HG3208VR
HYDRAULIC GUILLOTINE

MANUAL

(S960)

QC11Y-8X3200

Hydraulic Guillotine shears

Operation Manual

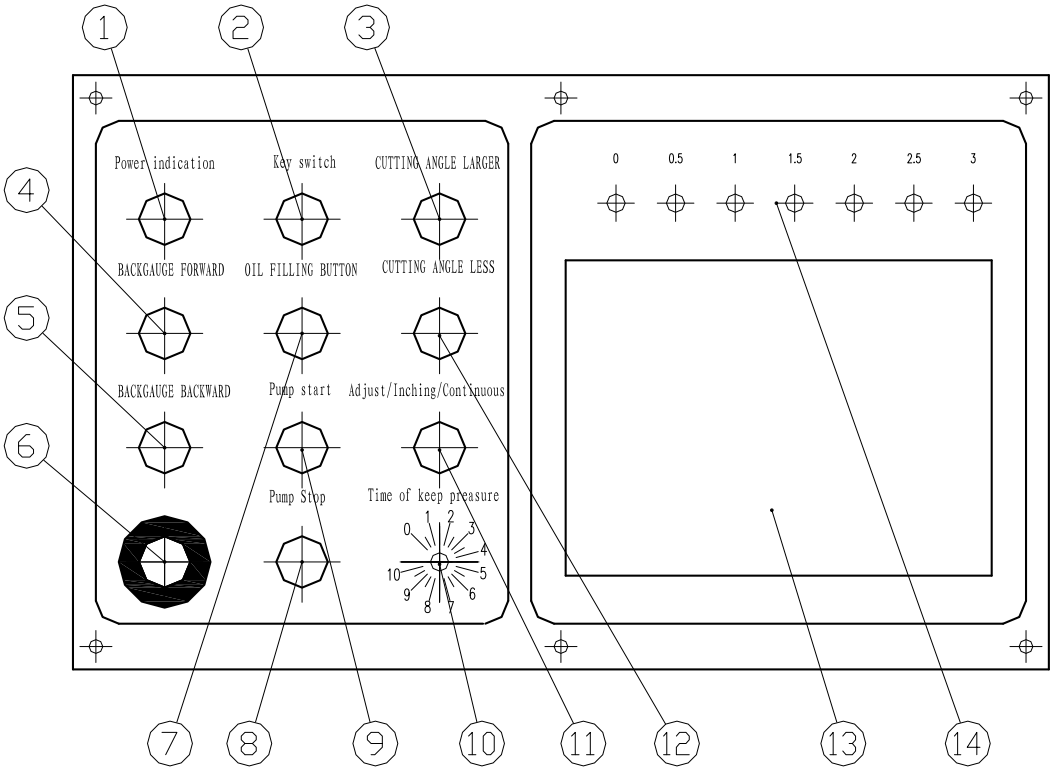
Serial No. : Q709103

Contents

2、Performance Parameters of Machine (table 1)

