

Care of Bonsai Tools

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Introduction

Routine maintenance and care is essential if you want the best performance from the hand tools used in pruning and shaping your bonsai. During normal use of your bonsai tools, sap, pitch and dirt accumulate on the blades; cutting edges get nicked; and rust forms from the accumulation of moisture in the sap and dirt.

As the cutting edges become dull, greater pressure is required to make a cut. The cuts are not clean, and tearing and crushing of cells occurs, causing damage to your trees. Severe damage to your cutters can also occur. The combined effect of increased cutting pressures, dulled edges and accumulated dirt causes the blades to separate. The wedging pressures can be enough to break the tip of steel branch and root cutters. Therefore, good tool care should become a daily practice.

TOOL CARE RECOMMENDATIONS

If you follow a few simple rules the life of your bonsai tools will be increased and the time between

sharpening will be extended, making your hobby more enjoyable.

1) Examine your tools before and after using and look for bent tips on scissors, nicked cutting edges, dirt accumulations and rust. If any of these conditions exist correct them before using the tool.

2) Do not use your branch or root cutters when cutting roots in a soil mass. Sand or small stones in the soil will nick or break the cutting edges. Clean the dirt from the roots or use pruning shears, which are not only tougher and more able to take the punishment, but are a lot easier to restore.

3) Do not drop your tools or throw them down carelessly. This can bend or break the cutting edges and is the most common cause of tool tip failures.

4) Do not overload your tool. Use a larger cutter or make the cut in small, easy stages.

5) Protect the tips and cutting edges of your bonsai tools when they are not in use. Store them separately in a pocketed cloth roll or compartmented tool kit.

MATERIALS REQUIRED FOR TOOL RESTORATION

Pruning and cutting tools can be restored to good working condition by cleaning, sharpening and oiling. The materials required are easily obtained:

- . Turpentine or Rubbing Alcohol
- . "Scotchbrite" or "S.O.S." Cleaning pads
- . Emery Paper - grit #320 or #400
- . Emery paper - grit #240
- . "3-in-1" or "WD-40" lubricating oil
- . Oil stone, Arkansas stone, Washita grade, Paper towels

CLEANING OF TOOLS

Cleaning of tools after use is relatively simple, IF you have carried out your routine care program. The first step is to wipe off all dirt and grit.

Next, the tree sap that remains can be removed by wiping the cutting blades with a damp paper towel. Pitch from conifers may have to be removed with rubbing alcohol or turpentine. When stubborn stains or light rusting is evident, rub the blades with a damp S.O.S. Cleaning pad.

To remove severe rusting use the #320 or #400 grit emery paper. Remove all the dirt, rust and sap off with the tool in a closed position first. Do this to protect your fingers from the cutting edges and sharp tips.

You will find it easier to work when you support the tool on a solid surface. When all the exterior rust, sap and dirt is removed, open the blades, clean the faces of the cutting edges. To clean rust from the inside faces of a scissor type tool, lay the emery paper on a flat surface and rub the inside of the blade while holding it flat on the emery paper.

When all the tool surfaces are bright, wipe off all the cleaning dust and grit. Oil the tool all over with a light coating of oil, remembering to oil the pivot joint and exercise the joint several times to penetrate the pivot and drive out dirt and old lubricant. This is especially important on rivet type joints but, it will prevent rusting and reduce wear on all joints.

Now your tools are ready for storage or for sharpening.

SHARPENING BONSAI TOOLS

There are two types of bonsai tools, each requiring a different approach to sharpening:

- 1) Those with a scissor - cutting action, e.g., trimming and pruning shears.
- 2) Those tools with a mandible (biting) action, e.g.. branch, root and "knuckle" cutters.

SCISSOR TYPE BONSAI TOOLS - DEBURRING

To sharpen scissor type tools, first check that the blade tips and edges are not burred. Any burrs should be removed before sharpening. To remove burrs, put a small amount of light oil on the oil stone. An equal mix of light oil and kerosene is ideal for honing. The lubricant is used to carry away the minute metal particles removed during the honing process.

Now, open the scissors and lay the stone flat on the inside of the blade. (Figure 1). Push the stone over the blade, making sure that the stone remains flat, until the burr is removed. Turn the scissors over and stone the opposite, inside face, if necessary. Excessive or unnecessary stoning can eventually deform the cutting faces.

