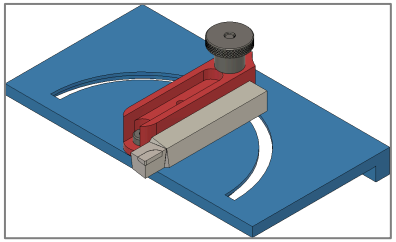
Goniostat for the Tormek

User Manual

Version 3
06 September 2025

Goniostat for the Tormek

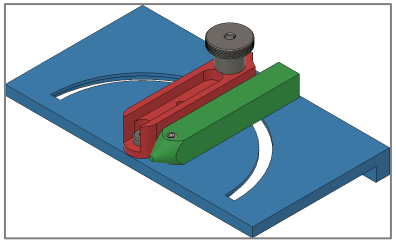
Sharpening a square-shafted tool



1. Set the angle of the tool fence (red) vs. the base (blue). The embedded white lines are used for guidance, but a compass should be used if you need more accuracy.
2. Place the tool base (blue) atop the SVD-110.
3. Set the angle of the tool base vs. the grindstone using the WM-200.

4. Place the tool (gray) against the tool fence (red).
5. Slide the base plate (blue) left and right on the Tormek SVD-110 to grind the tool's edge.

Sharpening a round-shafted tool



1. Set the angle of the tool fence (red) vs. the base (blue). The embedded white lines are used for guidance, but a compass should be used if you need more accuracy.
2. Place the Tool base (blue) atop the SVD-110.
3. Set the angle of the tool base vs. the grindstone using the WM-200.

4. Place the tool in a tool holder (green) which is appropriate for the diameter of the tool's shank.
    a. Rotate the tool as necessary to align it for proper grinding.
    b. Secure the tool in place using the set screw.

Many tools are sharper than they seem. Hold the tool with pliers when inserting the tool's shank into the tool holder, & especially when removing the sharpened tool from the tool holder.

5. Place the tool holder (green) against the tool fence (red).
6. Slide the base plate (blue) left and right on the Tormek SVD-110 to grind the tool's edge.

Do not over-tighten the screws. This is not necessary, and 3D-printed parts will strip if over tightened.

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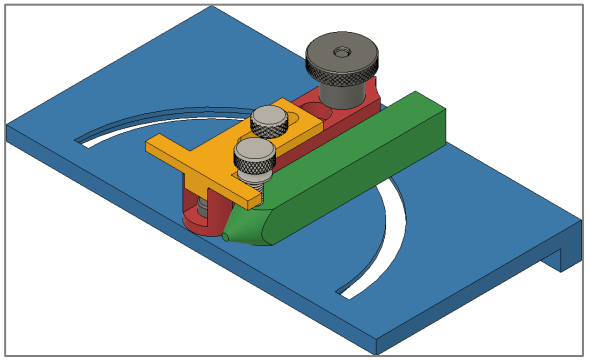
Sharpening a round-shafted tool where wings of the tool need to be equal length



1. Set the angle of the tool fence (red) vs. the base (blue). The embedded white lines are used for guidance, but a compass or other angle gauge should be used if you need more accuracy.
2. Attach the depth stop (yellow) to the tool fence using the thumb screw (the black one). Leave it a little loose for now (it gets tightened in step 7, below).
    a. Use the shorter depth stop for the smaller tool holders.
    b. Use the deeper depth stop for the larger tool holders (0.375", 0.5", or 10mm).
3. Place the tool base (blue) atop the SVD-110.
4. Set the angle of the tool base vs. the grindstone using the WM-200.
5. Place the tool in a tool holder (green) which is appropriate for the diameter of the tool's shank.
    a. Remove the set screw from the tool holder (green) and replace it with the flanged thumb screw (the chrome-colored one).
    b. Rotate the tool in the tool holder as necessary to align it for proper grinding.
    c. Secure the tool in the tool holder using the thumb screw.
6. Place the tool holder (green) against the tool fence (red).
7. Adjust the depth stop (yellow) as necessary and tighten the screw holding it in place.

