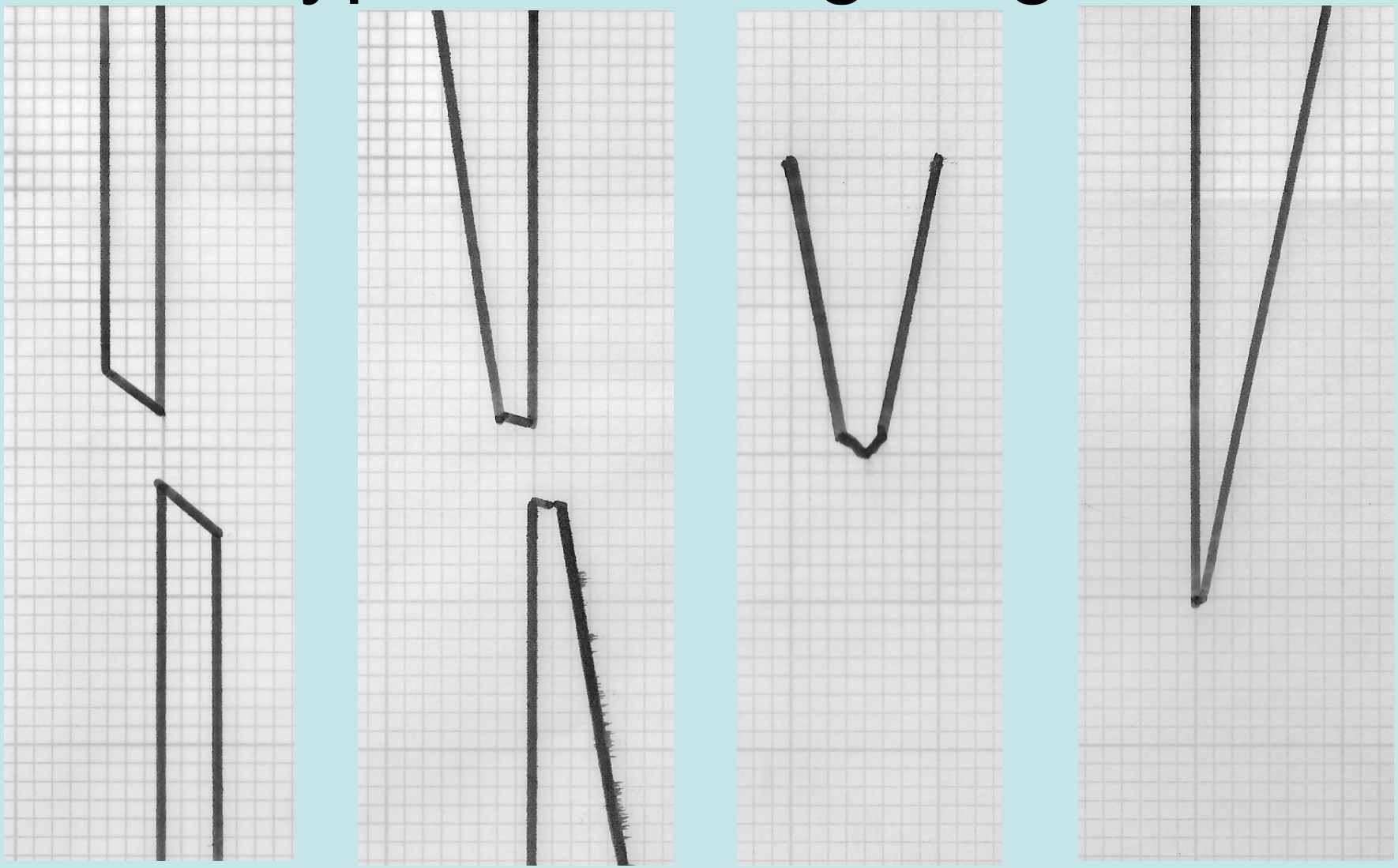
Tool Care And Sharpening

Bill Boytim

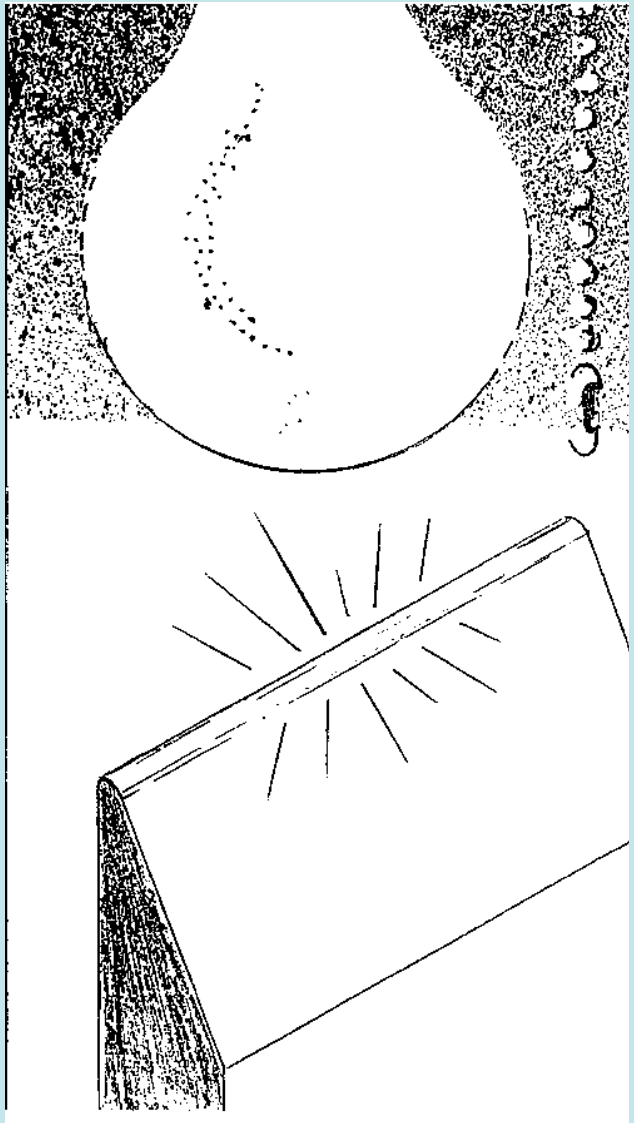
The Sharpening Philosophy

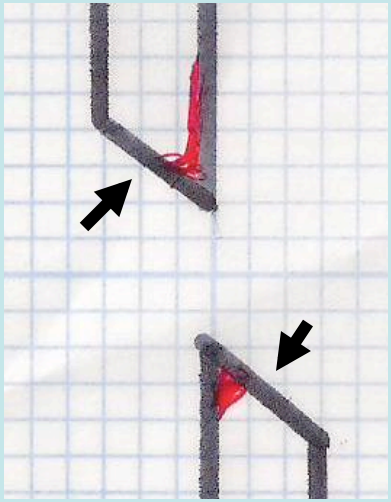
"Sharpen while the tool is still sharp, not to recover sharpness"

