

SAWMILL FORUM

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I seem to be having a problem breaking shoulders on my saw without hitting any metal. What could cause this problem?

As usual, for any given symptom in a sawmill, there are always lots of possible causes.

The first thing to look for is bit creepage. If the bits tend to work their way up and out a little, they will begin to break. Creeping bits can be caused by loose sockets (meaning worn shanks or worn sockets), or improper socket geometry. As the weather gets colder the bits will creep more. And the more they creep, the more they break. Sawing frozen hickory or hard maple can sometimes create a vibration that will let the bits in good sockets work their way up enough to create some breakage.

Of course not sharpening soon enough will make the bits work a little harder which in turn can deform the sockets enough to make them loose enough over time to create a huge problem. It also pays to mention just constantly hitting the leading end of the log too hard when entering the cut will in time degrade the fit in the sockets..

Sometimes you might hit some metal that will break some bits without breaking any shoulders. This can be very hard on the sockets and set up the right conditions for a shoulder to break later. Of course there is always the chance that you can hit some metal and create a small crack in the shoulder that might break later—making you think it broke without hitting any metal.

Other causes can be sharpening practices that result in some longer teeth mixed in with shorter ones because you broke a couple of teeth and replaced them with new ones without sharpening them down to be the same length as the rest of the bits. Or you might find yourself mixing brands of bits or even running into a problem with a mixed batch of bits between one box and another. This shouldn't happen if you stay within the same brand, but it can easily happen when you

mix brands in the same saw at the same time. Mixing two different brands of carbide bits can often be an easy way to run into trouble.

If you don't keep the hook angle accurate and consistent when sharpening you are looking for this type of problem to occur.

An additional area where you might not think to look is the bearing closest to the saw. If it allows the saw to move up and down a little so that it is running in an out of round fashion, this could cause some unexpected shoulder breakage as can a bearing that is worn to the point where it has some chuck in it. This can almost have the same effect as forgetting to turn the saw back against the pins when tightening the nut. Of course that will usually result in breaking the lug pins when chuck in the bearing will most likely manifest itself as broken bits or shoulders.

And let's not forget that no matter how well a shoulder is welded onto a saw, it will always be the weak link in that saw. This is of course if the socket geometry was reproduced in a satisfactory manner. On the other hand, if whoever welded a shoulder on your saw happened to get the socket geometry off a little, it could result in the welded shoulder being a little higher than the rest and therefore taking a heavier hit each time it cuts. If, on the other hand, that shoulder comes out a little low, it will put the shoulder directly behind it in jeopardy.

As you can see, there are many possibilities. Now all you need is a professional who can look at your saws—and how you maintain them—to properly determine where the problem is.

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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