## SAWMILL FORUM

CASEY CREAMER

SAW DOCTOR



What is the difference between right hand, left hand, and even handed circular saws? And what do you have to do differently when you hammer them?

Circular head saws in sawmills are usually "handed," meaning that they are either right-handed or left-handed. Slasher saws, cut-off saws, end trimmer saws, and edger saws are usually what we call



Right-handed saw.



Left-handed saw.

"even-handed." Head saws have a log side and a board side, while edger saws, gang saws, and trim saws don't have a log side versus a board side.

Circular head saws are usually tapered one or two gauges, meaning that they are approximately .015" to .030" thicker at the center than they are at the rim. This extra metal is supposed to give them more strength while they are cutting so that they are more likely to saw in a straight line and less likely to crack. On a conventional headrig, the log is held fast to the carriage by dogs. As the saw is in the cut, there is a spreader that slightly pries the board away from the log as it is being cut. This keeps the board far enough away from the body of the saw to prevent friction, and minimize any tendency the saw might have to throw the board back at the sawyer or whoever else is standing nearby.

Since the log is not moved away from the body of the saw, there are two things that prevent the log from rubbing the saw and causing friction. One is the saw kerf, or side clearance of the teeth. The rim of a 7X8 gauge saw measures approximately .165" and the bits will measure 9/32" or .281". So that would give you a side clearance of .058." The other thing that keeps the log from rubbing the saw is the fact that if the saw is hammered correctly, it will be flat on the log side when it is standing in a vertical position.

There are some who will hammer a saw to be dished towards the log side with the theory that it will prevent rubbing and heating.Well, it will, but it will also prevent accurate sawing.The more dish you put in the saw, the more it will have tendencies (Continued on page 33)

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to run off line in the direction of the carriage. Although saws that heat on the log side will also run off line, (usually out of the log) that doesn't mean you should be having the saw hammered to be inaccurate on purpose.

I define a correctly hammered saw as one that is flat on the log side, with an acceptable amount of wobble (+/- .015" for a 48" to 60" saw) and the right amount of tension in the right location. As long as you have a properly hammered saw with teeth that have been maintained properly (sharpened accurately and with enough side clearance) any heat in the saw would be coming from troubles with collars, bearings, and/or mill alignment.

By the way, don't think that making a saw flat on the log side means that you only hammer on the log side. If, for example, a saw is dished towards the log side to start with, you would have to do your hammering on the board side to bring the saw back to flat on the log side.

So, to get back to your original question, it's the log side that determines the hand of the saw. As you stand at the infeed end of the saw looking it square in the teeth, you will see that the log either passes the saw on your right or on your left. If it passes on the right we call that a right-handed mill and therefore it will require a right-handed saw.

When we hammer a saw, we really don't need to know whether it is left- or right-handed. All we need to know is which side is the log side. Armed with that knowledge, we just go ahead and hammer the saw so that the log side is flat. Now if we had a saw that had no taper, hammering it so that the log side was truly flat would produce a saw with a board side that is also flat by virtue of having no taper. If we hammer a tapered saw to be flat on one side, it follows that the board side will automatically have all of the taper.

What about even-handed saws? Generally, even-handed saws are run in situations where there are no board-side versus log-side

considerations, such as in a gang sawing operation, end trimmer or even a firewood processor. Most saws that are meant to be even-handed are also not intentionally tapered, although some are. I say intentionally because plenty of untapered saws actually measure a little different at the rim and the center just because that sort of thing can easily happen in the manufacturing process. Sometimes it is only a matter of a couple of thousandths difference. That won't affect how the saw runs, but it will be something you will be able to easily find with a straight edge.

So when hammering an even-handed saw, it is very important to make both sides look exactly the same relative to flatness, rather than getting one side flat and assuming the other side will follow suit. In a sense, when you hammer a saw that is meant to be even-handed, it is most important to center the saw instead of



Circular-saw firewood processors use even-handed saws.

trying to get both sides perfectly flat. If there is no taper at all, then when you get the saw centered you will find that it is also flat on both sides.

The important thing to remember is that nothing will ever be perfect if you measure close enough, but the closer you get to perfection, the more forgiving the saw will be to other inaccuracies in the mill and the better chance you will have of achieving greater accuracy in your end product and hopefully more production and reduced sawing costs. Accuracy pays.

## 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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