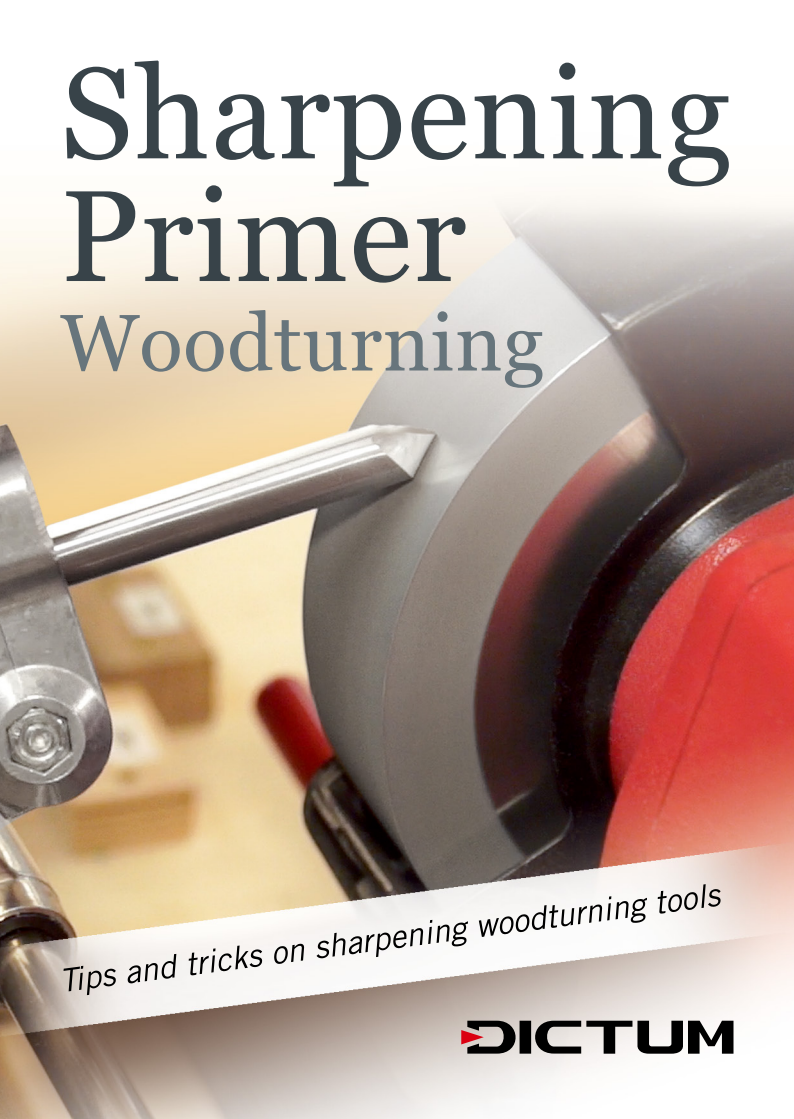
Sharpening Primer

Woodturning



Tips and tricks on sharpening woodturning tools

DICTUM

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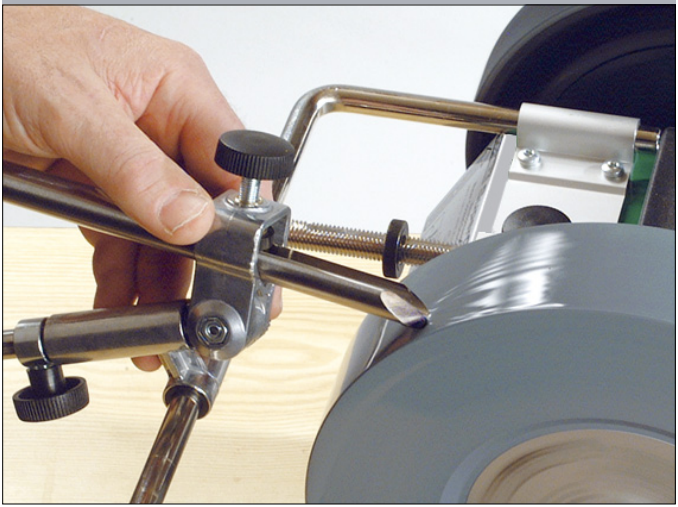
Introduction



Normally, woodturning tools are made of very hard, wear-resistant HSS or PM steels that can be worked on waterstones only with enormous effort. We recommend using DICTUM DS 150 L, Tormek or ProEdge grinding machine. Their special grinding jigs enable a fast and consistent sharpen-ing, even with complicated cutting edge geometries. After sharpening the outer bevel, polish the inner burr by hand with a multiform stone or a profiled leather honing wheel, similar to the process used for gouges.