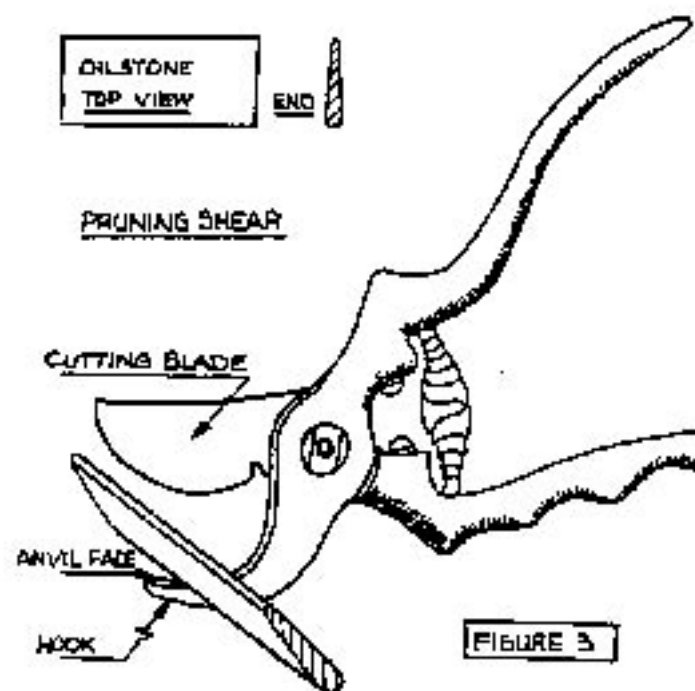
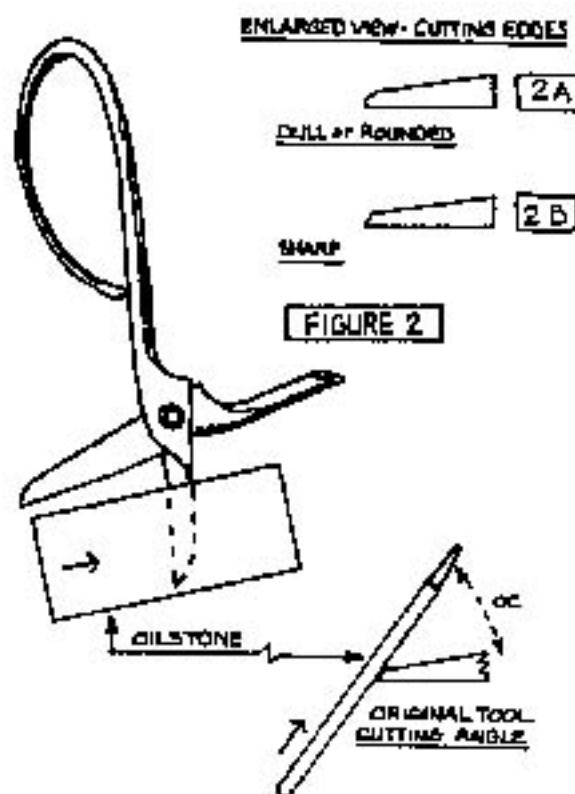
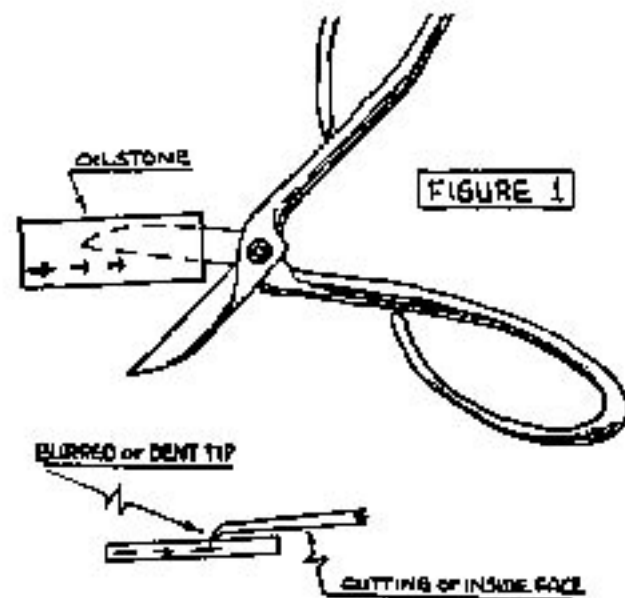
Depending upon the size of the tool and the shape of the oil stone, as well as your adeptness in handling them, you may prefer to reverse the process of moving the stone over the tool, to moving the tool over the fixed stone. A little practice will help you determine which is best for you.