Many tools are sharper than they seem. Hold the tool with pliers when inserting the tool's shank into the tool holder, & especially when removing the sharpened tool from the tool holder.

8. Slide the base plate (blue) left and right on the Tormek SVD-110 to grind the tool's edge.
9. Rotate the tool in the tool holder as necessary to expose the next wing and secure it in place using the thumb screw.
10. Repeat steps 8-9 as necessary.

Do not over-tighten the screws. This is not necessary, and 3D-printed parts will strip if over tightened.

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Sharpening two-edged tools using the Plates for Round Rod Cutters

1. Place the plate (blue) atop the SVD-110.
2. Set the angle of the plate vs. the grindstone using the Setup Block (green). Be sure the flat surface of the setup block is against the plate, and the two round nubs are against the grinding media's surface.

3. Place the tool in a tool holder (green) which is appropriate for the diameter of the tool's shank.
    a. Rotate the tool as necessary to align it for proper grinding.
    b. Secure the tool in place using the set screw.

Many tools are sharper than they seem. Hold the tool with pliers when inserting the tool's shank into the tool holder, & especially when removing the sharpened tool from the tool holder.

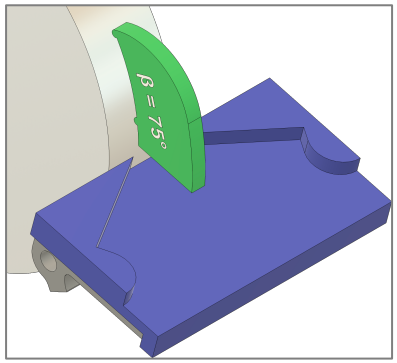
4. Grind the top of the tool by rotating the base 90° and using the side of the grinding wheel. This can be done using only the SVD-110.

5. Place the tool holder (green) against one side of the plate.
6. Sharpen that side by sliding the base plate (blue) left and right on the Tormek SVD-110 to grind the tool's edge.
7. Swap the tool holder to the other side of the plate.
8. Sharpen that side.

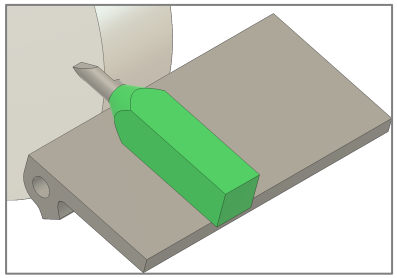
9. Depending on the desired edge surface, this process may need to be repeated using increasingly finer grinding media (e.g., up to the Tormek SJ Japanese grindstone).

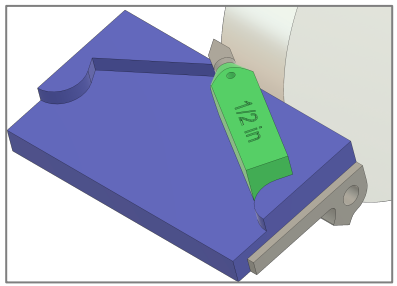
10. If a relief is desired on the edge, lower the SVD-110 by the desired angle (e.g., 10° to 20°), and repeat steps 4-7. Typically, a relief angle does not have to be extremely polished, so that step can be accomplished on a single grinding surface.

Do not over-tighten the screws. This is not necessary, and 3D-printed parts will strip if over tightened.



Set the angle


Grind the top of the tool



Grind the edges of the tool

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A typical series for grinding the surfaces would be:

Series	Grinding Media	Steps
1	SG-250 Original Grindstone, graded rough or SB-250 Blackstone Silicone, graded rough or DF-250 Diamond Wheel Fine	Steps 4-8
2	SG-250 Original Grindstone, graded smooth or SB-250 Blackstone Silicone, graded smooth or DE-250 Diamond Wheel Extra Fine	Steps 4-8
3	SJ-250 Japanese Waterstone	Steps 4-8
4	SG-250 Traditional Grindstone, graded medium or SB-250 Blackstone Silicone, graded medium or DF-250 Diamond Wheel Fine	Step 10