Overview of dry and wet sharpening machines

Overview of sharpening machines		Roughing-out gouges	Spindle gouges	Bowl gouges	Scrapers, chisels
Dry-Grinding Machines	 DICTUM® Low-speed Grinder DS 150 L	Free-handed or with Wolverine sharpening system	Free-handed or with Wolverine sharpening system	Free-handed or with Wolverine sharpening system	Free-handed with support
	 Sorby™ ProEdge Grinding Machine	Free-handed or with jig	Free-handed with support or jig	Free-handed with support or jig	Free-handed or with jig
Wet-Sharpening Machines	 Tormek® Sharpening-System	with jig	with jig	with jig	with jig

Sharpening machines for dry grinding

The main argument in favour of **dry grinding** is the **rapid material abrasion**, which is as good as impossible when using a wet sharpening machine with certain types of steel. This reduces the grinding time.

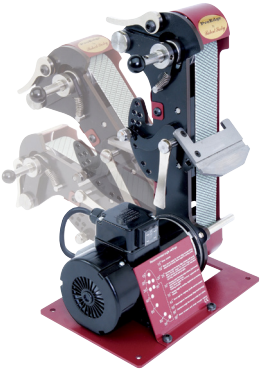
DICTUM® Low-speed Grinder DS 150 L
(No. 720782)

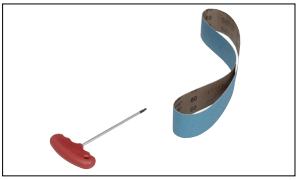
Low-speed Grinder with CBN Grinding Wheel (No. 711241)

Low-speed Grinder with Sharpening Set for Woodturning Tools (No. 711242)

Low-speed Grinder with Sharpening Set for Woodturning Tools and CBN Grinding Wheel (No. 711243)

Sorby™ ProEdge





Basic (No. 720383)

Deluxe (No. 720384)

Important features of dry sharpening devices

1. Smoothness of the ground surface
Since dry grinding basically guarantees rapid material removal due to the higher speed of the machine, the smoothness of the grinding surface produced is a crucial factor when buying a sharpening wheel.

Initially designed for deburring and shaping, many inexpensive low-speed or double-wheeled grinders are equipped with very coarse grinding wheels (grit 40-60) made of a highly abrasive material.

The DICTUM Low-speed Grinder, which is also ideal for sharpening due to its lower speed, can be run with grinding wheels made of white aluminium oxide up to a grit of 120.

White aluminium oxide Grinding Wheels, 150 x 40 x 32 mm*
White aluminium oxide is one of the purest abrasives. It allows for fine surfaces and removes material quickly. Fits low-speed grinder DS 150 L.

Grit	
60	**No. 820895**
80	**No. 820896**
100	**No. 820897**
120	**No. 820898**

* *White aluminium oxide Grinding Wheels with 12,7 mm centre hole available online.*

White aluminium oxide produces significantly finer grinding surfaces than conventional grinding wheels made of normal corundum or silicon carbide and is therefore also suitable for sharpening woodturning tools. For an even finer grinding surface when dry grinding, we offer CBN wheels up to grit B46, which is comparable to JIS 325.

2. Constant wheel diameter
The specifications on sharpening guide settings given in this primer depend on the wheel diameter of the whetstones. However, the wheel diameters change due to the ablation that occurs when sharpening or trueing.

If the disc diameter (e.g. 150 mm) is reduced by 10 mm, there is a risk of hollow-grinding and thus the bevel weakening. Furthermore, the geometries of the grind will change. To obtain even results with each sharpening process with a low-speed grinder with a wheel diameter of 150 mm, we recommend using CBN or diamond grinding wheels.

Using CBN or diamond coated grinding wheels avoids the problem of reduced diameters and changing cutting edge geometries. In addition, these grinding wheels save time as they do not require trueing. CBN does not generate high temperatures at high speeds (double-wheeled grinder), which reduces the risk of annealing. Not only that, CBN offers great value for money, because the somewhat higher purchase price is offset by the more robust and aggressive crystal structure.

DICTUM® CBN Grinding Wheel Black Crystal, 150 x 40 x 32 mm, + side coating

With the CBN grinding wheels you can sharpen even HSS (also powder metallurgically produced) and hardened steel on the slowly running double grinder without the risk of the steel getting too hot. A special process allows grinding without coolant. With only slight pressure you achieve an excellent rate of stock removal and stunning grinding results. The wheels are made of steel and exactly balanced. Optimal speed range 1700 up to max. 3000 rpm. Can be used on e.g. DICTUM low-speed grinder (Clamping sleeve No. 707837 needed) or Creusen double-wheeled grinder.

