

GARRETT WADE TECHNICAL MEMO T59

Supplementary English Instructions for the Assembly and Operation of the Chainsaw Chain Sharpener Standard Model: GW Product 45T01.01

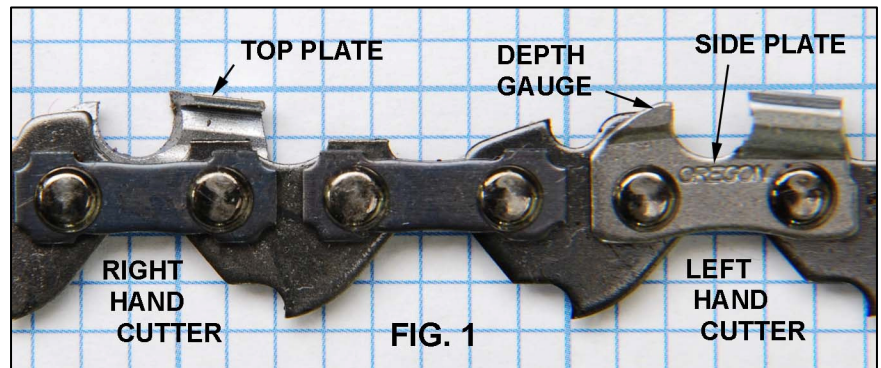
Your Sharpener comes packed with thorough safety, assembly and operating instructions in a number of languages. It's important to read and understand them; however, we have found the English translation of the assembly and operation instructions sometimes to be awkward in phrasing and inaccurate on the electric specifics for the USA, so we have prepared this supplement to aid you and make your work more efficient. Read this carefully. If you have any questions, do not hesitate to contact a Garrett Wade technician for assistance.

Always follow safe and sensible procedures. Always wear safety glasses (goggles) when running the motor and make sure the unit is securely attached to your work surface. Always set up and adjust the unit with the power cord unplugged. Always work in a clean area free of tools and objects, at a safe distance from any flammable substance or rags (grinding wheels cause some sparking during normal operation). Always practice caution (or wear gloves) when handling the chain. Never tamper with or in any way modify the unit. Never allow children to operate the unit. The unit is intended ONLY to be used to re-sharpen chain saw chains. **Do not use it for any other purpose.** Your machine is equipped with an 115V 60 Hz motor and can be plugged into any standard 115V 15A outlet. Once your sharpener is set up, you will find it can be used easily and efficiently time and time again.

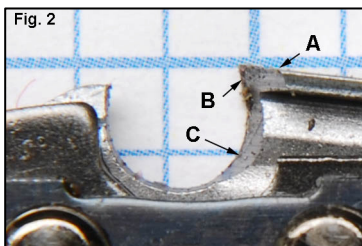
Before first using the Sharpener, inspect the grinding wheel for cracks or chips and replace if necessary (we stock replacement wheels). Never use a defective grinding wheel. (Tip: "Hang" the wheel by inserting a pencil through the arbor hole and lightly strike its edge with a non-metallic object, such as a screwdriver handle or another pencil. If the wheel is in good condition, this will produce a metallic sound; a dull sound indicates that the grinding wheel is cracked or otherwise defective, and should be replaced). As an extra precaution before any cutting action, first run the Sharpener for about 30 seconds to make sure there is no unexpected vibration. Replace the grinding wheel when it has worn to a diameter of 75mm (2.925")

BASICS OF THE SAW CHAIN

Before you begin, it would be helpful to review some basics: A saw chain comprises five basic parts – left-hand cutter, right-hand cutter, tie-straps, drive links and rivets. The alternating left-right cutters are the primary focus during sharpening. Each cutter features a ramp-like depth-limiting gauge (or *raker*) at the front and a gouge-like cutting element (*tooth*) at the rear. The gulf between is the *gullet*.