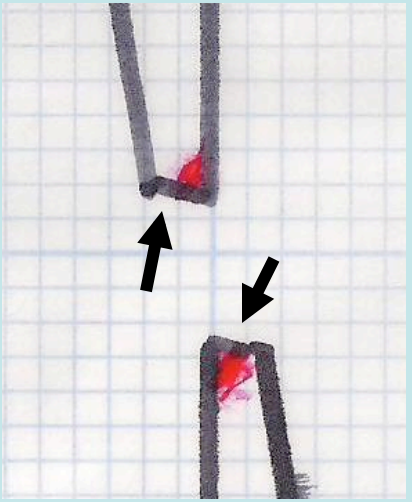
Type of Cutting Edges

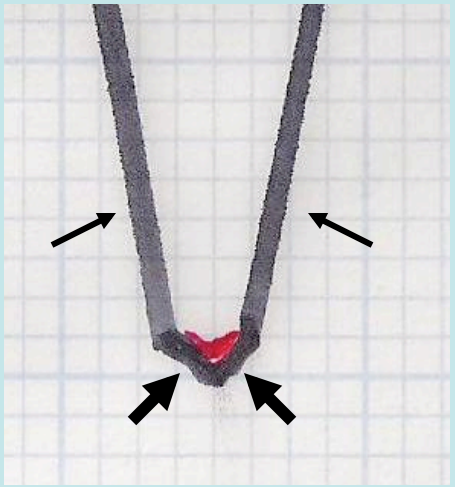


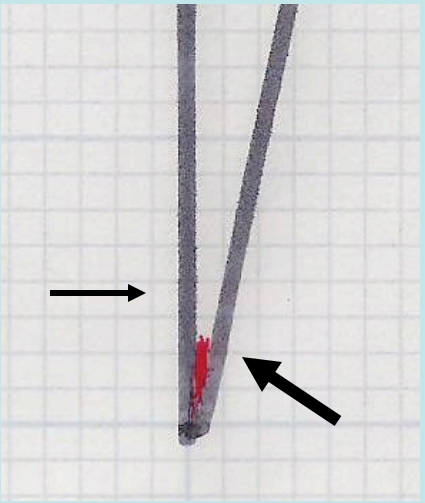
Determining if Edge is Sharp





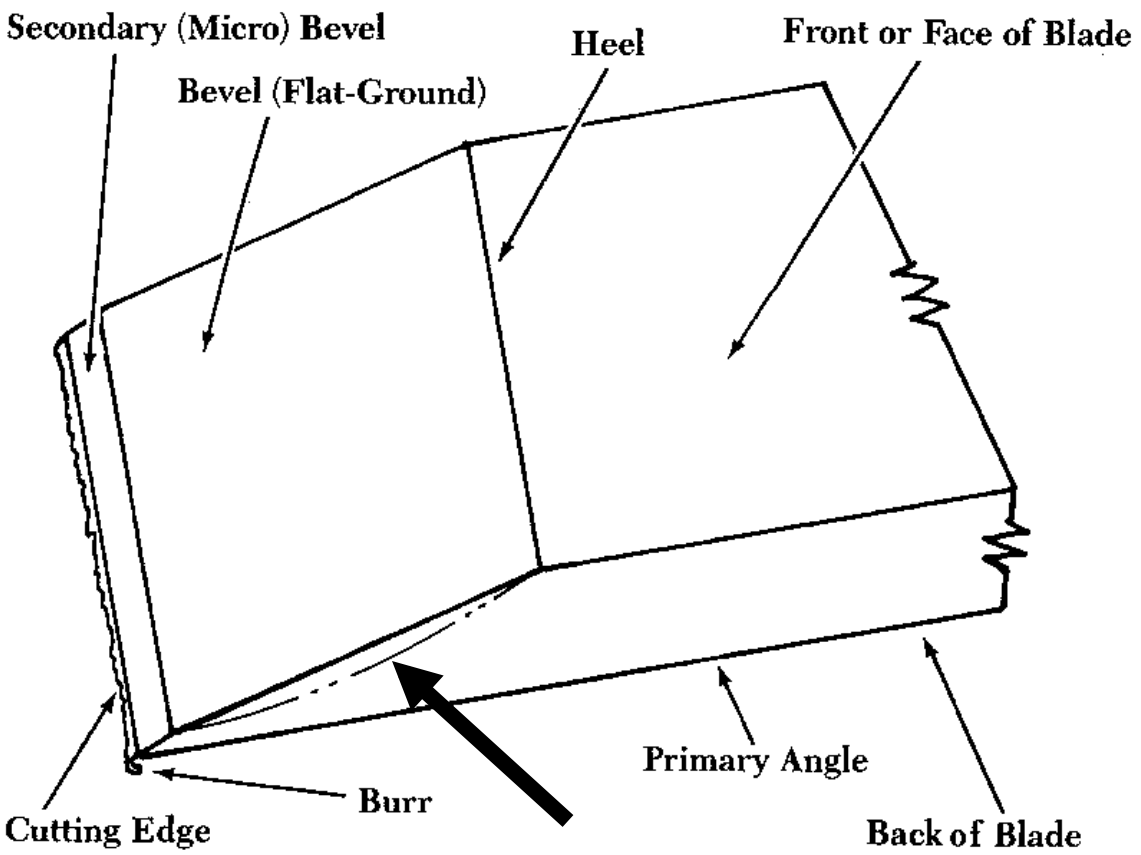




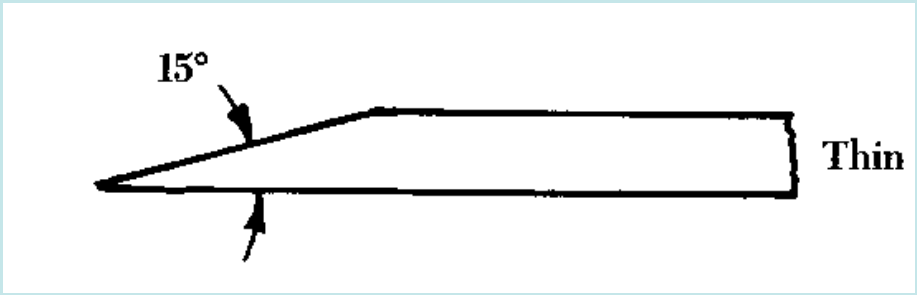


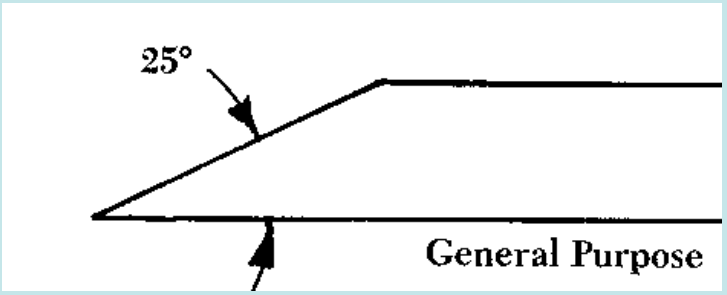
Concepts for Sharpening

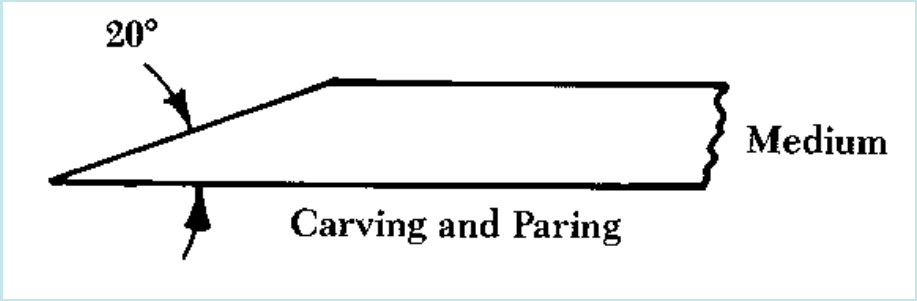
Illus. 5-1. *Terms associated with sharpening chisels and similar single-bevel hand tools, including plane blades (irons).*

