SHARPENING

November 12, 2019

Dick Hoblitzell

Woodturning Meeting
Woodworkers of Central New York

BASIC TRUTHS

Sharp, properly sharpened tools are a must

Must have equipment. Hand sharpening is not practical.

Grinder is second most important tool in woodturning

If it works for you, then it is correct

CHISEL STEELS

- Carbon Steel blued edge is dull
- High Speed Steel- HSS
- M2, M4
- Powdered - better combining of elements
- Kryogenic - tempered to minus 300 deg
- Chromium
- Validamum – up to 10% hardness and edge holding ability
- Carbide

- Freehand
- Jigs
- Angles
- Profiles skew, gouges, scrapers
- Wheels

MANY OPINIONS

EQUIPMENT

GRINDERS

New $100+, Used $30+

Wheel Size 6in 8in

Arbor 5/8in

1/2Hp, 3/4Hp

Speed 1750, 3450,Variable

Wheels Stone (aluminum Oxide), Diamond, CBN

Water wheel

Low speed 350rpm

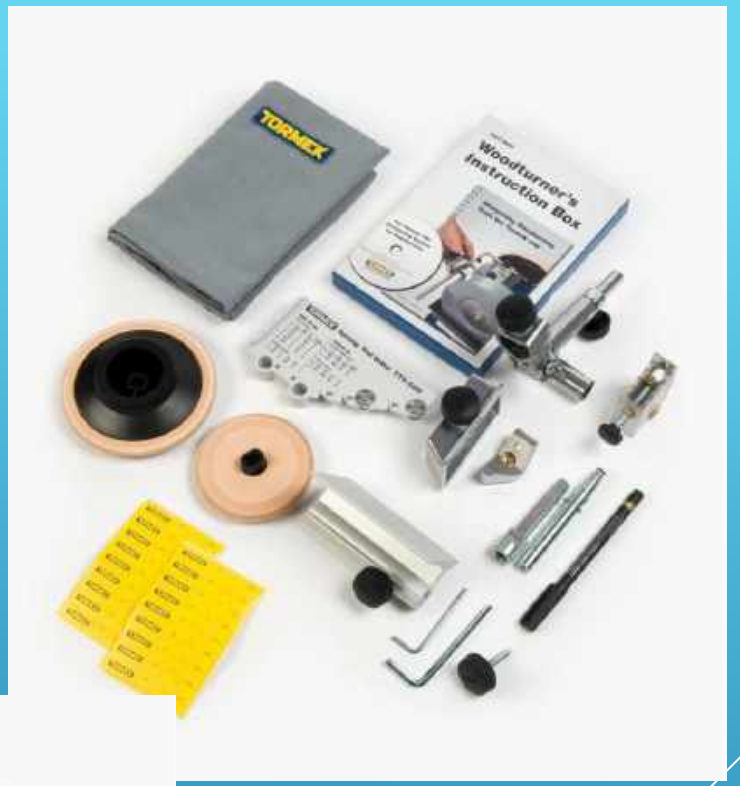
Woodworker

Carver

TORMEK

$36

$40



$90

$190+

TORMEK

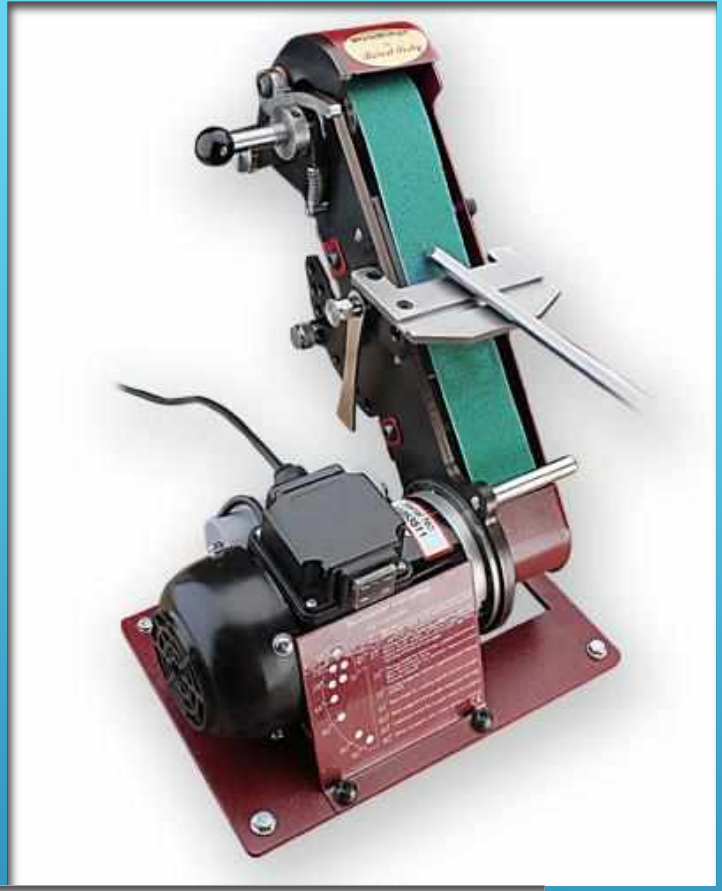
Sorby Pro Edge $460

Fingernail Profiling Kit $58

Belts 60- 3000 grit $10-$20

Hartville, Packard, Craft Supplies

SORBY PRO EDGE



Stone Aluminum Oxide

CBN (Cubic Boron Nitride)

