

Things You Should Know About Your Chainsaw

Having a sharp blade on a chainsaw not only saves effort and wear on your equipment, but makes using it more safe. Here are some tips for sharpening your own saw.

1) Determine the size or gauge of your saw's chain. You will need to buy either a rotary grindstone or chainsaw file/rattail file that matches your blade. Since there are several sizes of chainsaw teeth, the grindstone or file you choose must be the correct diameter for your saw. Typical sizes are 3/16, 5/32 and 7/32 inches in diameter.

2) Clean the chain thoroughly. You may use mineral spirits or a commercial degreasing detergent to remove oil, dirt, and debris from your chain. Do not flood or get excessive cleaner on the engine or other components, since some of these products can damage the plastic housing or other parts.

3) Inspect the chain for damaged or worn links and teeth. Individual teeth may become chipped, broken, or bent, making them dangerous to use. As a rule of thumb, the top plate (flat surface at the top of cutting teeth) should be at least 1/4 inch in length. If it is worn shorter than this, there is a risk it will break while operating your saw. Any damaged, weakened, or worn chains should be discarded.

4) Set your saw on a solid surface or clamp the bar in a vise. The saw must be stable and the blade must be supported in a stationary manner to file your saw safely and accurately. Clamping the bar in a vise, with the jaws holding the bar and allowing the chain to rotate freely is the ideal method of holding it.

5) Locate the leading cutter. This will be the shortest cutter on the chain. If all of the cutters seem to be the same length, you may start anywhere. The main concern is that you file each cutter so that the flat on top of the cutter is very nearly the same length, so that they each cut away the same amount of wood as they pass through the kerf of your cut. It also may help to mark the first tooth you file with a dab of white out or a permanent marker.

6) Set your file in the notch on the front of the cutter. This is the angled "tooth" on the front of the flat surface of

the chain link. The curve of the file should fit the curve of the face of the cutting tip, and the top of the file should be nearly flush with the top of the tooth.

Hold the file at the same angle that the cutter is ground or filed to begin with. The standard angle is about 25 degrees on most saws. Special "ripping" chains may have a flatter angle, and it is essential to match the angle the chain is originally machined to.

7) Slide the file across the face of the cutter, using a moderate twisting motion to discharge metal chips (filings) that are removed. There is some difference in opinion as to the best direction for pushing the file, but usually you will push the file from the short side of the angle toward the long point. This should leave a smoother cutting surface.

8) Work each tooth with the same angle from one side of the chain around the loop. As you progress around the chain, you will want to spin it so the teeth you are filing are on the flat top side of your bar.

9) Reverse sides of the saw, and proceed around the unfiled teeth angled in the other direction. Keep an eye on the length of each flat top of the cutter. Some manufacturers suggest measuring with calipers to ensure an equal "bite" as the saw is cutting, but if you have a good eye, you should be close enough to get fairly good results.

10) Check the clearance of the rakers (depth gauge), the curved hook shaped links between the cutters. They should clear each cutting edge about one tenth of an inch lower than the cutter. This gauges the amount of chip that the cutter removes on each pass through the wood. A special tool that is laid on top of the blade is available from chainsaw dealers or hardware stores. If the gauge is too high, and must be filed, this tool protects the adjacent tooth as you file the gauge down.

11) File any raker/depth gauges that interfere with the cutter (that are too high) with a flat mill bastard file (not likely to be needed, but possible as a defect).

Oil your chain (saturate/soak with oil), check the tension, and you should be ready to cut once again.

Tips

- Buy the correct size file for your saw.
- It is recommended that after a chain has been hand sharpened five times, it should be ground by a chainsaw shop to correct any variations in tooth pitch that occurred during filing.
- Use a chainsaw file guide to maintain the correct angle of your file stroke when filing your blade.
- Look for wear on the drive links, the blade groove, and sprocket often. Chains can break and cause serious injury or death when operated with worn or damaged parts.

Warnings

- It is recommended to wear gloves and safety glasses during the sharpening process. You are dealing with extremely sharp edges, and without gloves a cut can happen easily. With a hand file, however, safety glasses are not a requirement.
- Do not force the chainsaw file, it could shatter if too much force is applied.
- Sharpened or new chains require correct practices and quality. It is recommended to fully saturate (soak) the cleaned or new chain in the recommended oil.[1]
- Manufacturers recommend checking and readjusting chains often especially when first using a new chain (breaking-in). Oregon recommends checking frequently during the first half hour of use.
- It may not be necessary to use the "brand name" chains as store/distributor brands are made by only a few manufacturers, and most do use the standard designed chains, but original manufacturer's recommend using their own oil, chains and chain bars. Which is to be expected. Use the chain with the correct pitch, gauge, and profile always. As long as these three parameters are correct, you will have no problem.
- Not all chain bars are standard in how they are attached or adjusted, so be sure that those functions will work properly on your saw.
- Caution: For best readjustment adjust when cooled as all chains tend to loosen as they are being used - even after "break-in" - expanding from heat or wear.
- If adjusted while hot, then when cool they will shrink and may bind and not operate until loosened (so that is why they need to be adjusted when cool).

Things You'll Need:

- Chainsaw (rattail) file.
- Flat, mill bastard file.
- File guide or gauge.
- Safety equipment.
- Tools for adjusting your saw chain.
- Cleaner and rags.