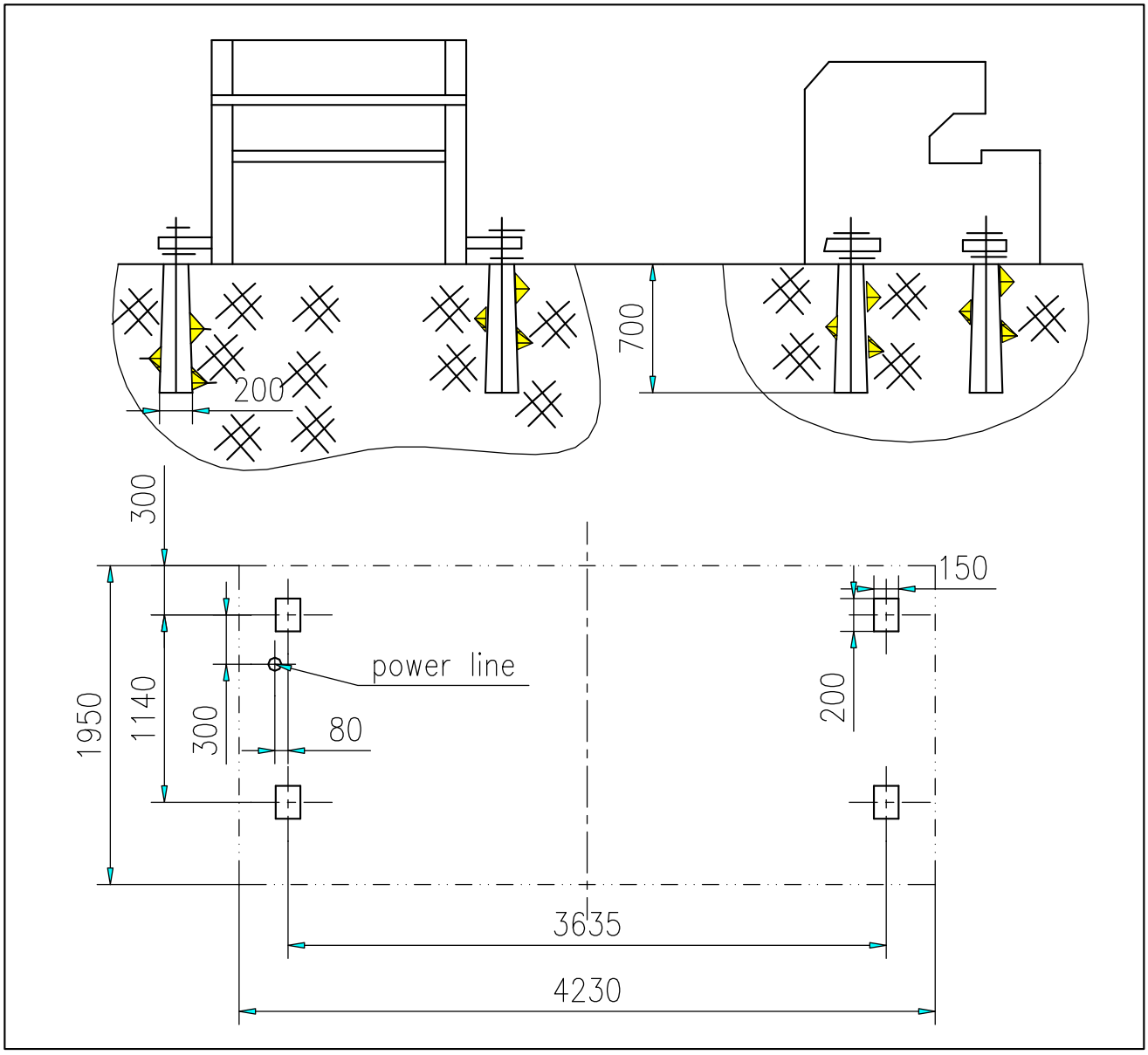
No.	Item		Data	Unit	Notes
1	Max. Cutting Thickness		8	mm	
2	Max. Cutting Width		3200		
3	Shear angle		2	Degree	
4	Stroke times without load		7	Min-1	
5	Upper knife Holder Maximum Travel		140	Mm	
6	Maximum Cutting Force		280	KN	Including the return pressure
7	Maximum Clamping Pressure		280	KN	Vary as per the load
8	Maximum Working Pressure of Hydraulic System		18	MPa	
9	Adjustment Range of Back-gauge		10-1000	mm	
10	Table Height Above Floor		800	mm	
11	Main Motor	Model	Y132M-4B5		
		Power	7.5	kw	
		Speed	1440	R/min	
12	Oil Pump	Model	NT3-G25F		
		Flow	25	ml/r	
		Pressure	31.5	Mpa	
13	Overall Dimensions	Length	3850	mm	
		Width	2200		
		Height	1980		
14	Machine Gross Weight		6800	kg	

3. 7. 1 Panel fig of switchboard (chart 1)



NO.	Function explanation
1	Power indicator
2	Power switch
3	Cutting angle increase
4	Back gauge distance decrease
5	Back gauge distance increase
6	emergency stop
7	Oil filling button
8	Main motor stop
9	Main motor start
10	cutting stroke adjustment
11	Adjusting\single cutting\continuous cutting switch
12	Cutting angle decrease
13	Back gauge value displayer (E10)
14	Cutting angle position indicator

4、Hoisting and Installation



4. 2 Installation of the machine

4.2.1 When installation , remove the balling cover on the worktable , and put the same height pad at the processing side. And put the IM ruler on the pad. And then use the lever meter to adjust vertically and horizontally , the allowance is less than 0.2mm every 1000mm length, the left and right direction should be same. The base depth for machine installation depends on the earth situation (but not less than 500mm.) The earth pouring work is done by twice(pls see the chart). After 15 days from the date of first pouring, put the machine on the base and adjust horizontally and then set the foot screws and adjust the pad iron and then make the second pouring. After 48 hours of that, adjust horizontally and tighten the foot screws.