SCISSOR TYPE BONSAI TOOLS - SHARPENING

To sharpen scissor type tools, open up the blades with the outside face up and the cutting edge toward you. Support the scissor firmly on a bench or table top. Place the oilstone over the outside face of the blade, (figure 2), at an angle equal to the original tool cutting angle.

Cutting angles may differ, depending upon the type of cutter and the manufacturer. Therefore, it is most important to maintain the original cutting angle of each different tool, as closely as possible. Push the oilstone in the direction of the arrows shown in figure 2, over the cutting edge until all the nicks are removed. Examine the cutting edge under a bright light.

If the edge is dull, (figure 2a), you will see a highlight reflecting off the cutting edge and if you gently pull your finger across the edge, it will slip with no drag. However, the sharp cutter, (figure 2b), will not reflect a highlight and if you gently pull your finger over the edge you will feel some drag. Caution: do not pull your finger along the cutting edge to test the sharpness! If the edge condition is



as described for figure 2b, your blade will be sharp.

Turn the scissor over and proceed to sharpen the other blade as previously described. Only three or four strokes of the stone should be necessary. Make certain that you are holding the stone at the same angle for each stroke, as changing the cutting angle while stroking the stone will continually "round" the edge and will not sharpen the blade.

When you have completed the sharpening of both blades, wipe off all the stoning grit, oil the tool and wipe off all the excess oil with a clean paper towel. In the process of wiping off the excess oil, leave a fine coating all over the tool to protect it from rusting.

If your pruning shear, (figure 3), has only one cutting blade, sharpen it as described above. The anvil blade should be cleaned and examined for burrs. Remove the burrs from the inside face as described above in figure 1. Wipe the shears clean and oil.

MANDIBLE TYPE BONSAI TOOLS - SHARPENING

The mandible type bonsai tools have a biting action, similar to your teeth. The cutting edges, when closed, should be in a straight line contact, (figures 4 & 4a), or a curved line contact, (figure 4c). If they are not in line contact, when you cut a branch or a root, the cut will be ragged or incomplete.

The first thing to do is to clean the cutter as described under cleaning of tools, then check for the line of contact, (figure 4b), by holding the cutter up to the light in a closed position. If any light shows through, the cutting edges are out of line. Nicks in the cutting edge can also be seen at this time.

Sharpening will generally not correct out of

line and nicked conditions. To re-align cutting edges and remove small nicks, place a six inch strip #240 grit emery paper, about half again as wide as the cutting edges, between the cutting edges. (Figure 4d).

With very light pressure on the cutting jaws, pull the emery through to hone the cutting edges. Do this several times then turn the emery cloth over so it is facing the opposite cutting edge, and pull it through several times. Repeat this process until the nicks are removed and the cutting edges are in line.

If only one cutting edge is nicked and the contact line is good, only the nicked edge has to be emery cloth honed. Any time this process is performed the tool will have to be sharpened.