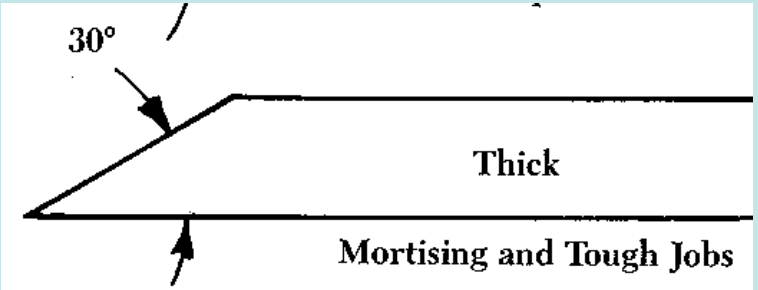


Concepts for Sharpening

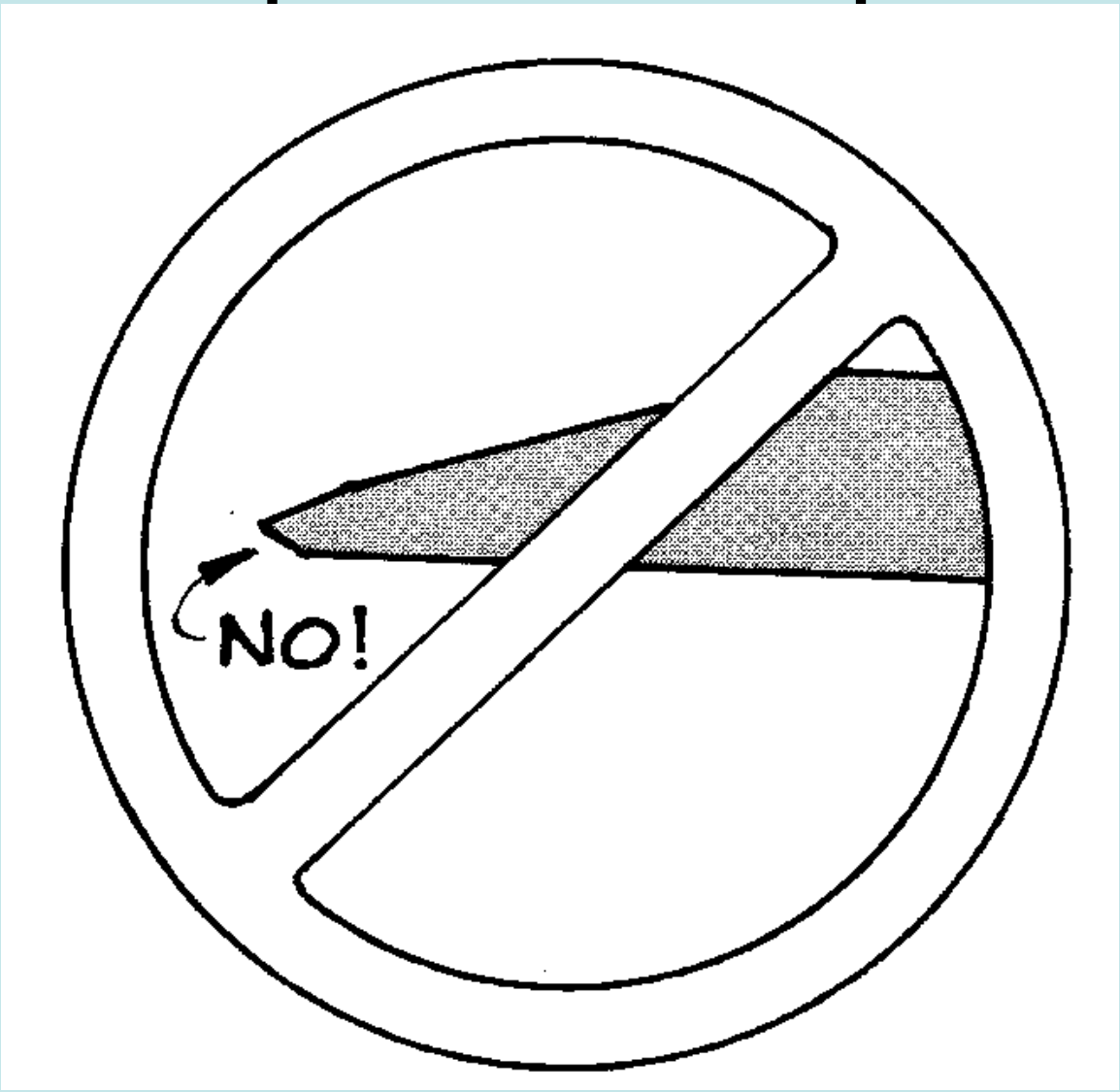








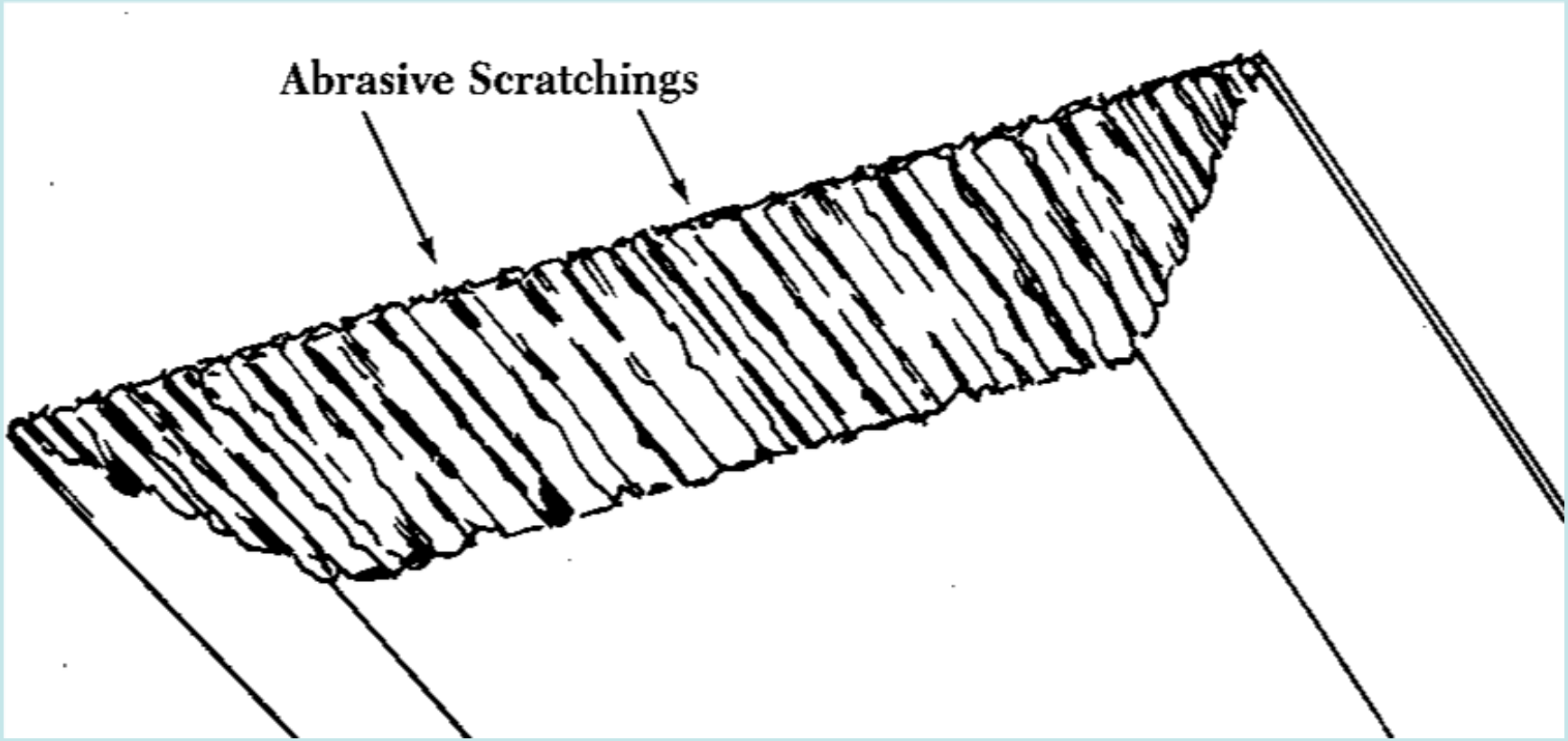
Concepts for Sharpening



Abrasive Types

- Synthetic
- Garnet
- Aluminum Oxide
- Arkansas Stones
- Silicone Carbide
- Ceramic
- Diamond

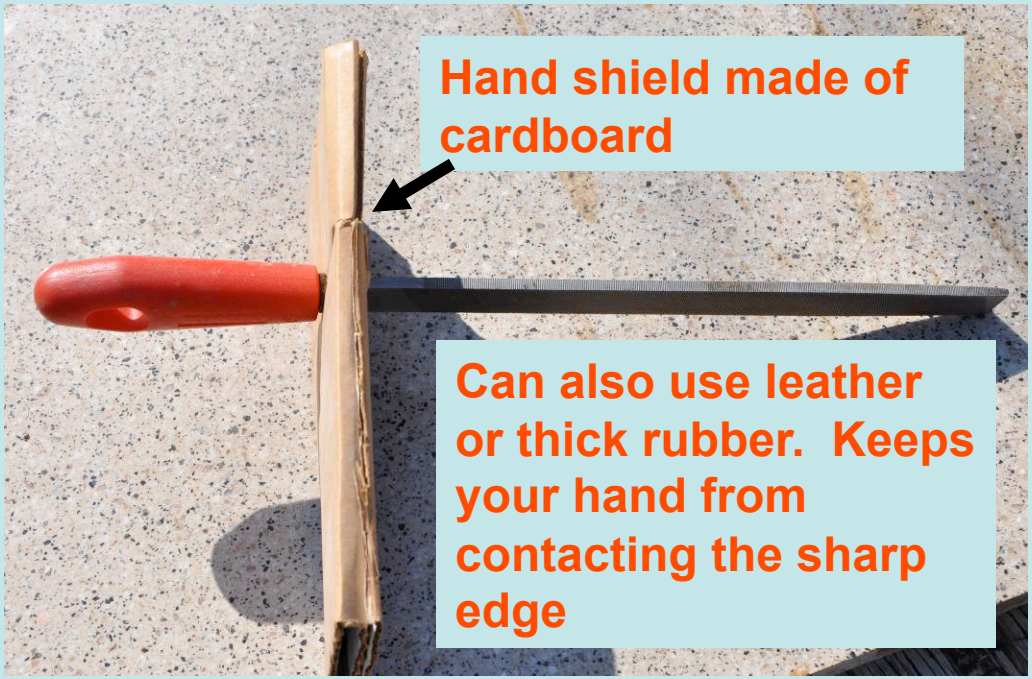
Abrasives Remove Material and Leave Gouge Marks