Grit

B91, comparable to JIS 170.
No. 715287

B54, comparable to JIS 270.
No. 715288

B46, comparable to JIS 325.
No. 715289

Coated with black CBN crystals for extra long service life when sharpening hardened tool steels.

Recycling pass

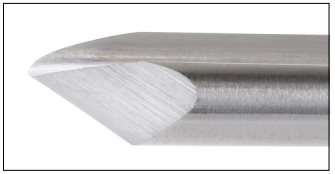
When you buy CBN grinding wheels, you get a recycling pass. Just send the used item back to us, and you will receive a recycling bonus when you buy a new CBN grinding wheel. The bonus rate in euros is visible in the recycling symbol.

DICTUM® Superflange with precision disk
The flange allows to adjusting the 32 mm standard bore of the CBN grinding wheels to the shaft diameter of the different sharpening machines.
Made of aluminium.

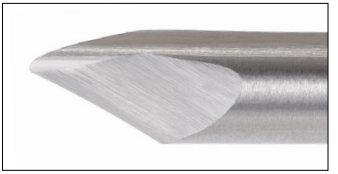
Bore 15 mm
For DICTUM CBN Grinding Wheels No. 715287. Fits Creusen double-wheeled grinders and other products with 15 mm diameter shafts.
Inner Ø 15 mm / outer Ø 32 mm
No. 704848

Bore 12.7 mm (½ Inch)
For DICTUM CBN Grinding Wheels No. 715287. Fits DICTUM low speed grinder and other models with 12.7 mm (1/2 inch) shaft.
Inner Ø 12.7 mm / outer Ø 32 mm
No. 704850

Clamping Sleeve for Adaptor Flange
For mounting CBN grinding wheels Ø 150 mm e.g. on slow speed DS 150 L (No. 720782). By means of this sleeve, the adaptor flange for CBN grinding wheels can be conveniently clamped to the machine shaft. The clamping sleeve bridges the distance from the clamping nut to the adaptor flange. Length 20 mm.
Bore 12.7 mm.
No. 707837



Fingernail grind, sharpened on wheel diameter 250 mm.



Fingernail grind, sharpened on wheel diameter 140 mm with slight hollow grind.

The changes in geometry are only marginally visible, but they are sufficient to influence the intended use of gouges of crack-prone steels (PRO-PM) and sharp bevel angles.

Sharpening machines for wet grinding

The main argument in favour of **wet grinding** is the **low heat generation**. This prevents any potential loss of hardness. The wet abrasive action also significantly reduces dust exposure.

Tormek® T-4/T-8 Original (**No. 705195/ 716034**)

Tormek® T-8 Original for Woodturners with Blackstone (**No. 716056**)

Tormek® T-8 Original for Woodturners with Blackstone and Woodturner's Kit (**No. 716057**)

Tormek® T-8 Original for Woodturners with DC-250 Diamond Grinding Wheel, K 360 and Woodturner's Kit (**No. 716054**)

Important features of wet sharpening devices

1. Fast material removal
Wet grinding produces fine grinding surfaces, but the stock removal leaves much to be desired due to the low speed.

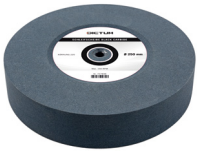
The selection of the right grit and abrasive, or making the right compromise between the fineness of the grinding surface and the removal behaviour, is therefore crucial.

We offer stones suitable for most wet sharpening machines with stone diameter 250 mm (Tormek T-7 and T-8, Record, Jet and Triton models), which produce a fine surface and deliver impressively fast removal.

DICTUM® Ultra-Speed Grinding Wheels

For our Ultra-Speed grinding wheels we use single-crystal-based aluminium oxide, manufactured in Germany, which is one of the most effective ultra-fine abrasives on the market. During the numerous tests carried out with microscope images, we have improved its composition to achieve an optimum compromise between a fine grinding pattern and fast material removal.