Diamond

WHEELS

Hardness codes

Friable

Shrink with use

Balance

Dressing

40 – 120 grit +

STONE WHEELS

STONE WHEEL MAINTENANCE

CBN WHEELS

$150-$300

80-120-180-400-600-1000

Always Round

Always Balanced

No dressing

Cut Very Fast

Less Heat

Wider 1.5in

Rounded Edge

Side Grinding

1/2Hp, 3/4Hp

1750 rpm

5/8in Arbor

8in CBN 180 Wheel

GRINDER OF CHOICE

SAFETY

Particles- steel, stone

Wheel cover

Work Light

Working height

Eye protection

Dust mask

Magnet in baggie

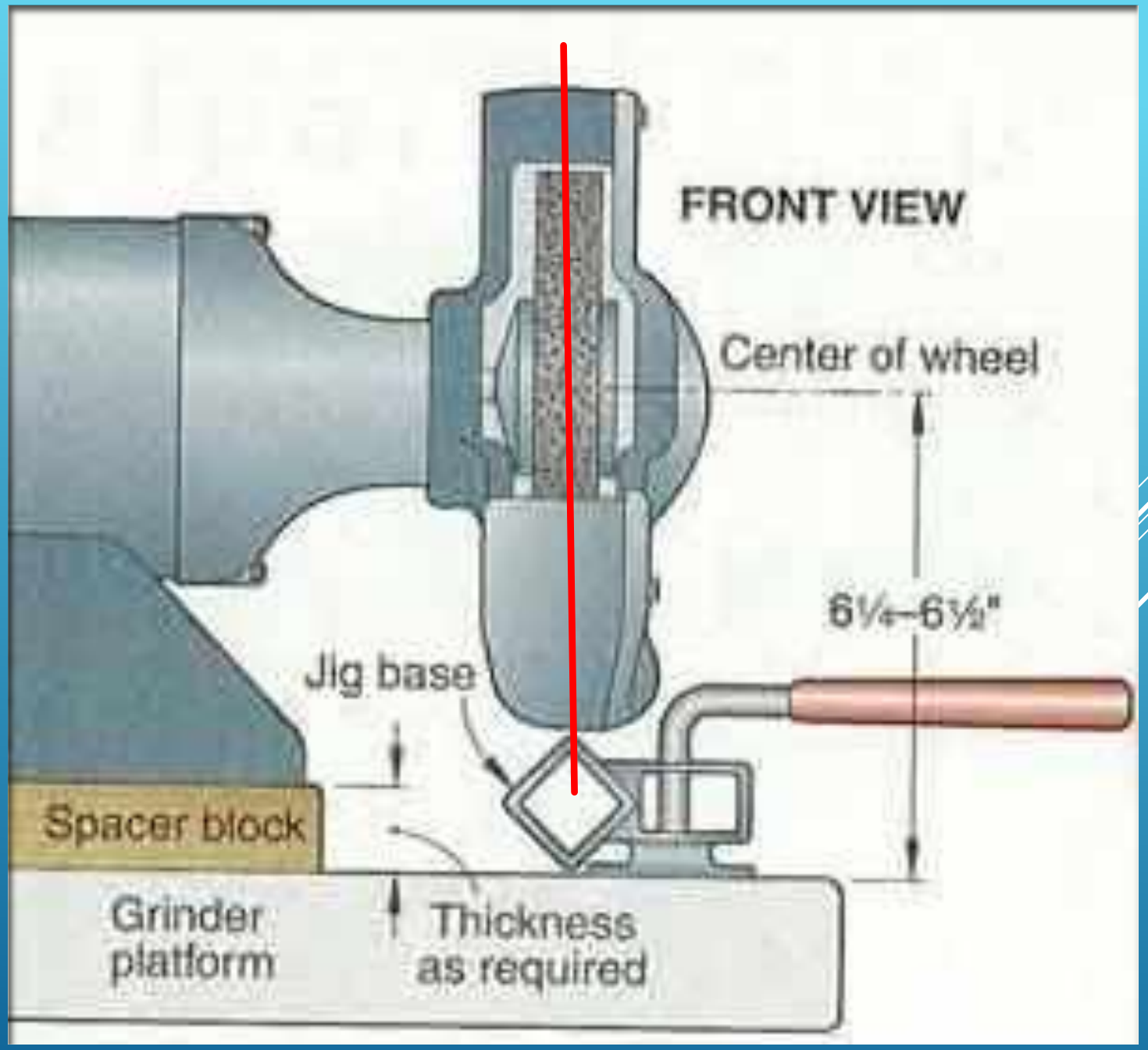
Dust collection

Fan

Base to arbor center 6 1/4-6 1/2
Use spacer block

Jig base midway on face

MOUNTING



Locate grinder close to lathe

Set grinder at a comfortable height - Chest

Consider magnifiers – headset glasses, or fixed magnifier

Practice on cheap chisels- PSI, Harbor Freight

Consider removable tool handles. Much easier to sharpen

Use Jigs

CONSIDERATIONS

COMMERCIAL JIGS

Insure Repeatability

Quick Setup

Minimal Grinding- less metal

