

ToughCut

Nickel 35 Edgebander User Manual



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Chapter 1 Safe Operation Regulations

Warning: Please read this user manual carefully before operation, if any doubt, please contact the nearby dealer to get more information.

1.1 Safe Operation Regulations

- Please clean up all the mess on the machine before start.
- Please remind the people around the machine before start.
- Check the hot melt margin before heating the heating glue box.
- Please pay special attention to the areas colored yellow or red, where are high temperature, electrification or high speed rotated cutters.
- When any abnormal during working, press down the emergency stop switch immediately.
- Please maintenance and repair the machine when power off.
- Only qualified workers are allowed to open control box and electrical cabinet.
- Please ensure the power isolating switch is shut off before replacing any electric parts.
- Inspect the function of safety devices periodically, and solve any malefactions immediately.
- When putting the edge, its head should be through the strip wheel, does not exceed the tape cut, or when sealing the first panel it will damage to the parts of the structure.

1.2 Attention

1. Do not change the machine without any prove!
2. To instead the parts from supplying from factory!
3. All the information now included in this user manual, please contact to the nearby dealers!
4. This user manual only suit for KDT-325!
5. Please take real products as criterion, if any change in technology. No further inform will be made.

Chapter 2 Technical Data and Functions

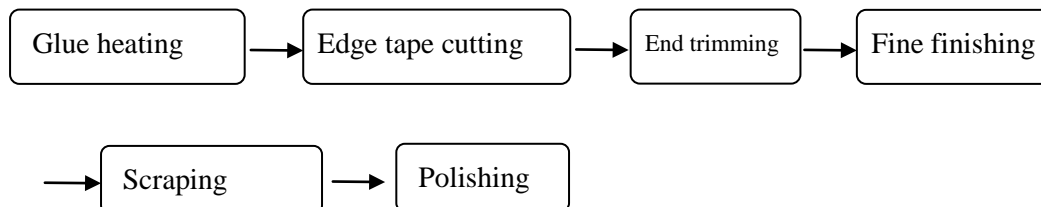
2.1 Technical Data

Technical Data

Panel thickness	10-60 mm
Edge thickness	0.4-2 mm
Feed speed	10 m/min
Panel width	80 mm
Min. workpiece length	120 mm
Compressed air required	6bar
Motor Power	8.97KW
Dust extraction Dia.	2×100 mm
Total machine weight	917 Kgs
Packing size	3000×900×1550mm

2.2 Functions

The working process of this edge bander as following:



Chapter 3 Handling and Installation

3.1 Transporting and Handling

The machine can be transported with manual forklift or power forklift, the load bearing should be 3 tons or above. The methods of transportation are as follows:

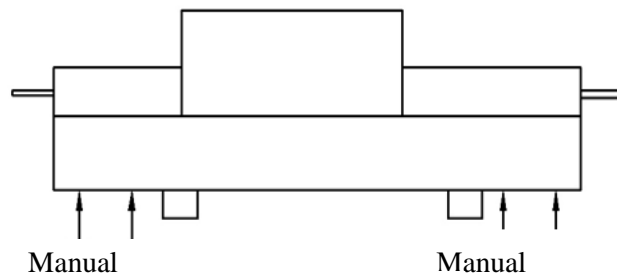


Figure 1 Method one

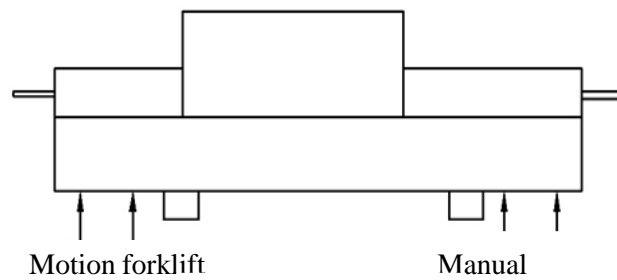


Figure 2 Method two

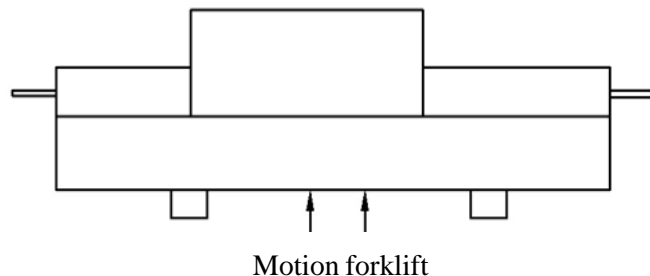


Figure 3 Method Three

3.2 Machine Installation

(1) Installation Preparation

Power: 415V 50Hz Three-phase four-wire power, the diameter of total power wire should be above 4mm².

Air source: Air compressor, the edge banding total pressure must be above 6bar, the diameter of the triplet input pipe is 12mm.

Dust extraction: should be equipped with necessary dust extraction equipment, the diameter of machine dust removal tube is 96mm, should be equipped with 4" dust extraction tube.

Installation environment: There is enough place for the edge banding to work, the installation ground should be fixed.

(2) Installation Steps

First step: Fix the machine

Shift the edge banding machine with motion forklift or manual forklift in the correct position, Use the anchor bolts to adjust the machine to horizon, then use the anchor bolts to fix the machine.

Second step: Clean up the packaged goods on the machine.

