

Qingdao Hongshenghong Machinery Co.,Ltd

**R-R-RP & P-R-RP
WIDE BELT SANDING MACHINE
PLANER SANDING MACHINE**

USER MANUAL

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1. USE

This product is a machine tool for (Planing) sanding and polishing the surface composed of various parts with an abrasive belt. Suitable for sanding wooden components, particleboard, fiberboard, micro-veneer, artificial marble, etc., and soft-lighting polyester varnished surfaces. Broadband sanding machine is an efficient and highly automated sanding equipment, which is widely used in the sanding of large-format wood-based panels, panel furniture parts and solid wood. It can complete fixed thickness sanding and surface finishing sanding.

This product is mainly composed of a frame, a feeding device, a lifting device, an electrical and pneumatic control device, and a vacuuming device.

2. Main structure

This machine is a series of products, there are various models of single sand, double sand, three sand, one planing and two sanding and primer for users to choose. This machine absorbs foreign advanced technology design, and adopts the integration of machine, electricity, light and gas to control the work of each part. This machine is mainly composed of sanding parts (thickness roller, sanding pad, tension roller, non-woven roller, abrasive belt, etc.), conveying parts (conveying belt, work table) transmission parts, pneumatic system, electrical control and dust collection devices, optoelectronics, frequency converters, etc. The sanding part is the main working part of the machine, and there are several forms according to different processing materials; the sanding machine is mainly composed of a fixed thickness roller, a driven roller, a tension roller, and a non-woven roller, and the fixed thickness roller is driven by the main drive motor and the V-belt. Drive the abrasive belt to rotate at high speed. When the abrasive belt is working, the belt is stretched by the tensioning roller, and the tensioning force is removed when the machine is stopped. The tensioning roller is supported on the piston rod of the cylinder to move up and down. When rising: the belt is tightened, and the belt is loosened when falling. It is controlled by a manual control valve (hand-pull valve). The sanding pad plays a role in increasing the contact surface of sanding during work. When it is working, the sanding pad is pressed to the sand belt by the axial displacement of the inclined iron on the control shaft, and its inclined surface is also connected to the pressing plate of the sanding pad. , pressurizing the pad to generate cutting pressure on the surface of the board. The sand-cutting pressure of the first fixed-thickness roller is realized by the worm wheel and the worm-driven bearing, and the sand-cutting amount of the second fixed-thickness roller is matched.

During the sanding movement, due to the error of the perimeter joints at both ends of the abrasive belt, and at the same time, sanding at a fixed position will easily cause uneven processing surface. In order to ensure normal cutting and product quality, a correction swing device is installed on the tensioning roller.

The cylinder rod reciprocates the roller, adjusts the position of the abrasive belt at any time, and constantly changes the position. The re-movement of the cylinder rod is controlled by the photoelectric switch on the right side of the abrasive belt and controlled by the electromagnetic reversing valve.

Two spring-loaded pressure rollers are installed in front of the thickness-fixing rollers to guide the feed and generate a certain pressure to ensure product quality and safety.

The feeding mechanism consists of a rubber conveyor belt and its transmission. The conveyor belt is supported by two front and rear rollers. The front driven roller adjusts the tension of the conveyor belt through the screw rod, and the conveyor belt centering adjustment device is installed on the left end of the roller, which is automatically adjusted by the machine control valve.

When the conveyor belt is running, push the lever to move the pressure plate to touch the motor control, so that the cylinder moves, and one end of the roller is pushed out to the other direction to move, so that the conveyor belt always runs in the correct position to ensure the normal conveying of the workpiece. The conveyor belt drive is located at the right end of the driving roller (discharge roller), connected by a special reducer, and its speed can be changed by the handwheel (start-up speed regulation). The rear of the conveyor belt is equipped with a cleaning brush roller (optional accessory).

The lifting mechanism of the worktable is controlled by a small worm gear reducer, and the sprocket rotates the lead screw at the same time to make the worktable go up and down smoothly. The upper digital display shows that the minimum display volume is 0.1 mm.

The machine tool is equipped with a vacuum device (users need to provide their own vacuum fans), and the wood dust is discharged from the machine tool through various vacuum points to maintain continuous and safe production. Operation can be carried out via various control buttons on the panel.

For safe production, this machine is equipped with the following safety protection devices

1. Emergency manual stop button, installed in front of the machine tool, can be pressed to stop in an emergency.

2. The lifting position limit of the worktable. There are limit switches at the highest and lowest points of the lift of the worktable.

Control excessive lifting to protect the conveyor belt from damage. (Need professional adjustment)

3. Belt deviation limit switch. When the abrasive belt deviates from the roller, touch the switch to stop,

The conveyor bed is automatically lowered to protect the abrasive belt and rollers from damage and prevent grooves from appearing on the board.

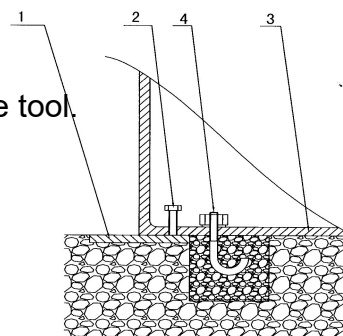
3. Installation and adjustment

1. Machine tool installation

Use the top hoisting hole to lift the machine tool. In order to keep the machine tool balanced, the steel wire rope should have sufficient length and the same length. When the ground of the machine tool is hard, the machine tool can be directly placed on four 100×200 thick 20mm iron plates, and the machine tool can be adjusted with adjusting screws. The vertical and horizontal are horizontal. When measuring the levelness (0.05mm), use a spirit level to place it on the plane of the machine frame to adjust the height of the screw, and fix the machine when the four corners are consistent. For example, if the ground is loose and not easy to bear the pressure of the machine tool, the cement foundation needs to be poured (see the figure below). One week after the initial adjustment of the machine tool, it is necessary to re-check whether the horizontal accuracy of the machine tool has changed. After the inspection and adjustment, check it every three months to ensure the machining accuracy of the machine tool.

2. Pay attention when connecting the power supply of the machine tool

- (1) The power supply voltage and frequency are consistent with the requirements of the machine tool.
- (2) The cross-sectional size of the cable should be determined according to the total power of the machine tool.
- (3) Must be well grounded.
- (4) Check whether the rotation of the motor is correct.
- (5) After normal operation, it is strictly forbidden to open the door of the electrical box.



3. Connect the compressed air pipe, the diameter of which is not less than 12mm, and the working pressure is maintained

0.6 ~ 0.8MPa, the vacuum pipe is well connected without air leakage, and the interface is average

The wind speed is not less than 25-30m/s.

4. Installation method of abrasive belt:

- (1) First check that the abrasive belt should have no wrinkles, no taper, and no waist drum.
- (2) Turn off the fan of the vacuum cleaner.
- (3) Close the pneumatic valve, and the tension roller goes down.
- (4) Open the positioning and tightening handle, pull out the locking sleeve and insert the abrasive belt.
- (5) Push on the locking sleeve, tighten the handle, and adjust the belt to be in the middle of the roller.
- (6) Open the pneumatic valve and the tightening roller rises to

tighten the abrasive belt.

5. Machine tool adjustment

1) The thickness of the machined plate and the amount of cutting are corrected.

Adjust the height of the table and the adjustment amount of the thickness-fixing roller and the sanding pad according to the thickness of the processing plate and the amount of sanding. Press the lift switch of the worktable on the panel, and the number on the panel displays the distance between the conveyor belt and the abrasive belt. Turn the weight table, and the sanding pad moves up and down to adjust the amount of sanding. The pointer of the heavy hammer table indicates that one grid is 0.1mm, and the handwheel rotates clockwise to lower the sanding pad, and vice versa. The main steel roller is driven by the worm gear and the worm to move the roller up and down to increase or decrease the amount of sand cutting.

2) Belt alignment adjustment

When the abrasive belt is running, each abrasive belt may have different moving speeds (note: due to the error of the abrasive belt joint), so the operation of the abrasive belt must be observed every time the machine is started, especially when replacing each abrasive belt. Notice. Start the sand rack, loosen the swinging fixed handle, and rotate the adjusting handle to make the sand belt run normally in the middle of the roller. The control principle of the abrasive belt: the abrasive belt is blocked-photoelectric switch-electrical signal-delay relay-solenoid valve-change the position of the swing cylinder to control the operation of the abrasive belt.

3) Selection of feeding speed

According to the size of the cutting amount and the quality of the machined surface, it is very important to choose the appropriate feed rate. The method is to turn the hand wheel of the continuously variable transmission (note: it must be adjusted during the operation of the machine), then the conveying speed can be changed to achieve a reasonable feeding speed.

4) Adjustment of the worktable plane

If the flatness of the conveying table and the machine tool changes after long-term work, the measuring tool (hundreds of

separate table) on the upper plane of the machine to adjust the lifting screw (pay attention to eliminating the thread gap), and then use the same

Method Measure other places (commonly measure the four corners of the machine tool), and make the table value consistent (0.03mm) as qualified.

Note: When the sand is partial, it is strictly forbidden to adjust the four lowering screws;

6 Adjustment of tensioning force

(1) Adjustment of the tension of the conveyor belt: screw the

adjusting screws on both sides of the driven roller to adjust the tension of the conveyor belt.

To adjust the tension, it should be noted that the tension should not be too large, so as not to cause deformation of the conveyor belt;

(2) Adjustment of the working pressure of the brush roller: loosen the fixed bolts at both ends of the brush roller device, and move the brush roller up and down

When it is suitable: tighten the bolts;

(3) Adjustment of the tension of the main motor belt: loosen the bolts on the motor fixing plate, and turn the tension bolts to make the three

The tightness of the angle belt should be appropriate, allowing the V-belt to have a 20mm bend under pressure;

(4) Adjustment of the tension of the lifting chain of the workbench: Tighten the tension sprocket through the long bolt to pull the chain

Tight but not too much to prevent the chain from breaking or bending the sprocket axle.

4. Operation:

1. Operation panel buttons (see attached picture)



2. Operation steps

Before starting, first check to make sure that the worktable is free of foreign objects, then start the vacuum fan, and start the compressed air supply at the same time, and then press the main start switch to start the front and rear sand frame switches (the front and rear sand frame motors are started by Y/Δ, and the conversion time is determined by the time Relay setting. Note: set by professionals), start the switch of the conveying bed.

In the process of processing, you should pay attention to the current

indication value at any time, check whether the size of the cutting amount in the processing of each sand frame is appropriate, and if not, adjust the thickness-determining roller and sanding pad. After completing the first piece of processing material, check whether the surface cutting is uniform. If the left and right are uneven, adjust the level of the roller or sanding pad.

5. Maintenance and Repair

I. Regularly maintain the machine tool according to the following requirements

1) After each shift:

(1) Thoroughly clean the entire machine tool with filtered and purified compressed air, especially the conveyor belt

There should be no dust left on the inner surface and the upper surface of the worktable, which seems to avoid reducing the sanding accuracy;

(2) When cleaning the machine tool, the vacuuming device should be activated;

(3) Check the compressed air filter and remove the condensate in the filter.

2): After every 40 hours of work:

(1) Check the compressed air filter and remove the condensate in the filter;

(2) Check the compressed air lubricator and fill enough lubricating oil (high-speed oil);

(3) Check the graphite cloth at the lower part of the sanding pad and replace it if necessary;

(4) Check whether the screws of the sanding pad bracket are loose. If they are loose, they should be tightened immediately, otherwise the machine tool will be damaged.

damage.

3) After every 200 hours of work:

(1) Check the felt pad at the lower part of the sanding pad with a ruler, and correct or replace it if necessary;

. (2) Lubricate the lifting chain with grease and check its tightness;

(3) Check the tension and wear of the V-belt;

. (4) Use an oil gun to inject grease into each oil injection hole of the machine tool:

(5) Check whether the fastening screws of the high-speed running parts are loose.

4) After every 300 hours of work: '

(1) Disassemble and clean the compressed air filter, replace the special oil (ub-3) of the continuously variable transmission, and open the

After the oil is drained, add new oil again, taking the oil hole as the standard.

(2) Check the tension of the conveyor belt;

(3) Check the vertical and horizontal levelness of the machine tool;

(4) Check the flatness of the upper surface of the workbench;

(5) Check the wear degree of the porcelain tube on the overtravel switch that is in close contact with the abrasive belt, and replace it if necessary.

5) Selection of lubricating oil for the following parts:

- (1) Bearings for rollers are added with high-speed grease;
- (2) Add calcium-based grease to the front and rear roller bearings of the conveyor belt;
- (3) Conveyor belt stepless speed changer plus special lubricating oil ub-3;
- (4) Hyperbolic reducer oil for lift reducer.

2. Repair of machine tools

After the machine tool has been working for a long time, the relevant parts of the machine tool should be carried out according to the following steps. adjustment and overhaul.

1) Grinding of conveyor belt (60# abrasive belt):

- (1) Adjust the flatness of the workbench;
- (2) Confirm that there is no dust on the inner surface of the conveyor belt and the upper surface of the worktable;
- (3) Adjust the adjustable steel roller and sanding pad to be 2mm higher than the fixed thickness roller;
- (4) Start the abrasive belt motor, conveyor belt reducer, and start the dust collector;
- (5) Raise the worktable (start the lift reducer first, and use manual feeding when approaching), until the conveyor belt touches the abrasive belt lightly, and the grinding of the conveyor belt should not be greater than 0.1 mm each time to avoid overheating deformation of the conveyor belt (can be fed multiple times);
- (6) After the conveyor belt is repaired, set the thickness indicator to zero.
- (7) Carefully remove the wear debris on the machine tool, especially the wear debris on the inner surface of the conveyor belt and the upper surface of the worktable;

2) Replace the graphite cloth of the sanding pad

- (1) Place the sanding pad on the flat plate;
- (2) Remove the bolts on both sides of the sanding pad and remove the old graphite cloth;
- (3) Flatten the new graphite cloth and fasten it on the sanding pad with bolts;
- (4) The adjustment pressure of the trachea is 0.1-0.2bar;
- (5) Check the flatness of the graphite cloth surface with a ruler, adjust and loosen the bolts on one side until it is leveled;

4) Sander does not start

- (1) The emergency stop button is pressed and not reset;
- (2) The abrasive belt presses the deviation limit switch; loosens the abrasive belt and tightens the cutting, so that the abrasive belt is centered, and the abrasive belt is tightened;
- (3) The belt deviation limit switch is damaged and needs to be replaced;

5) Feed end elastic

(1) Check whether the springs on the front two pressure rollers are damaged and replace them.

(2) The thickness of the sheet is too large and does not match the adjustment of the machine tool.

(3) The limit plate adjustment is too high.

6) The conveyor bed is automatically lowered, which is the automatic protection of the sanding machine. The descending distance is regulated by a time relay,

Generally set to 0-2 seconds (Note: set by professionals).

(1) After pressing the emergency stop button;

(2) When the abrasive belt presses down the deviation limit switch;

6, The use of abrasive belts

A, Correct use of belt tension

When using, reduce the tension of the abrasive belt as much as possible; for various wide abrasive belts, whether it is cloth or paper, the belt tension Usually 3-4Bar/Kg. Will suffice. Reducing the belt tension will have the following advantages:

- Reduce the problem of belt discount

Reduces friction between belt and roller/sanding pad, thereby reducing heat generated during sanding

Extended belt life due to reduced heat (abrasive belts are less prone to chip inclusion at low temperatures)

- Longer life of wideband machines (sanding pads and bearings)
- When sanding the sanding pad, the better elasticity makes the quality of the sanding also improve. Especially for painted and veneer veneer to be significant.

B, Simple way to test belt tension

. Put the abrasive belt in place

- Start belt tension

• Press the middle of the belt by hand. (See picture) If the upper roller is not easy

moving down, this indicates that the belt tension is too tight.

Adjust the tension adjuster down to 0 bar, you can see the upper

Roll down. This step will allow you to confirm that the adjuster is correct.

- Increase the operating air pressure to between 3-4 bar.

- Repeat step 3

•When the middle drum of the abrasive belt is easily moved down by hand, the abrasive belt

The tension is correct.

- Start the machine

- Check the swing of the belt. If it does not swing smoothly, adjust the

Positive swing function

- Carry out sanding tests and inspections to confirm that the machine is functioning properly.

3. Surface cutting amount of abrasive belt

The hardness of the wood, the power of the sander, the feed speed, and even the contact wheel

The diameter and hardness of the shaft are both very important factors that affect the stock removal. when

When sanding with rollers, under normal belt life, there is still

Ability to remove the sanding marks left by the previous sanding, we recommend

The maximum cutting amount is as right

Remarks: The cutting amount of the sanding pad should not exceed 0.05-0.1mm, depending on the grain size.

size (p150 to P240) and the elasticity of the sanding pad.

