

# How to Tighten Your Backsaw's Loose Handle (without stripping your nuts)

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By

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**H**andles inevitably loosen up on a backsaw. Isn't it irritating? Particularly in the winter, when the dry air of your workshop shrinks anything wood. That's when you notice that feeling of slop in your hand while sawing, and you've got the click-click-click of a loose fit between metal and wood just bugging you with each stroke. Maddening!

On reflex you reach for the nearest screwdriver, and just as inevitably, three things wind up happening:



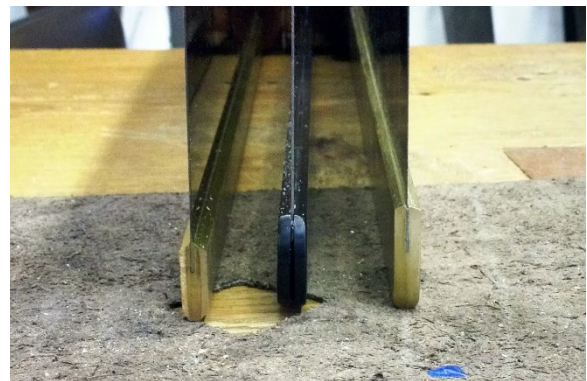
(1) You strip the inside perimeter of the counterbore with the edge of your slotted-nut screwdriver, and now you either live with the screwup or repair the wood and refinish your handle; or--

- (2) You distort the fasteners themselves, which are usually made of brass. Split-nut fasteners in particular deform quite easily given their inherently weak design. Or--
- (3) You actually crack the handle by overtightening.

And now you have deformed your saw.

The takeaway here is that tightening the screws is best done with no small degree of circumspection, and in any event it's the very last step of two other things you can do which are far more effective.

First of all, we all know that wood moves with seasonal change, right? And wintertime air is quite dry. By December, you'll likely notice that you have a loose handle. What's far less noticeable is the air gap that has developed between mating wood and metal surfaces inside the recess of the handle's mortise receiving the plate/back assembly.



*Figure 1: Note the difference between a traditional folded sawback (center), and a static back (left and right sides), where the plate is epoxied into a machined slit along the underside of the sawback. The latter presents a permanent mating.*

The good news is that if your saw is kitted with a traditional folded sawback, and you can adjust the back to get a good connection back in place during the dry months. *Disclaimer:* If you happen to have a static-backed saw—one in which the plate and back assembly are permanently mated by screws and/or epoxy, or machine-fitted into a slit milled along the underside of the sawback—then you're out of luck. Bad Axe saws and virtually any vintage saw will have a traditional folded sawback, which is intentionally designed to save your plate from kinking and to be manipulated in situations such as when your toothline has lost tension or your handle has become loose. And here's how to do just that:

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*Figure 2: Cut some 1.5" or 2" angle iron to 18" sections, smooth the metal, and line it with leather or cork-rubber-- and now you have a superb vise accessory with which to grip your plate when adjusting or removing a sawback.*

Secure your saw in the cork-rubber lined angle iron and cinch it up in a vise (note Chapter \_\_\_\_ on how to make a dynamite and inexpensive backsaw maintenance and sharpening system). Now lightly tap it with a light-duty mallet at the toe end of the saw, which will knock the sawback laterally toward the handle. Clasp the handle with a gentle touch while doing this.

Start off with light taps followed by more assertive taps until you feel the sawback shift toward the handle. You'll feel it in your hand

when the back edge of the sawback mates with the back wall of the mortise receiving the plate/back assembly. Stop at this point. Don't wind up knocking the crap out of the sawback, and resist giving it one more whack for good measure—you'll create torque where the fasteners pass through plate, and in so doing, create a new kink along the toothline.

Remove the saw from your vise and examine whether you still have a clicking loose handle. Chances are you've fixed it. Now sight down the toothline. If you notice a little kink at the toothline near the heel end (close to the handle), don't sweat it. What's happened is that you've created a little torque where the fasteners pass through the plate. You can fix that too without taking off the handle. Now we're going to complete the tightening process and retension your plate at the same time and make that toothline arrow-straight.



*Figure 3: Lightly tap the heel end of the sawback while clasp the underside of the sawback with thumb and forefinger. You'll know when the back shifts upon tapping it.*

Turn your saw upside down and examine the underside of your sawback where it enters the mortise receiving the plate/back assembly. If you see an air-gap there, then let's close up that area too. Brace the toothline down on a jointed flat surface (*I use my benchtop, gasp, cough, sputter—don't tell anyone*), and exert some pressure downward with my left hand. Note how the heel end of the saw faces right. Clasp the underside of the sawback with thumb and

forefinger about two inches away from the mortise. You want to *feel* both the underside of the sawback and the plate where it enters the sawback. Now tap the sawback with a light mallet lightly—repeat, *lightly*—in the area above the mortise. Keep tapping with more assertive strikes until you just feel the plate shift deeper inside the sawback. It should move no more than about 1/64 to 1/32, because that's all it takes. Any more than that, and you're hitting it too hard.