The cutting element has a profile that resembles the number "7"; its two surfaces, the top plate and the side plate, contain three different angles. The *top-plate angle* (Fig. 2: A) is the familiar 25-35 degree angle you see when you look down on the chain; the *top-plate cutting angle* (B) is the bevel on the underside of the top plate; the *side-plate angle* (C) is the beveled arc in the side plate.



Getting the angles exactly right is not as important as removing all damage from the side and top plate and making sure the critical top corner is really sharp.

Careful position and accurate adjustment of the chain in the chain guide of the sharpener is the key. Take your time - check repeatedly how the grinding wheel engages these cutter angles while setting up the first tooth. Once properly adjusted, the sharpener will accurately grind each tooth the same.

SET UP AND OPERATION

The following instructions refer to the exploded parts schematic, parts list and images in the multi-language manual.

Caution: Saw chains are very sharp - exercise caution whenever handling the chain. ALWAYS wear eye protection during use of the sharpener.

1. Unpack your sharpener. Your machine comes completely assembled except that the Chain Guide must be mounted on the base using the supplied bolt, and the motor assembly must be mounted on the side of the Chain Guide using the other supplied bolt. Do this initial assembly using the exploded figure 1A and figure 2 as a guide for positioning. Note that, although not absolutely required, it is best if the motor can rotate to a vertical position when at rest.
2. Clean the chain well (use gasoline or other solvent) before beginning work.
3. Lift up the Chain Stop (#13) and lay the chain in the Guide (see figure 2).
4. If necessary, slightly loosen Knob #9 (see figure 3) and rotate the chain carrier so that the angle indicated on the scale matches the specification of the chain you are working with. Retighten Knob #9 as necessary. (In our experience, Knob #9 can be left snug and the chain carrier can be rotated to the correct position without loosening and then retightening.)

All chains have equal numbers of left and right teeth. You will sharpen all the right (or left) teeth first, and then rotate the carrier to the correct position for the remaining teeth. This takes only seconds.

5. The next steps involves positioning the Chain-Stop #13 so that it positions each tooth in turn in the correct position when you rotate the motor and the grinding wheel removes the desired amount of steel from the dull tooth and re-sharpens it.

It will help to describe the general operating procedure first, so you can understand where you are trying to go.

As you move from one tooth to the next, you will first loosen the side clamp knob (part #6 in figure 6a). You then advance the chain manually two teeth (to the next right or left tooth) and then make sure that the back of the tooth is snug against the Chain-Stop #13. Then you retighten Knob #6 (figure 6a) before you sharpen the new tooth to ensure it does not move when the grind wheel works on it. You keep this rhythm up all the way around the chain. So you can see that that initially setting the position of Chain-Stop #13 carefully is important for speedy and accurate work. This position is set using Knob #7 (figure 4).

All these instructions will make instant sense once you begin the set-up process, so just begin and you will finish quickly.

6. The next (and final) step involves setting up the stop that controls the rotation of the grinding wheel so that it cuts just the right amount (enough to re-sharpen the tooth but not more than necessary). When this stop is set correctly, the grinding wheel can be moved easily and quickly from at rest to the cutting position and back again – repeatedly. (The English translation of the Italian instructions on this point (#5) is particularly opaque, and we advise not trying to comprehend it.)

This is shown in figure 5 with the adjustment of Knob #8. You will quickly get the hang of it as you test-rotate the motor body (the motor should be unplugged during this process) during this set-up step.

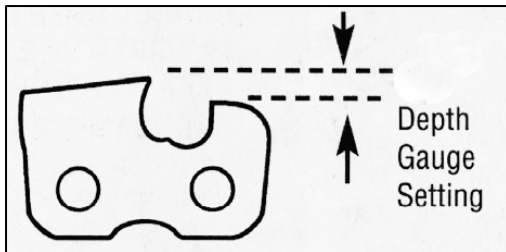
You will probably cycle back and forth between step 5 and step 6 of these instructions as you get all parts aligned correctly and this is entirely normal. Once you have finished, you are set up permanently to re-sharpen this chain (except for advancing Chain-Stop #13) again and again. Realigning the machine for a different chain will now take only minutes as you have the experience of having done before.

