Sharpening Handbook

Because *sharp enough* ... usually is not

Chapter 17

Wood Lathe Tools

Notes for All Wood Lathe Tools	17-2
Bedan Tools	17-3
Bowl Gouges	17-5
Detail Gouges	17-10
Finger Grip Tools	17-12
Fluteless Gouges	17-13
Parting Tools, Diamond	17-15
Parting Tools, Slim Fluted	17-17
Pen Mill	17-19
Pyramid Point Tools	17-20
Ring Tools	17-22
Scraper Blades	17-24
Scrapers	17-26
Scrapers, Negative Rake	17-28
Skew Chisels	17-30
Skew Chisels, Lacer-style	17-33
Skewchigouges - see Fluteless Gouges (17-13)	
Sorby Spindle Master - see Fluteless Gouges (17-13)	
Spear Point Tools	17-35
Spindle Gouges	17-10
Spindle Roughing Gouges	17-37
Spiralling & Texturing Tools	17-39
Termite End Grain Tools	17-40
Thread Chasing Tools	17-41
Vortex Tools	17-42

SharpeningHandbook.info

The full handbook, and the latest version of this chapter, are on the web at **SharpeningHandbook.info**. This chapter: November 2026.

Notes for All Wood Lathe Tools

High Speed Grinders

If grinding this on a high speed grinder or sander, be sure to manage the temperature so that the temper is not lost due to overheating.

High Carbon Steel



Temperature control is critical for high carbon steel. Tempering will be lost in the steel if heated until it is blue (~550˚F / 300˚C). Cool by dipping as needed in water.

High Speed Steel

Cool by dipping as needed in water.

Steel with Carbide Insert

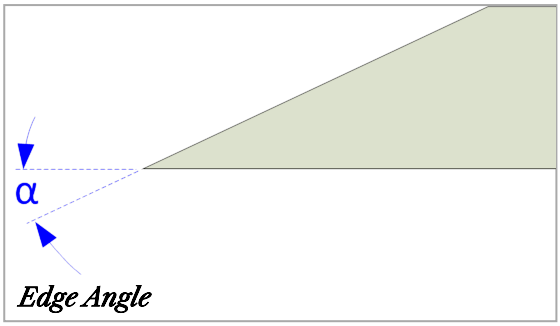


DO NOT cool by dipping in water. This will cause the carbide to crack due to shocks.

It is also recommended to use a high grit wheel for sharpening carbide as lower grits can cause cracks in the edge leading to it being far more crack-ridden and brittle. (Lower grits can be used for shaping the edge -- see also, Grindstones and Other Sharpening Media - Quick Selection Guide (see Chapter 2).)

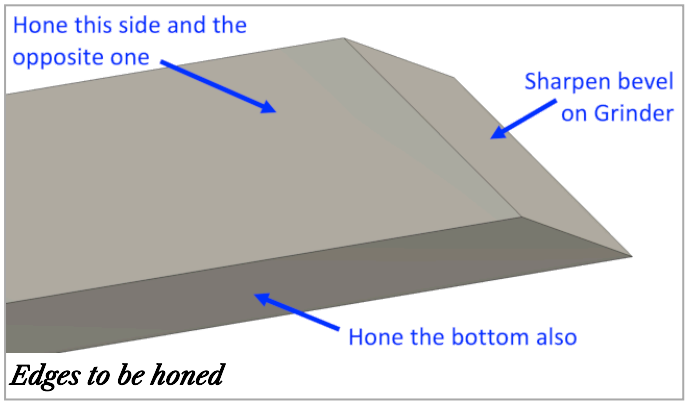
Bedan

As the points of the **Bedan** are used when this tool is employed, these must be the focus of the sharpening activity.



When honing, I use a 1,000 grit diamond stone to touch up the left & right sides, and the bottom.

> *You will find something more in woods than in books. Trees and stones will teach you that which you can never learn from masters.*
>
> Saint Berna



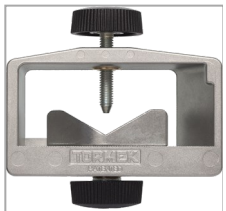
Edges to be honed

General Guidelines

α	SVS-50			Sharpness
	JS	P	Hole	
45°	0°	55 mm	B	7

Notes & Comments

Use the open seat on the Tormek SVS-50.


SVS-50 with Open Seat

Other Opinions

- Ernie Conover recommends an α of 25°-30° in The Lathe Book.
- Marty Kiminsky noted that an α of 15-30° is generally recommended for this tool in "Woodturning" magazine, issue # 352. (He did not note a personal preference though.)

More Information

Books & Papers

- "The Lathe Book", by Ernie Conover.

- "Woodturning" magazine, issue # 352.
- Some information presented is from the Tormek handbook, "Water Cooled Sharpening of Edge Tools".

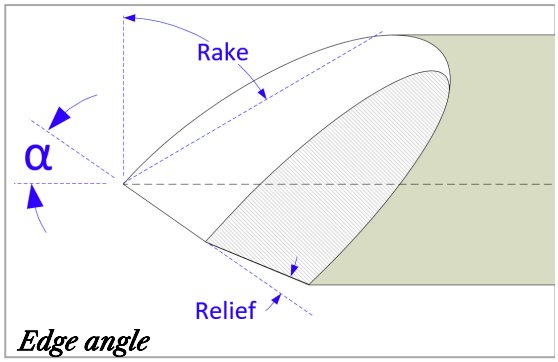
Videos & Presentations

- Tormek Sharpening Classes: Part 5 - Woodturning Tools (YouTube video).
- Tormek Sharpening Classes: Part 23 - Reshaping woodturning tools on a bench grinder (YouTube video).
- DMT Tools Honing a Bedan Woodturning Tool (YouTube video). A good video showing how to hone the Bedan.
- DMT Honing Tools Sharpening a Bedan Part 2 (YouTube video). A good video showing how to sharpen the Bedan using diamond plates.
- Bedan Practice #2 (YouTube video). A good video showing how to use the Bedan.
- How to sharpen roughing gouges, skews & parting tools - Tormek SVS-50 Multi Jig - with Nick Agar (YouTube video).
- Jeff Farris - Sharpening with the Tormek SVS-50 Multi-Jig (YouTube video).
- Tormek Multi jig SVS-50 (YouTube video)
- Tormek Turning Tool Setter TTS-100 (YouTube video)
- Tormek AngleMaster WM-200 (YouTube video)

> **Sharpness Scale** - see Chapter 1.
> **Ongoing maintenance** - see Chapter 4, *Woodworking Tools*.
> **Grindstones and Other Sharpening Media** - see Chapter 2.

Bowl Gouge

Guidelines shown below are for use with the Tormek gouge jigs (SVD-186 R, SVD-186, or SVD-185).



Guidelines below can be taken with two approaches:

1. **Sharpening for a workflow which uses a single bowl gouge** - consider the shape used by an artist whose work you admire (e.g., the "Ellsworth grind" if you wish to pursue work like David Ellsworth (ellsworthstudios.com)).
2. **Sharpening for a workflow which uses multiple bowl gouges** - consider

α	Rake	Relief	Comments
40°	40°-50°	10°	Primary bowl gouge - the 40°/40° is good.
55°	10°	10°	Used for the inside bottom of the bowl.

Sharpness Scale 7

A **relief** ground into the bottom part of the gouge helps reduce bruising the wood as the turner comes around the inside curve of the bowl. The Tormek handbook, Water Cooled Sharpening of Edge Tools, refers to this as "Rounding Off the Heel".

When a work lifts your spirits and inspires bold and noble thoughts in you, do not look for any other standard to judge by: the work is good, the product of a master craftsman.
Jean de la Bruyere

The heading rows were repeated with each grinding angle to make the table below more useful.

General Guidelines					
α	Rake	Relief	SVD-185/186		
			JS	P	Hole
40°	**40°**	**5°**	2	75mm	A
40°	**60° - 75°**	**5°**	2	75mm	A
45°	**5° - 15°**	**5°**	2	65mm	A
45°	**45° - 60°**	**5°**	2	65mm	A
50°	**5° - 15°**	**5°**	*n/a*	*n/a*	*n/a*
55°	**5° - 15°**	**5°**	4	65mm	A
60°	**5° - 15°**	**5°**	6	75mm	A
60°	**60° - 75°**	**5°**	6	75mm	A

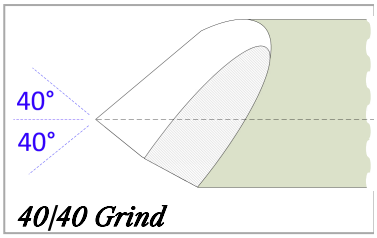
Notes & Comments

40° Grind

The "40/40" grind is advocated by Stuart Batty (Allan's son), and is used by his protégé Ashley Harwood. They both advocate hand grinding on a platform set for 40° (a number of companies make such platforms).

My experience is that this shape is very useful for the really hard woods used in ornamental turning. Examples include African Blackwood and Desert Ironwood (both with Janka hardness measures >

13,000 N).



40/40 Grind

As shown in the diagram to the right, the wings are not swept back as far as the diagrams below, but the α remains the same. Also, the wings (on the rake) are recommended to be flat, not convex. This is because the wings are not a key element of the style Stuart uses for his work (unlike that advocated by David Ellsworth). I have found it difficult to produce truly flat wings; mine are more convex. This has not decreased the usage of the tool's grind shape for me.

Stuart Batty has a number of great videos on Vimeo showing his SB Tools, including some on sharpening.

40/40 Grind Using a Tormek



Henrik Franck Stampe provided this set of instructions for making a 40/40 grind using a Tormek grinder. He noted that this helps get a flat edge on the wings as shown in the picture to the left. As he also noted: trying to control the wing shape using precise side-to-side movements is difficult, oftentimes leaving the wing edges a mess.


Grinding the Top of the Cutting Edge

Step 1: Grind the top of the cutting edge flat
Settings: Hole A | JS 4 | P ~45

Place the bowl gouge "upside down" in the SVD-186 (bowl gouge's flute opposite the screw knob, as shown in the picture to the right). This is a bitt fiddly, but it is quite possible. Set the tool's projection in the SVD-186 to around 45mm.

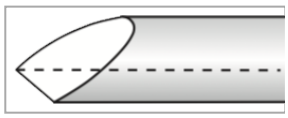
Using the side of the grinding wheel, grind the top edge flat, very carefully and very little at a time. This is shown in the picture to the right (*click on the picture to see a bigger version*).

Step 2: Grind the cutting edge
Settings: Hole A | JS 2 | P 75

Place the bowl gouge in the SVD-186 in the more typical fashion (bowl gouge's flute towards the screw knob). Set the tool's projection in the SVD-186 to 75mm.

