

# SAWMILL FORUM

CASEY  
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**I think I have collar trouble and I need to get my collars resurfaced. Can that be done with the mandrel in place or do I have to take it out and send it to a machine shop?**

If you think you have collar trouble you probably do. It is sort of like if you think you snore a little at night, chances are that you snore loud enough that your neighbors are well aware of it and are not too happy.

Collar trouble is a very common problem that often goes unnoticed for quite a while, until you are having enough unexplained saw trouble that someone like me suggests that you check your collars.

Most likely you do have a problem with your collars, but before you do anything about it, you really should verify the problem. There are a number of ways to check the collars using a machinist's straight edge and feeler gauges, and/or chalk to look for the proper taper on both surfaces. There is nothing wrong with those methods, but when it comes to deciding if you need to resurface the collars, I am more concerned with what the collars are doing than how they look.

When the outside diameters of the two collars mate exactly and the taper is proper on both collars (about .005") they will support the saw properly without distorting it. So, rather than take all of the needed measurements to make a determination, what I really want to know is whether the collars distort the saw when the nut is tightened.

It is an extremely easy thing to check and all you need is a dial indicator or at the very least a set of feeler gauges. If you read my book, *Sawmiller's Guide to Troubleshooting*, you will find something in there called "the tighten the nut trick." It will give you all of the details of how to perform it, but I can give you a general idea here.

With the nut hand tight, you set the dial indicator against the rim of the saw and zero out the indicator. Then you just tighten the nut the same amount that you normally over tighten it and see which way the rim of the saw moves and how far. If you are too cheap to own your own dial indicator, you could

get by with a set of feeler gauges by checking the gap between the saw and the guides before and after you tighten the nut from hand tight to wrench tight.

How much movement is allowable? Almost none. To be sure of what you have, you should repeat the test in at least three places on the saw and then do the same thing using another saw. It doesn't have to be a saw that is ready to run. There are a few cases where a saw with a problem lump right at the collar line will show movement when you do "the tighten the nut trick." But it won't show that movement evenly in all three places on the saw and it won't show exactly the same amount of movement on your other saw. If checking in three places on two different saws gives you exactly the same readings each time, it is safe to say those readings are legitimate.

All of my readers know that I am a stickler for the saw having to be flat on the log side. If you start out with a proper saw and mount it on a bad collar and tighten the nut, you will no longer have a saw that is flat on the log side.

Once you have decided that the collars do need to be resurfaced, you will have a few decisions to make. Let me first tell you what I think is the best way to proceed, even though I know that most of you won't take this route because you won't want to invest the time or money up front.

I think every production-oriented mill should have a spare mandrel and the best case scenario would be to have a spare that has the bearings and pulleys already on it so that it is that much easier to change when you need to. Then when you switch mandrels you should also send the old one out for repair and then put it back in stock waiting for the next time you happen to shear the pins or worse.

If you are not willing to do that, I would much rather see you pull the mandrel out and send it off to a machine shop to be resurfaced properly than to try getting it turned in place.

I know it is very tempting to have someone come in and do it where it sits, but let's remember how important this mandrel is to your operation. I think of it as the center of the universe in the world of sawmills. Everything good or bad radiates out

from the center of your saw and the collars.

There are a number of things I don't like about trying to turn it in place. To you it seems like so much less downtime, but in reality if someone comes into your mill with some sort of set up that is designed to be workable on most mills, it will take quite a bit of time for them to set it up properly before they can begin the resurfacing process. That is downtime that I think would have been better spent on removing the mandrel to send it to a proper machine shop. Of course if one were to build a proper set up from scratch just to fit your mill and no others, it would take a lot of time initially, but if it is designed properly it would be quick and easy to set up the next time you need it.

If you have more than two bearings on your mandrel, someone should really spend some considerable time lining those bearing up before the mandrel is turned in place or you risk compensating for the misalignment with your turning tool. The problem is that it isn't a real compensation. You are just turning it at its present configuration and if you readjust your lead or anything else that has to do with the mandrel, you will soon find that mandrel acting a little like a crankshaft.

Another problem I have encountered is that some of the people who turn them in place use a cutting tool on the surface instead of something along the lines of a tool post grinder. If there are any work-hardened spots on the fast collar, the cutting tool will tend to skip over them a little. If they were to use a grinder, it wouldn't be a problem.

And then what do you do with the loose collar? Some turn it around backwards and turn it that way. That is not exactly what I would call precision work. Others send the loose collar out to a machine shop, but then how can it get properly matched to the fast collar?

When you send the whole mandrel to a proper machine shop, they have the right machinery to turn both collars properly and to also mate them to each other.

And while it is there they have all the specs they need to make you a spare to have in stock for when you need it.

I know things are tight out there, but there are times when spending a little more time and money up front will save you quite a lot of unwanted and unproductive downtime.

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**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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