

SAWMILL FORUM

CASEY
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It looks like my saw has a crack in it. What should I do about that?

A lot of people will think that my first question will be where is it cracked. Wrong. My first question is, are you sure it's really a crack instead of a nasty scratch?

I have saved a lot of saws from the scrap heap--or should I say the sign maker--by being able to determine that the obvious crack was in fact just a scratch that looked just like a crack.

Of course the location of the alleged crack also has a large bearing on whether to scrap the saw or fix it, but none of that matters until we first determine whether it is a real crack or not.

There is a scientific way to check for cracks using a system called Magnaflux. I have tried that system many years ago and I found that it was so good, it also pointed out scratches in the same manner that it would point out cracks. That is great for pointing out a crack on a perfectly smooth surface where no crack or scratch is visible, but as smooth as our saws look, when you start to look close at them, you will find that the surface of a well used saw will be full of imperfections.

What I have found is that all you really have to do is to get some good light and a bit of magnification and as you study the shape and form of the imperfection, you should have no trouble determining whether it is indeed a crack or just an unwanted scratch. I should also note that if you wanted a saw to crack in a certain spot, the first thing you would do is to score (scratch) it. So any real serious scratch does have the ability to become a crack in the future, which is not to say that it will, but just that it is an added risk factor.

Certainly if you see what looks like a scratch in exactly the same spot on both sides of the saw, it is a pretty good bet that it is a real crack. Of course seeing it on only one side of the saw doesn't mean that it's not a crack either, but it certainly is enough of an incentive to make you want to get out some magnification and give it the look that it deserves.

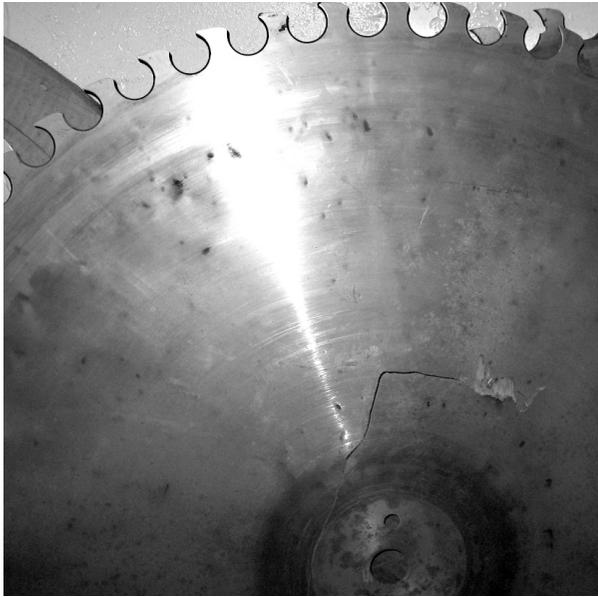
One of the differences between a crack and a scratch that you will be able to see with the help of proper magnification is the shape of the line. Scratches usually happen by something sharp or abrasive being dragged across the saw. So the resultant line should be straight or slightly curved. But if you examine a real crack under enough magnification you will notice a jagged, almost serrated edge to it. This is the big clue.

If you do find a real crack, now is the time to decide whether it is a crack that should be repaired, or a death certificate for that saw. Opinions will vary on this part. Obviously safety is a big concern. On the other hand, let's not go overboard and throw away something that is not only cost effective to repair, but also relatively safe when done properly.

I can tell you that there was at least one state prison system that owned and operated a number of sawmills within their prison system. And they had a strict rule that they would never fix any crack in any one of their saws for the protection of their workers (prisoners). Fortunately the rest of us don't seem to need such extreme protection.

It is not uncommon for wide band saws to develop gullet cracks. Nor is it uncommon for a sawfiler to repair those. Inserted tooth circular saws rarely get gullet cracks and shouldn't, because the shanks should be absorbing most of the forces that would cause a gullet crack. When I say "gullet crack" I am referring to a crack that goes from the bottom of the shank socket towards the center of the saw. These are rare, but when I see them, I pronounce the saw DOA.

Shoulder cracks on inserted tooth saws are quite common, and the only reason we don't see more of them is because the saw will usually lose the shoulder completely before anyone notices the crack. Sometimes the crack will be such that you lose the whole shoulder or it may be in more of a diagonal direction so that you only lose the tip of the shoulder. Either way it is easily repairable when done properly. If I see a shoulder crack, rather than try to repair that crack, it is much easier and will be more successful to



Now that's a crack!

just finish the job by removing the shoulder so that a replacement shoulder can be properly welded in place. If you tried to just weld that crack, you would definitely distort the geometry of the socket and possibly not find the exact end of the crack when welding, or even cause the crack to grow while you are welding it. The end result would leave you with a loose socket and a crack that is not fully repaired.

I would always reject any crack in the body of the saw and also any crack going outwards from the center of the saw with the exception of a crack that goes directly from the bore to one of the pin holes. I don't worry about them because they are predrilled at both ends and therefore have no reason to go any farther.

Although there are differing opinions as to which cracks should be repaired, mine is based on risk versus reward and the fact that when it comes to welding saws, the weld will always be the weakest part of the saw, even when done properly. The other factor to consider is that you really shouldn't bother welding anything on a saw unless you have been properly trained specifically in the field of saw welding. Just being a skilled welder may not necessarily give you what you need to properly weld a saw, just like being a skilled saw welder doesn't necessarily mean you should be trusted with structural welding on I-beams and angle iron.

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.

The author is a saw doctor and president of Seneca SawWorks, Inc., P.O. Box 681, Burdett, NY 14818, tel. (607) 546-5887, email casey@senecasaw.com.