Grind the cutting edge using the face of the grinding wheel.

Flute Note: The bowl gouge sold by Ashley Harwood has a parabolic flute. Feedback I've seen regarding this grind shape has noted that the parabolic flute seems to work best for this grind. Additional feedback I've read is that a U-shaped flute does not work well with this grind.

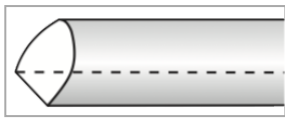


The profile shown to the right with long swept back wings can be achieved by adding more side-to-side swing of the tool when sharpening it (i.e., grinding the wings further back for a higher rake angle -- more information about this is in the comments below).

The Tormek handbook, Water Cooled Sharpening of Edge Tools, advises that this grind shape is not recommended for starter-level turners as it can be somewhat aggressive, but many others feel that 40° is the optimal grind angle (except for bowl bottom gouges, where 60° is recommended).

Note: I do not see this grind discussed often in woodturning fora or at woodturning tool sharpening events.

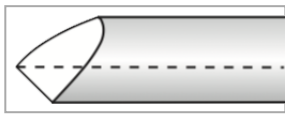
45° Grind



The Tormek handbook, Water Cooled Sharpening of Edge Tools, recommends that this grind shape is for turners of all skill levels.

Others feel that 40° is a far better grind angle (except for bowl bottom gouges), especially if pursuing a multiple bowl gouge workflow.

Note: I do not see this grind discussed often in woodturning fora or at woodturning tool sharpening events.

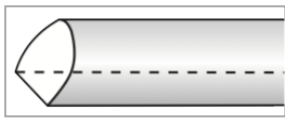


The "Irish" profile with swept back wings was pioneered by Liam O'Neil, and can be achieved by adding more side-to-side swing of the tool when sharpening it (i.e., grinding the wings back further).

Allan Batty recommended this angle, though Stuart Batty noted that his father's recommendation for this angle was based on his production work being made easier (vs. using a second bowl gouge for bowl bottom work).

Stuart's stories of working for his father are worth the price of admission to his classes (oh, and the instruction is good too).

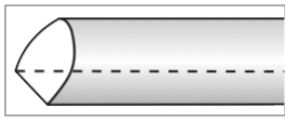
50° Grind



This is a good grind for bottoms of shallow bowls.

The wings do not need to be swept back, and indeed the rake angle may tend towards 80°.

55° Grind



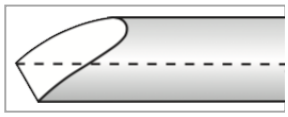
The larger edge angle is beneficial when turning deeper within bowls.

Tom Wirsig noted that this angle, coupled with a U-shaped flute, is best for figured woods, also noting that it must be very sharp (see also, *"Tips for Turning Figured Woods"*, in the October 2022 edition of "American Woodturner"). Tom also recommends a shape where the wings are not swept back, with the rake angle tending towards 80°.

60° Grind

This is a good cutting angle for bottoms of the bowl, especially a deep bowl.

The rake angle (wing sweep) will look like the one shown above for 55°.



The *"Ellsworth"* shape, made famous by David Ellsworth (one of the founders of the American Association of Woodturners - Member #1) has wings which have a very pronounced convex shape.

David turns a lot of wet wood for the objects he makes, and I have found that this shape works well for such turning. I have also found that this shape is not as usable for really hard woods (i.e., Desert Ironwood or African Blackwood).

These wings are a key element of the style David uses for his work (unlike that advocated by Stuart Batty).

Flute Note: The bowl gouge developed by David Ellsworth has a parabolic flute. Feedback I've seen regarding this grind shape has noted that the parabolic flute seems to work best.

Other feedback notes that a U-shaped flute works well for this, especially for the bottom of a bowl. That same feedback also noted that the **α** could be as high as 75° - 80°. Also, the wings would not be swept back for this use.

Rake Angle Grinding

The best shape for the edge is slightly convex or flat.

Good	 **Slightly Convex** - best shape	 **Flat** - acceptable shape
Bad	 **Overly Convex** Cause: excessive grinding on the front edge.	 **Concave** Cause: excessive grinding on the wings/sides.

Longer Wings?

The wings can be extended for a greater rake angle by the way you grind. The rake angle is increased when you spend more time grinding on the wings, and when you increase the amount of swing you use when grinding.

The diagram to the right shows this movement.

Glenn Lucas' video, *Avoiding common problems when sharpening woodturning tools*, is a good one to review before proceeding down this path. A link to that video is below.

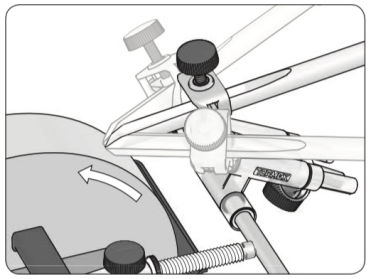


Image courtesy Tormek

Tool Too Short?



Comparison of two bowl gouges; one old, one new

When the tool gets too short to be held by the jig, you can grind off the top as shown in the upper tool in the picture to the left. This flat area allows for the jig to hold the tool without the tool slipping or rotating.

And when it gets even too short for that, consider making it into a round negative rake scraper (see Negative Rake Scraper, in this chapter) (great for bottom corners of boxes), a beading tool, or a point tool.

More Information

Books & Papers

- Some information presented is from the Tormek (tormek.com) handbook, “Water Cooled Sharpening of Edge Tools”, © Tormek AB.

Published Articles

- There are three really good articles in American Woodturner, a magazine published by the American Association of Woodturners (woodturner.org).

- "A Guide to Gouges" by Joe Larese, in the October 2011 edition. In it, he outlines very well differing gouge shapes and angles for **α**, and the impact these have on bowl turning.
- "Modern Tool Steels and Grinders" by Tom Wirsing (thomaswirsing.com)
- "Reduce Tearout and Get Cleaner Cuts", by John Lucas. September 2024. John reports on some testing he performed with using differing grits of grinding wheels.
- "Refining the Edge: Skews and Gouges", by Alan Lacer with Jeryl Wright. Summer 2009

Videos & Presentations

- **Jeff Farris' Presentations**
  - Sharpening with the Tormek SVD-185 Gouge Jig (YouTube video)
- **Alan Holtham's Presentations**
  - Tormek SVD-186 Gouge Jig (YouTube video)
- **Glenn Lucas' Presentations**
  - Avoiding common problems when sharpening woodturning tools (YouTube video). Glenn's video is quite well done, especially explaining about what causes concave surfaces on the cutting edge of the bowl gouge, and how to avoid it.
- **David Peters' Presentations**
  - Tormek SVD-186 Gouge Jig Review and Comparison to the 185 (YouTube video)
- **Tormek Presentations**
  - Tormek Live Sharpening Class - Part 4 - Carving Knife & Carving Tools (YouTube video).
    - The commentary that starts at 10:40 about setup of the Tormek (tormek.com) SVM-00 Small Knife Holder Jig (tormek.-com) is excellent.
    - Around 24:00, there is a discussion on sharpening hook knives (with the grind on the outside edge). Sharpening the inside edge must be done by hand, or using the method advocated in The Complete Guide to Sharpening (1996) by Leonard Lee (en.wikipedia.org).
  - Tormek Sharpening Classes: Part 5 - Woodturning Tools (YouTube video).
  - Tormek Live Sharpening Class - Part 9 - Sharpen a flat bevel with Tormek MB-100 on a diamond wheel (YouTube video).
  - Tormek Sharpening Classes: Part 23 - Reshaping woodturning tools on a bench grinder (YouTube video).
  - Tormek AngleMaster WM-200 (YouTube video)
  - Tormek Short Tool Jig SVS-32 (YouTube video)
  - Tormek SVD-185 Gouge Jig (YouTube video)
  - Tormek Turning Tool Setter TTS-100 (YouTube video)

Web Sites

- AAW Forum - Bowl Gouge Flute Descriptors (aawforum.org). This is a very good overview of the various flute shapes. It does not get into the preferred method for sharpening by shape, but is worth reviewing.
- TurnAWoodBowl.com (turnawoodbowl.com) is a pretty good reference site for sharpening bowl gouges, especially as it regards the bevel angle you might select. (But it does have a LOT of advertisements on the site -- bit on the annoying side.)

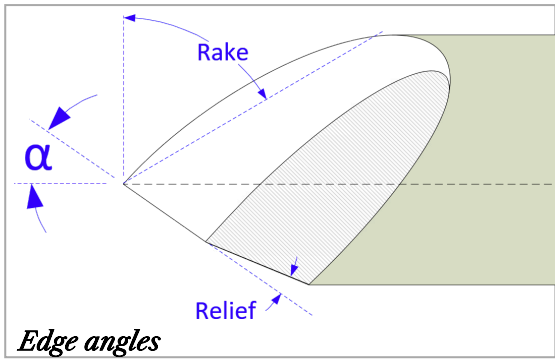
> **Sharpness Scale** - see Chapter 1.
> **Ongoing maintenance** - see Chapter 4, *Woodworking Tools*.
> **Grindstones and Other Sharpening Media** - see Chapter 2.

Detail & Spindle Gouges

Detail Gouges and **Spindle Gouges** are different in the shape or depth of the flute. (This article by Joe Larese, "A Guide to Gouges" gives a good overview of the differences.)

Regardless of the flute, the sharpening is the same.

Guidelines shown below are for use with the Tormek Spindle Gouges (SVD-186 R, SVD-186, or SVD-185).



Edge angles

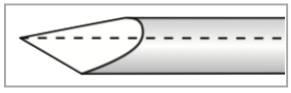
Without craftsmanship, inspiration is a mere reed shaken in the wind.
Unknown

General Guidelines

α	Relief *(if used)*	SVD-186 JS	SVD-186 P	SVD-186 Hole	Sharpness
30°	5° - 10°	2	55 mm	B	7
45°	5° - 10°	2	65 mm	A	7

Notes & Comments

30° Grind

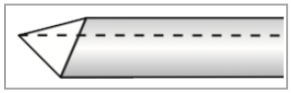


α can range from 30° - 40°.

For tight spots, detail work and finest finish. When the flute is shallow, this is known as a Detail Gouge. Traditionally, the wings are swept back quite far.

Not recommended for starter-level turners.

45° Grind



α can range from 35° - 45°.

Standard profile. For turners of all skill levels.