A FEW HELPFUL TIPS

As you go, watch how the wheel engages each tooth to make sure you are getting the result you want. The grinding movement should be a “quick in and out”. Do not stay long on the same tooth. *Always wear safety glasses or goggles.*

After you sharpen the first tooth in the chain, flag it with a spot of paint or bit of tape. This helps to see the tooth come around again (at which point you rotate the turret and start in the opposite direction), and prevents sharpening an already sharpened tooth (it happens).

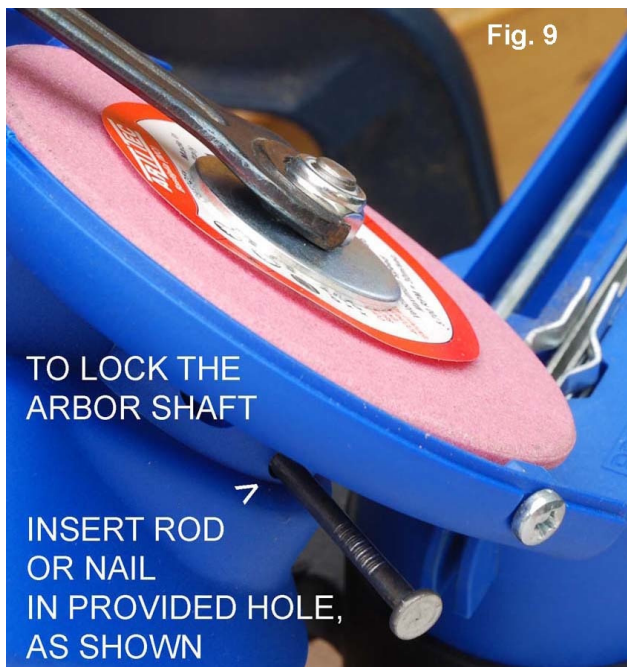
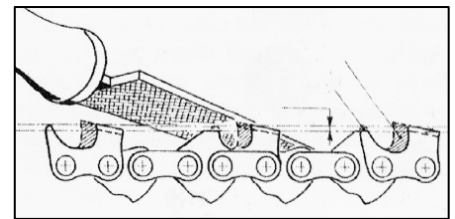
To insure the chain is unobstructed and does not kink during sharpening, we mounted ours to a 10” block of 1 x 6 that we then clamp to the work table. The chain hangs freely from the sharpener and does not abrade the edge of the table or kink. We drilled a hole in the block and hang the sharpener on the wall when not in use.



ONE FINAL IMPORTANT NOTE

Take a look at the cutter top plate. Notice how it slopes down to the rear. This slope, or *clearance angle*, assures that the critical corner is always the highest point. However, repeated sharpening can cause a reduction in cutter height. The chain depth-limiting stop becomes too high with respect to the cutting teeth. The chain will not bite and thus loses its self-feeding characteristics.

When this occurs, you must file down (with a flat file) the depth limiting stops (or *depth gauge*, the hook-like tail of the side plate, across the gullet from the cutting tooth). Check your chain specifications for the correct depth gauge setting (often 0.025” below the peak of the cutting tooth).



CHANGING THE GRINDING WHEEL

Loosen the nested M4 screws (16) and remove the wheel guard (4). Use a spanner or wrench to remove the M8 arbor nut. A hole through the arbor shaft is located directly behind the inner wheel guard (Fig. 9). To lock the arbor shaft, insert a rod or nail, as shown. Remove the arbor nut and outer flange. Replace with a new wheel.

Replacement wheels are available. GW item 45T01.03

If you have any questions, please contact us at 800-221-2942, or email mail@garrettwade.com and ask for a Garrett Wade technician.

We hope you enjoy your Chain Saw Chain Sharpener.

Garrett Wade Technical Department