Third step: Contact the power

Pull out the general supply from the bottom of electrical cabinet, and connect the four divides to the reserved terminal, it needs to connect the ground to the ground copper bar in the electrical cabinet. Be aware of the right position of these terminals for the divides. Turn on power after complete certification. If the conveying direction of conveyor belt is opposite, exchange the arbitrary two phase of the general supply.

Fourth step: Connect the air source to the triplet input of the machine, check if there are any leakages.

Fifth step: Connect to the dust exaction equipment, and connect to the dust removal port, tighten the joint.

Sixth step: Adjust the machine according to the thickness of the panel and the edge band, the actual method refers to Chapter 5.

Chapter 4 Adjustments of Function Unit

4.1 Adjustment of guide plate

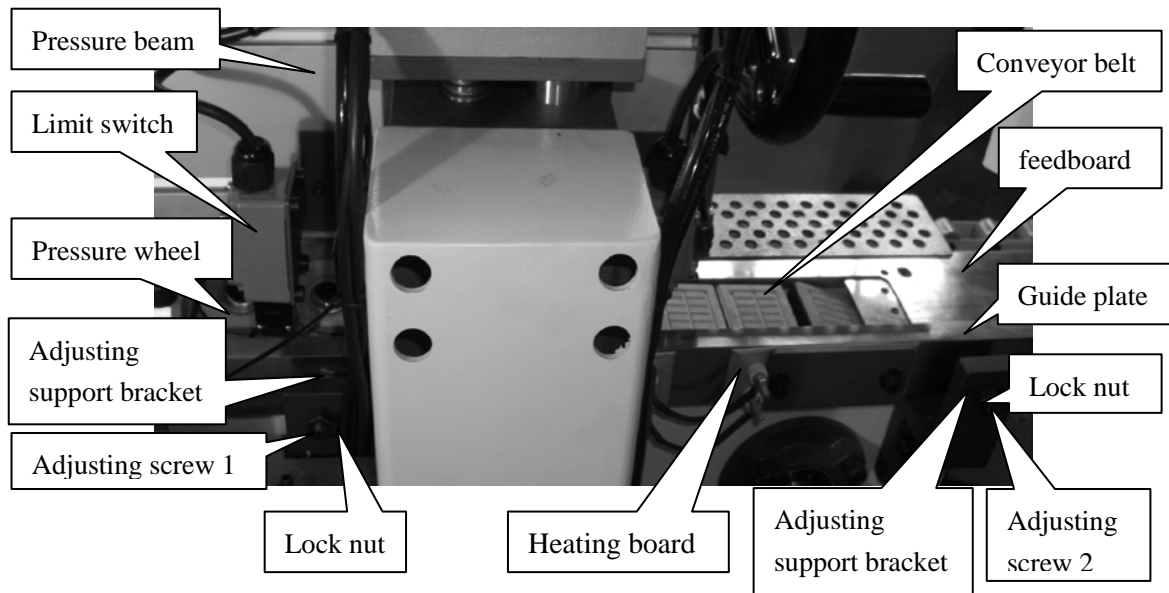


Figure 1 installation position of guide plate

Guide plate is used to guarantee the being edged surface of panel is parallel to the movement direction of conveyor belt when placing the being edged panel, which can ensure it won't appear the quality questions of edge during the subsequent edge process.

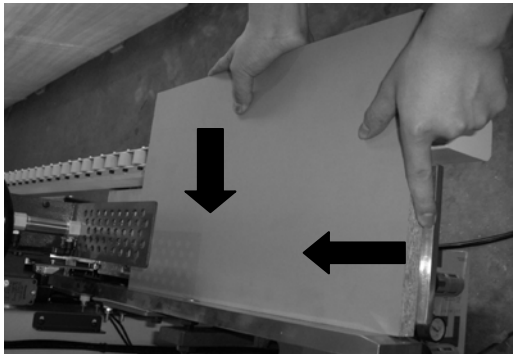


Figure 2 the right way to place the board

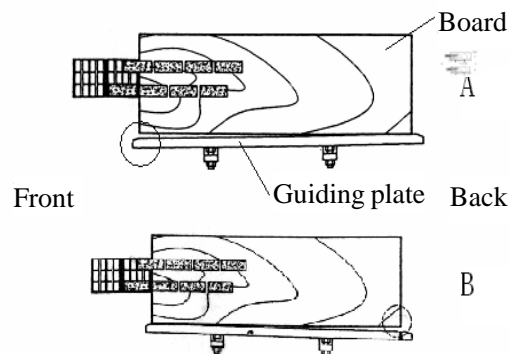


Figure 3 installation error of guide plate

When placing the being edged panel, confirm both sides of being edged surface snap to the working surface of guide plate firstly (as Figure 2 shown). If part of panel goes into the conveyor belt, the front end and back end snap to the guide plate at the same time (as Figure 3 shown), it means the working surface of guide plate is unparallel to the movement direction of conveyor belt, then need to adjust the guide plate.

Adjustment of guide plate:

As Figure 1 shown, turn off the power of edge bander firstly, and take down the shield of guide plate. Loosen the four lock nuts of adjustment screw 1 and screw 2, then adjust the two screws to set the side vertical distance between the working surface of guide plate and conveyor belt as 35mm, lock the two lock nuts of adjustment screw 1 (as Figure 4). Start the edge bander after locking, press the conveyor belt button on control box panel to start the conveyor belt, and adjust the speed of conveyor belt to low speed, other edge banders' functions do not start (**Attention: it should not start the heating switch at this moment, prevent electric shock or scald from touching the heating board when adjusting the guide plate**). Put a non-edged board on the feeding board in the right position, push the board slightly, making the being edged surface snap to working surface, and push the board to conveyor belt.