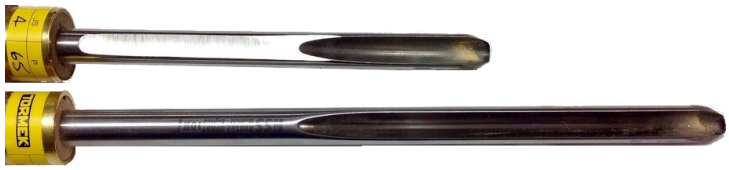
Other Opinions

Marty Kiminsky noted "Woodturning" magazine (issue # 352) these α angles for gouges:

Gouge Type	Generally Recommended	Personal Preference
Detail Gouges	40°	40°
Spindle Gouges	25° - 40°	40°

Tool Too Short?

When the tool gets too short to be held by the jig, you may be able to grind off the top as shown in the upper tool in the picture to the left. This flat area allows for the jig to hold the tool without the tool slipping or rotating.



Comparison of two bowl gouges; one old, one new

Or, when the tool gets too short to be held by the jig, consider making it into a beading tool (video).

More Information

Books & Papers

- Some information presented is from the Tormek (tormek.com) handbook, "Water Cooled Sharpening of Edge Tools", © Tormek AB.

Published Articles

- "A Guide to Gouges", by Joe Larese, gives a good overview of the differences between the types of gouges. "Woodturning" magazine, issue #352.
- "In Defense of Smaller Sharpening Angles" by Mike Darlow. "American Woodturner", a magazine published by the American Association of Woodturners (woodturner.org), December, 2024. Mike's comments regarding more acute angles (~25°) are based on some good reasoning.
- "Refining the Edge: Skews and Gouges (on the web site)", by Alan Lacer with Jeryl Wright. American Association of Woodturners (woodturner.org)' "American Woodturner", Summer 2009

Videos & Presentations

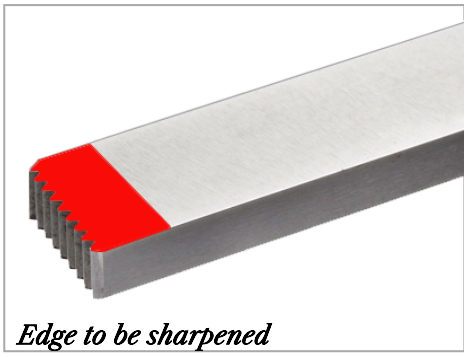
- **Alan Holtham**
  - Tormek SVD-186 Gouge Jig (YouTube video)
- **David Peters**
  - Tormek SVD-186 Gouge Jig Review and Comparison to the 185 (YouTube video)
- **Tormek**
  - Tormek Sharpening Classes: Part 5 - Woodturning Tools (YouTube video).
  - Tormek Live Sharpening Class - Part 9 - Sharpen a flat bevel with Tormek MB-100 on a diamond wheel (YouTube video).
  - Tormek Sharpening Classes: Part 23 - Reshaping woodturning tools on a bench grinder (YouTube video).
  - How to sharpen bowl and spindle gouges - Tormek SVD-186 Gouge Jig - with Nick Agar (YouTube video).
  - Sharpen gouges with the Tormek Gouge Jig SVD-185 (YouTube video)
  - Jeff Farris - Sharpening with the Tormek SVD-185 Gouge Jig (YouTube video)
  - Sharpen short edge tools with the Tormek Short Tool Jig SVS-32 (YouTube video)
  - Tormek Turning Tool Setter TTS-100 (YouTube video)
  - Tormek AngleMaster WM-200 (YouTube video)

Sharpness Scale - see Chapter 1.
Ongoing maintenance - see Chapter 4, *Woodworking Tools*.
Grindstones and Other Sharpening Media - see Chapter 2.

Finger Grip Tool

The **Finger Grip Tool** is sharpened by rubbing a diamond file against the top of the tool.

This is shown in the picture to the right as the area marked red.



Edge to be sharpened

> *Law of the Workshop: Any tool, when dropped, will roll to the least accessible corner.*
>
> Unknown (but I've said it too many times)

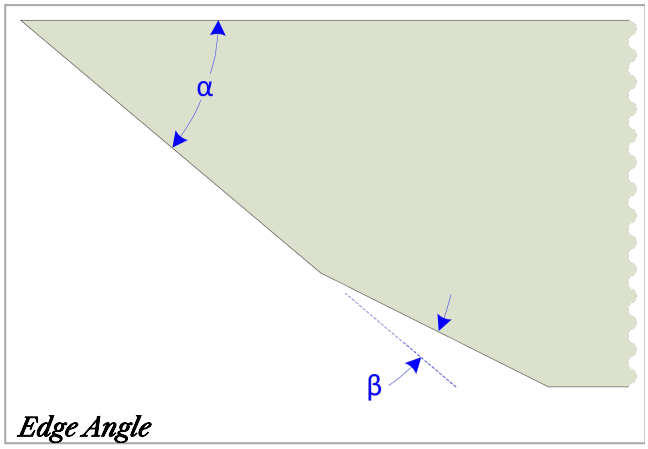
Ongoing maintenance - see Chapter 4, *Woodworking Tools*.

Fluteless Gouge

This guidance covers *Skewchigouges* & the *Sorby Spindle Master*.

The fluteless gouge is typically used in the same manner as the skew chisel (see Skew Chisel, in this chapter) (without the tendency to catch), or a spindle gouge (see Detail & Spindle Gouges, in this chapter).

Guidelines shown below are for use with the Tormek SVD-186 or SVD-185 Gouge Jig.



Edge Angle

> *The life so short, the craft so long to learn.*
> Hippocrates

General Guidelines

α	β	SVD-186 JS	SVD-186 P	SVD-186 Hole	Sharpness
30°	*n/a*	2	55 mm	B	7
60° - 70°	5° - 10°	*n/a*	*n/a*	*n/a*	6

Notes & Comments

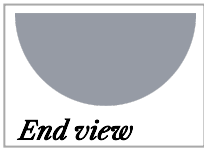
30° Grind

This is the more typical approach when sharpening this tool.


End view

60° - 70° Grind

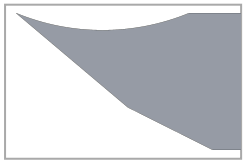
Reed "Robo Hippy" Gray recommends this angle for cleaning up the bottom of a bowl. The one he uses for this is more of a half-round tool, and he uses it as a scraper.


End view

The second video below shows it well.

Relief Grind

The use of a relief grind (β) is recommended but not critical. If one is used, +5° to +10° is recommended.



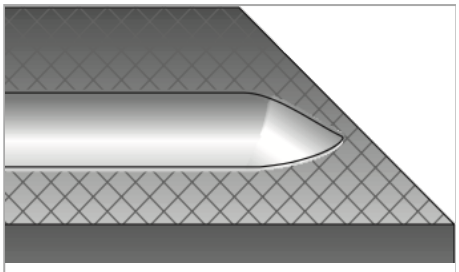
Concave Top Face

One school of thought is to grind the top face to be slightly concave. This is shown in an exaggerated view to the left. I am not a fan of adding this grind as it changes the angle of attack too drastically as the tool is rotated in use.

Top Grinding

Some turners advise not grinding the bottom, curved edge when sharpening this; rather they advocate sharpening the tool by grinding along the top, flat side. They will use a fine-grade diamond plate

to do this (as shown in the picture to the right).



Sharpening the fluteless gouge
Image courtesy Robert Sorby

More Information

Books & Papers

- Some information presented is from the Tormek (tormek.-com) handbook, "Water Cooled Sharpening of Edge Tools", © Tormek AB.

Published Articles

- These are really good articles in American Woodturner, a magazine published by the American Association of Woodturners (woodturner.org).
  - "In Defense of Smaller Sharpening Angles" by Mike Darlow. December, 2024. Mike's comments regarding ore acute angles (~25°) are based on some good reasoning.
  - "A Guide to Gouges (on the web site)" by Joe Larese, in the October 2011 edition. In it, he outlines very well differing gouge shapes and angles for **α**, and the impact these have on bowl turning.
  - "Modern Tool Steels and Grinders" by Tom Wirsing (thomaswirsing.com)
  - "Refining the Edge: Skews and Gouges (on the web site)", by Alan Lacer with Jeryl Wright. Summer 2009
- Sorby's document (on the web site) about the SpindleMaster is a useful reference.
- Tom Wirsing (thomaswirsing.com) wrote really good article, Modern Tool Steels and Grinders, which was published though the American Association of Woodturners (woodturner.org).

Videos & Presentations

- **Jeff Farris**
  - Sharpening with the Tormek SVD-185 Gouge Jig (YouTube video)
- **Robo Hippy**
  - Fluteless Gouge Tips (YouTube video)
- **Alan Holtham**
  - Tormek SVD-186 Gouge Jig (YouTube video)
- **David Peters**
  - Tormek SVD-186 Gouge Jig Review and Comparison to the 185 (YouTube video)
- **Tormek**
  - Tormek Sharpening Classes: Part 23 - Reshaping woodturning tools on a bench grinder (YouTube video).
  - Sharpen short edge tools with the Tormek Short Tool Jig SVS-32 (YouTube video)
  - Tormek AngleMaster WM-200 (YouTube video)
  - Tormek Turning Tool Setter TTS-100 (YouTube video)

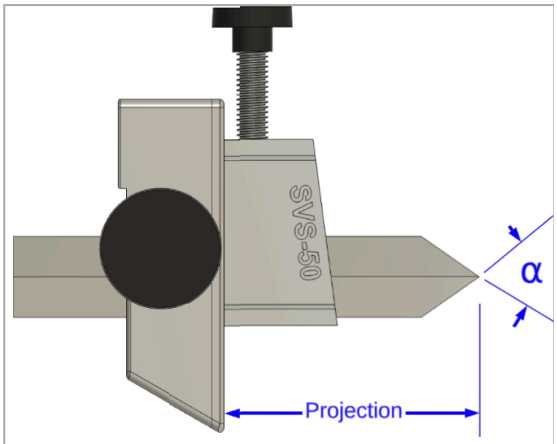
> **Sharpness Scale** - see Chapter 1.
> **Ongoing maintenance** - see Chapter 4, *Woodworking Tools*.
> **Grindstones and Other Sharpening Media** - see Chapter 2.

Diamond Parting Tool

Guidelines shown below are for use with the Tormek SVS-50 Multi Jig.

For the Diamond Parting Tool, Tormek recommends the Open Seat; however I have found that the Closed Seat is easier to use.

- The advantage to using the Closed Seat is that it is easier to align the tool with the USB, making it easier to ensure the tool is properly aligned relative to the grindstone.
- The disadvantage is that the tool has to be removed and the projection re-set to sharpen the other side. (Though this is not a difficult task.)



