

NHLA – “Hardwood Matters”

Sawing Dogs and Kneeblocks Successfully

Most mills have experienced bandsaws gradually “getting unstable”, trying to run into or away from the carriage. It can be pretty frustrating, not knowing what changed from one day, or one saw, to another. Here are a few basic checks that may help find the causes.

First things first – is the front edge of the saw tight? If it’s not the tightest part of the saw you can’t saw straight lines. Fire up the bandmill, track in a good saw, shut the mill off and let it coast to a stop, lock it out. Pull on the leading edge, the back edge, and the center and see what it takes to pull them off the guide. On a single cut the front edge has to be noticeably tighter than any other part of the saw. On a doublecut the front cut should be just a bit tighter than the backcut, but they should be quite close. A loose cutting edge can be a problem with mill alignment or with saw preparation, what is certain is that these saws will not cut properly.,

When saws are unstable bandmill alignment can clearly be a root cause, particularly if saws are consistently running the same direction. While it may seem like once a mill is aligned it should stay put that’s certainly not the case. The constant vibration present in a mill is working tirelessly to loosen ever fastener it can reach. Every millwright I know has gone through the “I know bloody well I left that tight” scenario, the problem is that vibration works stuff loose, that’s it’s job. When you combine that with the gyroscopic precession forces inherent in a bandmill (every force that acts on a gyroscope displays the effect of a force in the opposite direction ninety degrees in precession) it’s no wonder things move. Vibration is loosening everything in sight, the wheels are twisting the mill sideways, hello Mr. Kneeblocks.

While you’re going over the alignment pay particular attention to the bandmill guides, especially the shifting top guide. It’s no good to check the alignment of the guides in just one position. Once you have them aligned run the top guide up and down and check alignment again in several positions, you’re likely to find that shifting the guide changes alignment. This is due to wear in the shifting mechanism, until you can make proper repairs move it up far enough to be clear, get it aligned and leave it stationary. If shifting the top guide is twisting the saw you’re losing a huge amount of the beam strength that a well put us saw has. Once that happens it takes very little force to make the saw run sideways. Sorry to harp on this, bit of a pet peeve.

If the saws running wide generally seem to be right after they enter the cut the bandmill strain becomes suspect. When a bandsaw hits the cut it shock loads the strain and to keep the saw on line the strain mechanism must recover very fast and keep the front edge tight. Mechanical strains have fulcrum points that are easy to inspect and lever arms that you can watch react to changes in load. If they quit moving you’ve got problems, it means the fulcrum points are embedded instead or rolling, it means the strain is dead, and the dogs are in danger. The rules are the same for air strain, reaction to changes in load must be immediate.

In the filing room unfortunately almost anything that is not quite up to snuff will cause saws to run unpredictably. At the risk of harping again (no wonder I live alone) the biggie always was and always will be not getting the teeth genuinely sharp, with every corner up and working, but enough of that.

A couple of the more subtle problems can occur over time and seem to “suddenly” reach critical mass and cause problems. One of these is worn parts in a saw sharpener (or swage or shaper) that lead to a “long corner” (one side of the swage being heavier than the other). When this is caused by the grinder it’s usually a result of the grinding wheel spindle not being dead square to the faceplate of the sharpener. A very slight error from square causes a tiny bit more material removal from one side of the swage, but that error builds with every grind and with every swage. That long corner replicates itself and the saw will lead in the direction of that long corner. Worn cone screws on the sharpener are often at the root of this sneaky problem, but poor maintenance on swages and shapers will also do it for sure. Once you correct the root cause you’ll have to grind the swage off the saws completely and bring them up again or you will still replicate the problem.

Another of the common causes that has to be corrected in the filing room is bent teeth. Generally when saws are being leveled the teeth are hung off the edge off the leveling block, as a result bends in the teeth themselves are overlooked. When the bent teeth are pulled back onto the leveling block and examined the appearance they create can be that of a ridge or dish in the front quarter. Shortening up the straightedge to examine these parts of the saw carefully and separately is necessary, this is after all the business end of the saw.

Successfully sawing dogs clearly means never getting near them, but bandsaws seem to seek them like tornado’s finding trailer parks. Problems with bandsaw instability can be pretty frustrating, here’s hoping these thoughts will be some benefit.