



BY CASEY CREAMER

## In last month's Sawmill Forum, I touched briefly on worn out saws as opposed to saws that had been deemed to have been hammered too much.

Let me first say that worn out is a relative term. A saw that is worn to the point where it will no longer stand up to the rigors of a high production mill may still be perfectly fine for a medium production mill. When that saw becomes no longer viable for the medium production mill, it could still have plenty of years left in it for a small handset mill. The beauty of inserted tooth saws is that they don't get smaller as you sharpen them like band saws or solid tooth circular saws. When treated properly, saws can last a very long time. But that doesn't mean they will last forever.

Let's talk about what you can do to prolong the life of your saw:

Treat the sockets properly. Once the sockets are worn out, so is the saw. Always oil the sockets and the bits and shanks when changing bits. There is very little tolerance in the geometry of the sockets. Putting new teeth in dry will certainly cause your saw to be worn out well before its time. Trying to save time and labor by not sharpening your saw before it is dull will cost you much more in the long run as you ruin more lumber and

cause the saw to get hammered sooner instead of later. Running a dull saw also puts more strain on the socket, which in turn will wear the saw out sooner.

Of course, hitting metal is rough on the sockets to say the least. But just hitting the leading end of the log hard instead of easing into the cut will take its toll in time. If you have shanks that are not worn out, yet still go into the sockets too easy, that is a sign that your sockets are worn, and a sign that it might be time to replace that saw. Before replacing that saw, have your local saw doctor measure the sockets to make sure that is in fact the issue.

Occasionally, saws come into my shop with "oversized" shanks. They make shanks that are one, two, or three sizes over so that you can continue to run a saw that you probably should have replaced. But there is a big problem with oversized shanks. We have double circle patterns such as B and F and then we have the single circle patterns such as 2 ½ and 3. With the B and the F patterns you have the shank part of the socket and then the bit part of the socket. You have two separate circles, hence the term double circle socket. If the reason your bits and shanks are loose is because the shank socket is either worn or mis-sized, then oversized shanks would be a good fix. But most likely the reason your bits and shanks no longer fit properly is that the bit circle has been pushed back from hitting metal, hitting the end of the log too hard or just suffering from the abuse that comes with running your saw too dull.

In that case, putting an oversized shank in, although it will tighten the socket up a little, is really the wrong fix. It will go in harder and, as a result, it will

start to wear the shank circle out to the point where nothing will tighten up that socket anymore. What you really need would be a bit with an oversized body to take up the slack caused by the bit sockets being pushed back, and nobody makes them. In fact, there are a few brands of B/F carbide teeth out there that unintentionally have undersized bodies which make the bits and shanks fit a little loose and will change the tension in the saw because of how poorly they fit, if the saw was hammered with properly sized bits in it.

If you are running a single circle pattern like 2 ½ or 3, you have an additional problem. The part of the circle that contacts the bit can get pushed back sort of like what happens with a double circle pattern, but there is also a flat spot right behind the bit that gets worn just from vibration while in the cut and/or by hitting the end of the log too hard or hitting metallic objects embedded in the log. As that flat spot wears, it changes the hook angle and back clearance angle in the tooth because the tooth goes in a little farther because that flat spot is worn. That, in turn, makes that tooth cut harder, which wears that flat spot more, and pushes that part of the shoulder back a little more, which then makes the bits and shanks that much looser.

But, again, trying to solve that problem by using oversized shanks will tighten things up temporarily but in the long run will only make those sockets looser and even dangerous.

If your bits and shanks don't fit tight enough in your saw, get the sockets measured by a pro, and if the sockets are worn out, it is time to replace that saw.



Interested to learn more from Casey Creamer? You can watch our video on how Casey hammers circular saws on *The Northern Logger* YouTube page. Just search for "The Northern Logger" on YouTube and click the video entitled "How to Hammer a Circular Saw with Casey Creamer." Please send future questions about sawmills and their operation to Casey Creamer, saw doctor and president of Seneca Saw Works, Inc., PO Box 681, Burdett, NY 14818, (607) 546-5887. You can also reach out by email: [casey@senecasaw.com](mailto:casey@senecasaw.com).