DICTUM® Ultra-Speed Grinding Wheels
For grinding double-layered blades as well as chrome/vanadium steels and HSS. Hard bond. Aluminium oxide abrasive.
Ø 250 x 50 mm, Bore 12 mm.
Grit
220 **No. 727847**
1000 **No. 727849**
3000 **No. 727850**



DICTUM® Black Carbide Grinding Wheel, Grit 220
Black silicon carbide is ideal for grinding hard materials such as HSS and carbon steels. Woodturners especially appreciate this abrasive for its fast material removal properties as well as its long service life. Black silicon carbide abrasive.
Ø 250 x 50 mm, Bore 12 mm.
No. 727848

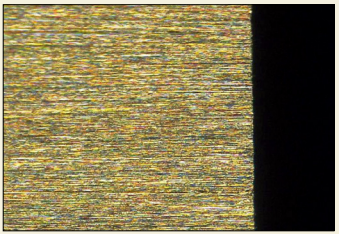
DICTUM® microscope tests for the development of our Ultra-Speed Grinding Wheels

In the course of the development of the DICTUM® Ultra-Speed grinding wheels, our specialists carried out various test grinding operations and compared the results under the microscope.

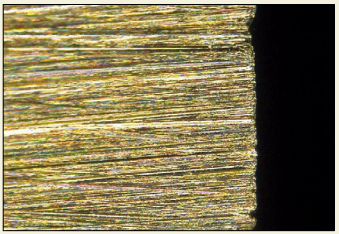
Sharpening only the bevel on new woodworking tools such as chisels or plane blades without paying attention to the back of the blade leaves the degree of sharpness to chance or the diligence of the tool manufacturer. The blade back, however, cannot be ground with a wet grinding machine.

For the tests, the backs of chisel blades were pre-sharpened on bench stones up to grit 6000. The aim was to show the cutting edge formation that can be achieved with a standard 220 grit sharpening wheel.

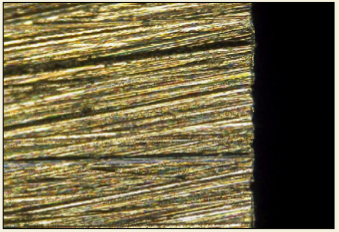
By polishing on a leather disc, the sharpening result can be slightly improved; the coarse grinding marks, however, cannot be removed. With a lot of pressure and time on the leather disc, even deep scratches can be largely removed. This procedure, however, rounds off the cutting edge and thus reduces its service life.



Comparison
Bevel ground with 1000/6000 grit bench stone (combination stone) by hand with a sharpening guide. In order to achieve similar results on the wet grinding machine, a finer grinding disc, e.g. DICTUM® Ultra-Speed Grinding Wheel (grit 1000 or 3000) must be used.



DICTUM® Ultra-Speed Grinding Wheel
Bevel ground with DICTUM® Ultra-Speed Grinding Wheel, 220 grit. The result: Finer grinding marks than with a conventional grinding wheel with 220 grit. This procedure is therefore a good compromise between sharpening time and sharpening outcome, but results in a much coarser shaped cutting edge than with manual grinding up to grit 6000 or the use of a DICTUM® Ultra-Speed Grinding Wheel with grit 1000 or 3000.



Conventional grinding wheel
Bevel ground with a conventional grinding wheel with 220 grit.

2. Constant wheel diameter
The specifications on sharpening guide settings given in this primer depend on the wheel diameter of the whetstone. However, the wheel diameters change due to the ablation that occurs when sharpening or trueing.

The reduction in diameter of grinding wheels that wear over time can be compensated for to a certain extent by using the TTS-100 angle jig. We therefore recommend using the TTS-100 with the Tormek sharpening instructions when possible. However, if the used stone is already heavily worn, there may also be slight changes in angle and geometry, even when using the TSS-100.

This can also occur when combining both sharpening systems (pre-grind with a double-wheeled grinder, regrind with the Tormek). To obtain even results with each wet sharpening process, we recommend using CBN or diamond grinding wheels.

DICTUM® CBN Grinding Wheel Black Crystal
This CBN grinding wheel has been specifically designed for use on wet grinding machines such as the Tormek T-7/T-8. The CBN-coated, precisely balanced aluminium body allows grinding without water or coolant. This saves time and keeps the workstation dry. With only slight pressure you can achieve an excellent rate of stock removal and stunning grinding results. There is no risk of annealing with HSS and hardened steels. Coated with black CBN crystals for extra long service life when sharpening hardened tool steels. Ø 250 mm, width 50 mm, centre hole 12 mm, 4.9 kg. Fits Tormek® T-7 und T-8, as well as Record, Jet and Triton models with wheel diameter 250 mm.

Coating around the circumference

B46
Comparable to Tormek Diamond Grinding Wheel 1200 or JIS 325.

Coating around the circumference
No. 715416
+ Side coating
No. 715418
+ Double side coating
No. 715420

Coating around the circumference +
Side coating / Double side coating

B54
Comparable to Tormek
Diamond Grinding Wheel
600 or JIS 270.

