

SAWMILL FORUM

BY CASEY CREAMER

I have an annoying problem that eats at me. I have a Frick "0" manual mill powered by a GM 4-71 diesel engine. Saw: 52" 7/8 gauge. 44 T. 9/32" kerf reg. bits with free-cut shanks. Saw 500-550 rpm. Sawing both softwood and hardwood, my problem seems to come at end of cut. The saw then seems to come back to board side a fraction of an inch. A visual estimate of 1/8-1/4". But saw and bearing next to fast collar are running cool to the touch. Each of the 4 knees can be pulled and pushed back a good healthy 1/4". Could this be a problem, the lash between rack and pinion gears? My mill is old, saw bought new from Hoe 12 years ago and does not have much use.

I doubt that the slop in your headblocks is the culprit. When you make a set you are taking up the slop for that time period.

Your observation about what happens at the end of the cut is the most important piece of information here, aside from the lack of heat in the saw. What you are describing is a saw that runs in towards the log and then as it exits the cut it stands back up leaving a gap between the saw and the log. If the saw exited the cut cleanly and made no other moves as it exited the cut, I would be pointing at the mill alignment. Because in that case, your saw would actually be sawing a straight and true line like it is supposed to do. It just wouldn't be the line you wanted

because your cant would at that point be measuring smaller on the far end.

Your cant is still measuring smaller on the far end, but for a totally different reason. Instead of your saw sawing a straight line, it is laying over into the log which we would refer to as running in. If it had been running out instead of in, it would have also been heating because as the saw lays over towards the board side, that exposes the body of the log side of the saw to the log, which will at that point rub the saw, create heat, dish the saw farther to the board side by expanding the log side, thus causing more running out and more heating.

How the saw exits the cut is the first thing I ask about when asking for symptoms during the normal troubleshooting process. The answer tells me which direction to look initially. If it exits the cut cleanly, then I need to look in the direction of alignment. Carriage, track, carriage wheels, etc. On the other hand, if the saw exits the cut with any drama, I now have a somewhat completely different direction to start focusing my attention. In that case, I want to look at the collars, the bearings, how the saw was hammered, and how the saw is being sharpened.

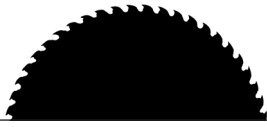
The saw is not heating so I am not worried about the bearings being the issue. That leaves three things that can make the saw lay over in either direction. Since we are looking at it laying over into the log instead of out of the log, I would first check to see how the saw was hammered. You still have to check the collars to make sure that when the nut is tightened from hand tight to wrench tight it isn't dishing the saw towards the log aide. Usually, bad collars tend to dish the saw towards the board side. And of course, the first thing you should check before anything else is whether the teeth are sharpened accurately or not. In this case, if it was the teeth, you would see that they are sharpened out of

square and high to the log side. But, usually when I see inaccurate sharpening the teeth are high towards the board side, which of course will make the saw run out instead of in. Generally, the only time I see bits that are sharpened high to the log side is when someone is trying to compensate for a saw that is running out of the log instead of getting the saw hammered properly.

My guess is that there is more than a good chance that you have a saw that was hammered improperly to be dished towards the log side in the errant hope that when it came up to speed it would magically get the notion to stand up straight. This is still a common myth being bandied about in our industry that just really doesn't hold water. If a dished saw had the ability to straighten itself up when at speed, why would I be able to make a living straightening saws? They would just straighten themselves up and put me out of business. And let's face it, if by any chance centrifugal force would actually straighten a bent saw, what would it do to a saw that was already straight? Let's add to that a little bit. When put up



Notice the shiny guideline. This saw must have been running in and instead of fixing the problem, the sawyer chose to try and steer the saw with the guides.



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properly, our saws are not really straight. They are flat on the log side and tapered one or two gauges on the board side. If the saw was truly straight, it would be even-handed which would mean it would look exactly the same on both sides. That is what we call an even-handed saw. If it was a single gauge saw it would be flat on both sides. Because our saws are tapered, to have a truly straight saw we would have to have exactly the same amount of taper on each side, or half the amount of taper we would see when the log side is flat and the board side is tapered.

Now that we have figured out what is most likely causing your problem, that doesn't mean we are finished. You can get the saw hammered properly and/or get the bits sharpened accurately, but then there is more work to do. Just because you found the major cause of your problem that doesn't mean that you should stop there. Even though your problem isn't being caused by an alignment issue, you should still go ahead and go through the entire sawmill troubleshooting process from start to finish to make sure there aren't some other issues lurking in the background. It is also quite common for sawmills to mis-adjust one thing in order to try and get around an inaccuracy somewhere else. That is what we call the "law of compensating errors." How many of you have tried to solve the issue of a saw running out by adding extra lead? Then when you fix what was originally causing the saw to run out, you are trying to make your mill run properly with 1/8" lead or more. That's not a good idea.

One more thing that I noticed in your original question. You said your saw runs 500 to 550 RPM. In actuality, it doesn't. It either runs 500, 550, or some definite number in between. When a new customer brings in a saw to be hammered, I always ask a series of questions about the mill so that I have the specs I need to put up their saw properly. Of course, I have to know whether they have a right or a left-handed sawmill. That's how I know which side of the saw to make flat while leaving the other side tapered. I also need to know what speed they run in RPMs so that I can convert that to SFPM so that I know how much tension (or stretch) to put into or leave in the saw. Anyone who has ever answered my RPM question with an answer like 500 to 550 knows full well by looking at me that they really haven't answered the question properly. The amount of tension each saw needs isn't a moving target. It is a specific amount based on the actual speed that the saw is really running at.

You can either put a tachometer on the mandrel or figure out the speed based on the size of the pulleys. Either way, it's important to come up with a specific number. If your power plant is varying enough to make the saw run that entire range of speed, you either have an issue with your motor, or the saw is running so poorly that it is slowing the motor down that much. Start with accurate information, and you can expect good results.

Send your questions about sawmills and their operation to Casey Creamer, president of Seneca Saw Works, Inc., PO Box 681, Burdett, NY 14818, (607) 546-5887. Email: casey@senecasaw.com.



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