Oneway Wolverine

Oneway Vari-grind

Extension setup block- tip to jig

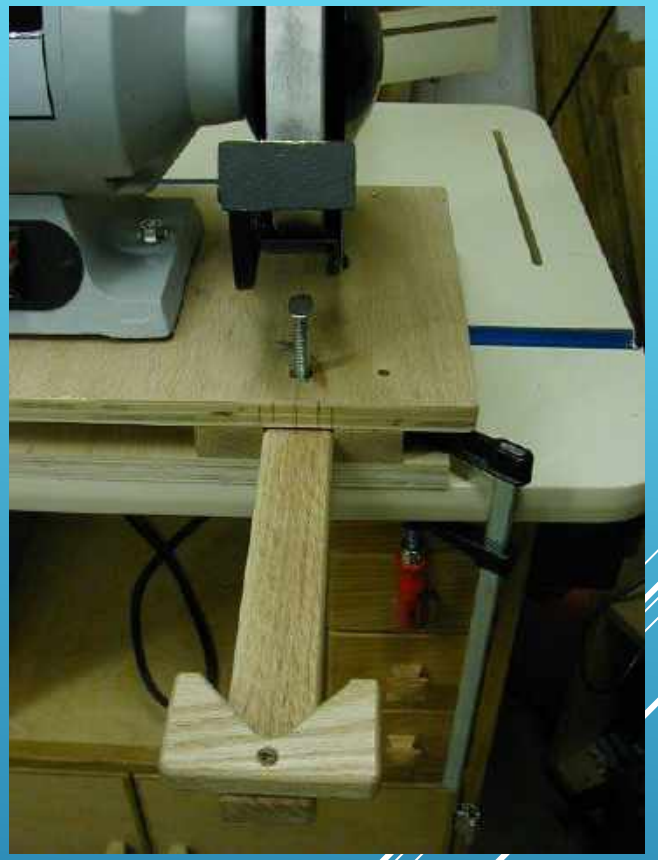
Raptor setup Craft Supplies

Skew jig do not use- platform

ALL jigs have DIY equivalents

$90

ONEWAY WOLVERINE



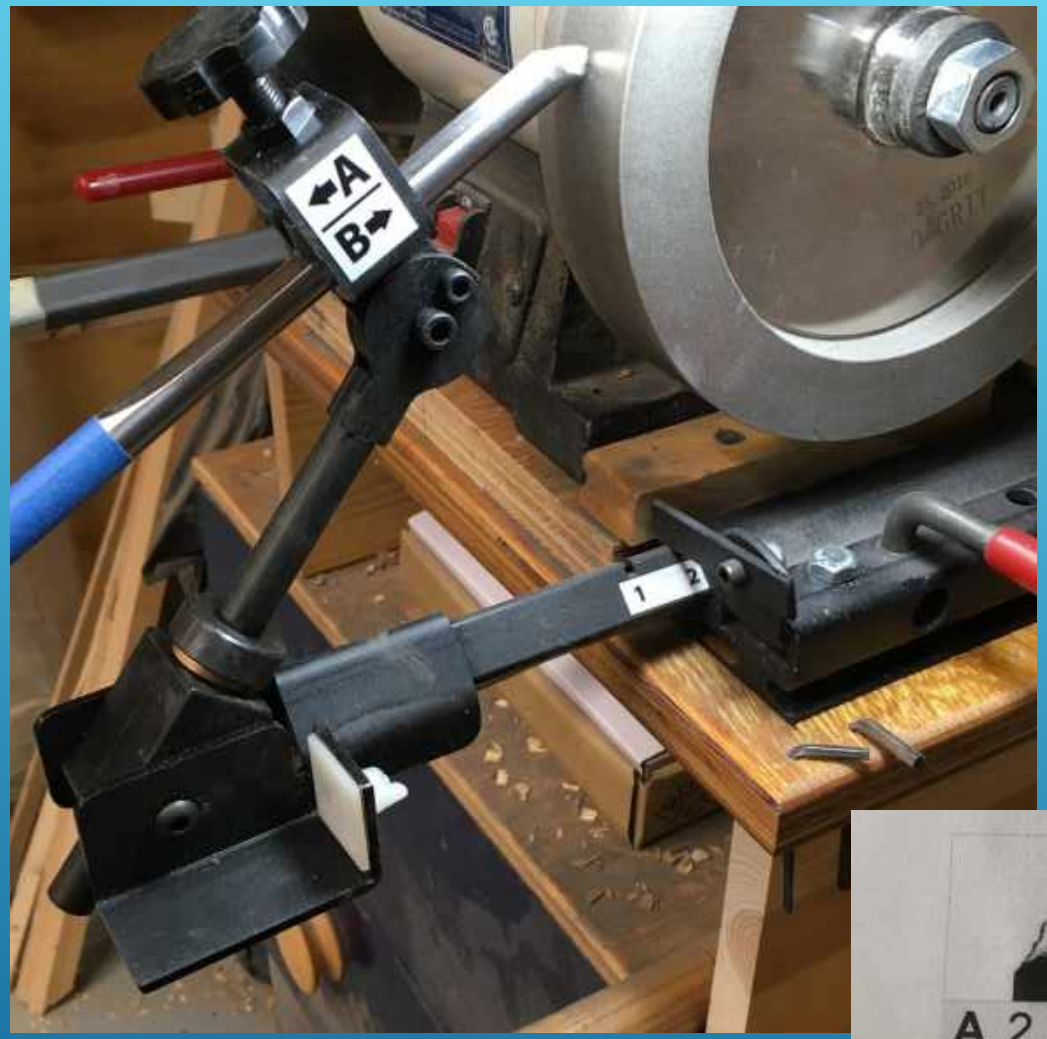
DIY WOLVERINE

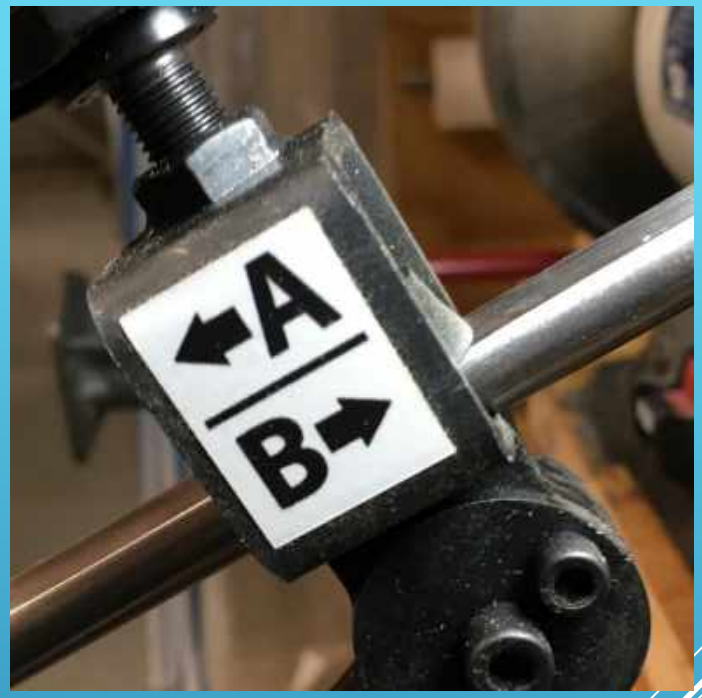
ADJUSTABLE GOUGE JIGS

GOUGE JIGS

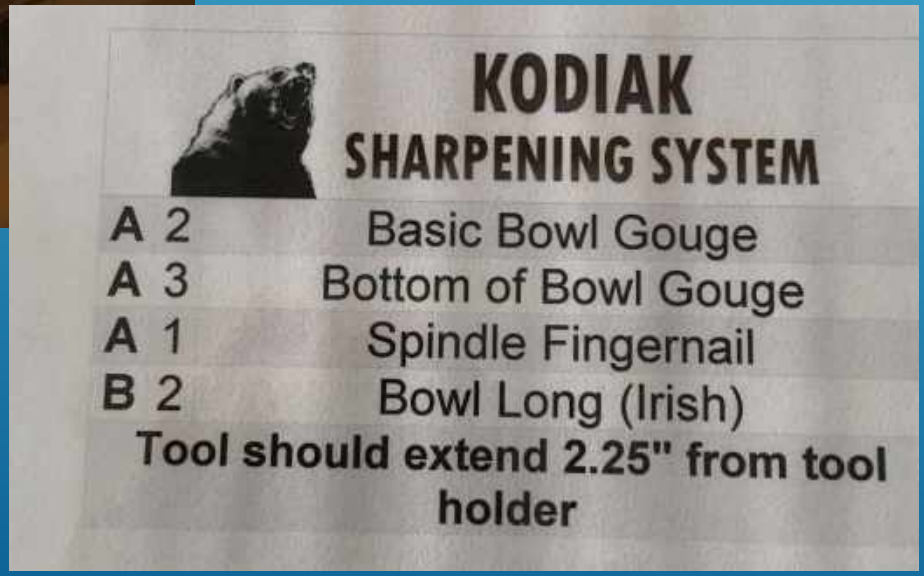
Kodiak
$115

JoHannes Michelsen
Vector Grind $183

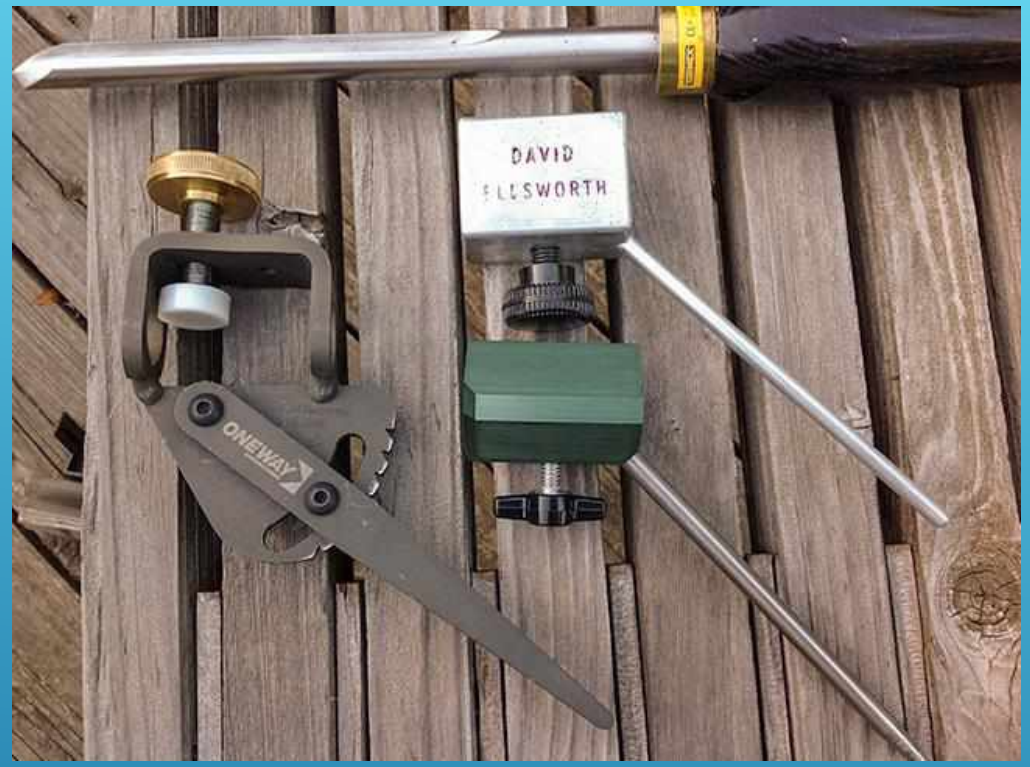

A
B