Parting tool held in the SVS-50 with Closed Seat

Hand-craft signifies cunning, or sleight, or craft of the hand, which cannot be taught by words, but is only gained by practice and exercise.
Joseph Moxon

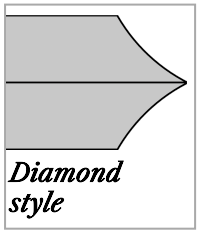
General Guidelines				
α	SVS-50			Sharpness
	JS	P	Hole	
55°	0°	65 mm	B	6

Notes & Comments

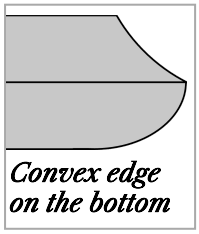
α can range from 50° - 85°.

Edge Profiles

Some different edge profiles are discussed below.



Diamond style



Convex edge on the bottom

The diamond style shown to the left is the shape for the tool when shipped by most manufacturers. The edges may be flat instead of slightly concaved (shown exaggerated here).

An alternative has a convex edge on the bottom edge. This is shown in the 2nd picture to the left.

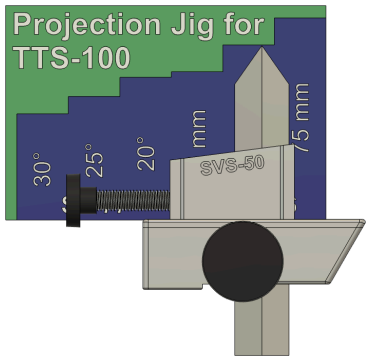
The advantages to this approach are: the added metal below the center line provides better support for the cutting edge, reducing vibration at the tip, this shape does not burnish the wood as quickly as the traditional shape, and the tool is kept sharp longer.

The disadvantages to this approach are: this shape will not be as sharp (as the α will be larger), this tool shape cannot be flipped to allow the turner to use the the other side. This is useful when wood builds up on the edge's surface (as it does with oily woods like padauk), and it also does not allow for usage in as close a quarter (i.e., when using the tool like a bedan to cut at a rotated angle).

Setting the Projection

The TTS-100 or the Projection Jig (see Chapter 3) can be used to set the projection. (The color of the top of the Projection Jig is shown green for clarity.)

The picture to the right shows that projection being set.



Setting the projection

Using the Open Seat on the SVS-50

If using the open seat, it is recommended to not move side-to-side with the tool's edge engaged with the grinding surface. Instead, move to a position, ensure the SVS-50 is aligned with the USB, and then raise the handle to engage the tool with the grinding surface.

If you want to move use a different part of the grinding surface, lower the handle first, and then repeat the above-listed instructions.

More Information

Books & Papers

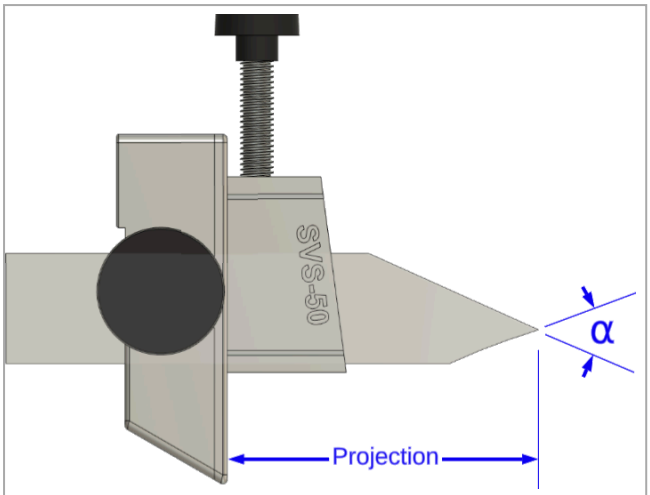
- Alan Lacer (alanlacer.com) wrote an article for the AAW (woodturner.org) titled “Learn to Sharpen Your Turning Tools” where he recommended 50° (25° per side) for the edge.
- Some information presented is from the Tormek (tormek.com) handbook, “Water Cooled Sharpening of Edge Tools”, © Tormek AB.

Videos & Presentations

- Tormek Live Sharpening Class - Part 3 - Chisels, plane irons & Tormek grinding wheels (YouTube video).
  - At 00:46, there is a great explanation of sharpening a tool with a radiused end using the SE-77 Square Edge Jig.
  - At 00:52, there is a great explanation of how to use the MB-100 Multi Base.
- Tormek Sharpening Classes: Part 23 - Reshaping woodturning tools on a bench grinder (YouTube video).
- How to sharpen roughing gouges, skews & parting tools - Tormek SVS-50 Multi Jig - with Nick Agar (YouTube video).
- Jeff Farris - Sharpening with the Tormek SVS-50 Multi-Jig (YouTube video)
- Tormek Multi jig SVS-50 (YouTube video)
- Tormek Turning Tool Setter TTS-100 (YouTube video)
- Tormek AngleMaster WM-200 (YouTube video)

Sharpness Scale - see Chapter 1.
Ongoing maintenance - see Chapter 4, *Woodworking Tools*.
Grindstones and Other Sharpening Media - see Chapter 2.

Slim Fluted Parting Tool



Parting tool held in the SVS-50 with Closed Seat

Guidelines shown below are for use with the Tormek SVS-50 Multi Jig. For the Slim Fluted Parting Tool, the Closed Seat is used.

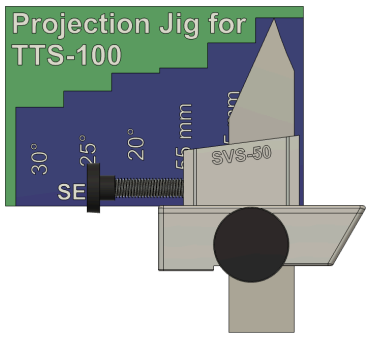
It is a good practice to use a wire brush to clean the fluted edge before sharpening. That way you don't damage the cutting edge when cleaning it later. I use one from an old M-16 gun cleaning kit.

Where you find quality, you will find a crafts-man, not a quality-control expert.
Robert Brault

General Guidelines				
	SVS-50			Sharpness
α	JS	P	Hole	
40°	0°	75 mm	B	6

Notes & Comments

Use the closed seat on the Tormek SVS-50 (shown above).



Setting the projection

Marty Kiminsky noted that 45° is generally recommended for this tool, and that is his personal preference also. See also, "Woodturning" magazine, issue # 352.

The TTS-100 or the Projection Jig (see Chapter 3) can be used to set the projection. (The color of the top of the Projection Jig is shown green for clarity.)

The picture to the right shows that projection being set.

More Information

Books & Papers

- Some information presented is from the Tormek (tormek.com) handbook, “Water Cooled Sharpening of Edge Tools”, © Tormek AB.

Videos & Presentations

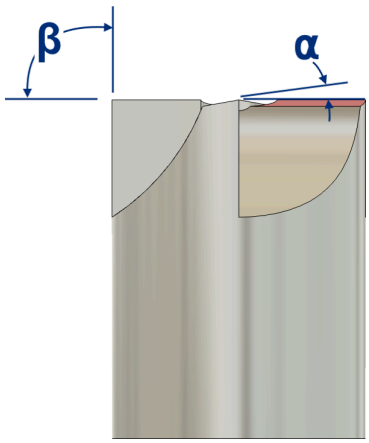
- Tormek Live Sharpening Class - Part 3 - Chisels, plane irons & Tormek grinding wheels (YouTube video).
  - At 00:46, there is a great explanation of sharpening a tool with a radiused end using the SE-77 Square Edge Jig.
  - At 00:52, there is a great explanation of how to use the MB-100 Multi Base.
- Tormek Sharpening Classes: Part 23 - Reshaping woodturning tools on a bench grinder (YouTube video).
- How to sharpen roughing gouges, skews & parting tools - Tormek SVS-50 Multi Jig - with Nick Agar (YouTube video).
- Jeff Farris - Sharpening with the Tormek SVS-50 Multi-Jig (YouTube video)
- Tormek Multi jig SVS-50 (YouTube video)
- Tormek Turning Tool Setter TTS-100 (YouTube video)
- Tormek AngleMaster WM-200 (YouTube video)

Published Articles

- “Woodturning” magazine, issue # 352.

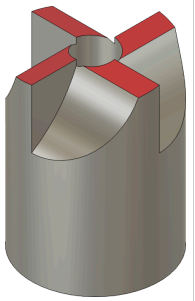
> **Sharpness Scale** - see Chapter 1.
> **Ongoing maintenance** - see Chapter 4, *Woodworking Tools*.
> **Grindstones and Other Sharpening Media** - see Chapter 2.

Pen Mill



Edge Angles

Guidelines shown below are for the **Bevels' Angles**. The ground edges are shown in the picture to the right as red.


Edges Ground

The leading edges of the cutting surfaces must be coplanar. As shown in the picture to the left, this is the edge next to the flat side, not the angled or curved side. This ensures that all four cutting edges engage with the flat surface of the wood at the same time. (If the pen blank's surface is not perpendicular to the tube, it will be after milling it down.)

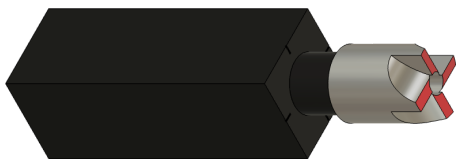
The side edge angle of the cutting surfaces must be perpendicular to the axis of rotation. This ensures a flat surface for the pen's end. If it is not perpendicular, the surface left will be conical (either convex or concave).

You will find something more in woods than in books. Trees and stones will teach you that which you can never learn from masters.
Saint Berna

General Guidelines		
α	β	Sharpness
10°	90°	6

Notes & Comments

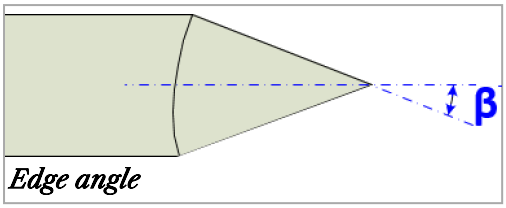
Holding the Tool for Sharpening


Tool Holding for Sharpening

The tool should be held in a way where all four edges can be ground consistently. The black piece shown in the image to the left can be used with the 3D-printed goniostat (see Chapter 3).

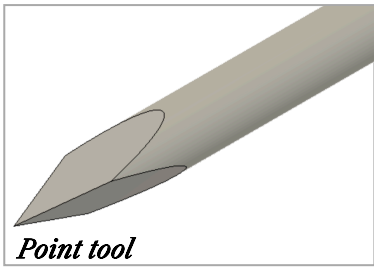
Sharpness Scale - see Chapter 1.
Ongoing maintenance - see Chapter 4, *Woodworking Tools*.
Grindstones and Other Sharpening Media - see Chapter 2.

