the maximum time for the driven wheel to rotate. If the set time is exceeded, the system will alarm

IV Model parameter screen

In the advanced parameter setting screen, click the "Model Parameters" button to enter the model parameter setting screen.



1. Feeding cylinder stroke: set the maximum stroke of single feeding, the default is 430mm

2. Positioning and buffering distance: the buffering and returning distance when returning and positioning size, with a default of 6mm

3. Motor power setting: the default is 4000W according to the motor nameplate setting

4. Saw wheel diameter: 420mm by default

5. Frequency Address of Inverter: Hechuan Inverter Set 90 00

The above parameters have been set up at the factory. Customers should not easily modify the above parameters to avoid abnormal operation of the equipment;

6. Process selection in saw: the change option is used to distinguish between the middle numerical control of saw and the conventional numerical control;

7, hydraulic tension: choose whether to use solenoid valve control hydraulic tension;

8. Important function description: valve calibration

5. This function is mainly used to calibrate the speed control valve to match this equipment.

Instructions for Use of New Intelligent Speed Regulation System

V Standby

VI Setting

Click the Setting to enter the man-machine setting screen.

2. Press the Calibration for a long time to enter the calibration procedure of the touch screen. When the touch screen is not very sensitive, it can be calibrated

3. Time setting: When the time is not on time, the customer can reset the time. You need to press the to modify the time.

4. Brightness adjustment: The brightness of the screen can be adjusted through the progress bar

5. Click English to switch between Chinese and English

IV Alarm troubleshooting

No.	Alarm content	Cause	Solution
1	The current processing task has been completed, please re-enter!		Re-enter data
2	The oil pump is not started, please start the oil pump first!		Start the oil pump newly and perform other operations.
3	The saw blade is broken or slipping, please check!	1.The saw blade is not tightened, stuck or the saw blade is broken. 2.Broken band detection sensor is broken	1.Re-check the saw blade, tighten or replace the saw blade 2.Replace the sensor
4	Long time unmanned operation, system shutdown!		
5	The current state is manual, please call "automatic gear" first "!	The external selector knob does not select automatic mode	Turn the knob to "automatic gear" and then return to the origin or start automatically.
6	No material detection switch action, please reload the material!	1.Material sawing completed 2.No material detection sensor is broken	1. Reload material 2. Replace the sensor
7	The saw wheel motor is overloaded, please check!	1.Sawing speed is too fast, load is too large, inverter exceeds maximum torque alarm 2.When the sawing torque reaches 140%, the intelligent speed control driver will give an alarm.	Reduce the feed speed and select the appropriate linear speed gear.
8	Oil pump motor thermal overload, please check!	1、Oil pump motor overload, thermal relay protection action 2、Thermal relay amage	1, check whether the oil pump motor is overloaded, whether the pressure is too high, etc. 1、Replace the thermal relay

No.	Alarm content	Cause	Solution
9	Processing data input error!	1, processing size or processing quantity input error, processing data group is not selected	The input of processing size and processing quantity shall not be 0
10	Before working automatically, please return to the origin first!		
11	Water pump motor thermal overload, please check!	1, water pump motor overload, thermal relay protection action 2. Thermal relay is damaged	1, check whether the pump motor is overloaded, pump motor burned, etc. 2、Replace the thermal relay
12	The speed control valve fails to return to zero, please click to return to zero!	1、The voltage is too low, causing the speed control valve driver to return to zero. 2、The speed control valve is stuck and the speed control valve fails to return to zero.	1、Properly increase the switching power supply voltage 2、Replace the speed control valve
13	The saw blade is not tensioned, please tighten the saw blade before starting!		
14	Saw frame rise time overtime alarm!	1、Fast forward transfer switch failure, return to the origin is not in place	Check and replace the corresponding switch
15	Rear jaw back to the origin timeout alarm!	2、Fast forward transfer switch failure, return to the origin is not in place 3、Origin switch failure	Check and replace the corresponding switch