Sight down your toothline again. See if the squiggle went away. No problem if it's still there. Examine once again the underside of the sawback where it enters the mortise. By now, that little air-gap should be closed up. So far, so good.

Flip your backsaw around, so the toe end now faces your right. Clasp the underside of the sawback again with your thumb and forefinger, only this time about 2-3 inches away from the toe end of your saw. Exert slight downward pressure and tap the toe end of the back with your mallet, coming down at 10-20 degree oblique angle toward the handle. Start with light taps graduating toward more assertive taps until you



*Figure 4: Repeat the process at the toe end, again, while using your thumb and forefinger to ascertain whether your back shifts.*

feel the plate shift deeper into the sawback—no more than 1/64<sup>th</sup> to 1/32<sup>nd</sup>, or your hitting your sawback too hard.

**Understand this:** *Traditional folded sawbacks are NEVER intended to swallow the plate all the way up into the inside fold. The spine of the plate will conform to any irregularity along the axis of the inside fold and translate to the toothline. The air gap between spine and inside fold is deliberate, which allows the sawback to teter-totter during the retensioning process, thus equalizing clamping pressure along the axis of the spine. THIS is what allows one to retension a traditional folded backsaw at will, much akin to adjusting one's plane iron with the adjustment lever—and it's just as easy.*

You have now retensioned your saw to release the torque (if any) where the fasteners pass through the plate on the handle end potentially caused by the first step of the procedure. Sight down the toothline—it should now be arrow-straight. Test again to see if you have a loose handle. If it still clicks ever so slightly, now is when you want to tighten up the fasteners. Use common sense at this stage—you should never crank hard on tightening your fasteners. Just give them an eighth to a quarter turn until you feel that they are firmly engaged.

Check again for looseness in your handle. If it still feels just a tad loose, then put your saw back in the vise and give it the lightest of taps from toe to heel as described in step one. Remember to hold the handle lightly with your non-striking hand—you'll feel it when the back edge of your sawback re-mates with the back wall of the mortise.

Re-test now for a loose handle. You should be good to go at this point. Reexamine for a straight toothline. If you still have a light wiggle at the heel end of your toothline, Repeat step two by tapping at the toe end with just the slightest of taps until you can just feel the plate shudder ever so slightly deeper into the sawback. Re-sight down the toothline, and . . . mission accomplished.



Now some of you regardless of what I've written here about creeping up on the tapping process are just going to have someone hold your beer while you whack away, and you're going to wind up cramming the spine of your plate at the toe end all the way into the inside fold of your sawback until metal mates with metal, and that's no good. In fact, it completely undermines the design of the traditional folded sawback when this happens. The air-gap between the spine of the plate and the inside fold of the sawback is quite deliberate. Should be anywhere 3/16's to 3/8's of space in there for these types of adjustments. If you've 'overachieved' in this regard, the good news is you can start all over by lifting the sawback with your sawback lifter—another inexpensive tool you can make in your own shop described in Chapter \_\_).



*Figure 5: lift your sawback with a simple 14" x 1.5" x 1/4" flat iron bar with a kerf sawn 2.5" down on-center at one end of the bar. Line about six inches of it with cork-rubber, and now you've made yourself a sawback lifter.*

Simply lock your saw back into your jaw extenders with the heel end of the back just in front of your handle resting positively on the surface, and the toe end of the back about 3/16" above the surface. Insert the kerf of your sawback lifter along the plate as far aw you can go, and push upwards (don't fulcrum this step by forcing the lifter down like a crowbar—you'll gouge the softer metal of the sawback in so doing—and push the sawback upwards from where it closes on the plate by an eighth and no more than a quarter of an inch. You've now reestablished your air-gap.

Sight down the toothline again, and you'll see an ugly s-roll. No worries. Just re-position your saw's toothline on a jointed flat surface, bear down slightly with your non-striking hand (remember to clasp the underside of the sawback and plate with thumb and forefinger, and tap the toe end ever so slightly until you feel the plate shift. Now your toothline should be straight, and your handle locked up tight.



*Figure 6: Always, always, always assess what you've done with each step and don't rush it. You know you've created an S-roll--so take the time to see it. Then retension it away.*

And no one had to hold your beer while doing it.

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