1
2

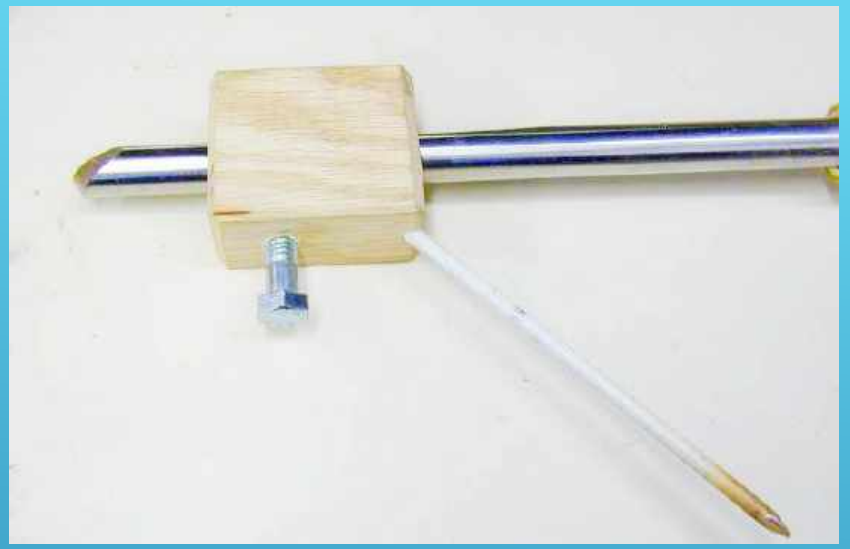

A
B

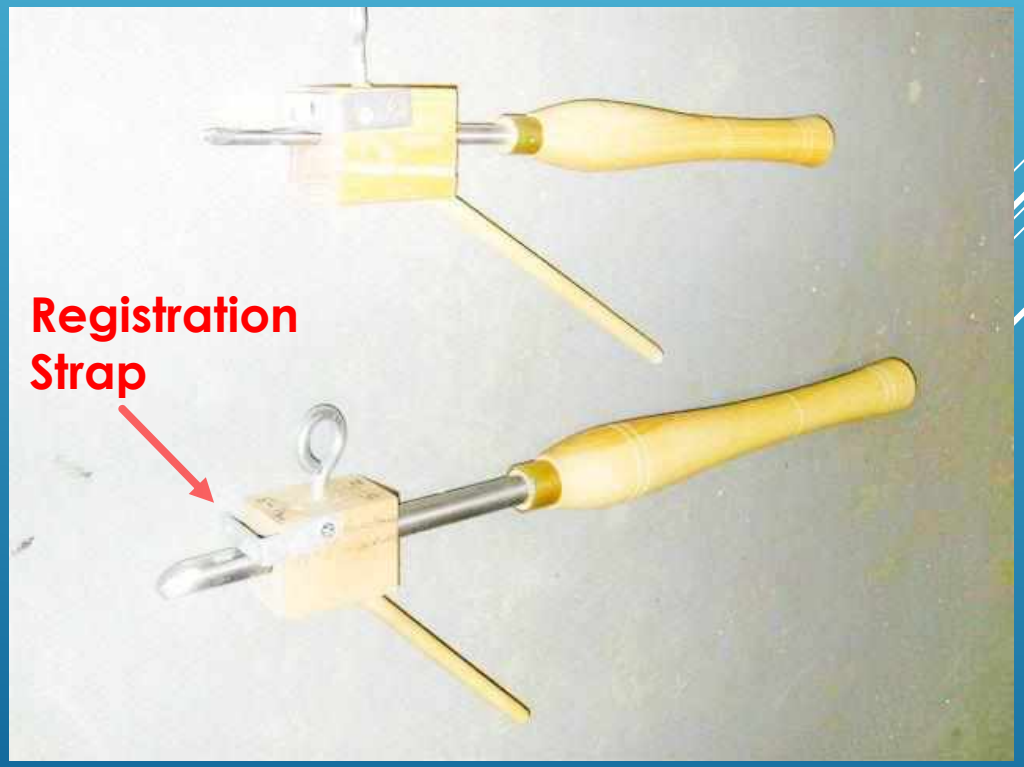
KODIAK


KODIAK
SHARPENING SYSTEM
A 2 Basic Bowl Gouge
A 3 Bottom of Bowl Gouge
A 1 Spindle Fingernail
B 2 Bowl Long (Irish)
Tool should extend 2.25" from tool holder

1
2



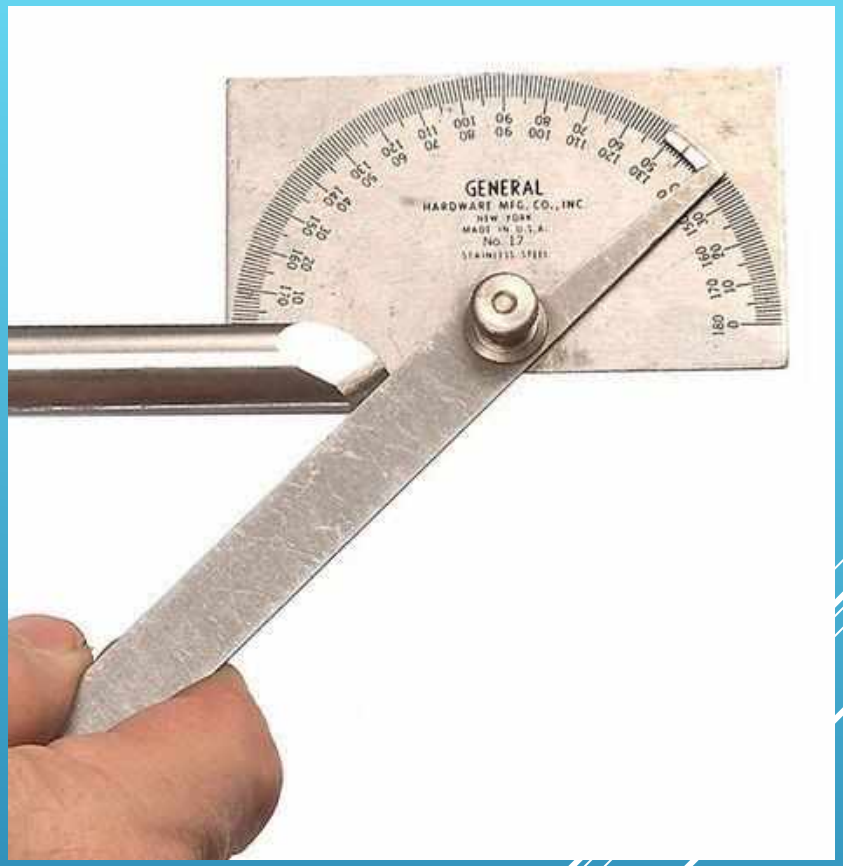




V-ARM FIXED JIGS

SETUP

Goal is Repeatability & Quick Setup



- Decide on a few angles
- Refine turning techniques
- Approximate angle is fine
- Mark tool with tape and angle/jig