Pyramid Point Tool



Edge angle

The **Pyramid Point Tool** is ground with 3 cutting edges, each very much like the vortex tool (see Vortex Tool, in this chapter).


Point tool

> *For the artisan, craft is an end in itself. For you, the artist, craft is the vehicle for expressing your vision. Craft is the visible edge of art.*
> David Bayles

General Guidelines	
β	Sharpness
15° - 20°	6

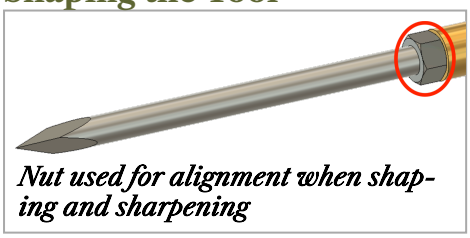
Notes & Comments

Some turners will increase β to be as high as 45°. That will work for some activities such as rolling a bead, but does not provide access into tight areas necessary for turning beads (especially smaller ones).

I find the recommended angle (β) to be better for such work. And if you are new to this tool, learning to use it at that angle will provide for more options as you improve.

The Projection Calculator (on the web site) on this site can be used to calculate settings for different values of β. This calculator is web-based and does not require Excel.

Shaping the Tool


Nut used for alignment when shaping and sharpening

Before the first shaping of this tool, look at how you can make the re-sharpening repeatable with minimal effort.

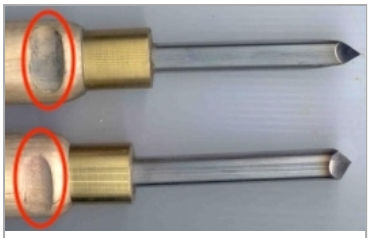
I found one recommendation for gluing a nut to the tool at the ferrule. (If you are making your own tool, consider using a nut for the ferrule.) There is circled in red in the picture to the left. Three of the nut's sides provide a great reference for ensuring the edge is presented to the grindstone consistently.

I used 2-part epoxy to attach a $^{1}/_{2}$" nut to mine as the tool had a shaft of that size.

I had to drill the nut's threaded area out a bit to enable it to fit over the tool's shaft. The minor diameter for some options are:

- $^{1}/_{2}$"-13 (UNC) nut is 0.4056"
- $^{9}/_{16}$"-12 (UNC) nut is 0.4603"

David Reed Smith published an article describing how to make these, but alas it is no longer available on the Internet. In that article, he noted that adding a groove to the handle helped with aligning it when sharpening the tool.



Groove cut and used for alignment when shaping and sharpening

This would be particularly useful if sharpening on the Tormek as the groove could be aligned with the universal support bar.

Re-Shaping the Tool

This tool is one where reshaping the cutting surface can be onerous, and the Tormek BGM-100 Bench Grinding Mounting Set can be quite useful. When grinding on a high speed grinder, all the settings remain the same.

Making the Tool

Sean Rubino's video below shows how to make a point tool, and it is quite good. The jig that Sean made is worth considering for sharpening this tool. If you do make one of these jigs, consider making it from metal (e.g., aluminum). And add a brass tipped set screw to help keep the tool from rotating in the jig when sharpening the other three faces.

More Information

Books & Papers

- The late Bill Jones has a really good description of how to use this tool in his 1997 book, “Further Notes from the Turning Shop”.
- Stacey Hager wrote a nice article, "Make Your Point Tool" which was published in the Fall 2005 issue of “American Woodturner”, a publication from the American Association of Woodturners (woodturner.org).
- Some information presented is from the Tormek (tormek.com) handbook, “Water Cooled Sharpening of Edge Tools”, © Tormek AB.

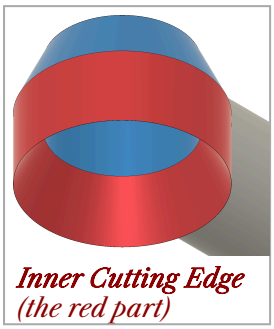
Videos & Presentations

- Point Tool - I Love this DIY Lathe Tool! (YouTube video), from Mike Peace. In this video, Mike shows how to make the tool, and how to use it.
- Tormek Sharpening Classes: Part 23 - Reshaping woodturning tools on a bench grinder (YouTube video).
- Jeff Farris - Sharpening with the Tormek SVS-50 Multi-Jig (YouTube video)
- Tormek Tool Rest SVD-110 (YouTube video)
- Tormek AngleMaster WM-200 (YouTube video)

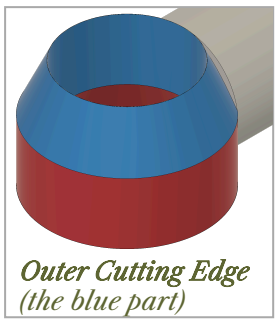
Sharpness Scale - see Chapter 1.
Ongoing maintenance - see Chapter 4, *Woodworking Tools*.
Grindstones and Other Sharpening Media - see Chapter 2.

Ring Tool

This tool is shown ground with 2 cutting edges. I have denoted these using colors: an inner one shown as red, and an outer one shown as blue.

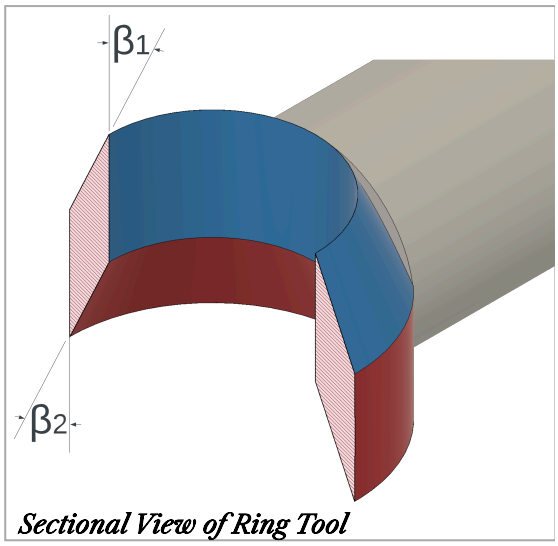


Inner Cutting Edge
(the red part)



Outer Cutting Edge
(the blue part)

The SVD-110 Tool Rest is the recommend jig to use.



Sectional View of Ring Tool

> *There are no mistakes in woodworking ... until you run out of wood.*
> Unknown

General Guidelines		
β_1	β_2	Sharpness
25°	25°	6

Notes & Comments

This tool is fundamentally a skew with a round edge, hence the rather acute angle.

The two angles, β_1 & β_2, can be different, though that is more of a user decision regarding its use. If you choose to go this route, consider making the outer cutting edge (β_2) around 30°.

All four surfaces (2 on the red edge; 2 on the blue edge) should be honed to give a smooth, sharp cutting edge.

More Information

Books & Papers

- Robert Sorby (robert-sorby.co.uk) have a good instruction sheet (on the web site) on usage and sharpening of this tool.

Web Sites

- Ulf Jansson's (svarvulf) Instagram page shows many posts about usage and sharpening his variation of this tool.
- Ulf designed a platform and a special jig for his Tormek to sharpen the tool.

Sharpness Scale - see Chapter 1.
Ongoing maintenance - see Chapter 4, *Woodworking Tools*.
Grindstones and Other Sharpening Media - see Chapter 2.

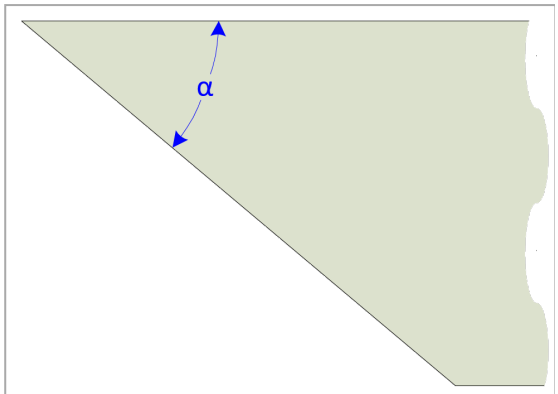
Scraper Blade

The **Scraper Blade**'s cutting edge is formed by one step on the grinder. The grinding action forms the hook.



Sharpening the blade using the Tormek SVD-186

Whilst using this tool, you may need to hone often with a diamond file.



Edge Angle

Crafts make us feel rooted, give us a sense of belonging and connect us with our history. Our ancestors used to create these crafts out of necessity, and now we do them for fun, to make money and to express ourselves.

Phyllis George

General Guidelines	
α	Sharpness
65°	6

Notes & Comments

The Tormek SVD-186 or SVD-185 is easily used for this activity. As shown in the picture above, you will use the shaft rather than the tool holder.

Reference the Tormek handbook, Water Cooled Sharpening of Edge Tools if you have any questions.

More Information

Books & Papers

- Some information presented is from the Tormek (tormek.com) handbook, “Water Cooled Sharpening of Edge Tools”, ©Tormek AB.

Videos & Presentations

- Tormek Sharpening Classes: Part 5 - Woodturning Tools (YouTube video).
- Tormek Live Sharpening Class - Part 9 - Sharpen a flat bevel with Tormek MB-100 on a diamond wheel (YouTube video).
- How to sharpen roughing gouges, skews & parting tools - Tormek SVS-50 Multi Jig - with Nick Agar (YouTube video).

- Alan Holtham - Tormek SVD-186 Gouge Jig (YouTube video)
- David Peters - Tormek SVD-186 Gouge Jig Review and Comparison to the 185 (YouTube video)
- Sharpen gouges with the Tormek Gouge Jig SVD-185 (YouTube video)
- Jeff Farris - Sharpening with the Tormek SVD-185 Gouge Jig (YouTube video)
- Sharpen short edge tools with the Tormek Short Tool Jig SVS-32 (YouTube video)
- Tormek Turning Tool Setter TTS-100 (YouTube video)
- Tormek AngleMaster WM-200 (YouTube video)

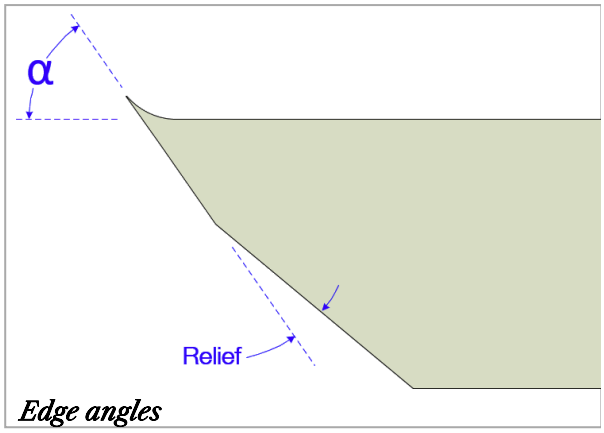
Web Sites

- TurnAWoodBowl.com (turnawoodbowl.com) is a pretty good reference site for sharpening bowl gouges, especially as it regards the bevel angle you might select. (But it does have a LOT of advertisements on the site -- bit on the annoying side.)