4.2.2 Before the machine delivery, put the knife beam to bottom dead point and fix up with pad to prohibit accidents; **after installation, pls backout the twice fixed pads at the inner-bottom between left and right boards, or else it will cause mechanism troubles.**

5、Adjustment and Operation of the Machine

5.1 Preparation before the operation

A、Must backout the twice fixed pads at the inner-bottom between left and right boards, or else it will cause mechanism troubles.

B、Clean the oil stains of the machine surface，inspect all bolts are tighten.

C、Fill the lubrication grease .

D、Clean and fill the Model L-HL 46 ordinary hydraulic oil into the oil tank。

E、The machine should be grounded , connect the power supply , the machine uses 415V/50HZ power.

F、Tighten all hydraulic pipe connecting nut.

G、before the delivery of the machine, the various valves have been locked properly and tightly. Pls do not adjust the handwheel freely to avoid abnormal action of the machine and avoid loss.

H、the air pressure of accumulator has been setted to 5~6 MPa before delivery, need not to adjust unless you have special situation

5.2 Run Trial

A、Power on and turn the power switch to “1 ”.

B、Push the motor button , and start the main motor. Inspect the motor(use the same axis with oil pump) and make sure that the motor rotation direction should conform to the oil pump marked direction. If not conformed, pls change the input phase . But do not change the inner connection. When conformed, start main motor.

C、Because the knife beam is on the bottom dead point, pls reset it.

1）Turn the switch on the penal to adjust function

2）Press oil filling button and angle increase button meantime, adjust the filling pressure to 14~16 MPa and keep 2~3 seconds.

3）Loose the angle increase button first, then loose oil filling button, knife beam return.

4）Turn the switch on the penal to cutting function

D、Turn the hand wheel according to the plate thickness and adjust the blade clearance

E、Adjust the back gauge distance according to the plate length.

F、After above action is finished, then Stamp the foot switch and start the cutting.

G、Push the red button “EMERGENCY STOP” when machine is abnormal or when you want to stop the machine.

H、After the machine is tested fine under both no load operation and load operation, then you can make the machine into formal production. If find the machine is abnormal, you will have to correct the problems and then put into production.

5.3 Single cutting

Turn the switch on the penal to single cutting mode, then stamp the foot switch, the knife beam moves down and starts to cut. The cutting is finished when moves to the lower limit SQ3 or when you release the foot switch. After complete the cutting stroke, the machine will automatically moves up until it is up to the upper limit SQ4 . If the plate is not cut off completely, pls do not release the foot switch to avoid the hurt of plate.

5.4 Continuous cutting

Turn the switch on the penal to Continuous cutting mode, stamp the foot switch and press the pump start button at the same time, then loose them, The knife beam

will automatically repeat the action of single mode until that times are up or switch is turned off . Anyway we do not encourage customers to use this mode as the machine runs quickly and sometimes may hurt the plate or accident occurs.

5.5 Adjustment of cutting angle

Turn the switch to adjust mode, press the angle decrease or increase button to decrease or increase cutting angle; after adjustment, turn the switch to cutting mode.

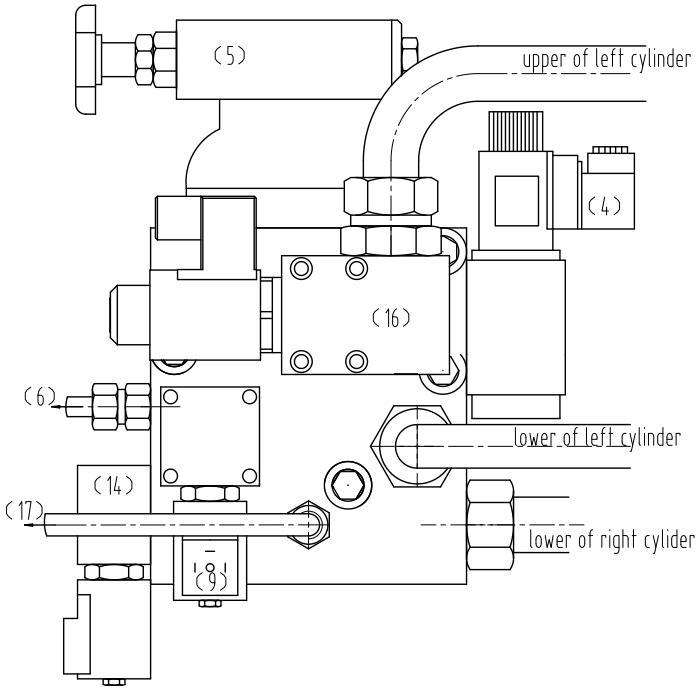
5.6 Reset of cutting angle(oil compensation of the series oil circuit)