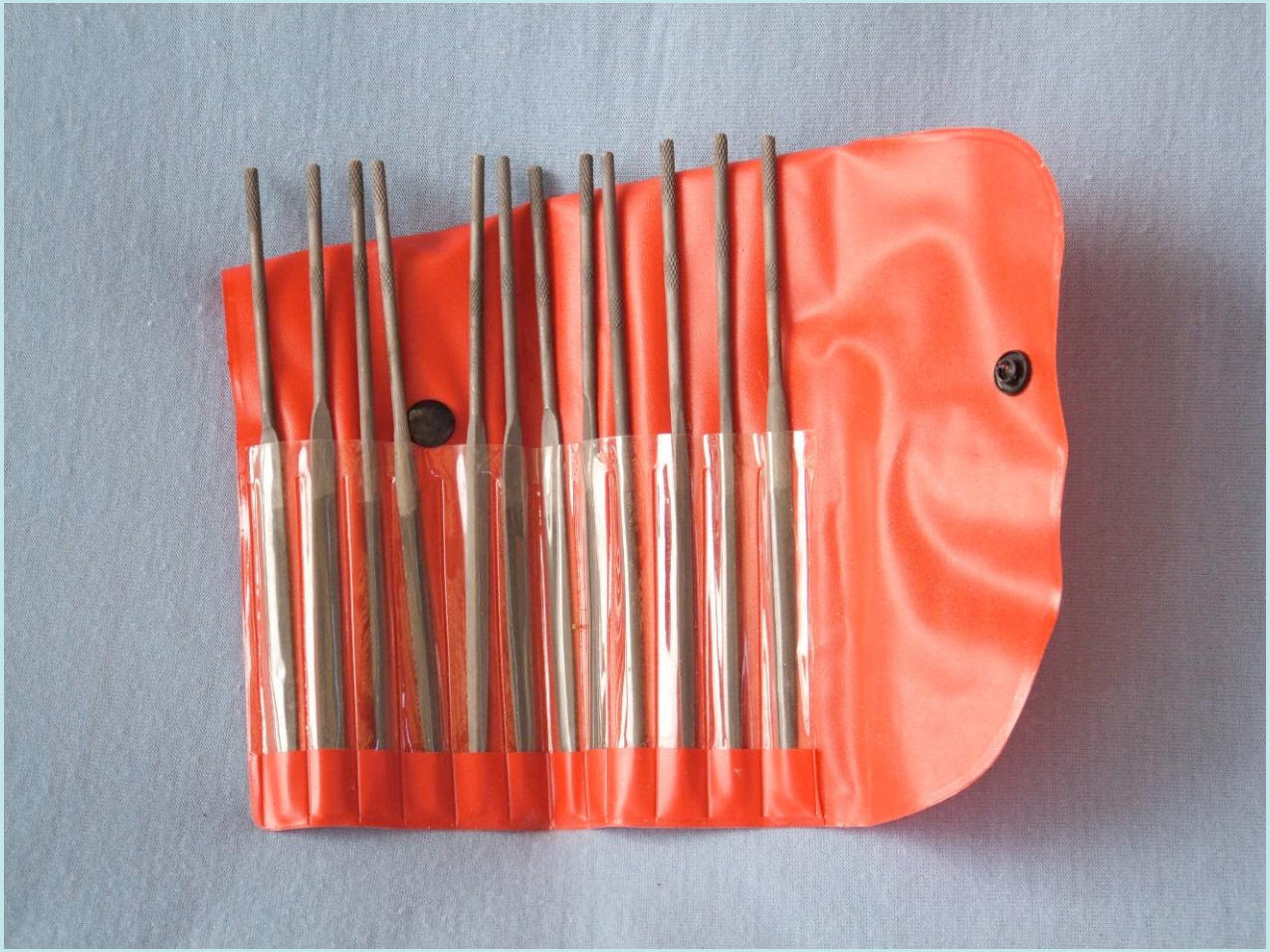
Abrasive Size

- The larger the number the finer the particle
- U. S. Grit 100 = Japanese Grit 150
- U. S. Grit 180 = Japanese Grit 240
- U. S. Grit 320 = Japanese Grit 500
- U. S. Grit 900 = Japanese Grit 4000
- U. S. Grit 1000 – 1200 Finest = Japanese Grit 6000 Finest
- Larger the number the higher the polish