LIMIT ADJUSTMENTS

LIMIT ADJUSTMENTS

Consider Fixed Jigs

Rapid Setup & Consistent Results

Use a Platform for

Rough Gouge, Scrapers, Skews

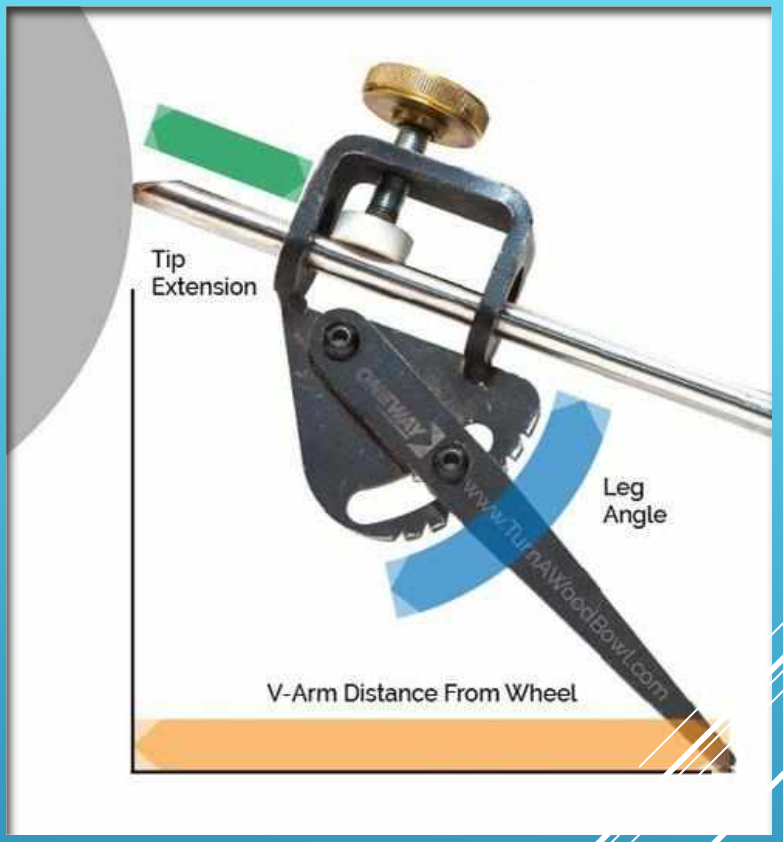
Use a Jig for Gouges

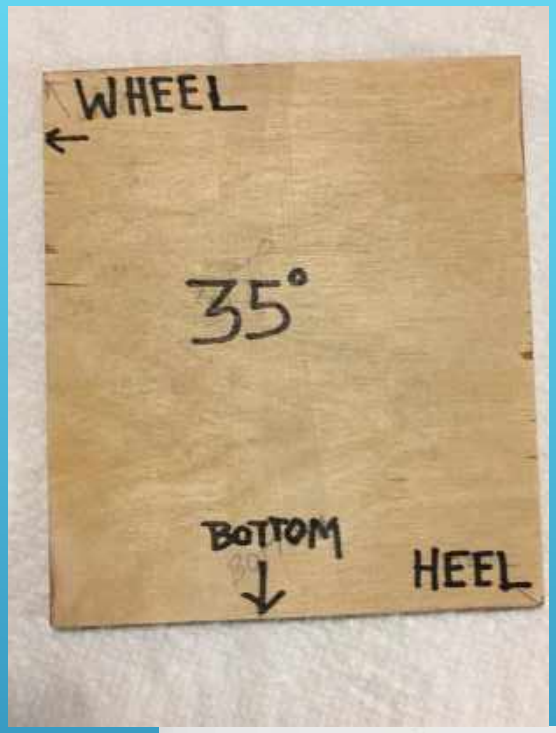
Permanently Fix VariGrind arm 45deg

Choose Fixed Tip to Jig Extension 1 ¾ - 2 ¼

Only Adjust V-Arm Distance

If you do this……..





CBN wheel eliminates fancy jig

ANGLE JIGS

MY *DIY* ELLSWORTH JIG

The block is 4pcs 1/2in x 2 oak scrap

- Epoxy one side to bottom
- Place gouge in “L” to establish width
- Loosely epoxy other side
- Trim top sides to gouge diameter plus 1/16in
- Epoxy top. Creates square vs round hole
- Trim and sand

Drill @ 45° and epoxy rod from the centerline of gouge

Trim exposed rod to 7“

Thread 1/4-20 or 5/16-18 screw from bottom

- Forces gouge flute parallel against top of jig

Extend tip 2“ from jig

PLATFORMS

PLATFORMS

PLATFORMS

AJRAPTOR

25°
Thickness
of Chisel

BEDAN

Angle Gauge One

TABLE
SKEW
BEDAN
SCRAPER

PLATFORMS

PLATFORMS

TECHNIQUE

Angle Check – Mark Edge with Marker/Sharpie
Hand Turn Wheel Against Edge
Look for a Shinny Edge Along Entire Edge

Hands – Hold the Jig – Not the Handle
One Hand Keeps Tool on the Wheel
Other Hand Rotates

Loosen up. Woodturners Sway

Grind in a Continuous Motion – Eliminates Multi-Facets

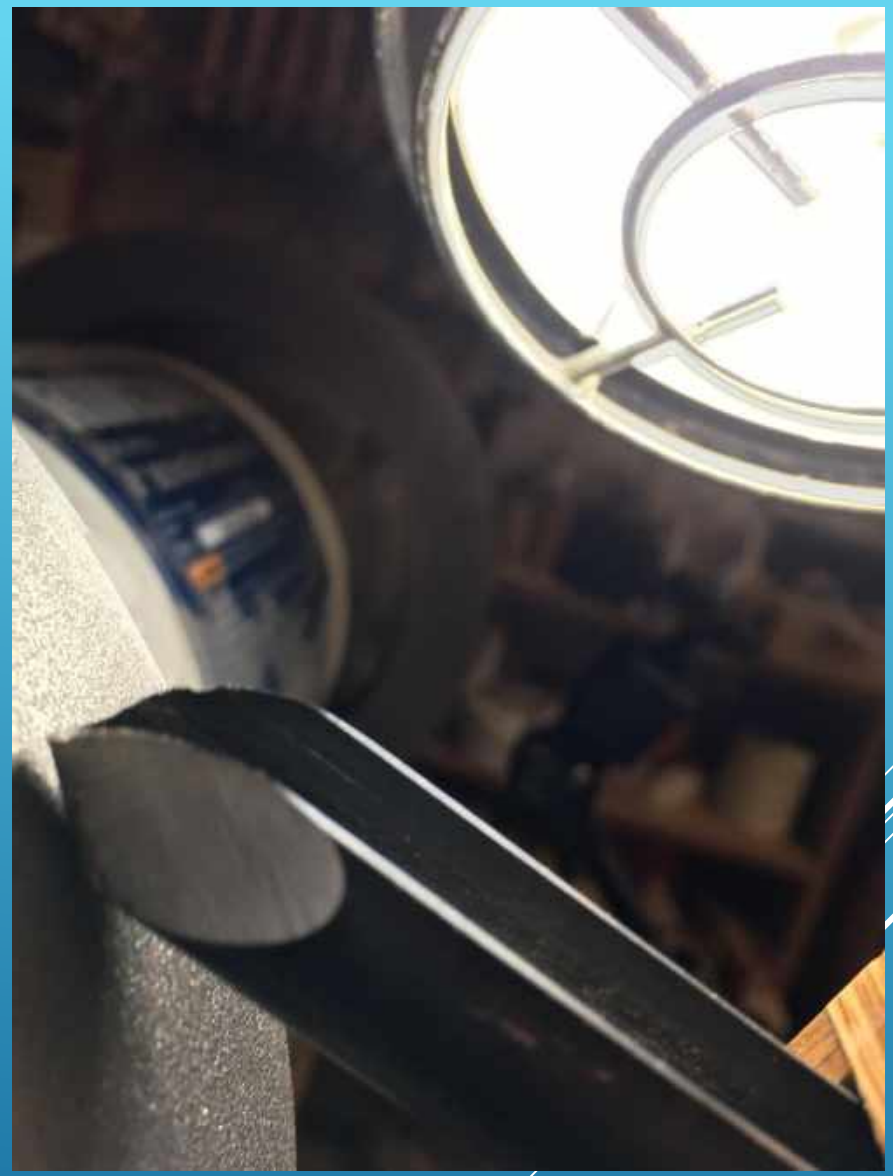
Grind Sides First then the Tip – Minimizes Overgrinding Tip