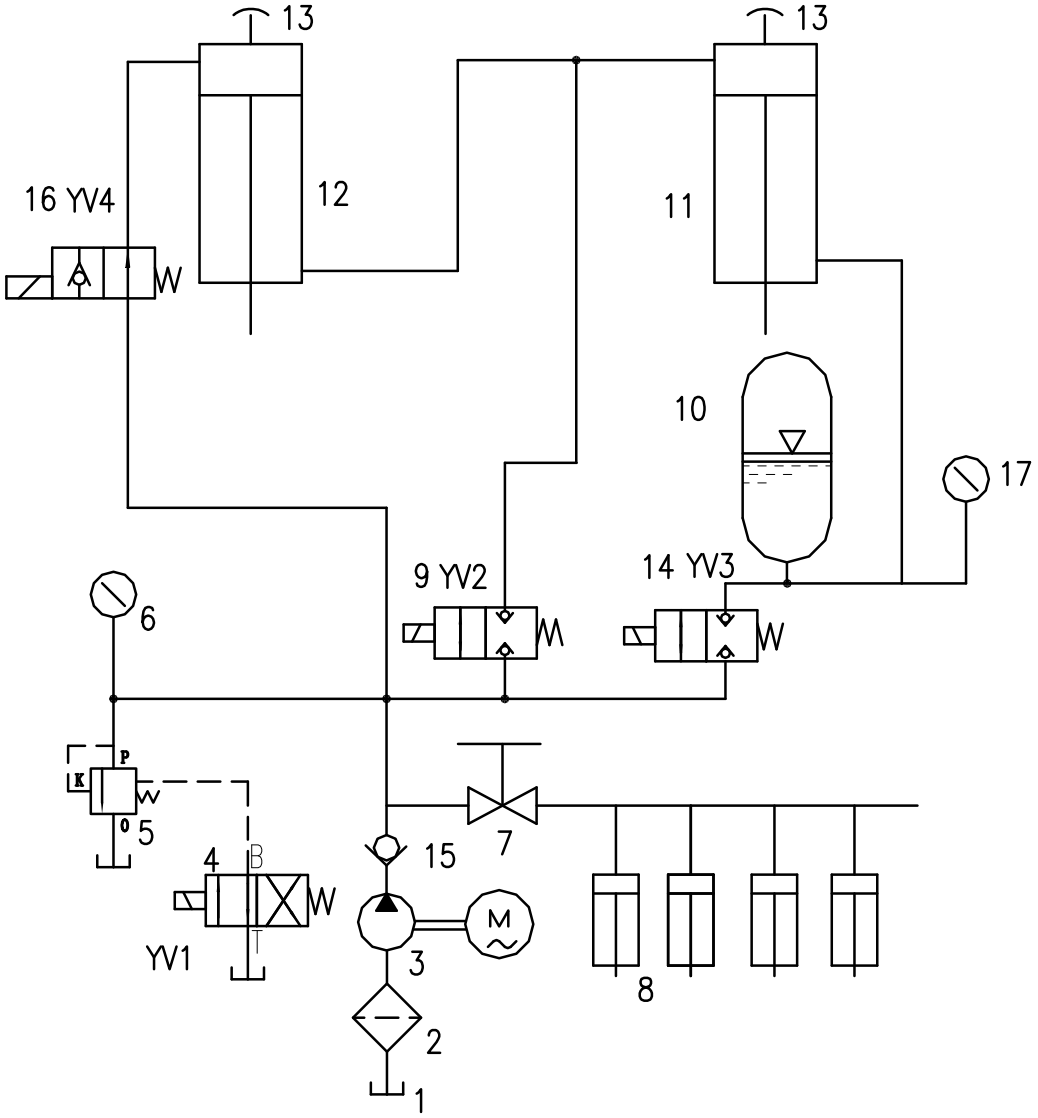
The cutting angle is set up to be 2 degree originally. After many times angle adjustment, 2 degree maybe not obtainable, and in this situation the angle can be recovered back to 2 degree. (This item also suits the oil compensation of the series oil circuit). The procedure is as below: turn the switch to adjust mode, stamp the foot switch , then push the angle increase button. When the knife beam moves down to the dead point, hold on the button for a few seconds and then release the angle increase button , then release the foot switch . After adjustment is finished, turn the switch to cutting mode.