> **Sharpness Scale** - see Chapter 1.
> **Notes for All Wood Lathe Tools** - at the start of this chapter.
> **Ongoing maintenance** - see Chapter 4, *Woodworking Tools*.
> **Grindstones and Other Sharpening Media** - see Chapter 2.

Scraper

The **Scraper**'s cutting edge is formed by one step on the grinder. The grinding action forms the hook.



Edge angles

> *Someday you will look back at this work, laugh nervously and change the subject.*
> Unknown

General Guidelines		
α	Relief	Sharpness
75°	40°	6

Notes & Comments

Some recommend the use of a belt sander (i.e., one which is bolted to the bench, not a hand-held one). I've used that and the Tormek with the Tormek SVD-110 Tool Rest. Both work, but the Tormek grinds away less metal, so that is what I prefer.

If you chose to grind a different angle, then use the following guidance when using the Tormek SVD-110 Tool Rest:

- When grinding angles >60°, grind in the horizontal position.
- When grinding angles <60°, grind in the vertical position.

Other Opinions

- Alan Batty recommended 70° with the under side ground back at 40° (a relief grind). (I and many others recommend you re-grind the tool to be a negative rake scraper (see Negative Rake Scraper, in this chapter).)
- Marty Kiminsky noted that 70-80° is generally recommended for this tool. (He did not note a personal preference though.) See also, "Woodturning" magazine, issue # 352.

More Information

Books & Papers

- Some information presented is from the Tormek handbook, "Water Cooled Sharpening of Edge Tools".

Videos & Presentations

- Tormek Sharpening Classes: Part 5 - Woodturning Tools (YouTube video).
- Tormek Sharpening Classes: Part 23 - Reshaping woodturning tools on a bench grinder (YouTube video).

- How to sharpen scrapers and cutters - Tormek SVD-110 Tool Rest - with Nick Agar (YouTube video).
- Tormek Tool Rest SVD-110 (YouTube video)
- Tormek Turning Tool Setter TTS-100 (YouTube video)
- Tormek AngleMaster WM-200 (YouTube video)

> **Sharpness Scale** - see Chapter 1.
> **Notes for All Wood Lathe Tools** - at the start of this chapter.
> **Ongoing maintenance** - see Chapter 4, *Woodworking Tools*.
> **Grindstones and Other Sharpening Media** - see Chapter 2.

Negative Rake Scraper

The cutting edge on a **Negative Rake Scraper** (also known as an **NRS**) is formed by one step on the grinder. **The grinding action forms the hook.**

The key with a Negative Rake Scraper is that the **α** angle must be less than 90°. If not, it won't work. For all practical purposes though, 70° is about as high as you can go for a functioning tool.

> *A craftsman knows in advance what the finished result will be, while the artist knows only what it will be when he has finished it.*
> W. H. Auden

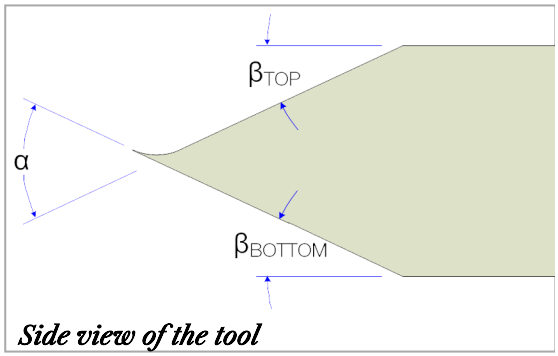
There seem to be two schools of thought on the shape of the cutting edge for this tool, and both options are shown below.

General Guidelines			
α	**β_{Top}**	**β_{Bottom}**	**Sharpness**
45°	22½°	22½°	6
65°	15°	50°	6

Notes & Comments

45° Grind

Tom Wirsing recommends a **β** of 45°, and has an impressive background to make such a claim. The platters he makes are ***very well done***.



Side view of the tool

Every time you resharpen, you can choose to re-grind both sides of this scraper, or not. If you do re-grind both sides, the action will clean off the residue left on the top edge by the scraping process (especially when scraping oily woods).

Making the top and bottom angles the same makes this significantly easier as you can sharpen the top, flip the tool, and then sharpen the bottom.

On the Tormek, sharpen with the Tormek SVD-110 Tool Rest attached to the support bar in the vertical position (with the grinding direction being towards the edge of the tool). This does two things:

1. it makes raising the burr faster and easier, and
2. makes sharpening easier as the tool is being pushed into tool rest, not being pulled away from it. (My experience when trying this from the other position was that the tool was being constantly pulled away from the tool rest and holding it there was difficult.)

This is my preferred approach.

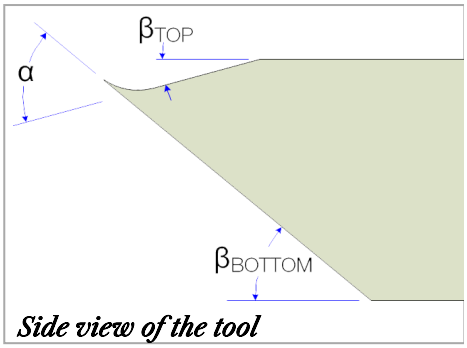
65° Grind

Marty Kiminsky noted that 25° top/40° bottom is generally recommended for this tool, and that is also his personal preference. See also, "Woodturning" magazine, issue # 352.

Grind the top first, and make it about 3mm (3/16 inches) wide. Then, you resharpen by only re-grinding the bottom. Once the top gets down to 1mm or so, you will need to re-grind it again.

An advantage to this approach is that you only need to sharpen one side at a time, so it is faster to resharpen (by a few seconds or so). This can add up as scrapers must be resharpened very often.

Various people recommend different angles for **β**, but the ranges are typically in the 50° - 75° range.



Side view of the tool

More Information

Books & Papers

- Some information presented is from the Tormek handbook, "Water Cooled Sharpening of Edge Tools".

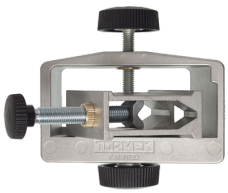
Videos & Presentations

- Tormek Sharpening Classes: Part 5 - Woodturning Tools (YouTube video).
- Tormek Sharpening Classes: Part 23 - Reshaping woodturning tools on a bench grinder (YouTube video).
- How to sharpen scrapers and cutters - Tormek SVD-110 Tool Rest - with Nick Agar (YouTube video).
- Tormek Tool Rest SVD-110 (YouTube video)
- Tormek Turning Tool Setter TTS-100 (YouTube video)
- Tormek AngleMaster WM-200 (YouTube video)

Sharpness Scale - see Chapter 1.
Notes for All Wood Lathe Tools - at the start of this chapter.
Ongoing maintenance - see Chapter 4, *Woodworking Tools*.
Grindstones and Other Sharpening Media - see Chapter 2.

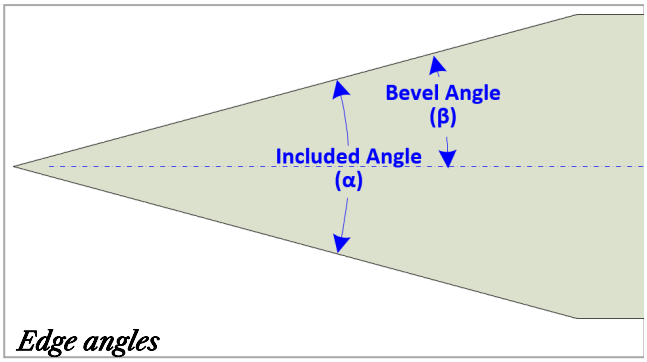
Skew Chisel

There are two Tormek jigs which can be used for sharpening the skew chisel.



SVS-50 with Closed Seat

The **Tormek SVS-50 Multi-Jig** (shown to the left) is the jig recommended in the Tormek manual.



Edge angles

Guidelines shown below are for use with the Tormek SVS-50 Multi Jig using the Closed Seat. The method for measuring the projection is shown below.



SVD-110

The **Tormek SVD-110 Tool Rest** also works quite well for shew chisels with flat sides (but not so well for those with curved sides). I found that this is my preferred approach now that I use the diamond grinding wheels.

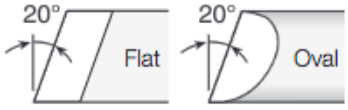
If you pursue this approach with a diamond grinding wheel, I recommend you secure an additional universal support bar, and lock the height in place with a collar (at either the TTS-100 hole A or B). This makes resharpening the tool easy.

Honing a skew chisel before use is recommended.

To the absolutist in every craftsman, each imperfection is a failure; to the practitioner, obsession with perfection seems a perception for failure.
Richard Sennett

There is a separate page in this handbook for Lacer-style Skew Chisels (see Lacer Skew, in this chapter).

General Guidelines

Edge Angle		Skew Angle			Tormek SVS-50			Sharpness
α	Range	γ	Range	Profile	JS	P	Hole	
30°	25° - 55°	**20°**	20° - 35°	Straight Edge 	20°	65 mm	B	7
45°					20°	55 mm	B	
30°	25° - 55°	*n/a*	*n/a*	Radius Edge 	30°	75 mm	B	7
45°					20°	65 mm	B	

Notes & Comments

30° Grind
For tight spots, detail work and finest finish.

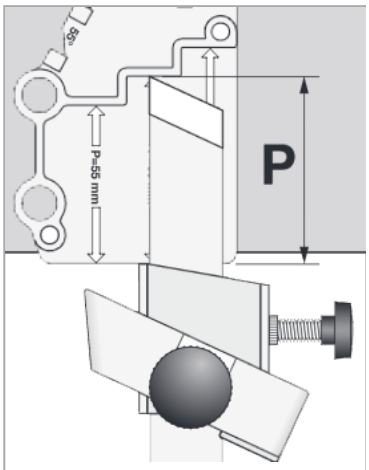
45° Grind
For broad application. Considered easier to control than a 30° edge angle.

30° Grind
For tight spots, detail work and finest finish.

45° Grind
For broad application. Considered easier to control than a 30° edge angle.

Reshaping the Edge

This tool is one where **reshaping** the cutting surface can be onerous, and the Tormek BGM-100 Bench Grinding Mounting Set can be quite useful. When grinding on a high speed grinder, all the settings remain the same. (For more information on Shaping vs. Sharpening, see also, Grindstones and Other Sharpening Media (see Chapter 2).)