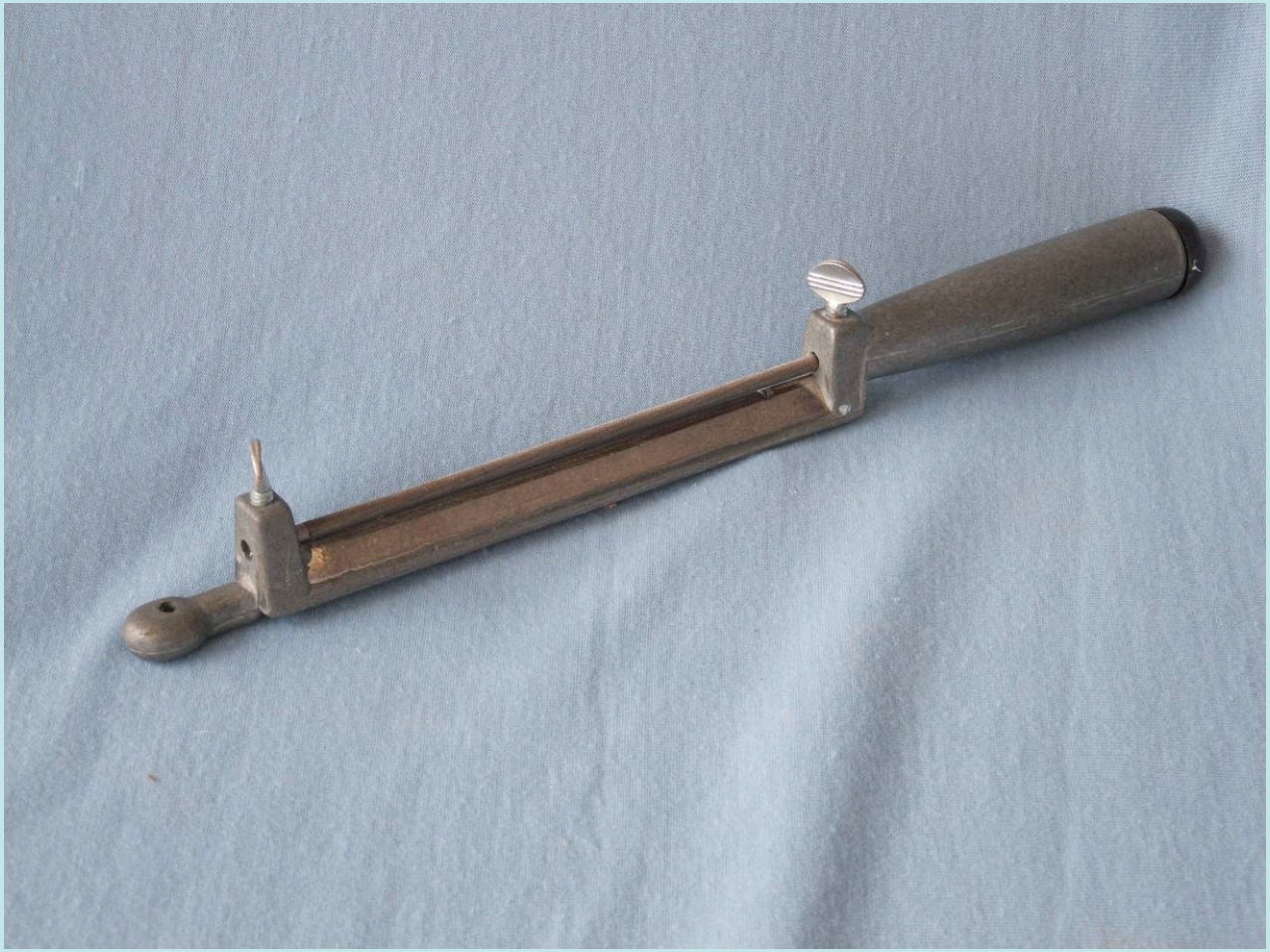
Tools for Sharpening
File



Tools for Sharpening
Jewelry File



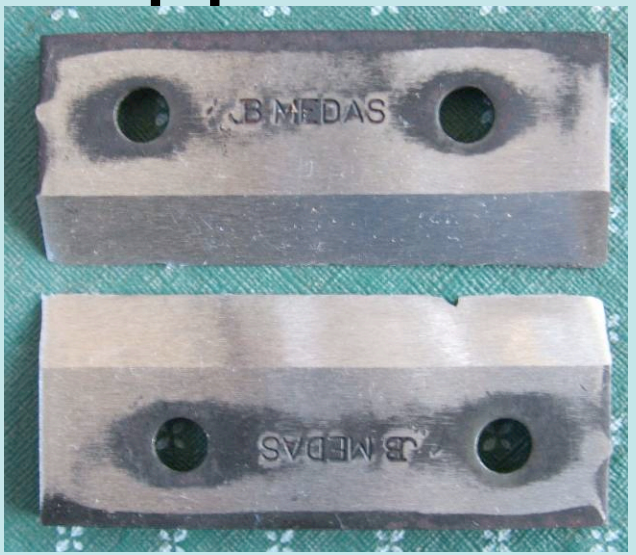
Tools for Sharpening Chain Saw File

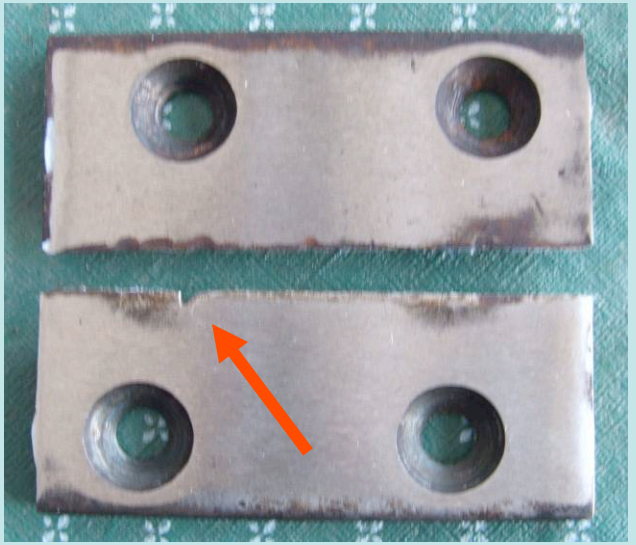


Concepts for Sharpening
Before Filing After

Tools for Sharpening
Power Belt Sander

Concepts for Sharpening Belt Sander and Chipper Blade





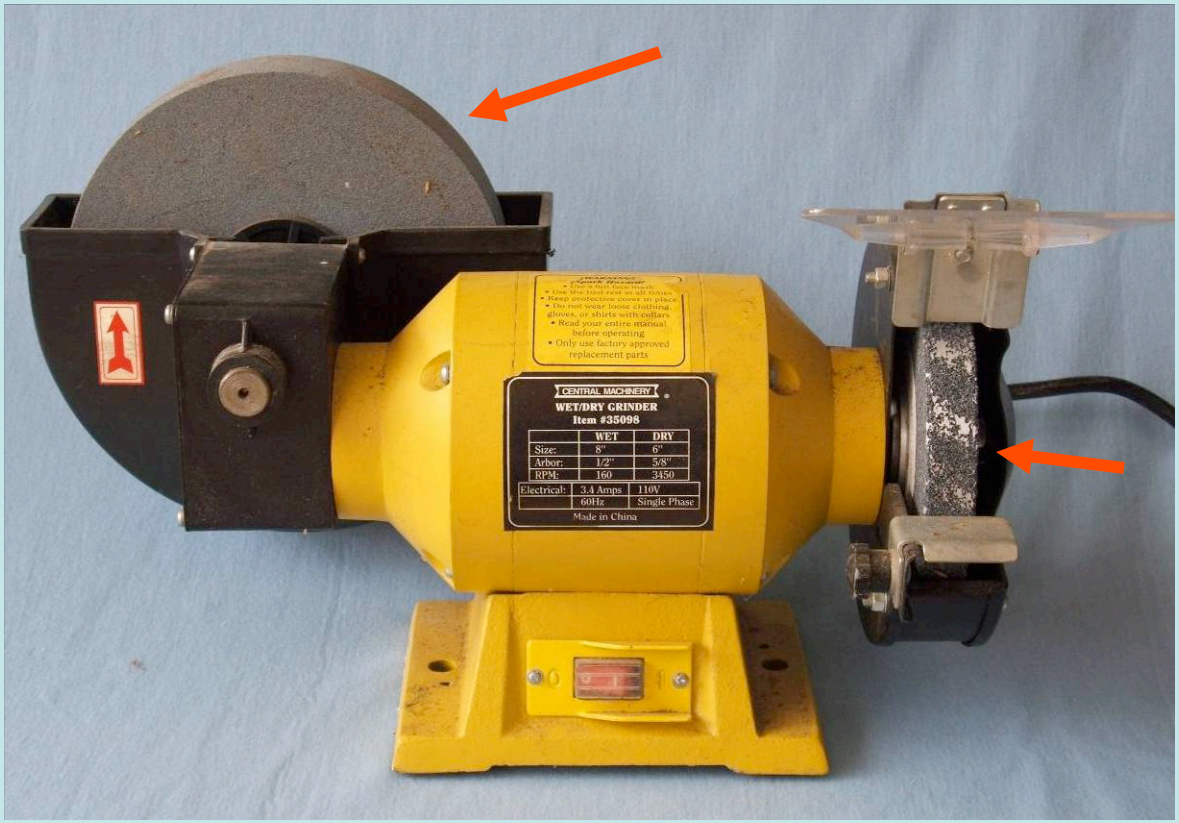
Concepts for Sharpening Belt Sander and Chipper Blade

Tools for Sharpening
Hand Held Grinder

Tools for Sharpening
Hand Held Grinder

Tools for Sharpening
Hand Held Grinder

Tools for Sharpening
Wet or Dry Grinder



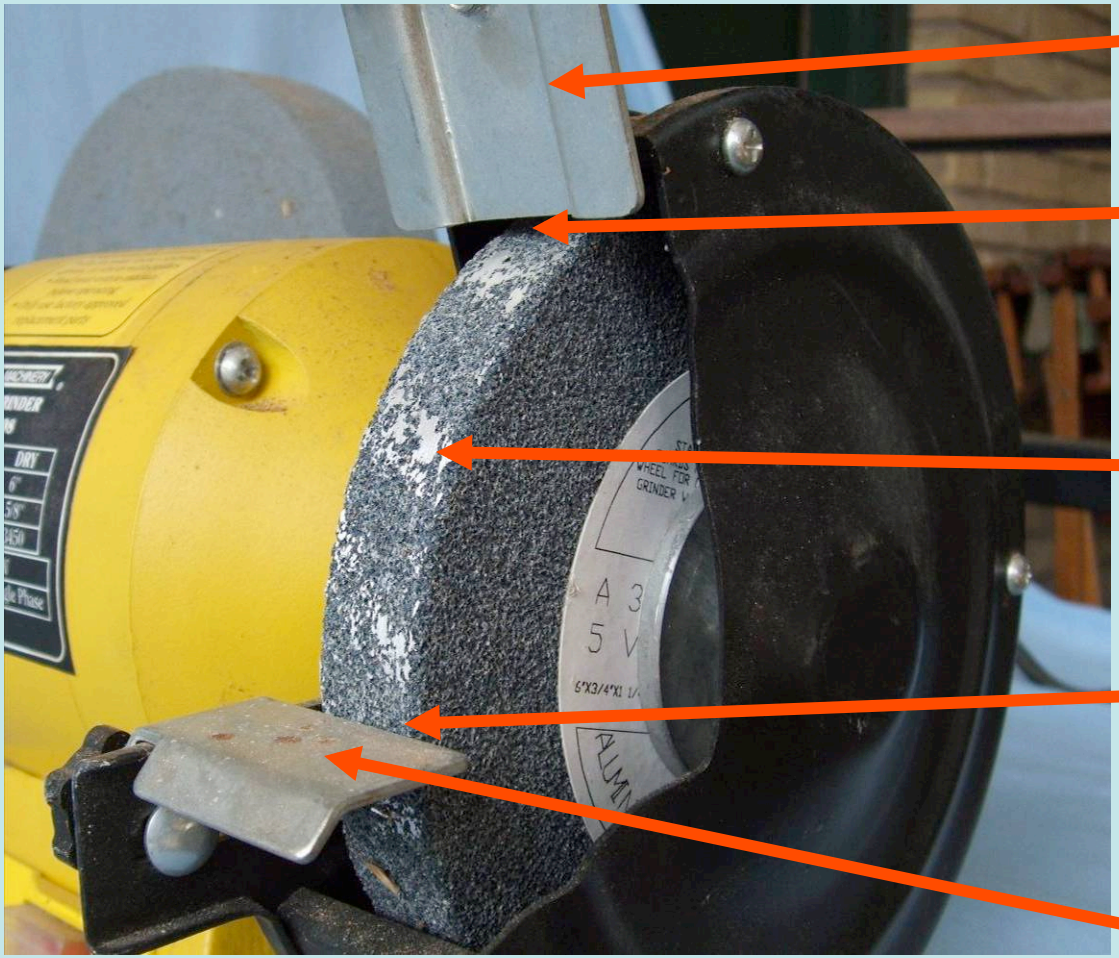
Wet wheel, 180 RPM, note revolution is away from you

Dry wheel, 3500 RPM, 6 inch diameter wheel velocity is approximately 60 MPH.

