Mount, Adjust and Operate the Foley No. 281 Trip-Hammer Set

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By

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I have always been a huge fan of hammer sets, given how consistently they deliver a precise amount of set appropriate to the gauge of metal in a given saw. This chapter describes how to mount, adjust and operate the Foley No. 281 trip hammer set, an ideal solution for pitches ranging from 8 ppi through 13 ppi.

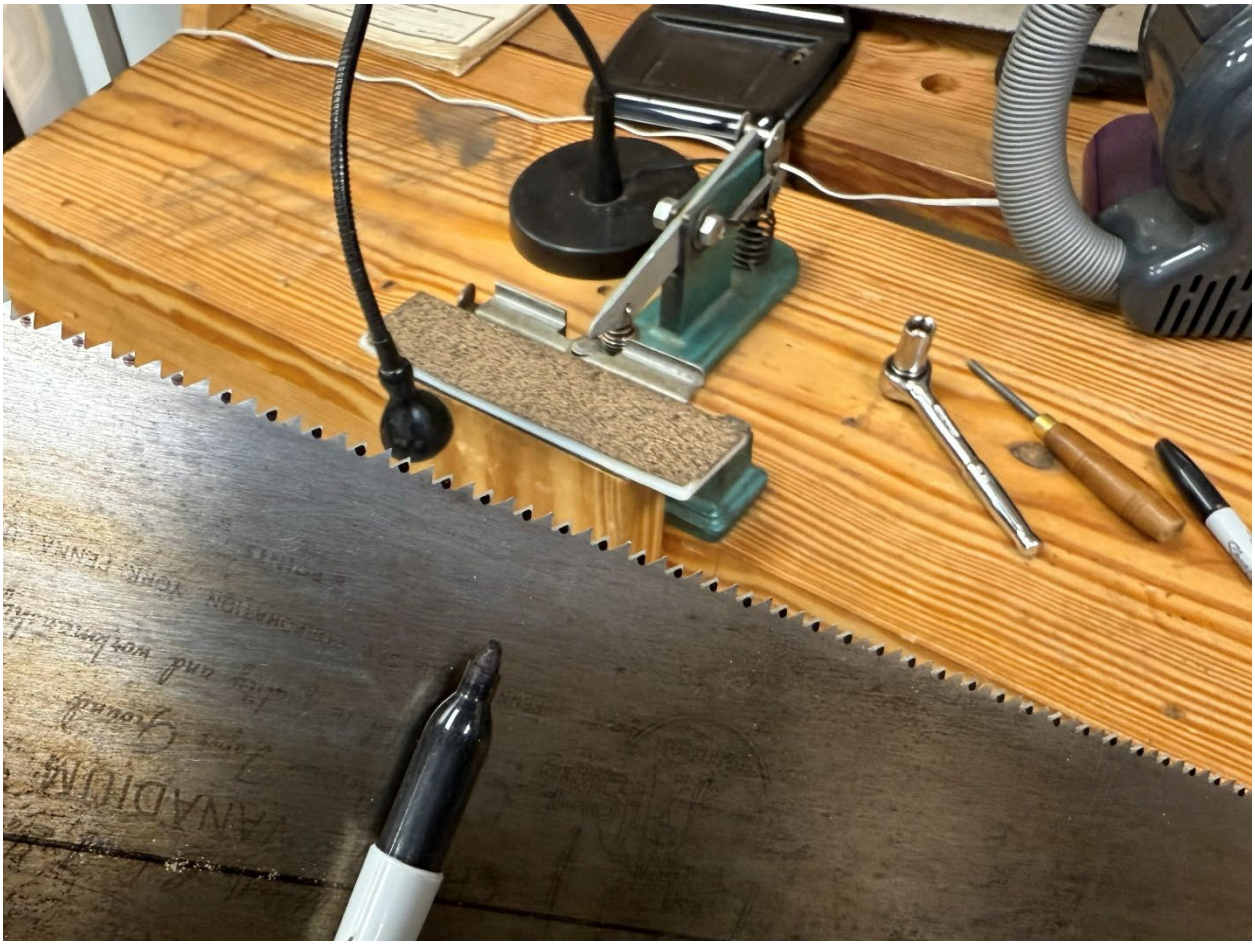
How to set it up: Mount the set along the edge of a utility bench and adjust the treadle activating rod such that the treadle itself is raised only a few inches off the floor. You'll need to auger a hole to allow the travel rod clearance through the benchtop, and another hole for access to the set strength spring wingnut to adjust tension. Use the underside of the set as a template for hole placement.