Secondary Bevel/Heal Relief – Use ¾ inch spacer

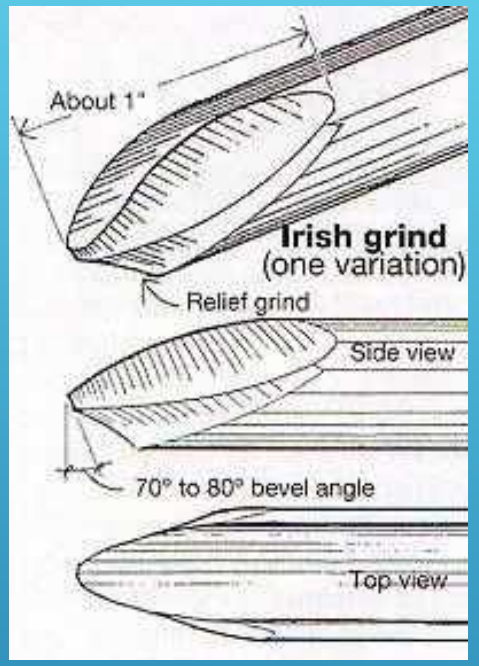
Recheck Tool Tip Extension if Removing a Lot of Steel

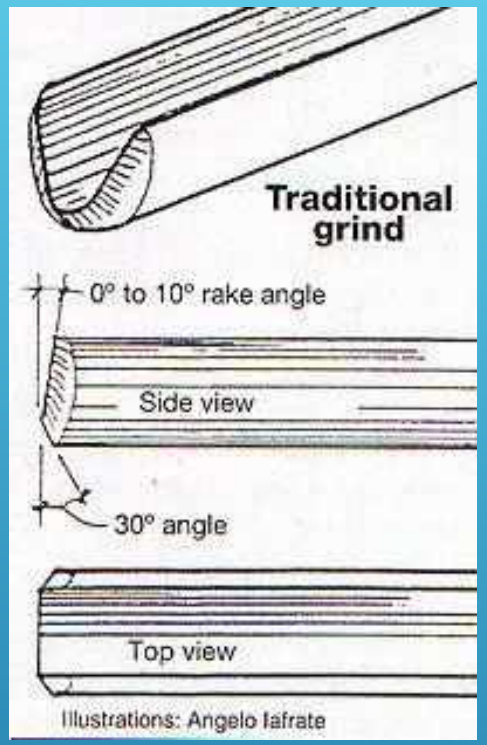
LIGHT Touch – *the weight of the tool & jig is enough pressure*

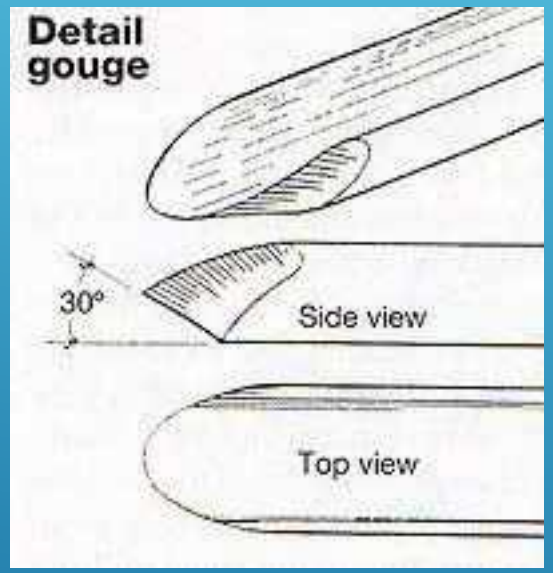
TECHNIQUE



SECONDARY BEVEL

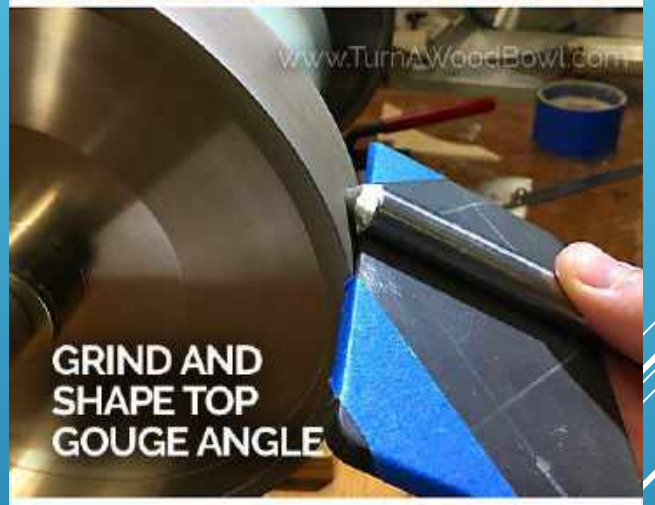

About 1"
Irish grind
(one variation)
Relief grind
Side view
70° to 80° bevel angle
Top view


