Sharpening Handbook

Because *sharp enough* … usually is not

Chapter 13

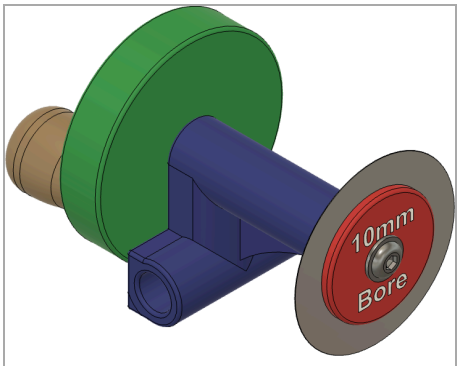
Rotary Cutters

Rotary Cutters 13-2

SharpeningHandbook.info

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

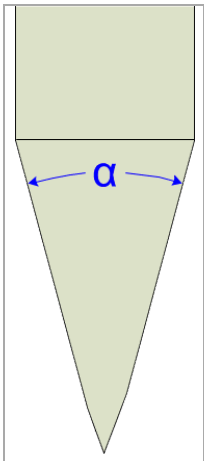
Rotary Cutters



Rotary cutter being held in 3D-printed jig

Wheels on **Rotary Cutters** are sharpened according to the angles shown below. The calculation of α is measured according to the drawing to the right.

These are sharpened using the a jig which holds the blade securely whilst allowing it to be rotated when being ground on the grinding wheel. *Consistent speed in the rotation is key to ensuring that the blade does not have any flat spots.*



Edge Angle

To be creative is to let little pieces of your heart go and place them into each project you make.
Pat Bravo

General Guidelines	
α	Sharpness
22° - 24°	7

Notes & Comments

22° - 24° Grind

The noted angle range is a best estimate; it is best to match the existing edge if possible.

It is often difficult to get the blade positioned for sharpening at such a small α angle. The result is that the blade may end up with a micro bevel (see Chapter 1). This is not problematic per se; however the sharpener must be sure that the micro bevel is honed.

Unless the blade needs to be re-ground, honing is usually sufficient.

Blade Size	Bolt Size Options	
28 mm	8mm	$^{5}/_{16}$"
45 mm	8mm	$^{5}/_{16}$"
60 mm	10mm	$^{3}/_{8}$"

Feedback I have received is that these need to be sharper than scissors to enable the seamstress to cut cloth easily.

Jigs

The jig shown above is detailed on the jigs page, Rotary Knife Jig (see Chapter 3). It is mostly 3D printed so it can be made easily and inexpensively.

Sharpening

Sharpen the blade using the Tormek DE-250 grinding wheel (1,200 grit). These blades are typically quite hard steel, so the diamond wheel is useful for setting the edge.

Based on how the blade is held it is best to use the USB in the horizontal position. This is edge-leading grinding, so do not be too aggressive with the grinding.

Honing

Honing is highly recommended. Feedback from my wife was that the unhoned blade was not sufficiently sharpened.

Regardless of the honing wheel used I strongly advise:

1. Ensuring that the honing wheel is rotating away from the user, ensuring you do not cut into it.
2. Ensuring that you move the rotating blade left and right along the honing wheel's surface to reduce the chances of grinding a rut into the surface of the wheel.

Honing Wheel Option	Honing Compound
Paper wheels on a bench grinder	a. 5µm diamond paste on one honing wheel, followed by b. 0.25µm to 0.5µm diamond paste on the other honing wheel.
Medium density fibreboard (MDF) ① ②	
Tormek leather honing wheel	Tormek PA-70 honing compound.

Notes:

1. A friend recommended making the honing wheel from high density fibreboard (HDF). Either MDF or HDF should work well for holding the honing media, though HDF should last longer.
2. I cannot speak to how well this works.

Holding the Blade for Honing

You can hold the blade using a bolt with a nut (based on the size specified above), and rotating it with a battery-operated drill. This is shown in the video noted below.



Safety Precautions

1. When affixing the blade to the bolt with the nut, be quite careful to not cut yourself on the blade.
2. When affixing the screw to the drill, be quite careful to not cut yourself on the blade.
3. Do not use the drill's power to tighten the nut. Instead, use a wrench.
4. Be sure to run the drill so that the nut tightens against the blade. Running it in the opposite direction will cause the nut to loosen, allowing the blade to flop around and become dangerous. If this happens, let the drill and blade spin down and then re-tighten the nut
5. When cleaning the honing compound off the blade, DO NOT do that whilst rotating the blade in the drill. You may get lucky a few times, but at some point, the spining blade will somehow cut you badly.

Make safety a priority: It is not worth the risk.

Cleanup After Honing

These blades get used on cloth which could easily be messed up badly if the honing compound is not removed. Either acetone or isopropyl alcohol is recommended for cleaning the blade after honing.

It is also worth advising the user that such treatment is worth considering before use.

More Information

Videos & Presentations

- 3D-printed Rotary Cutter Sharpening Jig (YouTube video).
- Sharpening Rotary Cutter, Part 1 (YouTube video)
- Sharpening Rotary Cutter, Part 2 (YouTube video)
- Tormek AngleMaster WM-200 (YouTube video)

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