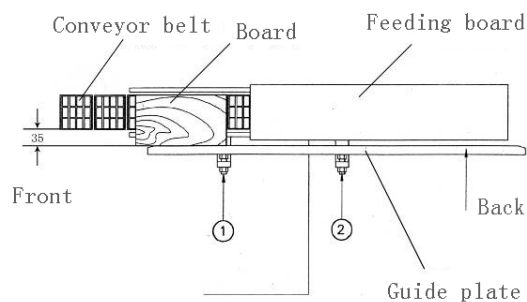


Figure 4 guide plate adjustment

In the process of the board entering into the pressure roller and conveyor belt, control forward and stop of conveyor belt any time by movable switch, observe carefully whether the front end and rear end of being edged surface snap to the working surface of guide plate all the time. If not (as Figure 3 shown), then adjust as the following methods:

(1) The front end of being edged surface snap to the working surface of guide plate

If appear the situation as A in Figure 3, it means the side vertical distance between the rear end of guide plate and conveyor belt is less than 35mm. Here can loosen the two nuts of adjustment screw 2 slightly, twist the adjustment screw 2 to adjust the guide plate slightly, and adjustment screw 1 is always fixed. Adjusting amount is according to the offset between the being edged surface of board and the working surface of guide plate to judge, the amount is better less, to prevent adjusting too much. After adjusting, use a board to try operating.

(2) The rear end of being edged surface snap to the working surface of guide plate

If appear the situation as B in Figure 3, it means the side vertical distance between the rear end of guide plate and conveyor belt is over 35mm. Here can loosen the two lock nuts of adjustment screw 2, twist the adjustment screw 2 to adjust the guide plate slightly, and adjustment screw 1 is always fixed.

Adjust the guide plate slightly repeatedly by step 1 and step 2, making the whole working surface of guide plate and side aligner of conveyor belt parallel, and the vertical distance of two surfaces should keep between 34~36mm. So the guide plate finishes the adjustment.

4.2 Glue Heating Unit

This unit is used to heat the glue, and doping it on the workpiece. This unit contains some adjustment units, which can be used to adjust the thickness of the glue, and make it uniform and average.

The adjustment includes these four sections:

(1) Adjustment of the thickness of adhesive layer

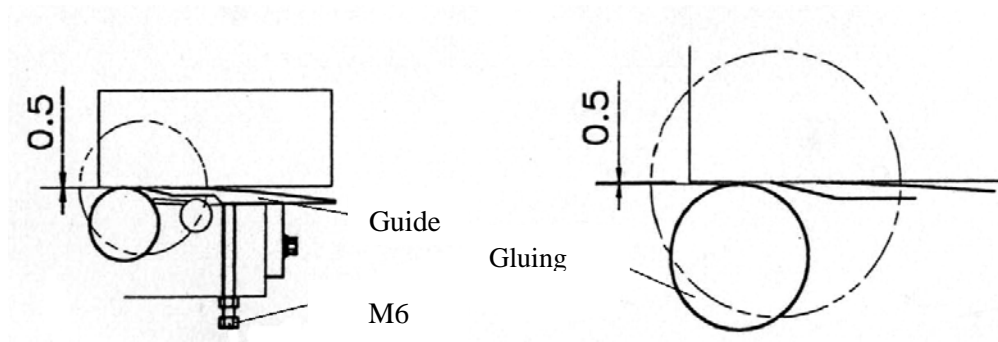


Figure 1 Adjustment of the thickness of adhesive layer

As the above picture shown, to adjust the vertical distance between panel and gluing roller surface with M6 screw to make sure the thickness of the adhesive layer is uniform. If the vertical distance between panel and gluing roller surface is too short, it will result the adhesive layer too thin, which make the bonding strength of the edge band on the panel not enough; otherwise, if the vertical distance is too large, glue roller cannot make the glue completely applied to the panel.

Detailed approach:

Loosen the M6 screw, and adjust the vertical distance of guider to the processing edge to be 0.1-0.5mm. Start the conveyor belt and glue heating function of edge bander, test banding with appropriate size of panel. Check the thickness of the adhesive layer and the strength of edge band that tear. If the adhesive layer is too thin, which means the adhesive is not strong enough, and adjusts the M6 screw to enlarge the clearance between the guider and panel. If it's uneven, then shorten the clearance. Repeat and slightly adjust the clearance, to make a perfect performance of the gluing.

(2) Adjustment of the glue amount

By controlling the clearance between the glue door and glue roller can adjust the glue amount, which makes the glue on the panel is uniform. The clearance is mainly by adjusting the screw 1 and screw 2 in Figure 2 to adjust the glue door, which make the clearance B achieve an appropriate state. The larger clearance is, the more glue amount will be; vice versa.

