

Delta 31-255x, 18-36" drum sander

1. **Introduction** - The Delta model 31-255x is an 18" x 36" drum sander with a two speed drive. The unit can be fitted with an optional outboard shaft that accommodates an accessory pneumatic drum for contour sanding. The system will provide accurate sanding for wood up to 18" wide in a single pass, or 36" wide in two passes.
2. **Safety:**
 - a) Obtain advice from the supervisor on duty if you are not familiar with the procedures used with this equipment.
 - b) A dust collector must be attached to this machine.
 - c) This machine is designed to sand wood or wood-like products only. Sanding or grinding metal can result in fire, injury and/or damage to the product.
 - d) Check the feed belt tracking periodically to prevent belt run-off.
 - e) Clear the sanding area and the infeed/outfeed tables of all objects prior to starting the machine. Be sure that all tools, gauges and wrenches are removed from the work area.
 - f) Do not sand pieces of material that are shorter than 7" long or thinner than 1/32" thick.
 - g) Support all sanding work pieces with a table or additional support at table height when they extend past the infeed/outfeed conveyor.
 - h) Dress properly. Do not wear loose fitting clothing, jewelry or gloves. Contain long hair. Keep clothing away from moving parts of the machinery.
 - i) Prevent the workpiece from contacting the sanding belt before starting the machine.
 - j) Sand with the grain of the wood.
 - k) Disconnect the machine from the power source before installing, removing or adjusting drum belts, conveyor belts or accessories.
 - l) Some wood dust is irritating and can cause respiratory problems. Wear a dust mask or filter system if you are sensitive to wood dust.
 - m) Never leave the machine running unattended.
3. **Operation**
 - a) Prior to any work, inspect the drum abrasive for tears and damage. If necessary, clean with an abrasive cleaning stick. Members abusing the machine and causing damage to the sandpaper should pay \$10 for a replacement strip (2"w x 13'-2½").
 - b) Connect the dust collection system to the 4" opening in the drum cover
 - c) Set table height for the stock to be run as follows:
 - 1) Using the thickness scale located next to the On-Off switch, set the table to a thickness slightly greater than the stock to be sanded.
 - 2) Turn on the infeed conveyor belt to a slow speed. Do not turn on the drum at this time.
 - 3) Open the drum cover and feed the stock into the machine on the infeed conveyor.
 - 4) Once the stock is under the drum, slowly raise the infeed table until the drum begins to rotate.
 - 5) Remove the stock from the outfeed table and close the drum cover.
 - d) Turn on the drum motor using the On-Off switch located below the switch shield on the left side of the machine. Move the switch up to the on position, and down to the off position. Normal operating speed for the drum is 2210 surface feet per minute. This is proper for general purpose sanding, stock removal, surfacing and rough finishing.

Note: If fine finishing is to be done on hardwoods, the drum abrasive should be changed to 120 grit, the drum speed changed to 3300sfpm and feed depths limited to no more than 0.004" (1/16th of a turn of the wheel at a time). This process should be repeated for 150 and 220 grit abrasive.

- e) Turn on the infeed belt conveyor by rotating the “Table Feed Knob” clockwise ¼ turn.
- f) Place stock onto the infeed table and guide it under the pressure rollers. Listen carefully to the drum motor sound and reduce the infeed conveyor speed at the first indication of a slowing of the drum by rotating the dial counter-clockwise 1/8th turn.
- g) As the work progresses, the infeed conveyor speed may be increased a small amount at a time if there is no indication of strain. However, each thickness adjustment will necessitate repeating the previous step.
- h) Observe the infeed belt position on the slider bed after each pass to insure that the infeed conveyor belt is tracking straight. If it is moving left or right on the slider bed, suspend operations and consult the Supervisor on Duty. Failure to have the tracking problem corrected will damage and make useless the conveyor belt (Cost: \$40.00).
- i) Where stock being surfaced is 9” or less in width, run it at an angle through the machine to cause even wear across the drum belt.
- j) Periodically clean the drum belt using an abrasive cleaning stick.
- k) At the end of the work session, clean the drum abrasive, the conveyor belt, and blow dust from the two motors and the drives

End

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The following is additional information for the supervisors benefit and is not included in the Shop Manual

For Supervisors only:

4. Changing the drum abrasive

- a) Standard abrasive is 80g or 120g Alumina-Zirconia belting which is blue. This belt will cause substantially less burning, especially when sanding Maple, Cherry or Mahogany because it tends to be self cleaning, runs cooler and tolerates pitch better than any other product.
- b) If it is necessary to replace a damaged drum belt, or change to a finer grit, use the following procedure. Please review section 3. d) 1) above before changing grit.
 - 1) Disconnect the power and dust collection system.
 - 2) Open the drum cover
 - 3) Press the spring-loaded abrasive clip located at the end of the drum (one at each end of the drum).
 - 4) Withdraw the sandpaper belt from the clip and carefully unwind the paper from the drum.
 - 5) Release the clip at the other end of the drum and store the abrasive strip for future use if it is undamaged.
 - 6) Cut a new strip of the desired grit 13'-2 1/2" long. Cut a taper on each end of the strip that extends 15-3/4" from the end. Use the previous strip as a pattern to be sure that the taper is in the correct direction on each end. If one or both tapers are backwards, the entire strip is useless. (When looking at the strip from the end, the right edge should be straight as cut at the factory, and the taper should go from the bottom right corner, up and to the left a distance of 15-3/4".) It will be necessary to clip off 1"-2" (trial & error) of the pointed tip on each end of the strip so that it will engage the drum clip properly.
 - 7) Install the new strip. Insert the point into one of the drum clips with the tapered edge running along the end of the drum. Rotate the drum to wrap the strip on the drum taking care to keep wraps tight and close together, but not overlapping. Insert the other end into the opposite drum clip. Double check that the sandpaper doesn't overlap at any place in the spiral seam.
 - 8) After running one workpiece, re-tension the drum abrasive.
 - 9) Abrasive selection:
 - 36g: aggressive stock removal, glue removal, rough sanding
 - 80grit – general purpose sanding and stock removal
 - 120 grit - minimum stock removal finishing, leaves fine marked surface
 - 180 grit – fine finishing, leaves smooth finish
 - 220 grit - very fine finishSanding should progress through all grits and should not skip a grit.

5. **Replacing the infeed belt** – this process requires removing the infeed/outfeed table and will require realignment of the drum. Follow instructions in the manual or request assistance from the supervisor assigned to the machine.