Traditional
grind
0° to 10° rake angle
Side view
30° angle
Top view
Illustrations: Angelo Iafrate


Detail
gouge
30°
Side view
Top view

PROBLEMS

Turn A Wood Bowl
GOUGE
FLUTE
FLAT ON
PLATFORM
www.TurnAWoodBowl.com


www.TurnAWoodBowl.com
GRIND AND
SHAPE TOP
GOUGE ANGLE

www.TurnAWoodBowl.com
CURVE
ALONG
FLUTE
WILL BE
CUTTING
EDGE

Dipped wing

Facets / Nose

Light Touch

PROBLEMS

DON'TS

Use Platform

Use Platform for Support

Hold Jig – Not Handle

HONING

Diamond/CBN 400-600 grit

Contact heel of the tool, then the edge

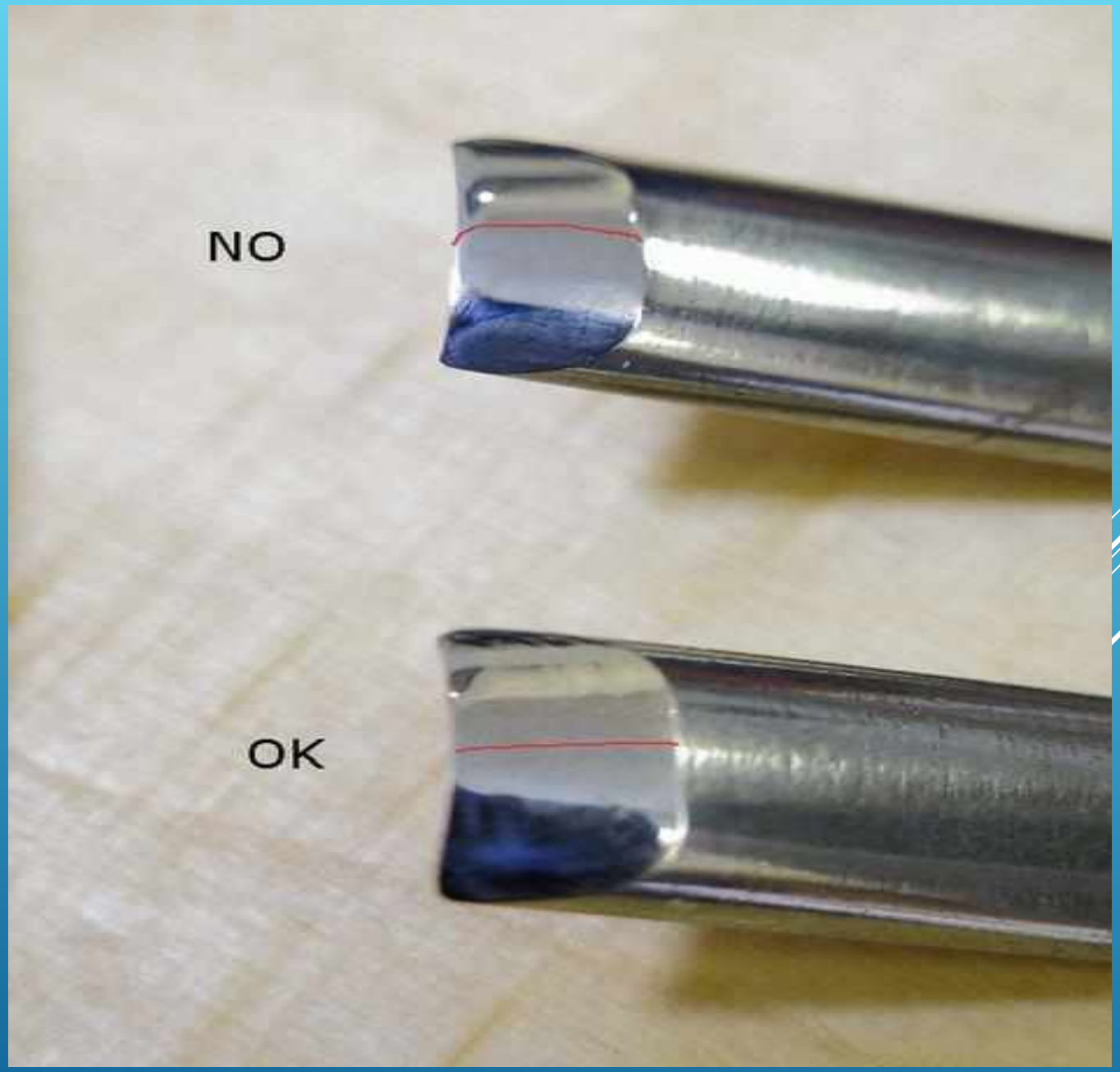
Hone with circular motion to a wire edge

Wire edge will be removed as tool touches the wood.

When sparks come over the chisel, you are at the edge

If you see the edge, you have no edge

WHEN IS IT SHARP



MORE INFO

Craft Supplies USA

Reed Gray

Glen Lucus

Stuart Batty

JoHannes Michelsen

Woodturners Wonders

John Lucus

Raptor Setup Jigs website

RoboRest platform

How To YouTube

How to YouTube, Vimeo

Vector Grind YouTube

Kodiak System website

How To YouTube

VIDEOS – YOUTUBE / VIMEO

SUMMARY

Locate Grinder Close to Lathe

Chest High Grinder Install

Safety Protection

Use/Save for CBN Wheel

Dress Stone Wheel Frequently

Use Jigs / DIY *(Build Your Own!)*

Remove the Handle

Loosen Up

Hold Jig Not Handle

Continuous Motion

LIGHT Touch

Re-Sharpen Before Final Cut