

Lumber Smith Trouble Shooting Guide

For saws with a motor adjusting bolt

In the event your Lumber Smith Sawmill is not cutting flat boards consistently or if you are having difficulty getting the blade to run on the drive and idle wheels properly (teeth off the wheels), do the following:

Adjusting the Saw

1. **Check the Motor Bracket** - Be sure the motor bracket is sliding on the case when the blade is tensioned and when blade tension is released.

Reason: If the motor bracket does not slide on the case when the blade is tensioned, the bracket will twist; causing the drive wheel to be out of alignment with the idle wheel. When tensioning the blade, watch the engine bracket – you should see it slide on the case – not twist.

2. **Check the Idle Wheel Plate** – Look at the idle wheel plate, the lower right corner. If that corner of the idle wheel plate appears to be bent outward by the vertical adjustment bolt, release blade tension and loosen the grommet nut above the vertical adjustment bolt. When adjusted properly, the grommet nut should be flush with the end of the stud or show 1 thread beyond the grommet nut. Tension the blade. (If your saw has a stud that sticks out beyond the grommet nut 10 to 15 threads, be sure the idle wheel plate is not being bent out by the vertical adjustment bolt, if it is; loosen the grommet nut no more than 2-3 revolutions counter clockwise.)

Reason: If the grommet nut is too tight, the travel (vertical adjustment) of the idle wheel plate is limited. In that case, the drive and idle wheels cannot be on the same plane causing the blade to twist.

3. **Check Wheel Alignment** – With the blade tensioned, check the alignment of the drive and idle wheels using the wood templates you received with the saw. If you adjusted the grommet nut, you will likely need to realign the drive and idle wheels. To realign the drive and idle wheels:
 - a. Check the wood templates sent with your saw, they can warp. Both templates should sit flat on a flat surface.
 - b. Loosen the blade back bearings and move them out of the way of the blade.
 - c. The drive and idle wheel alignment must occur with the blade tensioned.
 - d. Follow the wheel alignment steps outlined in your Assembly Manual. Recheck blade tension prior to locking the engine on the engine bracket. When checking vertical alignment, if you have difficulty getting the drive and idle wheels to align vertically, go back to **Check the Idle Wheel Plate** (#2 above) and insure the grommet nut is positioned properly.
 - e. Before locking the engine to the engine bracket, be sure the drive and idle wheels are aligned and the blade is tensioned properly. If both are true, lock the engine down on the engine bracket.
 - f. Pull the starter rope. If the blade is tensioned properly and the wheels are aligned, the blade's teeth will run off the drive and idle wheels about the same amount. When pulling the starter rope, if the blade does not stay positioned on the drive and idle wheels; the drive and idle wheels are not aligned properly.

Reason: All band saws rely on the blade being “balanced” on the drive and idle wheels despite pressure on the blade as it is pushed through a cut. The idle and drive wheels must be on the same plane for the blade to stay positioned properly on the drive and idle wheels.

4. **Check Blade Tension** - Adjust blade tension per the Assembly Manual.

Reason: A loose blade will wander. A blade that is too tight will break prematurely and can twist the saw case out of alignment – the saw case does flex under pressure.

5. **Check the Blade Back Bearings** - Insure the blade back bearings are nearly touching the back of the blade.

Reason: These bearings keep the blade aligned on the drive and idle wheels when you are pushing the saw through a cut. While cutting, the blade may touch these bearings from time to time. If there is too much of a gap between these bearings and the blade when pushing the saw through a cut, the blade will ride too far back into the case, causing the blade to waver in the cut – making the board surface wavy. If the blade touches the bearings constantly, the blade will eventually cut into the bearing and generate a lot of heat. Do not touch these bearings if the saw has been running and the blade was in contact with the bearing... it will be very hot!

6. **Check the Blade Guides** – Insure the blade guides are in proper adjustment. Apply firm thumb pressure downward to the blade guides such that the blade deflects downward about 1/16”. Be sure each blade guide is in contact with the blade across the width of the guide and not riding on a point of the blade guide.

Reason: The blade guides are a final departure point of the blade in the saw case to insure the blade’s “attack angle” is parallel to the cutting track. Blade guides decrease the unsupported span of the blade, while insuring an accurate and speedy cut.

Operating the Saw

Apply Constant Pressure on the Saw – When making a cut, apply constant pressure – not constant speed -- to the saw using the hand holds – not the motor or Lift Assembly wheels, etc. When you come to a knot, the cut will slow. Allow the blade to do its work, don't push on the saw harder to get through the cut.

Adjust Blade Tension - Adjust blade tension per the Assembly Manual. When tensioned properly, the teeth of the blade will be off the wheels and the blade will be positioned at the blade back bearings properly. Adjust blade tension as needed. After some experience with the saw, you will be able to “pluck” the blade, get the tone and blade tension correct quickly. After tensioning the blade, you might adopt the practice of pulling the starter rope and make an adjustment to blade tension rather than making an adjustment to the 2 blade back bearing's position. If the blade is not tensioned properly, the blade will run on the wheels (tension too loose) or off the wheels (tension too tight).

Watch Blade Condition – A dull blade will cut wood – slowly. The slower the cut, more heat will be generated; a hot blade will break sooner or later. Watch the condition of the sawdust and your cutting speed (using constant pressure), fine sawdust flying around means the blade is likely dull. Finish that cut, examine the blade, examine the wood you just produced looking for knots or an irregular grain pattern. Knots and irregular grain patterns slow the cut and may lead you to think the blade is dull when it is not.

Watch for a Blade Ready to Break – If during a cut, the blade begins to move in the kerf toward the end of the log and then back to the other end very rapidly (with each revolution of the blade); the blade is likely about to break. When this happens, a crack has developed somewhere in the blade causing the length of the blade to be different at the tooth edge of the blade vs. the back edge of the blade. The blade will break or come off the wheels very soon. If you notice this condition, stop the saw immediately, do not complete the cut and check the blade. Replace or repair (weld the crack closed) the blade.

Other Things that Can Go Wrong

Check the Idle Wheel Bearing(s) – Be sure the idle wheel bearings are in good condition. The idle wheel should not run sloppy on the idle wheel shaft. This is rarely a problem if your idle wheel has paired needle bearings.

Check the Condition of the Idle Wheel Plate - There are times when the idle shaft will become bent on the idle wheel plate. Remove the blade, remove the idle wheel (while making a mental note about where the 4 washers go) and check the idle wheel shaft to insure it is square (within 2-3 degrees tolerance) with the plate. If the shaft is not square on the plate, the wheels cannot be aligned. Call us and ask for a new idle wheel plate if your saw is under the 1 year warranty. When this condition occurs, some event(s) caused the problem – while cutting, the log turned and the blade did not break - the saw was left with the tensioned blade supporting the weight of the saw across the top of a log.