If it was 8 inch diameter, velocity would be 80 MPH

A wheel speed of approx. 1000 RPM would be better

Tools for Sharpening
Wet or Dry Grinder



Tongue guard

Space less
than 1 / 4 inch

Loading or glazing,
causes wheel to run
hot, remove with
dressing tool

Space less than 1/8
inch

Tool Rest

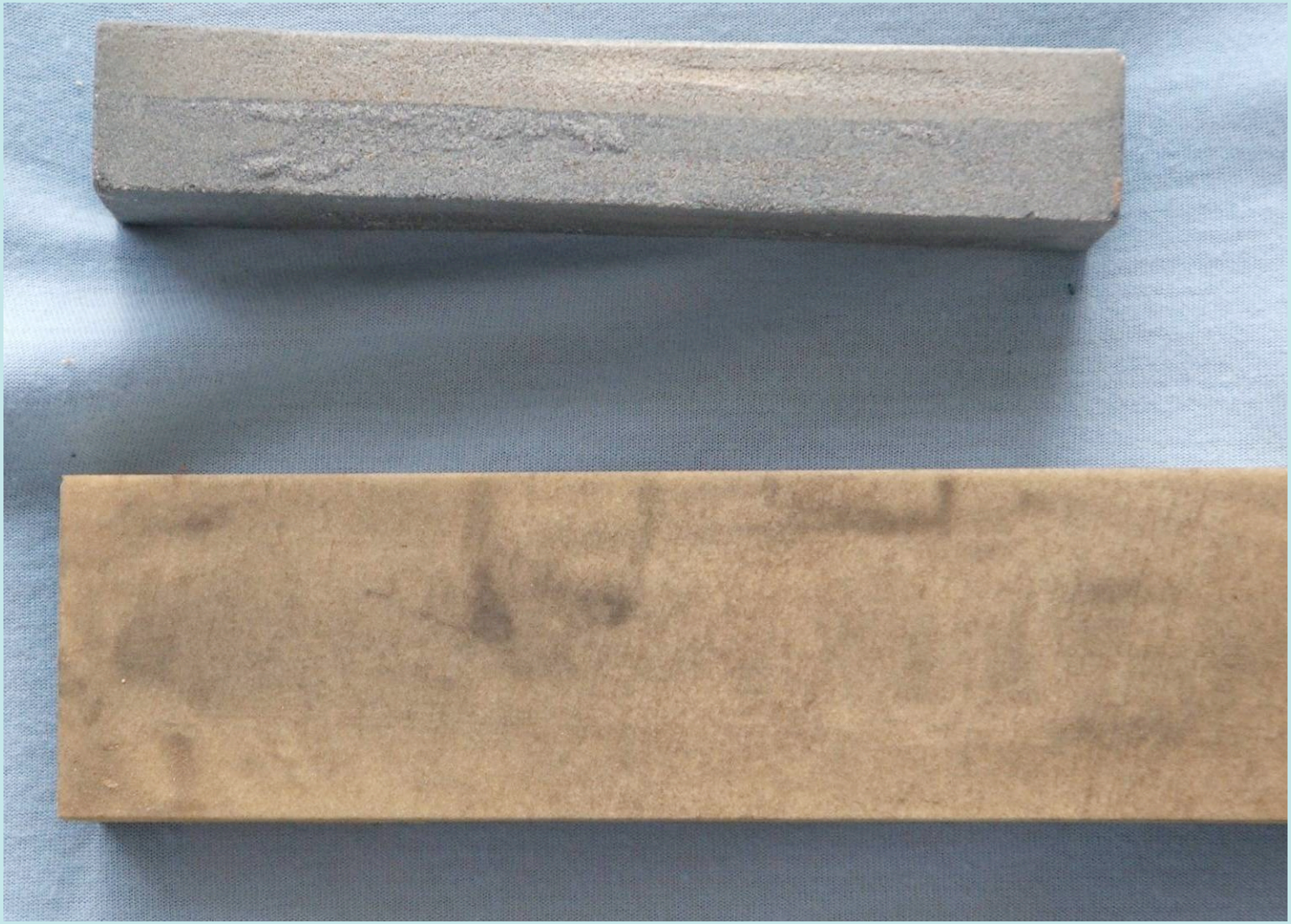
Tools for Sharpening
Wet or Dry Grinder

Due to the presence of electricity and water, a ground fault circuit interrupter must be used with this grinder