5.7 Oil filling

When the machine have been operated for a period of time, the return pressure may be consumed a lot, in this situation the knife beam can not return to the dead point, so we will have to fill the oil in this case. Oil filling procedures as below: turn the button on the panel to adjust mode, push the oil filling button, the knife beam moves down to the dead point, , adjust the overflow valve up to pressure around 14~16Mpa, the pressure will be displayed by pressure meter(17). When filling is finished, turn the button on the panel to cutting mode.

overflow valve(5)





Valve action print

	YV1(4)	YV2(9)	YV3(14)	YV4(16)
stop	−	−	−	−
cutting	+	−	−	−
Angle small	+	+	−	+
Angle big	−	+	−	−
Filling	+	−	+	−

No.	code	name	qty.	remark
17	YN−63	Pressure meter	2	0−40MPa
16	EPP50/22C1	Electromagnetic ball valve	1	
15	A−Ha10L	No return valve	1	
14	ECD30−2202	Electromagnetic valve	1	
13		Discharge device	2	
12		Cylinder	1	ourselves
11		Cylinder	1	ourselves
10	NQL−6.3/20	Accumulator	1	
9	ECD30−2202	Electromagnetic ball valve	1	
8		Clamping cylinder		
7	CJZQ−H15L	Ball valve	1	
6	YN−63	Pressure meter	2	0−40MPa
5	Y2−Hd20	overflow valve	1	
4	SWH−G02−B2−D24−20	electromagnetic valve	1	
3	NT3−G25F	oil pump	1	
2	WU−100X160−J	Net type oil filter	1	
1		oil tank	1	ourselves

7、Electric System of Machine

7. 1 **General introduction**：

The machine adopts the three-phase 415V power supply. 24V to A.C. control circuit; 27V
are maily installed inside the electric box and control panel. Pls refer to our electric componen

7. 2 Caution:

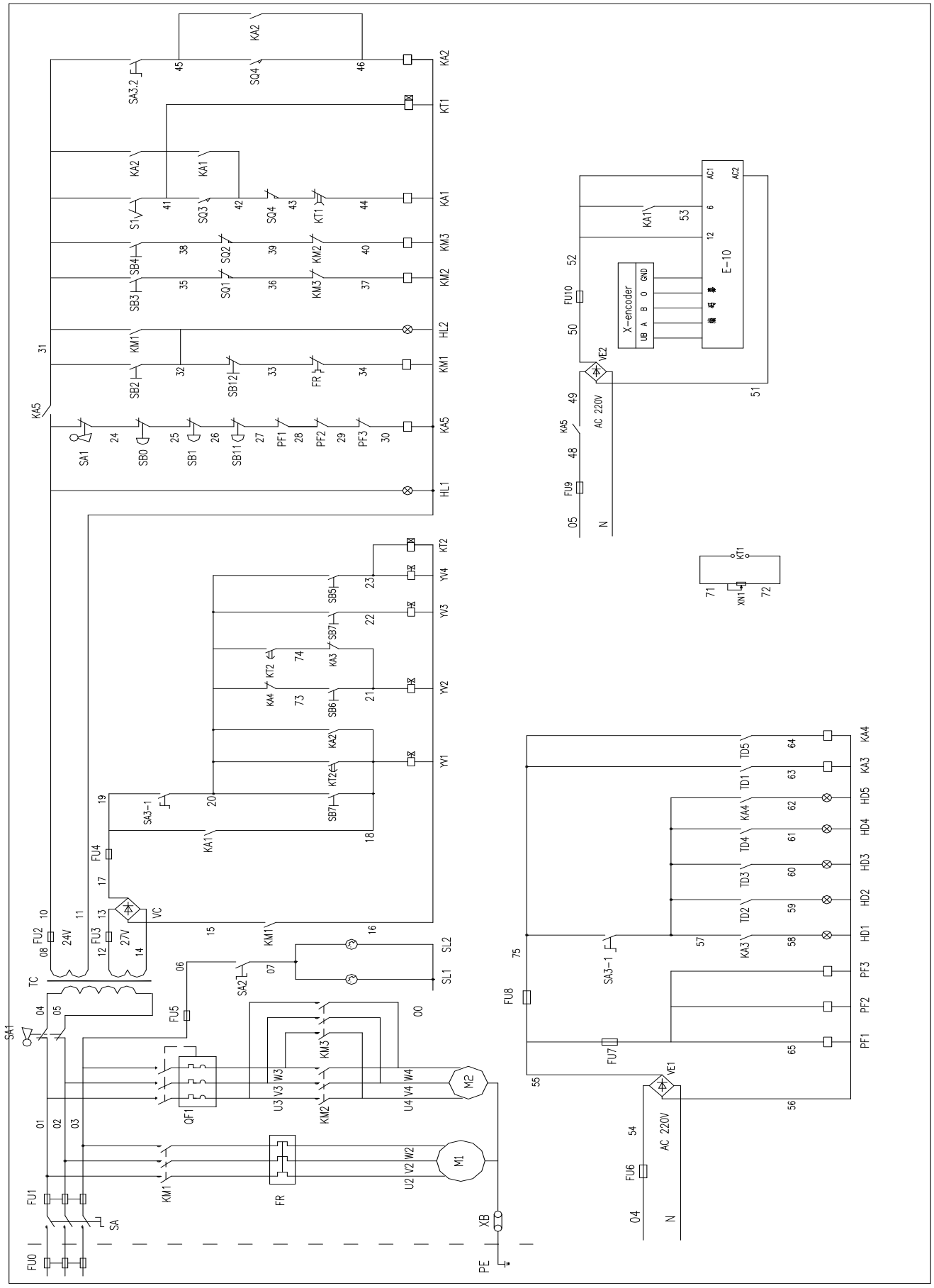
7.2.1 This machine is special tool, so users should arrange special operators. The operators should read this operation manual very carefully and receive training by our plant. Operators can run this machine only under approval of our technicians by training. People without training can not run this machine to avoid loss and hurt.

