

BY CASEY CREAMER

## Now that I figured out that I want an F pattern saw based on last month's Sawmill Forum, which bits and shanks should I use?

If you never intend to saw frozen or partially frozen logs, I would recommend using regular bits with regular shanks. That will give you the most gullet capacity for the F pattern. Assuming you will be sawing frozen or partially frozen logs at some point there are a few different ways that you can go.

**Bits:** The choices are regular bit, long bit, winter bit (aka Standall Bits), chrome bits, or carbide bits. I would first eliminate the long bits. People who use them think they are getting more bit for their money as compared to a regular bit, but that is not quite the case. If you look at the picture it appears that there is more usable bit available, but the reality is that the usable part of the tooth just sticks out a little farther. What that means is that because of the extra length, there is more leverage being exerted from the tip of the tooth directly to the shoulder of the saw right behind the tooth. And as you have all seen, that turns out to be the most breakable part of the saw. If you are sawing frozen hardwood, the last thing you want is to put more pressure on the weakest part of the saw, the shoulders.

I am also not all that impressed with the chrome bits. Yes it is a slightly harder surface, but it is just a plating on the outside. As soon as you sharpen the face of the tooth, that plating is gone from the face. It is still on the top and the sides of the tooth, but not the face. So, it sort of holds its sharpness a little longer than a regular bit, but not by much. And with that chrome plating, you shouldn't be swaging (although a few do anyway) and you need a grinding wheel instead of a file to sharpen it.

Let's talk about the carbide bit option. Let me first say that if you go with carbide, I recommend you go with a major brand of carbide bits. Nobody's quality is perfect but you will find that the major brands tend to be more consistent. I have noticed that a few of the not so major brands have some

inaccuracies in the size of the bit body that they use for their carbide bit. This will only cause you a problem if you change brands back and forth. Because of the inaccurate body size of some of these carbide bits, when you change brands, the difference in body size is enough to drastically change the tension in the saw to the point where it will definitely need to be rehammered. We all know that replacing worn out shanks with new ones will change the tension enough that the saw will have to be hammered again, but you are only replacing your shanks maybe once a year or less and you know to expect that situation. But just changing bits shouldn't ever change the tension in the saw.

Carbide bits tend to cost around four times as much as regular bits, and they tend to last about four times as long between sharpenings. Of course if you hit enough metal to ruin a new set of bits, that is costlier if they are carbide. But spending less time sharpening is certainly worth something. Of course sharpening carbide requires a power tool and a diamond wheel where regular bits

can be sharpened with a file or a regular grinding wheel which is less costly than a diamond wheel. If you knock a corner off of a regular bit, you might be able to save it by swaging it back or even just sharpening it enough to get back to a good corner. When you chip the corner of a carbide bit there is usually no fix to that other than replacing it with a new one.

One of the other things I don't particularly like about carbide bits is that I don't think they are ever sharp enough. A file will always make for a sharper edge than a grinding wheel and of course you can't file carbide. More important is that when carbide saws are sharpened it is usually done by sharpening at least two surfaces to obtain an edge that is sharp enough. That means sharpening the face and the top of each tooth. But inserted tooth saws are not meant to be sharpened on the tops and shouldn't be sharpened on the tops. Carbide saws have the tops of the carbide stick up a little from the shoulder of the saw. So as you sharpen the face and the top, there is enough material there that your grinding wheel doesn't run





into the shoulder of the saw. But inserted tooth saws are not designed that way. If the bits were made to stick up a little higher to allow for top sharpening, they would probably also break shoulders. And none of the hand held sharpeners are designed to be able to sharpen the tops anyway. So, as far as I am concerned, once you sharpen the carbide bits the first time, they will never really have a cutting edge that is quite as sharp as it should be because you are only grinding one surface. On the other hand, carbide bits get more and more popular every year and the mills that swear by them seem to be successful enough. There are some parts of the country where nobody uses anything but carbide bits, and they seem to survive. They are just not my first choice.

Now, let's talk about winter sawing. Frozen sawdust tends to be more brittle than unfrozen sawdust. What happens is that as that sawdust enters the gullet area it tends to swirl. As it is swirling the frozen brittle pieces bump into each other and can break up and become smaller. That broken, finer sawdust is now small enough to spill out of the gullet before the tooth exits the cut. This spillage will generate heat and force the saw off line. The old band saw filers came up with a solution years ago that some still use to this day. They grind or file a notch of sorts into the gullet area just below where the tooth transitions into the gullet. They call this a frost notch. The idea is that this notch will prevent the swirling of the sawdust so that the unbroken sawdust will just eject when the tooth leaves the cut. There are two different ways to accomplish this same task on an inserted tooth circular saw.

Remember that I said if you never intend to saw frozen logs, you should use a regular bit and a regular shank. If you think you may occasionally or on a regular basis be sawing frozen timber, you can use a different bit with the regular shank, or you can use a different shank with the regular bit and whichever way you go, you can stay with that configuration year round because it isn't worth changing

back and forth. Although the band saw filers who use the frost notch technique only do that in the winter.

The winter bit (aka Standall Bit) has a nub at the bottom of the bit where it transitions into the gullet area of the shank. This nub or protrusion is intended to try to prevent the swirling of the frozen sawdust in the gullet. The other option is to use a regular bit in combination with a winter shank (aka Super Shank). When you look at the shape of the winter shank in comparison to the regular shank you will notice that the part of the shank that is closest to the bottom of the bit sticks out (protrudes) into the gullet area and performs that same service of trying to prevent any swirling of the sawdust in the gullet before the tooth exits the cut and ejects the sawdust.

What you never want to do is use a winter bit in conjunction with a winter shank because what happens is that the two different nubs mate with each other therefore nullifying the intended effect. All you get when you do that is a smooth gullet with slightly less gullet capacity. Not a desirable situation. Be aware that all carbide bits only come in the winter bit design. So if you think you ever even want to just try carbide bits to see how they work for you, they will only work properly if you already have regular shanks in the saw. If you have winter shanks with regular bits and want to try running the carbide bits, you should at that point change to regular shanks to go with the winter carbide bits, no matter what time of year it is. Of course when you do that you will have to have the saw hammered because changing the shanks will definitely change the tension in the saw.

When it comes to what bit and shank configuration you try and/or end up with, there is no wrong answer – with the exception of trying to run winter bits and winter shanks at the same time. To some it is a matter of personal preference while others may actually take the time to test out the different options while collecting good data on what the costs of each type of bit are relative to the differences in

downtime and production amounts while trying to factor out some of the other variables that can make a difference. Remember that no matter which bit and shank configuration you go with, you still need to accurately sharpen your saw before it is dull.

*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.*



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