

# OPERATION MANUAL

*Automatic Hydraulic Finger Joint Shaper with glue unit*

## **WINTER MX 3515A**



### **WARNING!**

***The operator must thoroughly read this manual before operation.  
Keep this manual for future reference.***

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## 1. Application & Features

This machine is mainly used for comb-tooth tenoning the shorter wood, which glued by integrated one. then joint and make them longer, thus you can make the shorter wood as longer one and make the inferior wood as quality one, the availability of wood can be increased greatly.

The tenoning process is fulfilled by hydraulic system automatically; the wood is clamped by pneumatic system, thus it brings down the labor strength greatly. Imported precious linear guide has been adapted for movement guiding for the machine. It is with higher guiding accuracy and with smaller friction coefficient; its service life is longer and maintenance is easy.

## 2. Main Technical Parameters

a. Size of working-table	700X 500mm
b. Max. height for comb-tooth	150mm
c. Max. tenoning width	450 mm
d. Diameter for installing the main shaft	50mm
e. Motor power of main shaft	11 kw
f. Main shaft revolution	6750rpm
g. Motor power for cutting	
h. Cutting shaft revolution	2840 rpm
i. Motor power of oil supply	2.2kw
j. Overall dimensions	2200 x 1520 x 1320mm

## 3. Cautions for Operation

a) There are three control ways for the machine, through the selection switch change the shift. There are three shifts on the selection switch, when switch points at "Auto." position, it means that it is working under the way of full-auto., at this time you can make processing by following sequence, i.e. hold-down the timber, working-table moves forward, rolls rise automatically and make glue-spreading, working-table moves forward and as it contacts with the position switches at the end of the timber and glue-spreading rolls will

return to original position, discharging pneumatically, working-table returns to its original position, after a little while (this time can be set by customer to time relay) and working-table will recycle above sequence automatically; when switch points at the space between the "Auto." and "Manual" , it means that the machine is under the way of Semi-Auto, way, at this time as long as you tread the pedal valve and the working-table will fulfill one working cycle of above working flow, when it moves to some certain position and stop, tread the pedal valve again and it will fulfill the second working cycle. When the selection switch points at "Manual" position, i.e. it is under the way of Manual, at this time, you should operate the machine by the buttons on the switchboard. It is seldom used; it is mainly used for adjusting cutter, or for seceding the working-table after any emergency brake.

b) Feed direction means the direction of working-table moves from sawing to main shaft milling, so you must pay special attention to the cutter's direction while you install the cutting saw blade and the cutter-head of the main shaft. At same time you must screw down the compression nuts on the cutter.

c) Check the rotation direction for the cutter while test running the machine. Any reversal occurs, change any two wires and operate the machine again until cutter runs in correct direction.

d) Any accident occurs in working you must press down the button of "Emergency" to stop the machine.

e) The main shaft speed is high; you must often lubricate two bearings. The oiling hole is at the vane cover for lubricating the upper bearing, the oiling hole is at the inner bush of the main shaft, you can find it while you open the small door beside the main shaft.

f) Any unusual noise occurs you must switch off the power supply and find what the trouble is; you can operate the machine again until all troubles have been eliminated.

g) Connect the earth wire well before you operate the machine in avoid of occurring any electricity leakage to cause accident.

h) Check the air supply triplet at any time. Adjust the air pressure if its pressure is insufficient. Let off the stored water in it and add oil if insufficiency of oil in avoid of damaging the cylinder.

i) After working every day, clean the working site and the machine, only main power supply has been cut off can you leave.

j) In avoids occurring any glue solidifying and affect the glue-spreading result, clean the glue wheel and glue container every day when you leave your working site,

#### **4. Adjustment for the Machine**

##### 1) Adjust the saw blade

Loose the screws on the inlaid strip and turn the adjusting bolt, move the saw blade to and fro to a required position, then tight up screws again.

##### 2) Adjust the finger-joint cutter

Loosen the locking lever on the carrier for holding the cutter shaft and the small hand wheel at the center of big hand wheel, turn the big hand wheel to lift or lower the main shaft adjusting the height for the cutter, after adjustment you must lock the sliding bush on cutter shaft carrier again, at same time to tight up the small hand wheel, keep the big hand wheel can't be turned and make sure the main shaft can't shift (lift or lower) in working.

##### 3) Adjustment of the glue-spreading wheel

After the timber has been milled and move it to the glue-spreading wheel, by the upper and bottom bolts of the glue-spreading wheel base to adjust the glue-spreading wheel engaging the milled timber.

4) The normal pressure should be 0.6MPa, i.e. 6kg pressure per square centimeter, if the pressure is excessive high or low, turn the adjusting knob until the scale points at 0.6MPa.