Setting the projection of the skew chisel on the SVS-50 using a TTS-100

Other Opinions

- Allan Batty stated that you can have an **α** up to 55° for hardwoods, and down to 25° for softwoods, but he usually worked with an **α** up to 40°. (A video guide, featuring Allan Batty, on using the skew is at the bottom of this page.)
- Alan Lacer (alanlacer.com) wrote an article for the AAW (woodturner.org) titled *"Learn to Sharpen Your Turning Tools"* where he recommended 20° for the skew angle (**γ**).
- Mike Darlow (mikedarlow.com) wrote an article for the AAW (woodturner.org) titled *"Virtues of a Skew-Cut V-Groove"* where he recommended 25° for the edge angle (**α**) and 20° for the skew angle (**γ**).
- Another rule often cited is that the length of the bevel should be 1.5 - 2 x the thickness of the skew (equates to 30° - 39°).

Replacing Wooden Handles

A good source for the shape of a handle is The Wood Turner's Handy Book (1887), by Paul N Hasluck (see pg. 67, fig. 39).

Another source is the series of articles written by Aaron Keim, *Making a New Chisel Handle for Tired Hands*, (see details below).

More Information

Books & Papers

- Tormek's HB-10 handbook, Water Cooled Sharpening of Edge Tools. This is accessible at the Tormek web site (tormek.com).

Published Articles

- These are really good articles in “American Woodturner”, a magazine published by the American Association of Woodturners (woodturner.org).
    - “In Defense of Smaller Sharpening Angles” by Mike Darlow. December, 2024. Mike's comments regarding ore acute angles (~25°) are based on some good reasoning.
    - “Modern Tool Steels and Grinders” by Tom Wirsing (thomaswirsing.com)

    - "Reduce Tearout and Get Cleaner Cuts", by John Lucas. September 2024. John reports on some testing he performed with using differing grits of grinding wheels.
    - "Refining the Edge: Skews and Gouges", by Alan Lacer with Jeryl Wright. Summer 2009
- "Learn to Sharpen Your Turning Tools", by Alan Lacer.
- "Virtues of a Skew-Cut V-Groove", by Mike Darlow.
- Making a New Chisel Handle for Tired Hands: Part 1 (finewoodworking.com), by Aaron Keim and published on the Fine Woodworking (finewoodworking.com) website.

  Aaron noted, *"Some of the most important tools in my shop are my chisels. Whether I am chopping, carving, or paring, they are in my hands all day. As I have gotten older and my arthritis/tendonitis has gotten worse, my needs have changed. In this blog, I will talk about my preferred chisel handle and show how I make a replacement handle to suit my needs."*

Videos & Presentations

- Tormek Sharpening Classes: Part 5 - Woodturning Tools (YouTube video).
- Tormek Live Sharpening Class - Part 9 - Sharpen a flat bevel with Tormek MB-100 on a diamond wheel (YouTube video).
- Tormek Sharpening Classes: Part 23 - Reshaping woodturning tools on a bench grinder (YouTube video).
- Tormek Multi jig SVS-50 (YouTube video)
- How to sharpen roughing gouges, skews & parting tools - Tormek SVS-50 Multi Jig - with Nick Agar (YouTube video).
- Tormek Tool Rest SVD-110 (YouTube video)
- Tormek Turning Tool Setter TTS-100 (YouTube video)
- Tormek AngleMaster WM-200 (YouTube video)

> **Sharpness Scale** - see Chapter 1.
> **Notes for All Wood Lathe Tools** - at the start of this chapter.
> **Ongoing maintenance** - see Chapter 4, *Woodworking Tools*.

Lacer Skew

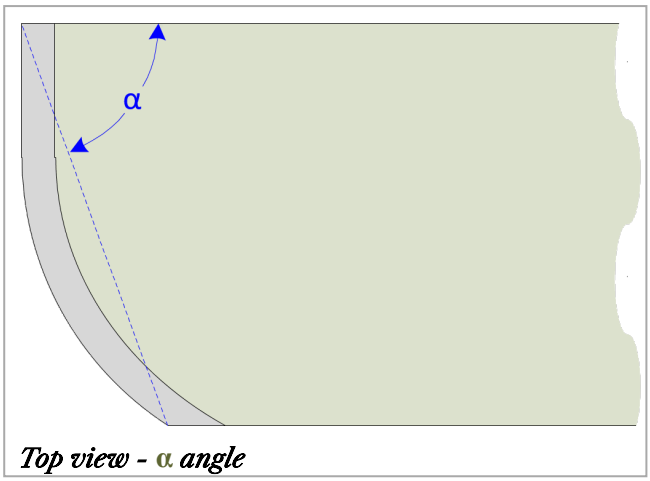
The **Lacer Skew**'s cutting edge is sharpened using a platform (retaining the same edge shape), and honed using a diamond stone. (There is a different page in this handbook for traditional skew chisels (see Skew Chisel, in this chapter).)



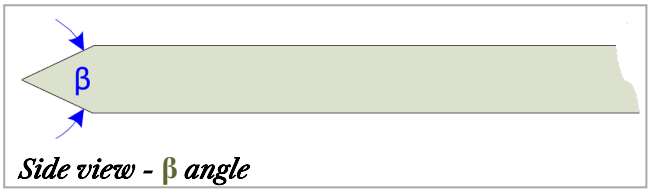
SVD-110 Platform Jig

Alan Lacer is most identified with this tool, and he recommends honing with a stone of 500 - 600 grit. He further recommends honing both sides of the cutting edge and also both sides.

Alan's sharpening instructions are on the Hamlett Craft Tools site.



Top view - α angle



Side view - β angle

The recommended Tormek jig is the SVD-110 Tool Rest.

Honing a skew chisel before use is recommended.

> *Those who say it's impossible should not get in the way of those doing the impossible.*
> Unknown

General Guidelines		
β	α	Sharpness
40°	70°	7

Notes & Comments

Alan Lacer recommends 70° for a point-to-point angle (α).

More Information

Books & Papers

- Some information presented is from the Tormek handbook, "Water Cooled Sharpening of Edge Tools".

Published Articles

- These are really good articles in American Woodturner, a magazine published by the American Association of Woodturners (woodturner.org).
  - "In Defense of Smaller Sharpening Angles" by Mike Darlow. December, 2024. Mike's comments regarding ore acute angles (~25°) are based on some good reasoning.
  - "Modern Tool Steels and Grinders" by Tom Wirsing (thomaswirsing.com)
  - "Reduce Tearout and Get Cleaner Cuts", by John Lucas. September 2024. John reports on some testing he performed with using differing grits of grinding wheels.
  - "Refining the Edge: Skews and Gouges", by Alan Lacer with Jeryl Wright. Summer 2009
- "Learn to Sharpen Your Turning Tools", by Alan Lacer.
- "Virtues of a Skew-Cut V-Groove", by Mike Darlow.

Videos & Presentations

- Tormek Sharpening Classes: Part 23 - Reshaping woodturning tools on a bench grinder (YouTube video).
- Tormek Tool Rest SVD-110 (YouTube video)
- Tormek AngleMaster WM-200 (YouTube video)

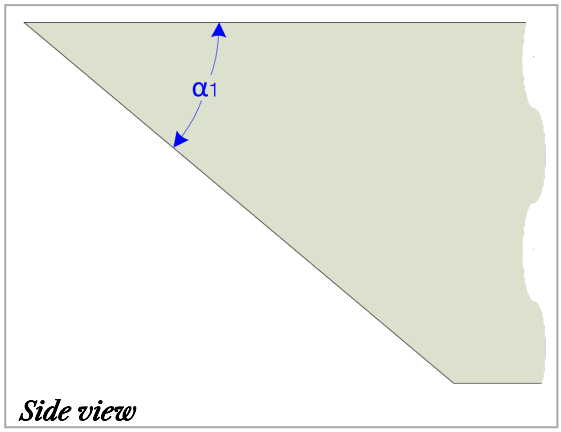
> **Sharpness Scale** - see Chapter 1.
> **Notes for All Wood Lathe Tools** - at the start of this chapter.
> **Ongoing maintenance** - see Chapter 4, *Woodworking Tools*.
> **Grindstones and Other Sharpening Media** - see Chapter 2.

Spear Point Tool

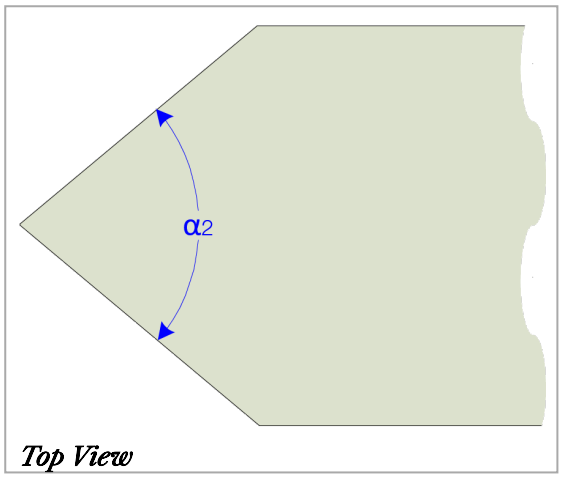
The **Spear Point Tool**'s cutting edge is sharpened using a platform jig such as the Tormek SVD-110.



SVD-110 Platform Jig



Side view



Top View

Better tools save time; but they don't make you a better craftsman.
Unknown

General Guidelines		
Edge Angle	Angle	Sharpness
α_1	40˚	7
α_2	40˚	*n/a*

Notes & Comments

α & 1 Grind
I've measured angles on tools in the range 35˚ to 80˚, but 40˚ works well for me.

α & 2 Grind
The top angle needs to be <90˚ so that the tool can be used as a scraper for corners, though I've measured angles on tools which range from 60˚ - 95˚.

More Information

Books & Papers

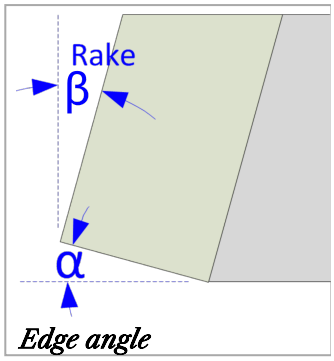
- Some information presented is from the Tormek handbook, "Water Cooled Sharpening of Edge Tools".

Videos & Presentations

- Tormek Tool Rest SVD-110 (YouTube video)
- Tormek AngleMaster WM-200 (YouTube video)

> **Sharpness Scale** - see Chapter 1.
> **Notes for All Wood Lathe Tools** - at the start of this chapter.
> **Ongoing maintenance** - see Chapter 4, *Woodworking Tools*.
> **Grindstones and Other Sharpening Media** - see Chapter 2.