Coating around the circumference
No. 715417
+ Side coating
No. 715419
+ Double side coating
No. 715421

Recycling pass
When you buy CBN grinding wheels, you get a recycling pass. Just send the used item back to us, and you will receive a recycling bonus when you buy a new CBN grinding wheel. The bonus rate in euros is visible in the recycling symbol.

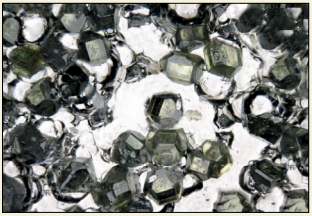
CBN coating

CBN stands for Cubic Boron Nitride, an abrasive grain that is nearly as hard as diamond but much better suited for sharpening hardened steel. Sharpening on diamond wheels produces heat, and from around 170 °C causes a chemical reaction between the diamond grain and the steel alloys which destroys the diamond grain. CBN, on the other hand, only reacts at above 400 °C, and is only destroyed at 700 °C and above.

Advantages of CBN in comparison with diamond:

- CBN contains robust crystals that are more stable and remain sharp for a long time
- CBN does not require cooling during sharpening

The CBN crystal shape has a structure analogous to a tetrahedron with sharp angles providing sharp tips for good removal (ideal for hardened blades)

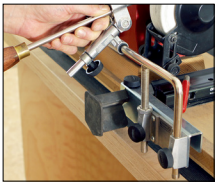


The diamond crystal shape has a structure analogous to an octahedron with one more tip but also more obtuse angles and is therefore not as aggressive as the tetrahedron-shaped CBN

Possible complementary products for dry and wet grinding

DICTUM Sharpening Gauge (**Nr. 704900**)

Tormek Mounting Set BGM-100 (**No. 705225**)



Tormek Converter OWC-1 (**No. 705353**)

Everything about SHARPENING

Techniques, tools and knowledge

www.perfect-sharpening.com

Useful tips and tricks and step-by-step instructions for sharpening knives and tools with the appropriate sharpening devices.

- Practical guide to different sharpening techniques as well as the appropriate sharpening devices
- Sharpening techniques on machines
- Videos and video tutorials
- Sharpening courses
- Sharpening professionals answer your questions
- Professional sharpening service

Videos

Tutorials

Tips

Vide

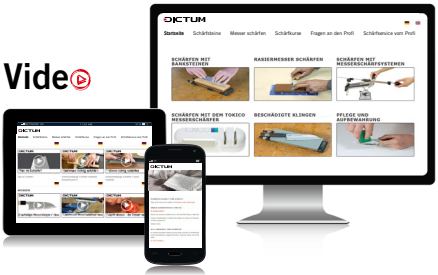


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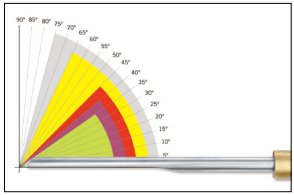
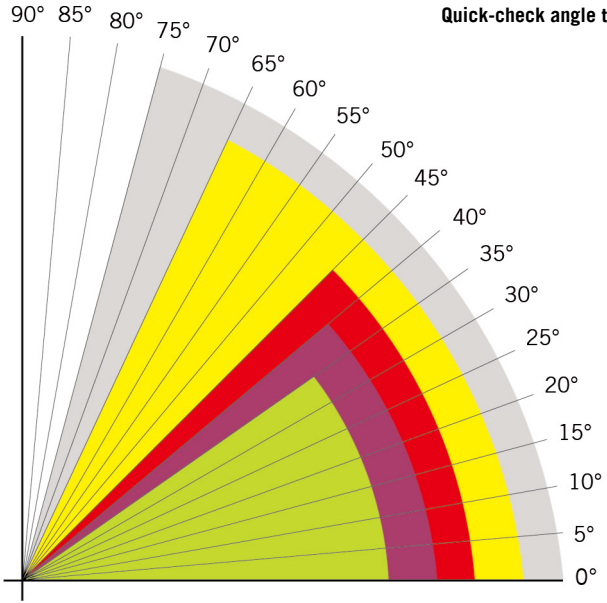
Table of angles

The angles given in the following table can be used as a guideline. In special cases, the cutting angles may be different from the specified values.