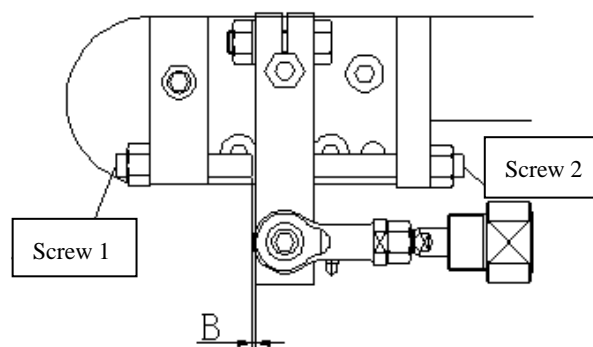


Figure 2 Adjustment of the glue door

(3) Adjustment of contact pressure between roller and panel

This adjustment assures the banding much more securely, making the glue is easy to penetrate into the panel.

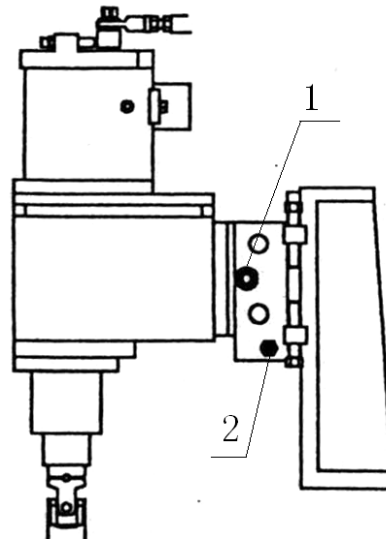


Figure 3 Glue Pressure Adjustments

Adjustment method: The pressure can be adjusted by screw 2. The more the spring compression is, the more pressure will be, and vice versa. Adjust and limit the stroke of glue assembly movement by screw 1, generally the stroke is about 1.5mm, which means after the panel through the guider the stroke of glue assembly goes backward is about 1.5mm.

Adjusting method of glue amount: When the adhesive layer spill over, that means the glue amount is too much, then should shorten the clearance between the front-end of M8 screw and link rod; if there is gap between the edge band and panel, that means the glue amount is not enough, then should increase the clearance.

(4) The relationship of adhesive layer and glue amount

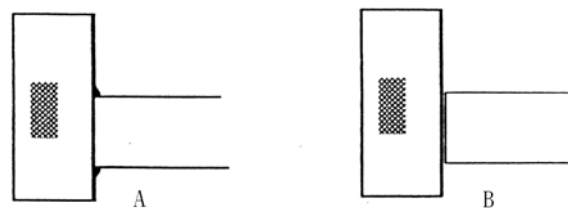


Figure 4 the relationship of adhesive layer and glue amount

When the clearance of glue roller and panel is small in Figure 1 and the glue amount is large in Figure 2, then the glue overflow on the upper and lower surface of panel that A shown in Figure 4. When the clearance is large in Figure 1, and the glue amount is small, then the glue is incomplete that B shown in Figure 4. Then adjust the glue amount and thickness of adhesive layer, to make a good performance.

(5) Adjustment of verticality between roller and panel

If there is no glue on the upper surface or lower surface of panel, it means that the roller and panel are not vertical.

Method: when there are no glues on top surface after Banding, it might result from situation A, and adjust by screw 2 backward, and screw 1 forward to make them vertical.

When there are no glues on lower surface, it might result from the inclination of B, and adjust by screw 1 backward and screw 2 forward to make them vertical.

Micro-adjust the screw 1 and screw 2 repeatedly, until the surface is average.

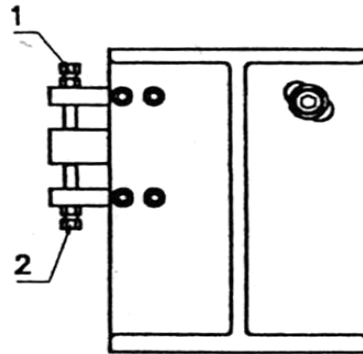
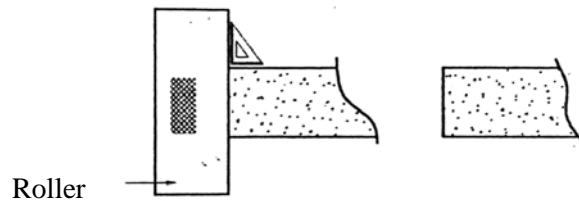
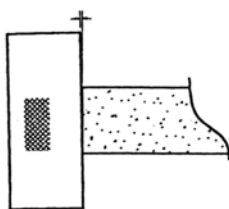


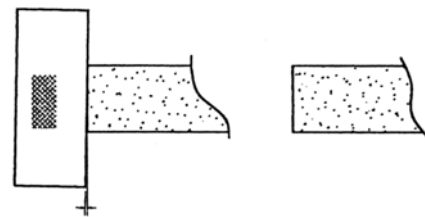
Figure Adjustment of roller



A Correct state



B Upper clearness



C lower clearness

Figure Comparison of three states

4.3 Edge Tape Cutting Unit

Edge tape cutting unit is used for pulling out the binding strip and cutting it down. This unit can ensure the automatic transmission smoothly of edge band by adjusting, and adjust the distance of the bottom of edge band and the low surface panel.