Make a ramp to support the sawplate. Take note in the video how I have built a small ramp surfaced with cork rubber. My crude solution is to cut 8" off a piece of 2 x 6 with my miter saw, such that the top supporting the ramp presents a 5° downward slope toward the anvil of the saw set. This downward slope lessens the acuity of the beveled anvil which otherwise will impart too much set on the teeth. Fasten a shelf on top to support the sawplate; mine is an 8" x 2" piece of 1/4" plastic, but a piece of plywood will work just as fine. Surface the top with cork rubber to add a little friction for work holding.

Adjust the fence: Eyeball where the bevel line of the anvil meets the sawtooth. You do not want

the bevel line to go below the gullet. The idea is to impart a coined line delivered by the beveled anvil just above the gullet. If you striking below the gullet onto the main body of the plate, you will dimple the main body of the plate just above the teeth, which invites cut friction and undermines your set.

Dot the teeth: Dot the teeth with a sharpie to serve as a visual cue, so you won't strike the teeth out of sequence. Simply press the tip end of your sharpie onto the upper half of the tooth. Resist the temptation to stroke it with some big messy mark just because you don't see that



well, or you're lacking in confidence. The idea is to aim small and hit small precisely center of mass on the tooth. Accuracy matters. Obviously, you're going to dot alternating teeth on both sides of the toothline to avoid striking the same tooth in different directions.

Work holding: How you hold the saw plate onto the set ramp matters. You'll want to pinch the plate into the fence by using your thumb and middle finger to keep positive contact onto the fence. Hold the plate down with both forefingers right in front of the spot where the hammer strikes the sawtooth over the anvil.

Operating: You'll find that just barely resting your foot on the treadle will raise the hammer just enough to slide your sawplate over to the next dotted tooth you're going to strike. Resist the tendency to lift the hammer high, because then you cannot see where it will strike center of mass on the tooth. Rest the Hammer on the tooth before striking it and make adjustments to ensure you're going to hit center of mass. Then activate the strike with your foot pressing down on the treadle. You'll get the hang of it as you go.

Assessing for accureacy: after striking one or two teeth, examine the tooth on the opposite side of the strike and look for the coined bevel line imparted by the anvil, which should be located just above the gullet. If you're too high or too low, make necessary adjustments to the fence before proceeding. Once you have your bevel line synced to the pitch you're setting, strike about a dozen teeth on both sides of a saw plate. I generally do this at the heel end of the plate before setting the balance of the toothline. Mic the combined set of the tooth tips with your digital calipers and make sure you are in a set range appropriate to the gauge of your metal. Note the table I have included for the set range.

Set Strength Tolerances

Plate	Pre-Sharp	Post-Sharp	Stoned
0.015	.023-.024	.022-.023	**0.021**
0.018	.027-.028	.026-.027	**0.025**
0.020	.029-.03	.028-.029	**0.028**
0.025	.035-.036	.034-.035	**0.033**
0.032	.044-.045	.042-.043	**0.041**
0.040	.053-.054	.052-.053	**0.051**

- Final set goal post sharpening/stoning listed on right-side column.
- Set lessens with thinner plates; increases with thicker plates.
- Adjust hammer-set to achieve pre-sharp set objective.
- Sharpening process will lessen set.
- Use a hard Arkansas stone and dial caliper to dial in optimal set strength.

Set the balance of the toothline: Complete setting the toothline once you are confident that you have achieved bevel line placement and set strength. Accuracy in work holding and strike placement matters, so this is nothing to rush.

In conclusion, you'll find you can quite accurately and with great control set your plate with the Foley No. 281 trip-hammer set. The ability to control your sawplate with both hands greatly assists the precision of which this type of hammer set is capable.

Notes:

- Watch my video demonstrating the operation of the Foley No. 281 Saw Set.
- Download this article
- Download the Foley No. 281 Manual

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