

SAWMILL FORUM

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Last month we talked about getting a smoother finish on your “rough cut” lumber without using a planer.

Who wouldn't want a smoother finish on their lumber? Even if your customer isn't asking for a better finish, the smoother each board is, the more valuable the product looks. Even if you are making railroad ties or pallet stock, the better your loads look, the more likely your customers are to think they are getting a superior product from your mill. Better than your competitors.

I'm going to assume that everyone who read last month's Sawmill Forum got right to work at getting all of the inaccuracies out of their track, carriage, mandrel, and collars. That was the hard part. Here comes the easy stuff. All you have to do is make sure your saws are being hammered by someone willing to work in the closer tolerances needed to generate much less wobble in your saws.

Now comes the easiest part:

All you have to do is make sure that all of the teeth on the saw are in the same plane. Your saw doctor can do that for you, but quite frankly, this is something that you can do for yourself. That is if you have someone at the mill who has the patience and the time to devote to straightening all of the shoulders on your saws to a tolerance that is close enough to create a smoother finish on your boards.

If you try to straighten shoulders with a hammer, it will change the levelness and tension of the saw and possibly distort the socket to the point where the bits and shanks will no longer fit correctly.

But if you use a crescent wrench for shoulder straightening, it will not affect the rest of the saw in any measurable way. And all you need, aside from the wrench, is an accurate spider gauge and a good eye.

Start with a new set of teeth in the saw. First set your spider gauge to read the corners of the new bits that you just put into the saw. The gauge should be set so that it will just barely miss both corners of a perfectly centered tooth. Now start

with the board side of the saw and find any tooth corners that hit the spider gauge and mark the shoulders of each tooth that hit with a crayon or piece of chalk. Next, do the same on the log side of the saw.

There are three different possible reasons for why a new tooth would have a corner that is higher on one side than the other.

1. The tooth has a manufacturing flaw in that the side grinding is inaccurate, leaving more side clearance on one side than the other.
2. The vee groove in the saw was mismanufactured so that it is off center.
3. The shoulder is bent or twisted.

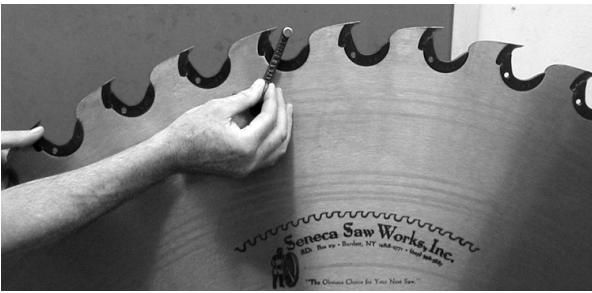
To be able to fix the problem you must first determine which one of these three categories you are dealing with. The reason I had you checking the corners first was to find which teeth had a problem. Once you know that tooth has a problem, the next step is to determine the cause.

Let's say, for example, that you found only one tooth with a problem and it showed a high corner on the board side. Now readjust your spider gauge to read the flat spot on the side of the tooth nearest where it contacts the tip of the shoulder. This flat spot is just past where the side grinding of the tooth ends.

If it checks out okay, then you just have a problem with the side grinding of the tooth being inaccurate. If it checks out high to the board side (like the corners did) then you have to determine if the vee groove is milled or if the shoulder is bent. You should remove the bit and visually inspect that vee groove. It won't be perfect, but if you can detect an inaccuracy with your naked eye, chances are it is not within running tolerance.

Most likely, the vee groove will look centered and you will then check the shoulder with your spider gauge to find the inaccuracy there.

If that shoulder is bent, and you have confirmed that it is bent towards the board side thus making the board side corner of the bit a little higher than the log side corner, you now have



Checking tooth alignment with a spider gauge.

to determine which one of two different kinds of bent shoulders you have.

1. The whole shoulder is bent to one side.
2. Just the tip of the shoulder is bent off to one side (twisted).

Either way, you can easily fix it with a crescent wrench. If the whole shoulder is bent evenly, the handle of your wrench will be pointing straight up. On the other hand, if the tip is twisted, you will need to put your wrench on the tip of the shoulder in more of a diagonal position.

It takes a fair amount of pressure to bend or straighten a saw shoulder. But don't get carried away with it. If you bend it too far and then have to bend it back and forth a few times before getting it centered, you are doing that saw a disservice. If you bend any metal back and forth too much it will weaken and either bend too easily during sawing or it will crack and soon break.

I would rather have you be a little timid with the wrench to the point where it takes a few tries without accomplishing anything before you get it to move the right amount, than to have you over bend it. This is where patience and a little finesse comes in. That guy in the mill who over tightens every nut and bolt he gets near, is not the right guy to get to straighten your shoulders on your saw. Pick out the person blessed with finesse and patience and a good eye.

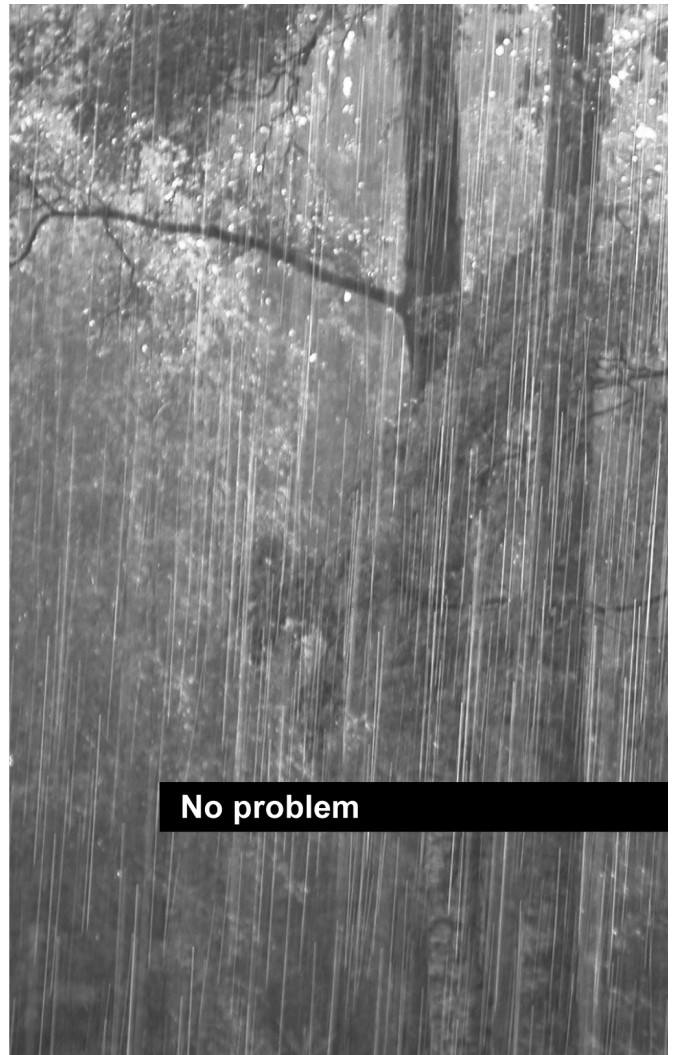
Once you get all of the teeth in all of your saws in the proper plane, you will discover that all of your saws run a little bit easier when all of the teeth are trying to cut the exact same line.

The smoother the finish, the easier it is on the saw. At that point you might just find that your saws will also stand a little more feed.

The world of sawmilling sure goes better when everything is lined up properly.

Questions about sawmills and their operation should be sent to Forum, The Northern Logger, P.O. Box 69, Old Forge, NY 13420, FAX #315-369-3736.

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