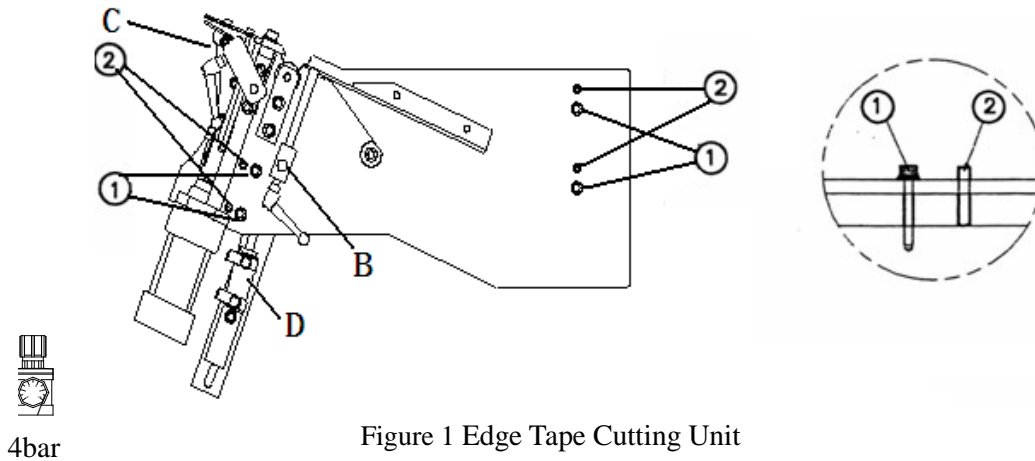


Figure 1 Edge Tape Cutting Unit

(1) Adjustment of bottom surface of edge band and panel

This distance adjustment is to make a certain processing allowance for trimming.

Method:

1. Loosen the four screws 1 in figure 1
2. Adjust the four set screws 2, to make the distance A of panel and edge band is 1~1.5mm, then adjust the strip panel to horizontal position.
3. Tighten screw 2 to fix the strip panel.

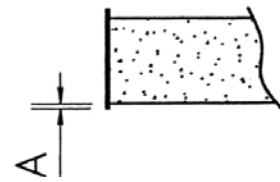


Figure 2 position of edge band to panel

(2) Adjustment of auto-tape

To ensure that the edge tape cutting unit can sent the edge band to the being edge surface of panel, need three factors to adjust.

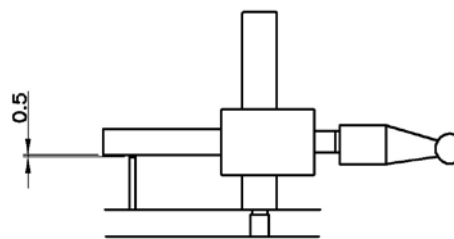


Figure 3 edge band limit unit

Adjusting method:

First,

The section of B section at Figure 1, adjust the clearance as the picture to be 0.5mm according to Figure 3, and make sure that the edge band can go through freely without any excursion.

(Note: Must adjust the clearance when changing edge band with different width)

Second,

The section of C section at Figure 1, adjust the clearance as the picture to be 0.5mm according to Figure 4, and make sure that the edge band can go through freely without any excursion.

(Note: Must adjust the clearance when changing edge band with different width)

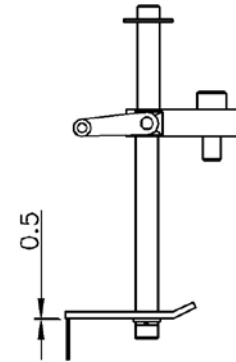


Figure 4 edge band limit unit

Third,

The section of D section at Figure 1, loosen the cylinder block fixed screw according to Figure 5, set the distance of the interval as 1mm (as the beginning position). Then loosen the two screws A at Figure 6, move the transfer wheel to make sure the edge banding belt can go through and not deviate.

(Note: Must adjust the clearance when changing edge band with different width)

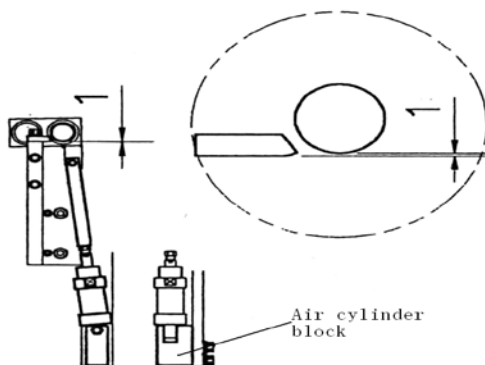


Figure 5 adjustment of air cylinder

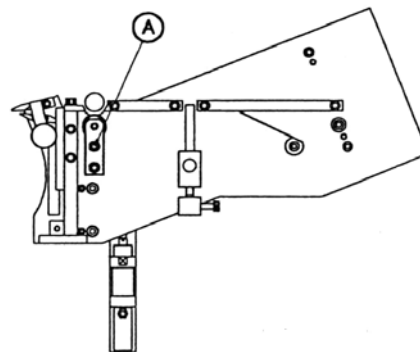


Figure 6 adjustment of transfer wheel

Attention: When installing the edge band, resetting the machine and so on, and the top should go through the transfer wheel, not exceed the cutting blade; otherwise parts of structure will be managed when edging the first wood.

4.4 Pressing Unit

Pressing unit is used to press the edge band to the being edged surface that the panel with glue, and ensure the different thickness of edge band bonding firm uniform by adjusting.

The vertical distance of each pressing wheel (standby and work) and panel should be 2mm (as Figure 1 shown). The working pressure is set as 1bar-the bigger one, 2bar-the smaller three (as Figure 2 shown).