Spindle Roughing Gouge



A positive rake angle is recommended by many as it reduces the chance to grab.

Be sure not to have the top of the curve to project forward from the center. To help with this, rotate in one direction only. Between rotations, lift the edge from the stone surface. This prevents working the centre more than the top edges.

Grind until you feel a burr raised along the entire edge, then hone the gouge to remove the burr.

> *Every woodworker needs a fireplace.*
> Unknown

General Guidelines								
Edge		Rake		Tormek Jig	JS	P	TTS-100 Hole	Sharpness
α	Range	β	Range					
45°	35° - 45°	**20°**	0° - 25°	SVD-186	0	65 mm	A	6
35°	35° - 45°	**20°**	0° - 25°	SVS-50 Open Seat	0°	55 mm	B	6

Notes & Comments

45° Grind

JR DUBUY on the Tormek forum recommended using the Tormek SVD-186 Gouge Jig with these settings. It works quite well.

35° Grind

Alan Batty recommended 45°, and this is generally recommended by many. I certainly recognize Mr. Batty's proven experience, but I've found that the 35° realized with these Tormek settings works extremely well.

Use with the Tormek SVS-50 Multi Jig with the Open Seat.

Marty Kiminsky noted that an **Edge** α of 40° to 45° is generally recommended for this tool, and that his personal preference is 40°. See also, "Woodturning" magazine, issue # 352.

More Information

Books & Papers

- Alan Lacer (alanlacer.com) wrote an article for the AAW (woodturner.org) titled *"Learn to Sharpen Your Turning Tools"* where he recommended 10° for the rake angle.
- "Woodturning"; magazine, issue # 352.

Videos & Presentations

- **Jeff Farris**
  - Sharpening with the Tormek SVD-185 Gouge Jig (YouTube video)
- **Alan Holtham**
  - Tormek SVD-186 Gouge Jig (YouTube video)
- **Tormek's Videos**
  - Tormek Sharpening Classes: Part 5 - Woodturning Tools (YouTube video).
  - Tormek Live Sharpening Class - Part 9 - Sharpen a flat bevel with Tormek MB-100 on a diamond wheel (YouTube video).
  - Tormek Sharpening Classes: Part 23 - Reshaping woodturning tools on a bench grinder (YouTube video).
  - How to sharpen roughing gouges, skews & parting tools - Tormek SVS-50 Multi Jig - with Nick Agar (YouTube video).
  - David Peters - Tormek SVD-186 Gouge Jig Review and Comparison to the 185 (YouTube video)
  - Sharpen gouges with the Tormek Gouge Jig SVD-185 (YouTube video)
  - Sharpen short edge tools with the Tormek Short Tool Jig SVS-32 (YouTube video)
  - Tormek Turning Tool Setter TTS-100 (YouTube video)
  - Tormek AngleMaster WM-200 (YouTube video)

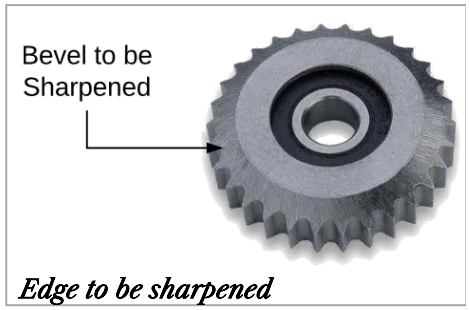
Web Sites

- TurnAWoodBowl.com (turnawoodbowl.com) is a pretty good reference site for sharpening bowl gouges, especially as it regards the bevel angle you might select. (But it does have a LOT of advertisements on the site -- bit on the annoying side.)

> **Sharpness Scale** - see Chapter 1.
> **Ongoing maintenance** - see Chapter 4, *Woodworking Tools*.
> **Grindstones and Other Sharpening Media** - see Chapter 2.

Spiralling & Texturing Tool

The **Spiralling Tool** wheel (shown to the right) is sharpened by rubbing a 120 - 150 grit diamond file against the bevel on the wheel whist it is being spun. The surface to be sharpened is indicated by the arrow.



Edge to be sharpened


Texturing tool wheel

The wheel can be spun by hand, or by pressing it against a spinning piece of scrap wood.

Sharpness Scale
6

The **Texturing Tool** wheel (shown to the left) should be spun by pressing it against a spinning piece of scrap wood (400-500 RPM).

This is *highly* recommended as the edges are pretty sharp points!

Sometimes I know the tool is sharp; other times it reminds me.
Rich Colvin

More Information

Books & Papers

- Some information presented is from the Tormek handbook, "Water Cooled Sharpening of Edge Tools".

Videos & Presentations

- Spiralling and texturing tool part 1 (YouTube video). Sharpening technique starts around 2:00, so video set to start at the same point. Note how the video says to set the scrap wood's rotation at 400-500 RPM when sharpening via that method.

Sharpness Scale - see Chapter 1.
Ongoing maintenance - see Chapter 4, *Woodworking Tools*.

Termite End Grain Tool

The **Termite Bit** for the **Termite End Grain Tool** is sharpened by:

1. mounting the **Bit** in the **Grinding Block**,
2. mounting the **Grinding Point** in a:
   - Pillar / Drill Press,
   - Router, or
   - Die Grinder
3. using the **Grinding Block** to hold the Bit against the Grinding Point whilst the Grinding Point is being spun.

Sharpness Scale 6



Oneway Termite bit



Oneway Termite grinding point



Oneway Termite grinding block

> Woodworking - patience = firewood.
> Unknown

Notes & Comments

Al Hockenbery* gave this alternate approach:

> *I put the sharpening point in an air-powered die grinder.*
>
> *To sharpen, I hold the termite in one hand, press the grinding point into cutter, and turn on the die grinder for a fraction of a second. This is just long enough, for the die grinder to hit max rpm and sharpen that side of the ring. Repeat for the other side.*

* Al Hockenbery is a highly noted wood turner and Honorary Life Member of the American Association of Woodturners.

Sharpness Scale - see Chapter 1.
Ongoing maintenance - see Chapter 4, *Woodworking Tools*.

Thread Chasing Tool Set

The cutters are sharpened to have a negative rake on the top of the tool.

Sharpness Scale 6

The tool is then honed by rubbing a 150+ grit diamond file against the top of the tool. The area to be honed is shown in the pictures as the area marked red.

Allan Batty's video (link below) is an excellent reference on how to sharpen these tools, and his guidance on how he modifies them to make them work better.



Outside chaser



Inside chaser



Grooving tool

> *Woodworkers are knotty.*
> Unknown

More Information

Books & Papers

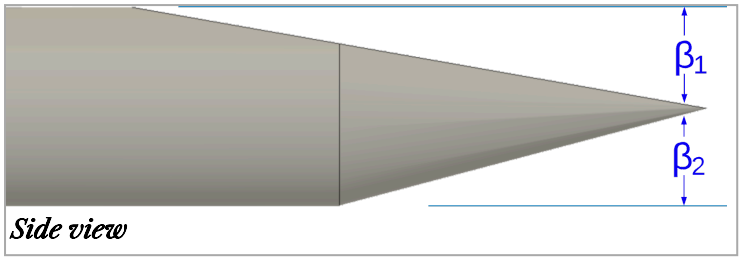
- The method outlined for sharpening and honing thread chasing tools comes from Bill Jones, and are described in his books (both of which are very worthwhile reads): “Notes from the Turning Shop”, & “Further Notes from the Turning Shop”
- There is a great article, “Chasing Threads: Simple tools and a lot of practice makes perfect”, showing how to use these tools is on the AAW web site (woodturner.org).

Videos & Presentations

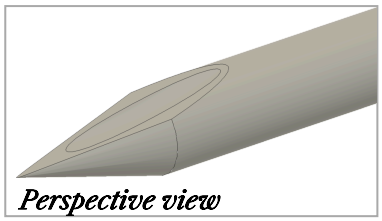
- Hand Thread Chasing with Allan Batty (YouTube video). Allan discusses sharpening these tools around 55:20.

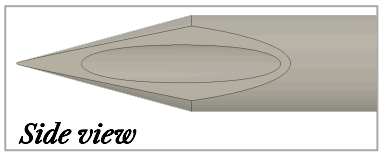
Sharpness Scale - see Chapter 1.
Ongoing maintenance - see Chapter 4, *Woodworking Tools*.
Grindstones and Other Sharpening Media - see Chapter 2.

Vortex Tool



The





Vortex's cutting edge is kept sharp by honing the upper edge (β_1).
A slip stone (or something similar) is recommended.

The angles denoted below give an overall cutting edge of 25°
which is very acute, but works very well when turning into tight spaces (e.g., finials).

> *When it comes to buying tools I use the approach my father taught me. "It's easier to get forgiveness than it is to get permission." My wife hates it, but it works every time … well almost.*
>
> Unknown

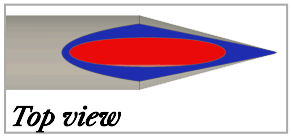
General Guidelines			
Edge	Edge Angle	Relief Angle	Sharpness
β_1	5°	*n/a*	7
β_2	20°	+5°	*n/a*

Notes & Comments

β 1 Grind

For the top bevel, it is not critical that the angle be exactly this value, but the overall angle ($\beta_1 + \beta_2$) should be 25°.

This surface does need to intersect with the bottom bevel in a way which forms a sharp edge along the entire intersection.



There is a relief ground into the center of the top bevel (the area colored red in the picture to the right). The purpose for this relief is to reduce the surface area which must be honed, speeding the sharpening process (as with the back face of Japanese chisels (see Chapter 18)). The shape of this is not critical, but be sure that at least $^1/_{16}$" (2mm) of face remains for the cutting (the area colored blue in the picture to the right).

β 2 Grind

For the bottom bevel, this is circular grind much like if you had used a pencil sharpener to perform the work.

A relief can be ground on this heel of the tool (as is done on Single Point Cutting Tools (see Chapter 11) on the metal lathe). If added, +5° is recommended. Be sure that at least $^1/_8$" (3mm) of primary bevel remains.

More Information

Videos & Presentations

- Sharpening the Drozda Vortex Tool for Woodturning (YouTube video).
- Tormek Sharpening Classes: Part 23 - Reshaping woodturning tools on a bench grinder (YouTube video).

> **Sharpness Scale** - see Chapter 1.
> **Notes for All Wood Lathe Tools** - at the start of this chapter.
> **Ongoing maintenance** - see Chapter 4, *Woodworking Tools*.
> **Grindstones and Other Sharpening Media** - see Chapter 2.