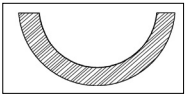
Scraper	to 75°
Bowl gouge	45°-65°
Chisel	45°
Roughing-out gouge	35°-40°
Spindle gouge	35°



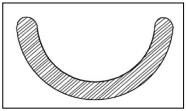
Quick-check angle table



Roughing-out gouges



Straight upper edge
90° offsets precisely shapeable

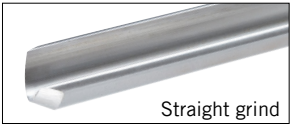


Rounded upper edge
comfortable hand position
yet free guidance

Geometries/grinding configurations Grind 35°-40° bevel angle

STRAIGHT GRIND

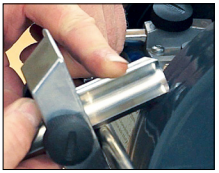
Standard grind.



Straight grind

DICTUM DS 150 L

- Adjust the distance of the Wolverine V-arm to the bevel angle



Tormek

- Place bracket horizontally
- TTS-100, hole distance B (both wheels touch the grinding wheel), SVS-50, protrusion 53 mm
- Turn until the upper edges are vertical (see picture)

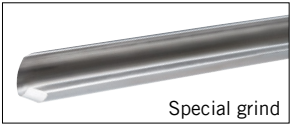
ProEdge

- Insert in V-block, adjust the angle plate to the bevel angle
- Turn the tool in the V-block until the outer edges are vertical

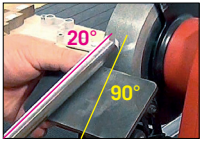
Roughing-out gouges

Geometries/grinding configurations Grind 35°-40° bevel angle

SPECIAL GRIND
(WINGS SWEPT BACK)
Enables rough pull cuts - similar to a spindle gouge.


Special grind

DICTUM DS 150 L
- Free-hand grinding with support while moving the axis of the turning tool about 20° and turning the tool at the same time
- Pay attention to symmetry



Tormek
- Similar configurations as for a straight grind, but the upper edges are turned beyond the vertical position
- Pay attention to symmetry

ProEdge
- Free-hand grinding with support while moving the axis of the turning tool about 20° and turning the tool at the same time

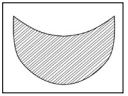
Video on sharpening roughing-out gouges available online.

www.dictum.com

Spindle gouges

English-style

Flute
Not milled over
the entire length.



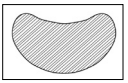
+ Stable, especially if there are vibrations or if the gouge protrudes beyond the tool rest

Flute runs 3/4 of the length.

European-/continental-style

+ Forged - therefore stable structure
+ Rounded upper edge enables a comfortable hand position

Flute
Milled over the entire length.
+ Gouges can be sharpened with a guide over the entire lifetime



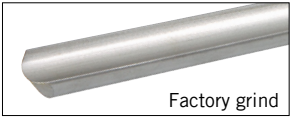
Flute runs the entire length.

Spindle gouges

Geometries/grinding configurations Grind 35° bevel angle

FACTORY GRIND

You can work with this but it is not ideal.



Factory grind

DICTUM DS 150 L

- Free-hand grinding with support while moving the axis of the turning tool about 20° and turning the tool at the same time
- Pay attention to symmetry

Tormek

- Place bracket horizontally
- TTS-100, hole distance A (both wheels touch the grinding wheel), SVS-50, protrusion 53 mm

ProEdge

English-style

- Insert in V-block, adjust the angle plate to the bevel angle

European-style

- Smaller widths: Insert in V-block, adjust the angle plate to the bevel angle
- Lager widths: Rolling movement in the V-block is hindered

Video on sharpening spindel gouges available online.

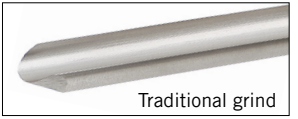
www.dictum.com

Spindle gouges

Geometries/grinding configurations Grind 35° bevel angle

TRADITIONAL GRIND

Good access to edges, good guidance thanks to the swept back wings. For transitions and V-shaped notches.


Traditional grind

DICTUM DS 150 L

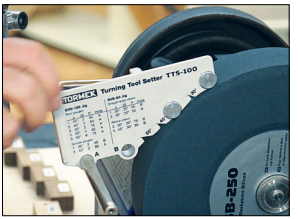
- Vari Grind, protrusion 65 mm, position 2 (second notch from the front)
- Push back the arm until you reach the bevel angle

Or for further working on the Tormek

- OWC-1 with Tormek Converter, TTS-100, hole distance A (both wheels touch the grinding wheel), SVD-186, position 2, 65 mm protrusion

Tormek

- Place bracket horizontally
- TTS-100, hole distance A (both wheels touch the grinding wheel), SVD-186, position 2, 65 mm protrusion



Polishing with a leather honing wheel

- Place bracket horizontally
- TTS-100, hole distance A (both wheels touch the leather honing wheel), gouge stays clamped in the SVD-186, use polishing paste

ProEdge

- Fingernail grinding jig
- First hole of the boss (without extender), position 2, protrusion 55 mm, adjust the angle to the gouge

Spindle gouges

Geometries/grinding configurations Grind 35° bevel angle

FINGERNAIL GRIND

Narrower V-shaped notches and transitions possible.