Water receptacle

Note: no tool rest

Tools for Sharpening
Wet or Oil Stones

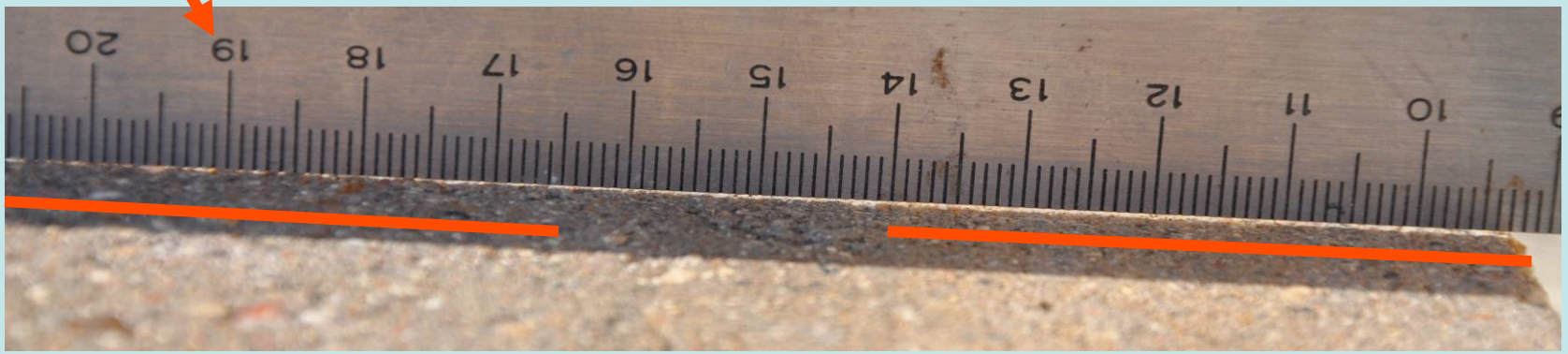


Tools for Sharpening
Wet or Oil Stones

Stone Holder

Tools for Sharpening
Wet or Oil Stones

Straight edge



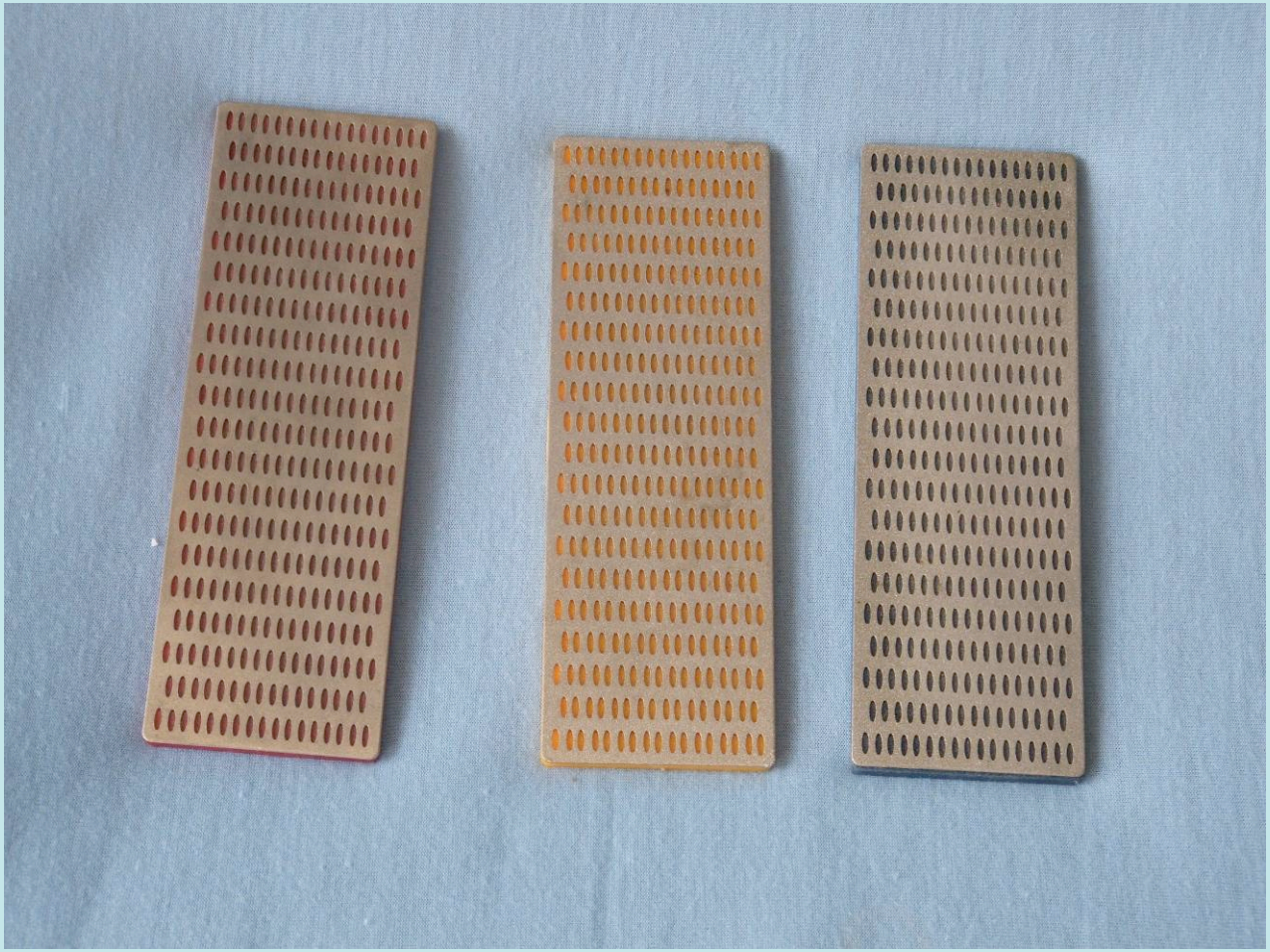
Stone is level

Stone is uneven based on the light between the straight edge and the stone

Tools for Sharpening
Wet or Oil Stones

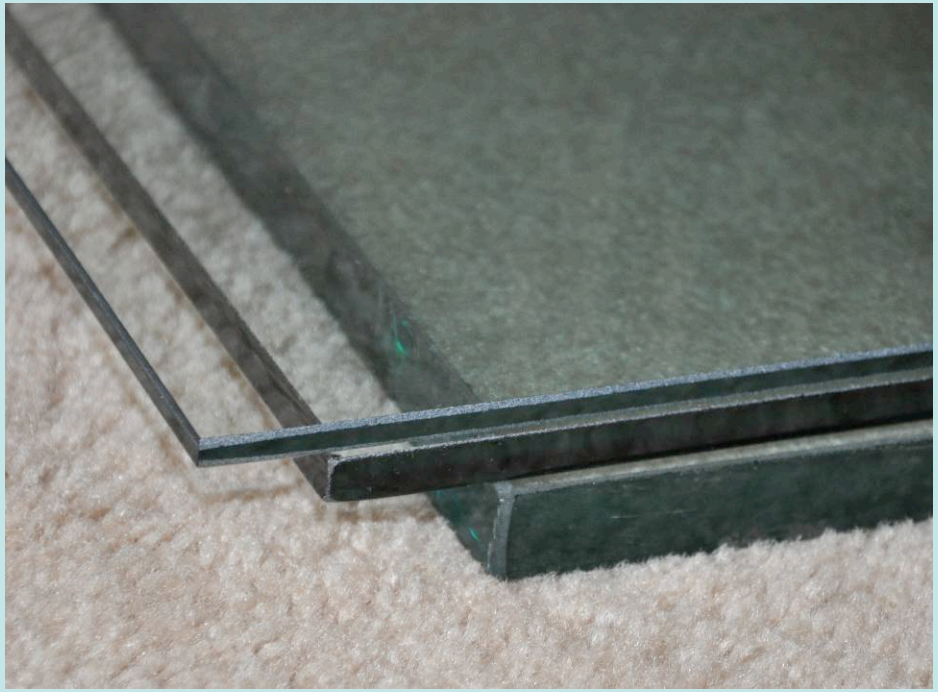
Tools for Sharpening
Wet or Oil Stones

Tools for Sharpening Diamond



Tools for Sharpening
Sand Paper/ Emery Cloth

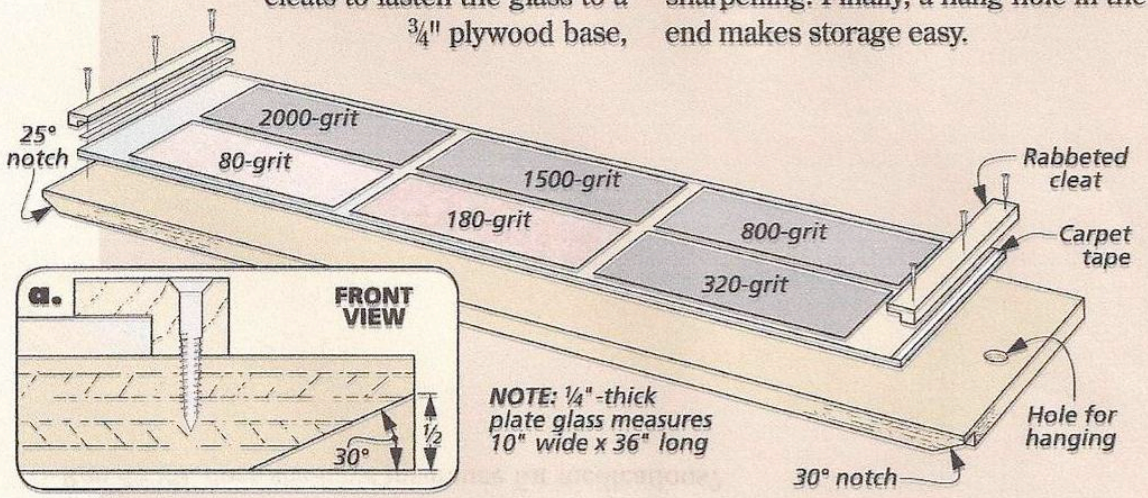
Tools for Sharpening
Sand Paper/ Emery Cloth

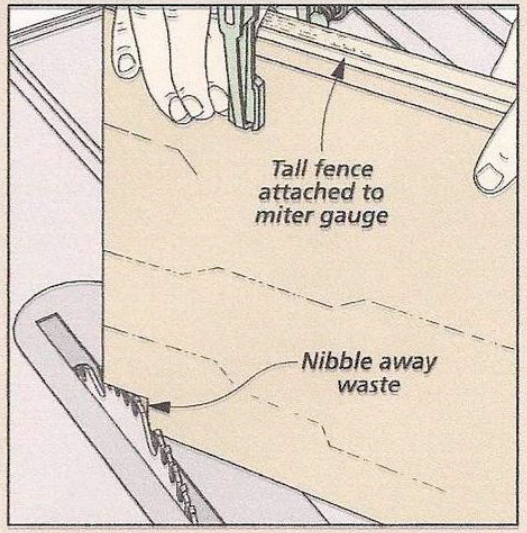


Tools for Sharpening
Sand Paper/ Emery Cloth

ALL-IN-ONE SHARPENING PLATFORM

Here's how to put a sharpening platform together. First, ask a glass supplier to cut you a piece ¼"-thick plate glass and soften the edges. Next, use rabbeted cleats to fasten the glass to a ¾" plywood base, as shown in the drawing below. This makes the glass easier to manage. A couple of angled notches in the corners of the base act as set-up guides for sharpening. Finally, a hang hole in the end makes storage easy.

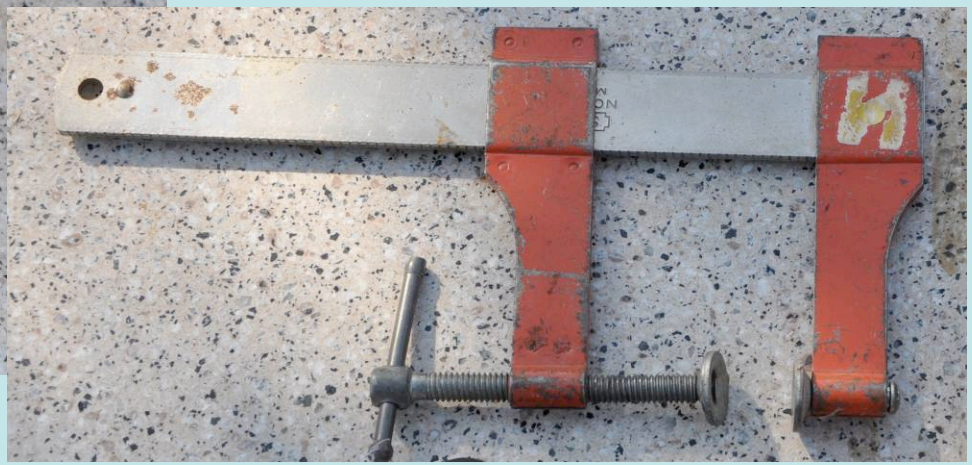




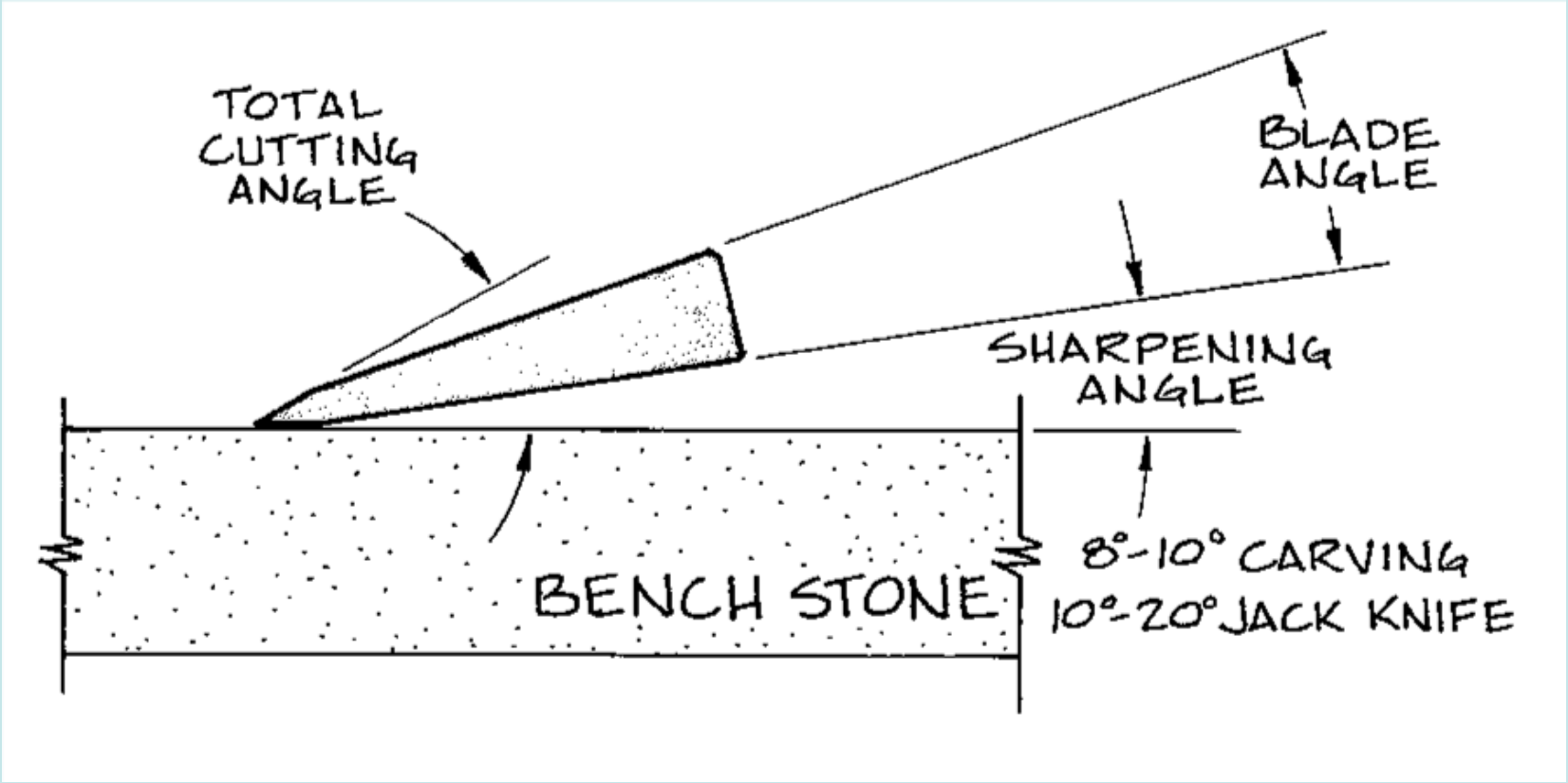
▲ **Nibble Away Waste.** *A tall fence attached to the miter gauge allows you to cut the "guide" notches in the plywood base. A hand saw could be used to do the job.*