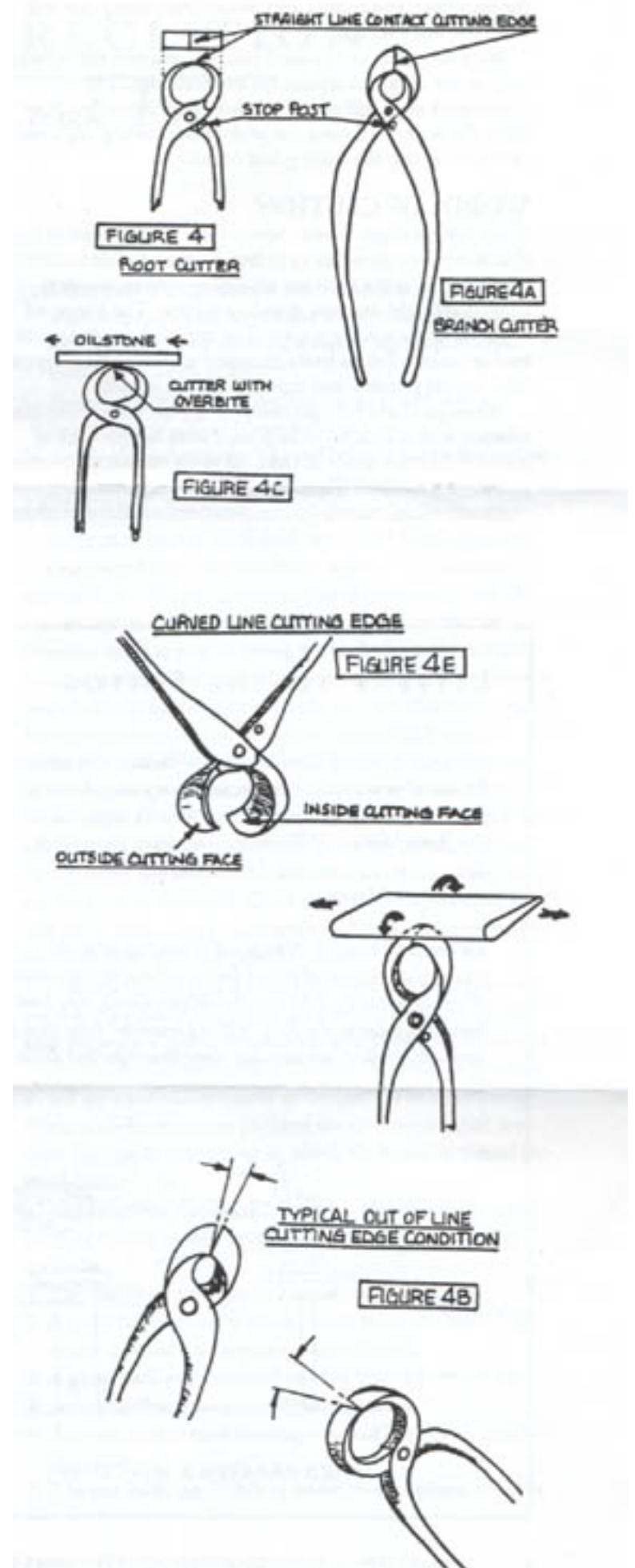
In addition, after this process has been performed, the cutting edges may not close completely, because of the "stop post" on the handle of the cutter. (See figures 4 & 4f). If this condition occurs, grind or file a small spot off the cutter handle until you get cutting edge contact. Do not file/grind the stop post.

When proper, cutting edge contact is achieved, do not have more than three thousandths of one inch clearance between the stop post and the handle, as this will cause excessive pressure to be applied to the cutting blades, which may cause breakage or failure of the cutting edge.

When sharpening mandible type bonsai tools, place the cutter in a closed position on a bench with the outside face up. Place the oilstone on the outside face of the cutter and slide the stone over the face and along the curved cutting edge. (Figure 4e).

Repeat the stoning motion until both edges are sharp. Do not worry about the cutting angles of the tool as they are established by the inside cutting faces, as shown in figures 4e & 4f.

If one cutting edge is still flat, from the emery cloth honing process, open the cutter and continue to sharpen that edge only. This should be done with care in order to maintain a cutting edge alignment and prevent the condition shown in figure 4b.



Both cutting edges of the mandible type cutting tool must be sharp. If one edge is dull, it will act as an anvil and will not give a clean cut.

Generally, branch pruners, root cutters and "knuckle" cutters have an "overbite". (Figure 4c). The overbite is normal for mandible type cutters, and proper sharpening care will maintain this overbite.

With the cutters in a closed position, sharpen the exposed edge in the direction against the overbite edge. The underneath edge will not be touched by this process. Now open the cutter and stone the underneath cutting edge, taking care to maintain the cutting line contact.

WORDS OF CAUTION:

If the cutting edges of your bonsai tools are damaged so badly that they require the edges to be bench ground, do not attempt this yourself, as the tools are too lightweight to absorb the heat generated by the machine grinding process. The tempered hardness of the cutting edge will be removed, rendering the tool as useless. Take a badly damaged tool to a tool sharpener, with special grinders and experience to do the job.

When you have finished sharpening your tools, clean your oilstone with a little oil to help wipe away the particles of metal. Add a few drops of clean oil to the surface of the stone and store it covered. These simple steps will retain the sharpness of the stone's grit, keep the surfaces flat and prevent glazing.