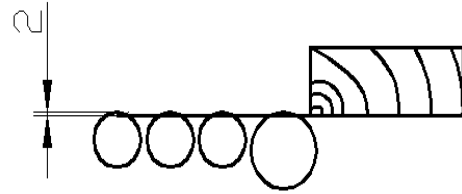


Figure 1 Adjustment of Pressing Wheel

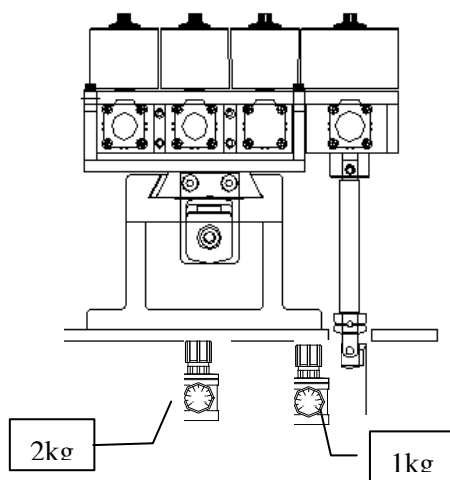


Figure 2 Pressing unit

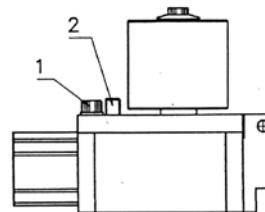


Figure 3 adjustment of verticality

If the edge band press on the panel, check the top surface or bottom surface of panel and find the edge band and panel is incompletely bonding, it means that the rotation axis of pressing wheel and the being edged surface of panel is not vertical. Then adjust the set screw 2 at Figure 3 to be normal.

Adjusting method:

First, loosen two screws 1, then adjust the two set screw 2.

Second, test banding carefully check if there is any clearness when passing the first big wheel and the last small wheel. After that, check whether it is tightly adhesive the band.

Third, try this testing measure several times, and adjust to the right position.

4.5 End Cutting Unit

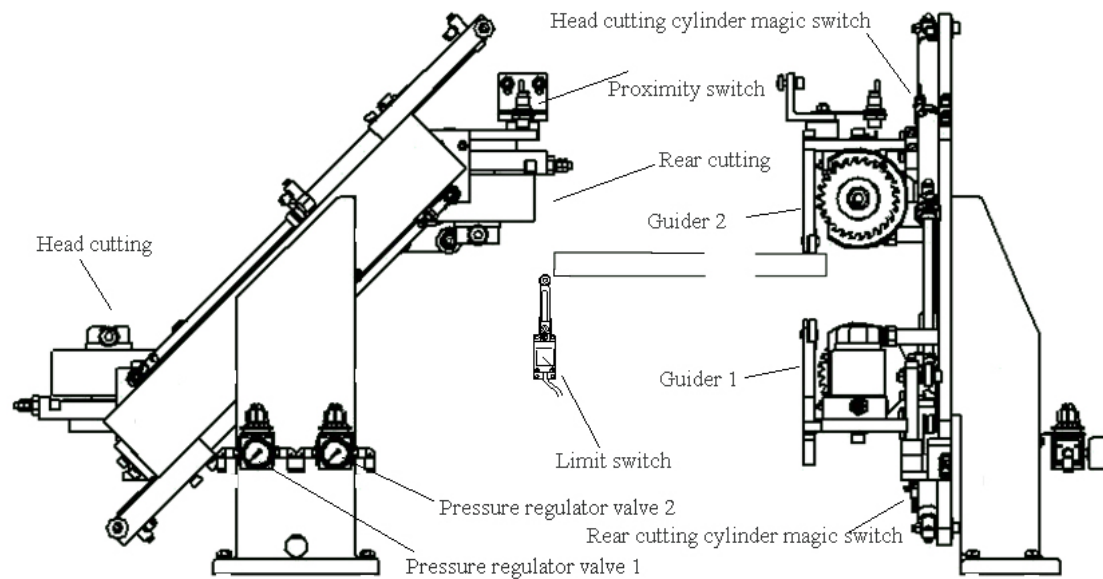


Figure 1 End cutting unit

End cutting unit is used to cut the redundant edge band on the board, making both sides of edge band snap to the front and back sides of board, and cut a certain chamfer to both ends of edge band.

(1) Working process of cutting unit

The working process of cutting unit is shown as Figure 1, when the panel touches the limit switch 1, cutting unit enters working state. The panel move with the conveyor belt, the front end of panel touches with the working surface of guider 1, push the cutting left lower direction to the cutting saw blade, and cut the redundant edge band of front end of panel. When cutting fall to head cutting cylinder magic switch light on, head cutting cylinder push down the cutting motor and away from panel. When panel is away from limit switch, rear cutting works, two bearings of rear cutting guider 2 press on the upper surface of panel, proximity switch light off. When panel is away from guider 2, the side aligner of guider 2 snap to the rear end of panel under the cylinder thrust and cut the redundant edge band. When rear cutting cylinder magic switch light on, rear cutting cylinder pull the rear cutting back to the top, proximity switch induct the light on, head cutting cylinder works, pull the head cutting back to reset, the whole working cycle finishes. (Attention: Only when the proximity switch light is off, if limit switch is touched, head cutting alarms!)

At Figure 1, the pressure regulator valve 1 is used to adjust the air pressure of cylinder of head cutting unit, making it up and down freely, generally maintain at about 3~4 bar. The pressure regulator valve 2 is used to adjust the end cutting unit, making it fall down when working, the air pressure is 3bar.