Tools for Sharpening
Bench Vise

Good for holding parts steady, mount on a bench or piece of wood that can be clamped to stable surface.



Concepts for Sharpening Pocket Knife



Concepts for Sharpening Pocket Knife

(1) NEW, SHARPENED KNIFE

WRONG

(2) AFTER SUCCESSIVE SHARPENINGS

CORRECT

(3) AFTER SAME NUMBER OF SHARPENINGS

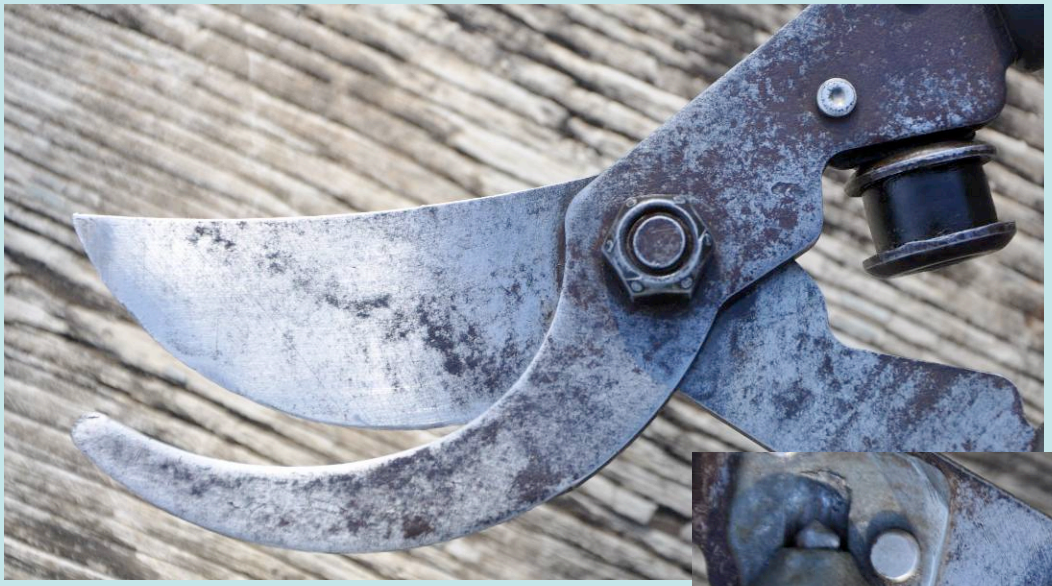
Concepts for Sharpening Pocket Knife

Concepts for Sharpening Pocket Knife

Concepts for Sharpening Pocket Knife

Concepts for Sharpening Pruners and Loppers

Concepts for Sharpening Pruners and Loppers



Concepts for Sharpening Pruners and Loppers

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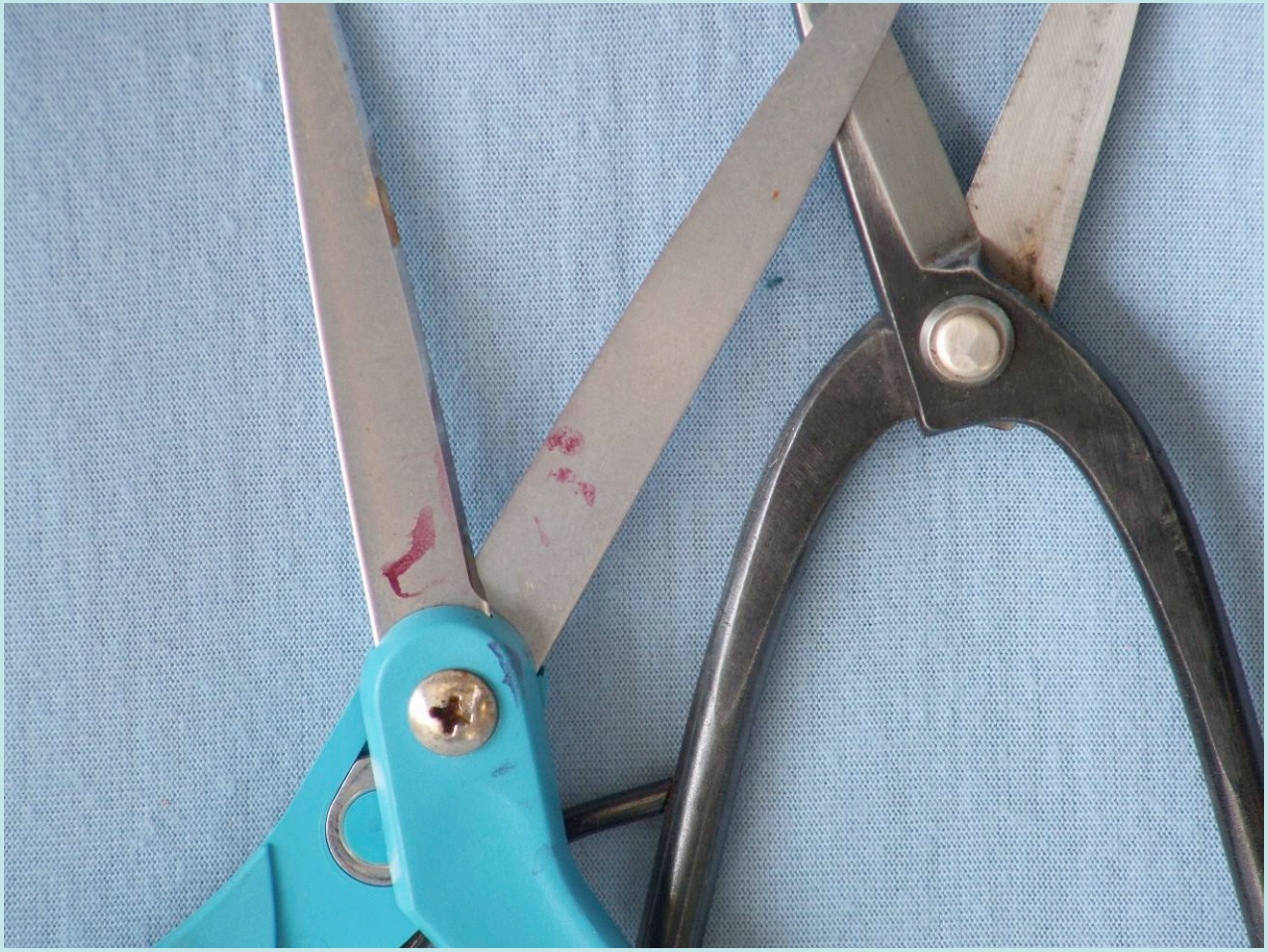
Concepts for Sharpening Pruners and Loppers

Caution

Adjusting Tools
Pruners and Loppers

Adjusting Tools
Pivot Point

Adjusting Tools/ Scissors



Basic Care
Abrasive Pad and Oil

Basic Care
Various Brushes

Basic Care Disinfectant

Basic Care
Wooden Handles

- Most are finished with lacquer, that is not water resistant
- Sand handle with 120 grit sand paper to smooth and remove weathered finish/ wood
- Apply paste wax and sand again with 120 grit sand paper, makes a slurry that seals pores
- Polish with a towel or soft cloth

Basic Care
Metal Handles and Tools

- Most are finished with paint
- Sand metal with 120 grit sand paper or 2/0 steel wool to remove rust and dirt
- Apply paste wax and sand again with 120 grit sand paper or 2/0 steel wool to protect metal or use anti-rust spray
- Polish with a towel or soft cloth

Summary

- Keep tools clean, dry and sharp
- Practice sharpening, takes time to learn
- Be Safety Conscious, sharpened tools can cut
- Dull tools cause more injuries than sharp tools
- New tools are not sharpened to their optimum
- Some tools are best sharpened by the pros: ex. saws