7.2.2 Operator should lock the SA1 key button and turn off the power switch at the electric box when leaves . Make sure the machine is power off when no operator.The machine should be grounded properly.

7.3 Electric principle print(refer to chart 5)

7.4 Electric components list (refer to table 2)

Electric principle print(chart 5)



Code	Item	Model	Specs	Usage
KM1	AC connector	LC1-D2510B7	4《0》+1《C》	Oil pump motor control
KM2	AC connector	LC1-D0901B7	3《0》+1《C》	Backgauge motor control
KM3	AC connector	LC1-D0901B7	3《0》+1《C》	Backgauge motor control
KA5	AC connector	LC1-D0901B7	3《0》+1《C》	Backgauge motor control
KA1	Middle relay	LC1-D0901B7	3《0》+1《C》	process control
KA2	Middle relay	LC1-D0901B7	3《0》+1《C》	process control
KA3	Middle relay	RXM-AAB2B D+ MY4NJ	3《0》+1《C》	process control
KA4	Middle relay		3《0》+1《C》	process control
FR	Heat relay	LR2-D1322		Heat protection of oil pump motor
QF	Air switch	NS80H-MA	32A	Power control of whole machine
QF1	Breaker switch	C65N 3PC3A	3P 4A	Back gauge motor circuit overload protection
SQ1	Limit switch	TZ-9208	1《0》+1《C》	Back gauge front limit
SQ2	Limit switch	TZ-9208	1《0》+1《C》	Back gauge back limit
SQ3	Limit switch	TZ-9208	1《0》+1《C》	Knife beam upper limit
SQ4	Limit switch	TZ-9208	1《0》+1《C》	Knife beam lower limit
SA1	Key switch	ZB2-BG21	2《0》	power of control
SA2	change switch	ZB2-BD21	1《0》	Alignment Light switch
SA3	Change switch	ZB2-BD33	2《0》+《C》	Selection of adjust/single
SB0	Emergency stop	ZB2-BS542	1《C》	Emergency stop
SB1	Emergency stop	ZB2-BS542	1《C》	Emergency stop
SB11	Emergency stop	ZB2-BS542	1《C》	Emergency stop
SB2	Start button	ZB2-BW3361	1《0》	Oil pump start button
SB12	Control button	ZB2-BA42	1《C》	Oil pump stop
SB3	Control button	ZB2-BA51	1《0》	Control the positive rotating of back gauge motor.
SB4	Control button	ZB2-BA51	1《0》	Control the reverse rotoation of the back gauge motor
SB5	Control button	ZB2-BA31	1《0》	reduce the cutting angle