## 5. List of Flat Belt and Bearing

Name	Type & Spec.	Install Position	Quan.
Flat belt	3X70X1270 mm	Main shaft	1
Bearing	6209	Main shaft	2
Bearing	6210	Main shaft	1

## 6. Pneumatic & Hydraulics system

(data is only for reference any alternation without prior notice)

List of hydraulic elements

Code	Type & spec	Name
1	VP-40	Vane type pump
2	DSG-3C3-N-03	Solenoid valve
3	250kg	Oil pressure meter
4	LA-H20L	Throttle valve
5	HOB40X1030	Oil cylinder

List of Hydraulic Elements

Code	Type	Name
1	BF4000	Triplet
2	SY7220-42ZD-02	Bilateral solenoid valve
3	QGA40 X 80	Cylinder
4	QGA63X150	Cylinder
5	10A-5R100 X 80(with magnet)	Cylinder
6	4V210-08	Single electric control change valve
7	IS3000-02	Air pressure switches

## **7. Electric control system**

(see attached diagram)

Connect the machine to the power supply of three-phase four-wire system, 50HZ, 380V, with earth protection system. If your power supply system is without this device, this machine can earth protection directly. Note: this circuit diagram is only for reference; any alteration is based on the actual machine and without prior notice.

List of Electric Elements

Type	Name	Spec	Quan	Remark
JC	AC contactor	40A 220v	1	Taiwan
	AC contactor	10-20 A 220V	2	
RT	Thermal relay	9-17A	1	
	Thermal relay	9^13 A	2	
BK	Transformer	Input 380V Output 220V	1	Tianzhang Group
SB	Emergency button	5-1 OA	2	Taiwan
	Start button	5-1 OA	8	
	Stop button	5-1 OA	3	
SF	Pedal swotch	TFS-402 220V 5A	1	Japan
KH	Selection switch	K44-v9 10A	1	Taiwan
J	Relay	RY4S-V9 10A	8	
KT	Tine relay	0-60S 10A	3	
Y	Bilateral solenoid valve	SY7220-42ZD-02 Coil voltage 220v	1	
	Single electric control change valve	4v210-08	1	
	Hydraulic solenoid valve	DSG-3C3-N-03 Coil voltage 220v	1	
ST	Position switches	TZ-5108-2	2	Taiwan
	Position switches	YBLX-NW18108	1	



## 8. Analysis for Common Troubles

Code	Troubles	Cause	Resolving method
1	Press down the hold-down switches and the air cylinder doesn't work.	The electromagnet and relay at the field of hold-down have problem.	Check and replace solenoid valve and relay.
2	Working-table moves to the end of the timber and cylinder doesn't work.	1. The position switches on the machine body have not been closed. 2. In control electric circuit, the relay and time relay at discharging field have problem.	Adjust or replace the position switches. 2. Check and find trouble for delay and time delay.
3	Cut-off cutter stop running automatically.	1. Excessive load cause break for thermal relay. 2. Thermal relay has been damaged.	1. Thermal delay change shift and energize automatically. Replace thermal relay.
4	All motors can't be started.	1. Lack of phase for power supply. 2. Air pressure is insufficient. 3. Electric system breaks.	1. Reconstruct three-phase power supply. 2. Supply required air pressure. Reconstruct the break.
5	Speed of the cut-off cutter becomes slow.	1. Belt is too loose. 2. Motor is hot.	Adjust the tension for the belt. 2. Stop running for a while and find the trouble.
6	Working-table oscillation occurs	There are big gaps between the guiding rails and the sliders.	Loosen the adjusting screws beside the sliders beneath the working-table to re-adjust the gaps.
7	Big noise for starting the machine and machine body vibrates strongly.	1. Bearing has been damaged or burnt. 2. Cutter installed is in a state of imbalance.	Replace bearing. Re-install the cutter and make it in a state of balance.

# Conformity certificate

Name: MXB3515A Automatic Finger Joint Shaper

Type of Product: MXB3515A

Series Number: \_\_\_\_\_

Date of Production: \_\_\_\_\_

**After inspection, this machine is qualified and allowed to  
send out of our factory.**

Inspector: \_\_\_\_\_

## Packing list

Name of product: MXB3515A Automatic Finger Joint Shaper with glue

unit (Hydraulic)

No.	Name	Quan.	Remark
1	Open spanner	5pcs	Inside of packing box
2	Fixture	1set	Inside of packing box
3	Hexagonal spoon	6pcs	Inside of packing box
4	Smash cutter	1	Install with the machine
3	Operating Instruction Manual	1	Inside of packing box
4	Conformity Certificate	1	
5	Packing List	1	

Note: Without any cutter supplied together with the machine shipping out of our factory.

Packing Inspector:

Date: