

## **Cluster #7 – 43" Wide Belt Sander**

### **NON-FOREMEN MUST NOTIFY THE FOREMAN ON DUTY BEFORE USING THE 43" SANDER Primary Use**

The primary function of the Wide Belt Sander is to create a smooth surface on wood. The wide belt sander is not intended to function as a surface planer; all pieces should be the same thickness. It is also not designed to remove paint, stain, shellac, varnish, glue or other finishes such as laminated surfaces.

### **Important Parts**

The most important parts are:

*Conveyor Belt/in-feed belt* – Feeds the stock under the sanding rollers.

*Emergency stop(s)* - The red bar in front of the conveyor belt, the red button on the instrument panel and two limit switches inside of the cabinet.

*Load meter* – Indicates how hard the sander is working. It should be kept below 50%.

*Height Gage [Fixed]* – A stationary white pointer that is used to set the initial table height according to your material thickness.

*Digital Height Positioning Gauge* – This gauge is best utilized to measure the distance you are raising or lowering the table between sanding passes.

*Platen* – The platen is used only for finish sanding to remove sanding marks. It puts 2?" of paper on the stock compared to 1/16" from the contact roller. To use, lower the platen to about the middle hole. Feed the stock using the last table height setting and watch the load meter. Run the stock through two times at the same platen and table height setting for best results.

*Spring limit switches* – These switches will prevent the machine from operating if either of these switches are engaged. The sanding belt should be positioned between the two-spring limit switches.

*Sled* – Is used for pieces that might slip on the in-feed belt. The sled has a rough underside that increases the friction against the belt.

### **Operation Sequence**

The following parts are operated in sequence:

- Air control – Will force the rollers tight against the abrasive sanding belt.
- Sanding head start – Starts and stops the sanding belt.
- Conveyor start – Starts and stops the conveyor belt.
- Conveyor belt speed adjustment – Adjusts the speed of the conveyor belt. Start it at mid speed [#4] and adjust the speed to keep the load meter less than 50%. Turning it clockwise will increase the speed.

### **Adjustment of the conveyor table height**

With the machine off, set the material to be sanded (on the sled if needed) on the in-feed conveyor table and raise or lower the table until the stock touches the fixed height gage. On subsequent passes the conveyor belt height can be very accurately set or checked by using the Digital Height Positioning Gauge. To use: Momentarily press the **on/off** key on the left, then zero the readout by momentarily pressing the 0 (zero) key, second key from the right. As the table is raised or lowered, the digits will provide an exact reading of the change.

### **Demonstrate the basic operation**

- Turn the "air control" toggle switch on. This will put tension on the sanding belt.
- Press the "sanding head start" button. This will start the sanding belt rotating.
- Adjust the belt speed to an approximately #4 setting. By increasing the speed of the conveyor belt you in turn increase the load on the machine, which can be read on the load meter.
- Press and momentarily hold the "conveyor start" button until the belt begins to move.
- Place the work on the infeed conveyor table and allow it to be drawn into the machine. Be sure your fingers are not under the work piece as the work reaches the infeed conveyor belt.

**CAUTION – Once the stock goes into the machine do not attempt to pull it back or try to stop it from advancing. To stop the sanding operation, hit either the emergency stop switch or bar.**

- Closely monitor the "load meter" and attempt to keep it below 50% by adjusting the conveyor belt speed or reducing the amount of stock removed.
- When the back end of your stock is on the infeed conveyor table and you are certain the load will not exceed 50%, walk to the rear of the machine and outfeed your stock.
- On any subsequent sanding passes, the infeed conveyor adjustment wheel should be turned clockwise approximately 1/5 of a turn and no more. This movement of the infeed table should be double checked on the "digital height gauge" for an approximate minus .010 to .12 inch cut.

## Turning the Wide Belt Sander off

- Press the "conveyor stop" button followed by the "sanding head stop" button.
- Turn the "air control" toggle switch to the off position after the sanding belt comes to a complete stop.

**CAUTION – Do not turn "off" the compressed air toggle switch until you can verify the sanding belt and all moving parts have come to a complete stop.**

- Turn off the Digital Height Gauge by pressing the on/off key.

If a fine grit sanding belt was installed, it must be removed and a lower grit paper, 60 or 80 grit should be re-installed. Before the member departs the machine it should be cleaned and the area swept.

## Safety

- Ensure all glue has dried at least 24 hours and all excess glue is completely scraped or sanded off prior to feeding it into the Wide Belt Sander. Immediately after glue is applied, wipe off all excess with a moist cloth. This will prevent glue build-up, will reduce the amount of glue that must be scrapped/hand-sanded off and will prevent glue build-up on the belt which will destroy the belt life and increase shop costs for replacement belts.
- Ensure the area behind the sander is clear before beginning the sanding process.
- Always wear eye protection.
- Keep fingers out from under the material when it is placed on the infeed conveyor belt.
- Do not stand directly behind material while feeding the material into the machine.
- The Wide Belt Sander is designed for sanding wood products only.
- Do not stand boards on end or side unless the boards are wider at the base than tall. Boards should be clamped to prevent separation. Items being sanded must always be in a stable position. Rather than side sand, use the jointer if possible.
- Do not overload the machine. To help recognize when the machine is being overloaded it is equipped with a main motor "load meter" which gauges the percentage of the motor's capacity being used. If the motor load exceeds 50%, slow the conveyor speed to reduce the load on the machine.
- Never attempt to sand material shorter than 16", narrower than 1" or thinner than 1/4". The 16" minimum applies even if using the sled.
- When sanding a narrow strip, always angle the stock across the rollers so as not to create a "hot" spot on the belt.
- **Never reach into the machine while it is running.**
- Examine your material for nails, staples, and other metal material close to the surface before putting it into the machine. Metal objects will cause

sparks and may cause a fire by igniting the sawdust. If in doubt, scan the material with the metal scanner.

- Roll sleeves above the elbow, secure long hair and don't wear loose clothing, loose jewelry.

## **Give Hands On Experience**

Wear safety glasses, turn on the dust collector.

Have each member perform the following:

- Place your wood on the infeed conveyor table and under the fixed height gage. Set the conveyor table to the correct height by adjusting the height adjusting wheel.
- Activate the sander using the steps discussed previously. Check the "CONVEYOR BELT SPEED ADJUSTMENT" is set at #4 or less.
- Feed the piece of wood into the machine and immediately focus on the load gage. If for any reason the load goes over 50%, decrease the feeding speed appropriately and/or reduce the amount of wood removed on subsequent passes.
- When the wood has begun the sanding process, by sight or by sound, and the load meter is below 50%, walk to the rear of the machine and retrieve your material.
- On subsequent sanding passes, move the conveyor table adjustment wheel 1/5 of a turn clockwise checking that the digital measurement is approximately -.010 to .12 inches.

## **Cluster #7 – Oscillating Edge Sander**

### **Primary Use**

The primary function of the Oscillating Edge Sander is to create a final surface finish on the edges of wood, drawers, doors or any long or short stock.

### **Important Parts**

Sanding Belt – Removes material from the wood stock.

Emergency Stop Button – Located with the stop switch.

On (Green) Off (Red) switch - Located on the lower right side of the machine.

Fence – If sanding with the belt in a horizontal position, the use of the fence is recommended.

### **OPERATION SEQUENCE**

Always disconnect machine from power source before making any adjustments.

## **Adjustment of the sanding belt table height**

The Table is spring loaded. With the machine off, loosen right and left side lock handles one at the time. Adjust table height, than lock one clamp at the time. **DO NOT LOOSEN CLAMPS WITH BOTH HANDS AT THE SAME TIME.**

## **Adjustment of the angle of the Main Table**

- The Table can be tilted from 0 degrees to the table up to 45 degrees.
- Loosen the lock handles under each end of the main table.
- Tilt the table to the desired position.
- Tighten each lock handle.

**Adjustment of the belt tracking is a maintenance function.**

## **Demonstrate the basic operation**

Have each member perform the following.  
Demonstrate the use of the oscillating edge sander.  
Demonstrate the use of the oscillating edge sander with the miter gage.

## **Safety**

- Never start the machine with the work piece against the sanding surface.
- Do not place hands in contact with the sanding belt during operation.
- Never wear gloves, roll sleeves to the elbow and do not overload the machine.
- The point of contact of the workpiece should be on the downstream side of the stock up to a maximum of 90 degrees.
- Examine your material for nails, staples, and other metal material close to the surface before putting it onto the machine. Metal objects will cause sparks and may cause a fire by igniting the sawdust. If in doubt, scan the material with the metal scanner.

## **Cluster #7 – Oscillating Drum Sander**

### **Primary Use**

The oscillating drum sander is used for finish sanding. Operating a drum sander correctly can save many rolls of expensive abrasive paper. Ensure all glue has dried at least 24 hours and any excess glue is completely scraped off prior to feeding it into the drum sander.

**On/Off switch.** To start the sander, pull out the yellow and red on/off switch. To stop the sander, push the switch in. This switch stops the sander drum only. The

conveyor is controlled by the conveyer speed rate knob. Ensure BOTH switches are **off** before leaving the sander.

**Select the correct height.** Before making your first pass, slide the workpiece under the sanding drum and adjust the height so the drum touches the workpiece but can still rotate with slight hand pressure.

**Select the correct feed rate.** For oscillating mode:

1. Turn **OFF** the sander, and ensure the drum is not rotating.
2. Press the red "oscillator switch" in and rotate until the pins engage.
3. Set the speed rate to maximum.

If sanding without oscillation, with the machine "OFF," pull out the red "oscillator switch" and set the speed rate to 40 – 50%.

**Drum Height Control.** On successive passes, rotate the Height Control Wheel 1/4 of a turn, down (counterclockwise), which equates to 1/64".

**SandSmart.** SandSmart continuously monitors the load on the drum motor, and automatically regulates the conveyor speed motor to maintain the highest feed rate without overload. If the load increases, indicating too great a depth of cut and/or too fast a feed rate, SandSmart will illuminate the red indicator light on the SandSmart panel, and reduce the speed of the conveyor. When the load decreases, SandSmart will extinguish the red light and increase the conveyor speed; but not faster than the manual setting on the speed rate control knob.

**Minimum length stock:** 2 1/4".

**Skew the work.** Sending your work through the sander at an angle improves the abrasive's effectiveness. It also helps reduce the possibility of burning either the wood or the abrasive. On the final few passes the board can be run straight through to remove angled sanding marks.