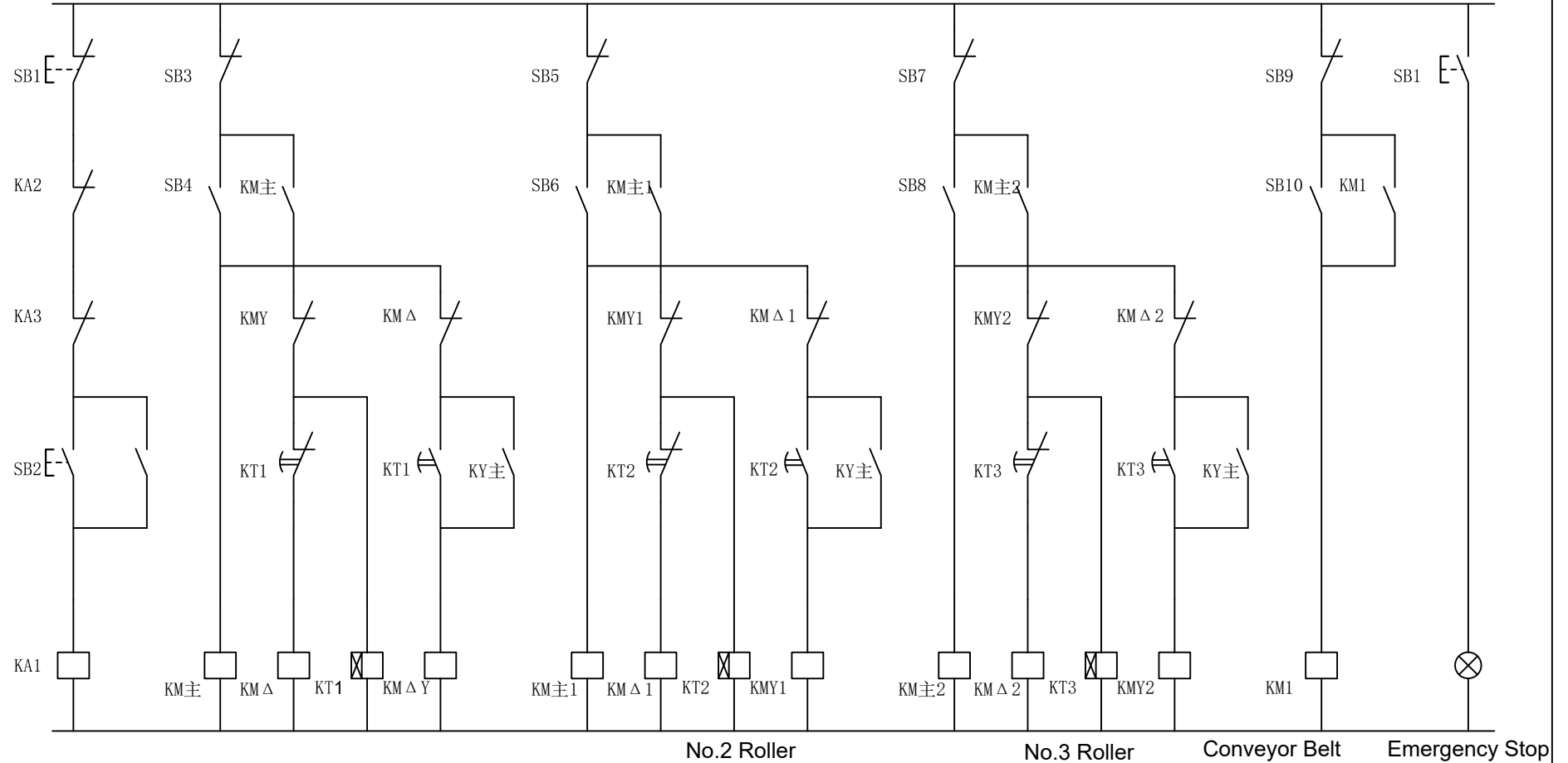
It is very important to eliminate sand marks caused by previous grit sanding, but not exceed the maximum cutting capacity of the belt grit. Skipping more than one grain size (eg, P80 to P1 50) will leave more sanding to later grains, resulting in reduced belt life. Also, the previous sand marks (P80) cannot be completely eliminated. Therefore, if sanding more than one grain size is skipped, we recommend that the amount of sanding must be reduced.

Note: The hardness of the wood directly affects the cutting amount; the abrasive belt is unchanged, the higher the wood hardness, the smaller the cutting amount.

A "quick check" for the correct amount of grind

One of the "quick" ways to check the amount of sanding is to sand a long piece of wood (the total length from the first rack to the last). When the plank is under all the sand racks, use the "emergency stop" to stop the machine, lower the conveyor table, and remove the long plank. Measure the thickness of the board at the appropriate location, and you can measure the correct amount of grinding for each grinding head. At the same time, the error degree of the left and right sides of each sand frame can also be checked; repeat the above process on the left and right sides of the machine and measure again, it can be clear whether the sanding amount on both sides of each sand frame meets the required accuracy.

Main Circuit Main Planing Roller



SB1:Emergency Stop
SB2:Main Power On
SB3:Planing Roller Power On
SB4:Planing Roller Power Off

SB5:No.2 Roller Power On
SB6:No.2 Roller Power Off
SB7:No.3 Roller Power On
SB8:No.3 Roller Power Off

SB9:Conveyor Belt Power On
SB10:Conveyor Belt Power off
KA1:Main Relay
KA2:Left Overbit Relay
KA3:Right Overbit Relay

No.2 Roller
No.3 Roller
Conveyor Belt
Emergency Stop