(2) Adjustment of cutting effect

When finishing cutting, if there is extra edge band as A at Figure 2, make the screw 1 tighten clockwise, motor moves forward; if the panel appear as B at Figure 2, the edge band will be cut too much, then adjust the screw 1 counter-clockwise. Adjust repeatedly until reaching satisfactory.

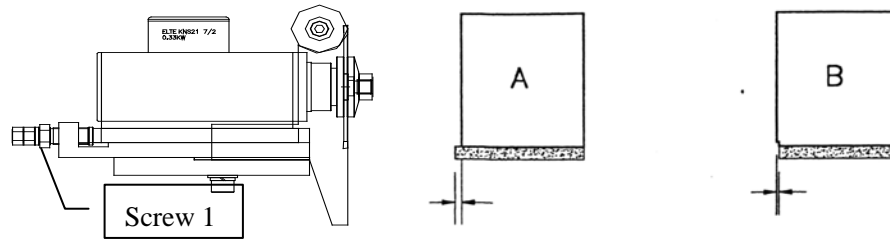


Figure 2 Adjustment of cutting effect

Adjust the angle of motor and guide, which makes the cutting effect like A and B at Figure 3.

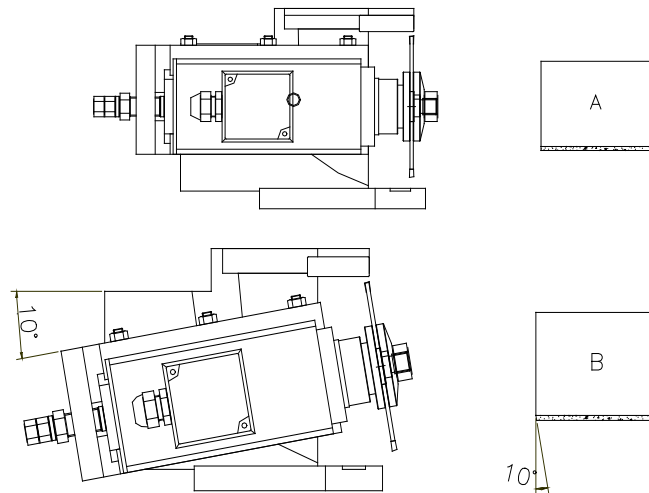


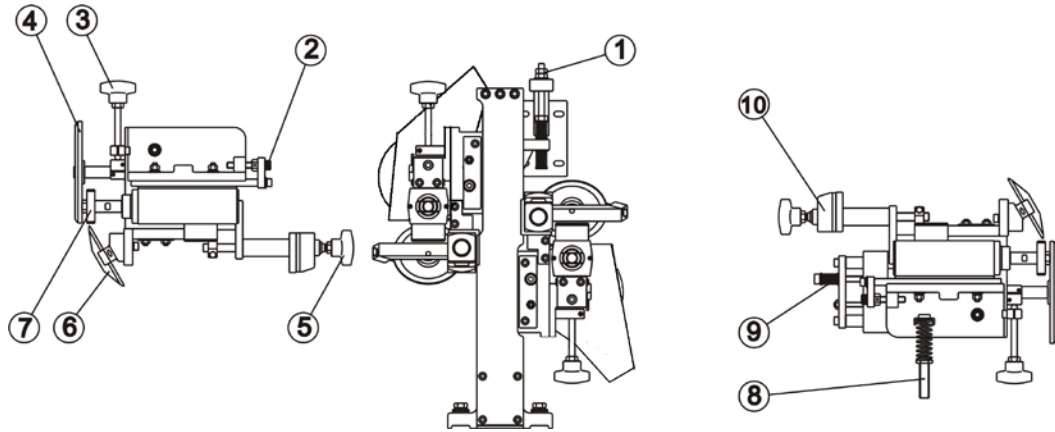
Figure 3 Adjustment of motor angle

Attention: Clean off all the wood meals with air gun after daily use .Then clean the guiding apparatus with WT-40 cleanser. Finally, add the butter through the injection nozzle or apply on the linear guide directly with the butter evenly, keeping the cleaning and lubrication of linear guides. All the damages result from urgent clean or some other human factors are beyond our responsibility.

4.6 Trimming Unit

1st trimming and 2nd trimming unit is used to cut the redundant edge band of top and bottom surface of panel, making the top and bottom edge of edge band flush with the top and bottom surface of panel.

(1) Each part of trimming unit



- | | |
|--|---|
| ① Pressure adjustment screw (top trimming) | ⑥ Side copy disk |
| ② Feeding adjusted screw (Y direction) | ⑦ Motor trimming blade |
| ③ Adjusted wrench (Y direction) | ⑧ Pressure adjustment screw (bottom trimming) |
| ④ Copier disk | ⑨ Pressure adjustment screw (blade) |
| ⑤ Adjustment wrench | ⑩ Thickness of edge band display |

Figure 1 trimming Unit

(2) Adjustment of 1st trimming cutter (with D series machine configuration rough trimming cutter)

To reduce the trimming milling amount of R fillet when 1st trimming (rough trimming), getting more smooth R fillet; in order to meet un-trim R fillet and need for trimming straight edge, add this set of rough trimming unit.

1st trimming cutter is flat blade, installation and adjustment is the same as 2nd trimming cutter, and just the angle of 1st trimming cutter blade straight line and horizontal direction is about 10 degree.