Fingernail grind

DICTUM DS 150 L

- Vari Grind, protrusion 65 mm, position 2 (second notch from the front)
- Push back the arm until you reach the bevel angle
- Start at the side with little pressure in the centre of the tool

Or for further working on the Tormek

- OWC-1 with Tormek Converter, TTS-100, hole distance B (both wheels touch the grinding wheel), SVD-186, position 3, 55 mm protrusion

Tormek

- Place bracket horizontally
- TTS-100, hole distance B (both wheels touch the grinding wheel), SVD-186, position 3, 55 mm protrusion

Polishing with a leather honing wheel

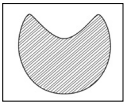
- Place bracket horizontally
- TTS-100, hole distance B (both wheels touch the leather honing wheel), gouge stays clamped in the SVD-186, use polishing paste

ProEdge

- 35° is not possible; the minimum angle that can be sharpened in the third hole of the fingernail grinding jig extender is 48°
- Free-handed with support

Spindle gouges (Detail gouges)

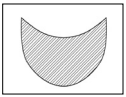
Round cross-section
Flute
Not milled over
the entire length.



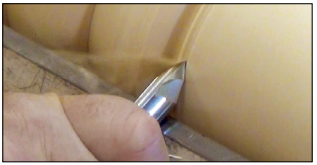
- The shallow flute allows excellent stability, even in work where the gouge protrudes well above the end stop
- Fingernail grind with secondary bevel

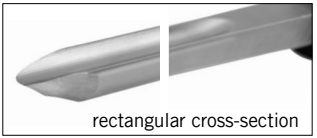
round cross-section

Rectangular cross-section
Flute
Not milled over
the entire length.

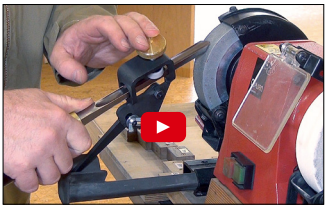


- The shallow flute and the rectangular cross-section (that keep vibration to a minimum), allow the best possible access to narrowest recesses
- Fingernail grind with secondary bevel





rectangular cross-section



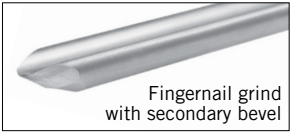
Video on sharpening detail gouges available online.

www.dictum.com

Spindle gouges (Detail gouges)

Geometries/grinding configurations Grind 35°/25° bevel angle

FINGERNAIL GRIND WITH SECONDARY BEVEL



Fingernail grind with secondary bevel

DICTUM DS 150 L

Main bevel 35° bevel angle:

- Vari Grind, protrusion 65 mm, position 3 (third notch from the front)
- Push back the arm until you reach the bevel angle (possible readjustment of the Vari Grind position required)

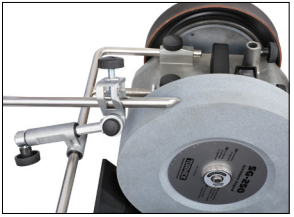
Secondary bevel 25° bevel angle:

- Vari Grind, protrusion 65 mm, position 3 (third notch from the front)
- Push back the arm until you reach the bevel angle

Tormek

Main bevel 35° bevel angle:

- Place bracket horizontally
- Caution: You cannot use the TTS-100 for this grind! SVD-186, position 2, protrusion 65 mm, wooden distance block of 4 cm between bracket and stone

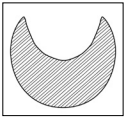


Secondary bevel 25° bevel angle:

- Place bracket horizontally
- Same adjustment as on main bevel, you just loosen the screw at the end of the SVD-186 and push it to the very back; the bevel angle results automatically

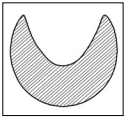
Bowl gouges

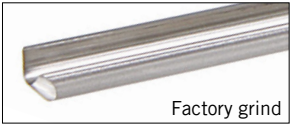
U-shape gouge
U-shaped flute
Mainly for working on the outside of bowls.

