

# SAWMILL FORUM

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Every profession has its own grapevine. Among themselves, many saw doctors will discuss interesting things they found while troubleshooting mills, or interesting saws they recently worked on—or of course—some of their more interesting customers.

One of my colleagues recently shared a troubleshooting story with me. Often, when I suspect collar trouble, I will ask the customer what shape the collars are in. Many times the reply is that they are “perfect.” My response to “perfect” has always been: “Show me something that is perfect and I will show you something you didn’t measure close enough.” Even if the reply is that the collars are okay, my next question is, “how do you know that?” Sometimes they report that they actually have checked the collars by using what I call the “tighten the nut trick.” Regular readers know that one. You set a dial indicator against the rim of the saw and with the nut hand-tight, you zero out the dial indicator. Next you tighten the nut with a wrench and see how far the rim of the saw moved, and in which direction.



5/8” pin holes with 9/16” pins.

Other times they tell me, much less convincingly—that they know the collars are okay because it is a brand new mandrel with new collars that they just installed. Again I ask what shape the collars are in, only in a louder tone. And of course, the mill man usually repeats his response in a now somewhat louder tone. After a few more rounds of this sort of thing, I explain that just because something is new, that doesn’t mean that it is, in fact, machined properly.

Back to my conversation with my fellow saw doctor: He explained that when he was checking the collars on a mill he was troubleshooting, he found that the pins were loose in the collar. Not just a little loose, but one size over.

Our saws usually have 5/8” pin holes, but we purposely use a 9/16” pin because we want to have some room for error between the location of the holes in the saw and the location of the pins in the fast collar. And of course, we all know to turn the saw back against the pins before tightening the nut, so that the saw can’t get a running start and shear the pins in the first cut.

In this particular case, the mill had purchased a new mandrel from the sawmill manufacturer. The mandrel was made in a way that the pin holes in the fast collar were also 5/8”—instead of a few thousands over at 9/16.” It’s okay if the pins fit a little loose in the collar, but one size over such as putting a 9/16” pin in a 5/8” hole is way too loose and will definitely cause some severe problems.

When mounting a saw on this mandrel, the maintenance guy would turn the saw back against the pins before tightening the nut, as always. But because the pin holes in the fast collar were so big, the pins would cock sideways when he turned the saw back against them. After just a few cuts, the saw would be bent and useless—a condition which they were of course eager to blame on my fellow saw doctor. After some investigation, he had to explain to the mill people that the eye (center) of the saw has to be free to react to any lateral movement at the rim of the saw. If the saw is hung up on the arbor in any fashion, the eye won’t be free to move back and

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forth. The end result will be that the only way the saw can react to lateral movement of the rim is for the saw to bend in the body and stay bent until it is repaired. In this case, it was quickly obvious that the pins definitely prevented that movement of the eye of the saw. Using a saw that just fits too tightly on the mandrel will have the same, tragic, outcome.

I don't know what the mill ended up doing to correct the problem, but there are a few different options. One would be to drill 9/16" holes in the collars. Or, bushings could be made for the existing holes. Another option would be to get 5/8" stock and then turn part of the pin down to 9/16" in a step-down fashion so that the 5/8" part fits the fast collar and the 9/16" part fits in the saw.

Either way, you need a saw where the eye is free to move back and forth inside the collars.

One thing that a lot of us saw doctors like to talk about is when a customer calls and says they have checked everything. Anytime I have had a customer start the conversation by saying they have checked everything, I have always been able to stump them by asking some of the more basic questions, like "did you check the bits?" or "did you check the collars?" Then—suddenly—the response is, "well no I didn't check tha-at"—as if to imply that inspecting the sharpening or the collars is some obscure way to troubleshoot a mill.

But that is what makes this profession all that much more interesting.

**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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