SB6	Control button	ZB2-BA31	1《0》	Enlarge the cutting angle
SB7	Control button	ZB2-BA31	1《0》	Oil filling
HL1	Indicator	XB7-EV61	AC 24V	Indicator of power on or off
HL2	Indicator	DL1-CEO024	AC 24V	Start Indicator of oil pump motor
HD1-HD5	Indicator	TPN-082	DC 24V	
	Indicator	TPN-082	DC 24V	
TD1-TD5	Limit switch	TZ-1308	1《0》	
	Limit switch	TZ-1308	1《0》	
KT1	Time relay	ST3PA-Y	AC 24V	Motor start delay
KT2	Time relay	JSS21-A	DC 24V	Cutting angle decrease delay
KT3	Time relay	JSS21-A	AC 24V	Cutting angle decrease delay
VE1	Switch power	S-145-24	145W	Supply direct current power
VE2	Switch power	S-35-24	35W	Supply direct current power
TC	Transformer	JBK5-500VA	415V/220V 24V	Supply control circuit power
S1	Foot switch	JWL1-11	1《0》	Control of knife moving down
FU1	Fuse box	C65N 3PC32A	3P 32A	System short circuit protection
FU2	Fuse box	C65N 1PC6A	1P 6A	System short circuit protection
FU3	Fuse box	C65N 1PC6A	1P 6A	System short circuit protection
FU4	Fuse box	C65N 1PC6A	1P 6A	System short circuit protection
FU5	Fuse box	C65N 1PC1A	1P 1A	System short circuit protection
FU6	Fuse box	C65N 1PC6A	1P 6A	System short circuit protection
FU7	Fuse box	C65N 1PC1A	1P 1A	System short circuit protection
FU8	Fuse box	C65N 1PC6A	1P 6A	System short circuit protection
FU9	Fuse box	C65N 1PC1A	1P 1A	System short circuit protection
FU10	Fuse box	C65N 1PC1A	1P 1A	System short circuit protection
PF	Photoelectric switch	BEN 10M-TFR2	DC 24V	Back protection
	Position Indication	E-10	DC 24V	
	Encoder	ENC-100-A		

8、Maintenance &Trouble Shooting

8.1 Blades

8.1.1 The blade clearance (blade gap) adjustment:

It is a very important factor to adjust the blade clearance which relates the cutting quality a

than450-500N/mm^2, it is suggested to use smaller clearance. And for less than 450-500N/mm

be displayed on the handwheel

8.1.2 measuring of blade clearance and adjustment of the proportional clearance

the proportional clearance relates the cutting quality directly. It is set up by the manufactur

adjustment procedure is as below: turn the switch to adjust mode, adjust knife beam to balan

distance between upper and bottom blades is 3~5mm, adjust the bolts and nut which support b

8.1.3 The installation of the blade

After the machine has been used for a period of time, must turn over the blade sides or change the blade. The installation of the upper blade is as below: make the upper knife beam flat(the cutting angle is 0). Then turn off the screw at the lower knife to change the blade or turn over the blade. (be careful of the sharp blade to avoid hurt.) it is easier to change the lower blade.Just take off the upper blade cover at the working table and turn off the screw to change the blade or turn over the blade.

8. 1. 4 The grinding and change of the blades

The blades need to be ground timely. And It is costly if do not grind the blades timely. If the blade is not sharp enough, the blade will be hurt due to too much pressure in cutting and the cutting quality will be affected. So pls make up a complete blade grinding timeline according to the production status. It is recommended to have some spare blades for replacement at any time.

Our recommended blade grinding timeline:

(1) For operation 80-100hours, pls turn over the blade sides. The upper blades and the lower blades can be turned over three times.

(2) For operation 320-400 hours, pls grind the blade. For most severe damaged blade, pls change the blade. After the blade grinding or when new blade is used, the blade clearance needs to be reinspected and readjusted.

8.2 Lubrication of the machine

Good lubrication is a must for the proper machine operation and long machine life. Pls make good lubrication as per our provided procedures.

The main areas for lubrication:

A、The guiding rod and thread rod of the back gauge. Lubricate it once a week. (clean the thread rod off the dirt and oil stains.)

B、3 rolled guiding rails. Lubricate it every day for the initial stage of machine running.