(3) Adjustment of 2nd trimming cutter

When using trimming unit to renovation the R fillet of workpiece, just set the counter value of upper trimming unit and lower trimming unit corresponding to the thickness of edge band.

Method: Use the edge band of 2mm thick, and set the value of counter⑩ as <002.0>, adjust the screw② at Figure 1 slightly.

(4) Replacement steps of trimming cutter

Loosen the screw 1 at Figure 2, pull out the 2 axis direction of copy plate slightly, struck it with wrench in position 3, then loosen the nut before the trimming cutter with 17mm wrench, take out the trimming cutter and replace the new one. The installation steps are opposite with above process.

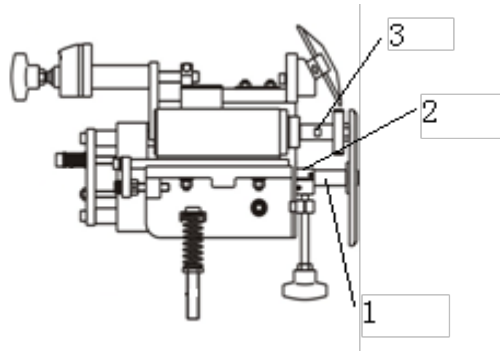


Figure 2 Replace of trimming cutter

(**Attention:** when install the new trimming cutter, pay special attention to the rotating direction of the motor and trimming cutter. If install opposite, it will damage the trimming cutter when working. Moreover, as the fast rotating of trimming motor, if there is imbalance in trimming, the motor will vibrate strongly, which will damage many parts. So it must be changed when trimming cutter damages.)

4.7 Buffing Unit

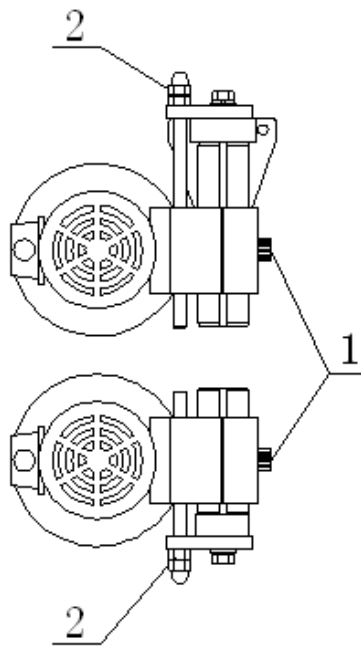


Figure 1 buffing unit

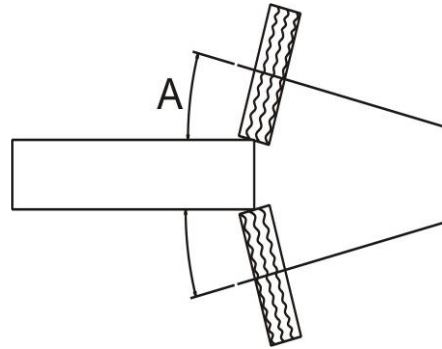


Figure 2 Angle between wheel and panel

The buffing unit is to remove the edge burr of edge band and any residual glue between edge band and panel, making the panel more clean and smooth.

(1) Adjustment of working position of buffing unit

Adjust the distance of the top and bottom buffing wheel regarding to the different thickness panels, only wring the top and bottom adjustment screw 2 to adjust the distance.

If adjust the inclination of cotton wheel and top and bottom surface of panel, loosen the fixed screw of motor, adjust the angle between motor axis and the top and bottom surface of panel, as Figure 2 shown, the angle A is between 10 to 15 degree. Loosen the screw 1, and adjust the horizontal angle of motor. Adjust the top and bottom position by using lift adjusting screw rod, making the R fillet embedded into cotton wheel 3~5mm. Tighten all fixed screws.

(2) Replacement of buffing wheel

The cotton buff is wearing parts; if the buffing effect is obviously not perfect as before, change the buffing wheel immediately. As Figure 1 shown, loosen the fixed nut of motor, unscrew the locked screw in the front of the cotton wheel, remove the old and replace it with a new one, and tighten with nut, and fix the motor to the slider according to original posit

Chapter 5 Daily Maintenance

Warning: Only keep all the maintenance on the condition of power off and cool down glue pot.

- Keep the working environment clean and dry.
- Lubricate the conveyer chains and chain blocks (by lubricating nipple on the lead rail) every 2 weeks.
- Lubricate the bearing block every 2 months.
- Check the abrasion of the cutter periodically, and change the damaged cutter urgently.
- Check the abrasion of buffing wheel periodically, and change the damaged wheel urgently.

Note: Maintenance cycle should extend or shorten appropriately according to the use frequency of machine.

Appendix

Inverter parameters setting
(Only for model EL inverter)

Parameter	Gluing	End-cutting	Trimming	Conveyor 220
01.00	80	200	300	80
01.01	50	200	300	50
01.02	220	220	220	220
01.10	0.5	3	3	0.5
02.00				
02.01	2	2	2	2
05.00	60			60
05.01	80			80
05.04				
06.03		2	2	
06.04		73	62	
06.05		5	16	
06.06		0	0	
07.00		3	4.6	
F	70	200	200	70

Remark: All the other parameter is set by original setting, if you need to restore production value, you can set 00.02 to 9. All the detail introduction of the EL inverter, please refer to Delta inverter user manual.