C、For the spare parts outside and the rolled bearings, pls lubricate it twice a week. And pls inspect and clean the lubrication system freaquently and take good care of them.

8. 3 The air pressure inspection of accumulator(the air pressure has been setted to 5~6 MPa before delivery, need not to adjust unless you have special situation)

When the upper knife beam returns slowly(the oil pressure is proper), pls inspect the air pressure of accumulator. The inspection way is as below: Make the machine power on, and do not start the main motor, turn the switch to adjust mode and push the oil filling button, discharge the return oil pressure and then the upper knife

beam will move down to the dead center. Inspect the nitrogen pressure by accumulator nitrogen tool. If the nitrogen pressure is less than 5~6 Mpa, pls fill in. After inspection and the filling, pls follow up the oil filling procedures（5.7）

CAUTION: ONLY FILL IN THE NITROGEN INSIDE THE ACCUMULATOR, OTHERS ARE STRICTLY PROHIBITTED

8.4 The maintenance of the hydraulic system

8.4.1 The ruturn lines(return circuit) of hydraulic system

1） check the oil level of the oil tank. If the oil level is less than the middle line, pls fill in the oil immediately up to the middle line.

2）After the machine has been run for one month, pls change the oil for the first time.

3）Pls change the oil every 2000 hours of operation.

4） The hydraulic oil should be qualified and the viscosity is 27-33.

5）Pls clean the oil tank thoroughly for every oil changing

8.4.2 Oil filter

1）Use gasoline or other solution to clean the oil filter. Pls refer to below timeline to clean the filter: Clean the filter first time after 8 days of machine formal operation. And later clean the filter every 30 days of operation.

2） Pls change the components of filter if they are found to be damaged.

8.4.3 Air filter

1） The air filter is installed at the oil tank.

2） Pls clean the filter first time after 500 hours of machine formal operation. Use gasoline or chloroethylene or other solution to clean it. And clean the filter every 1000 hours of operation.

8.4.4 Hydraulic pump

Pls refer to relevant technical data of hydraulic pump.

8.4.5 The inspection of the mechanical parts:

Pls check the fittings once a week for the tightness and also check the lubrication

situation. If find any abnormal things, pls correct it immediately before operation.

8. 4. 6 Adjustment of safety overflow valve

The overflow adjustment is very important for normal operation of the machine. Pls adjust it as per the maximum working pressure. If it is found that the machine is damaged due to that the pressure adjusted data exceeds the maximum data, the manufacurer will not be responsible for this kind of problems or loss occurred due to incorrect adjustment.

8.5 The Maitenance of the Machine

1). Operator should be familiar with the construction and characteristics of the machine .The machine is operated by several operators simultaneously , so should arrange special person to be in charge of the production .

2). Never put the hand within the upper and lower blades to avoid hurt.

3). To prevent accident due to tools and dirty things between knives , there're should no tools and dirty things on the worktable .

4). You should period check the sharpness of knives , if they become blunt ,you should grind or change at once . To grind the knives you should only grind the thickness and ensure the thickness of one set knife are same .

5). You should period check each part of machine , maintain the cleanness of the machine and surround environment and the good insulation of wire .

6. To maintain filter in good condition , you should often check and clean the filter mounted on the suction port of pump . If the filter not in good condition , it will effect the life of pump .

7 **Only fill in the nitrogen inside the nitrogen bag of accumulator.(oxygen is prohibited strictly0**). Pls fill in the nitrogen slowly to avoid t he breaking of the bag.

8. To avoid oil leakage, pls tighten the screws at the piping connection after 25 hours of operation initially. Pls tighten the screws again every 200 hours after formal production.

No	Item	Specification	quantity
1	Foundation Bolt	M20X500	4
2	Manual oil gun	Oil supply 1 cubic mm	1
3	Nitrogen fill tool		1
4	Operation manual		1
5	Quality Certificate		1
6	Foot switch	YDT1-12	1
7	Spanner		1

8	O-Ring	10x1.9	2
9	O-Ring	11x1.9	2
10	O-Ring	12x2.4	2
11	O-Ring	16x2.4	5
12	O-Ring	24x2.4	5
13	O-Ring	30x3.1	10
14	O-Ring	35x3.1	4
15	O-Ring	40x3.1	5
16	O-Ring	45x3.1	20
17	O-Ring	50x3.1	4
18	Pad	27	6
19	Pad	33	4
20	ferrule	22	5
22	ferrule	28	5

9、Packing List