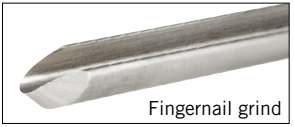


not suitable for fingernail grind

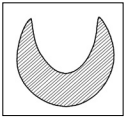
Superflute gouge
Parabolic flute
Universal application of the gouge.







Ellsworth gouge
Deep, parabolic flute
For inside and outside, rough and fine work.



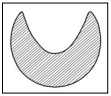
wings swept far back

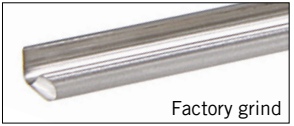
Bowl gouges

Geometries/grinding configurations Grind 50°-65° bevel angle

FACTORY GRIND

You can work with this but it is not ideal.





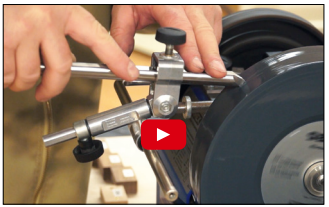
Factory grind

+ Simple, safe cut for the outside of bowls
- Bevel rubbing pull cut
- Facing off cut across the grain
- Hollowing cut

DICTUM DS 150 L
- Free-hand grinding with support while moving the axis of the turning tool about 20° and turning the tool at the same time
- Pay attention to symmetry

Tormek
- Place bracket horizontally
- TTS-100, hole distance A (both wheels touch the grinding wheel)
- SVS-50, adjust distance according to the bevel angle (50°-65°)

ProEdge
- With V-block, adjust support according to the bevel angle



Video on sharpening bowl gouges available online.

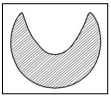
www.dictum.com

Bowl gouges

Geometries/grinding configurations
Grind 50° (50°-65° possible) bevel angle

TRADITIONAL GRIND

- Bevel rubbing pull cut
- Facing off cuts across the grain
- Hollowing cut




Traditional grind

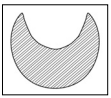
DICTUM DS 150 L
- Free-hand grind: start on the outside, pay attention to symmetrical wings

Tormek
- TTS-100, hole distance A (both wheels touch the grinding wheel), SVD-186, position 2, 65 mm protrusion, adapt according to the bevel angle

ProEdge
- With fingernail grinding jig, hole 1, e.g. with position 2, protrusion 58 mm, 50° bevel angle, adjust the height of the grinding arm according to the angle
- Free-handed with support

TRADITIONAL GRIND WITH U-SHAPE

- Bevel rubbing pull cut (for the outside of bowls)
- Lightly grind the back to prevent the edges from damaging the surface of the wood (see picture)
- Caution: if you remove too much material from the back of the turning gouge there is a danger of hooking while turning

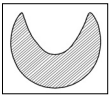


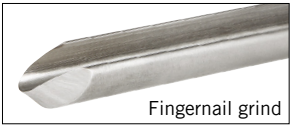

Traditional grind

Bowl gouges

Geometries/grinding configurations
Grind 45° bevel angle

FINGERNAIL GRIND




Fingernail grind

+ Highest versatility
- Trueing up cut along the grain
- Pull cut
- Bevel rubbing pull cut
- Angels hair cut (very good surface)
- Facing off cut across the grain
- Hollowing cut

DICTUM DS 150 L
- Vari Grind, protrusion 53 mm, position 2
- Reworking: the centre of the initial bevel touches the grinding wheel, remove material only on the sides

Or for further working on the Tormek
- OWC-1 converter, TTS-100, hole distance A (both wheels touch the grinding wheel), SVD-186, position 2, protrusion 65 mm

Tormek
- Place bracket horizontally
- TTS-100, hole distance A (both wheels touch the grinding wheel), SVD-186, position 2, protrusion 65 mm

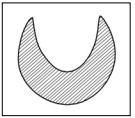
ProEdge
- 45° is not possible; the minimum grinding angle with fingernail grind on the ProEdge is 48°
- Use the third hole of the fingernail grinding jig extender; precise indications on protrusion or position cannot be given, because they depend on the length of the gouge worked on

Ellsworth special grind

Geometries/grinding configurations Grind 60° bevel angle

ELLSWORTH SPECIAL GRIND


Ellsworth special grind



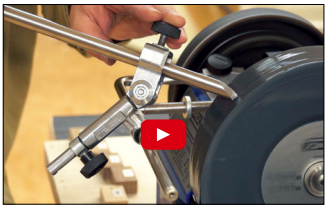
+ Highest versatility
- Trueing up cut along the grain
- Pull cut
- Bevel rubbing pull cut
- Angels hair cut (very good surface)
- Facing off cut across the grain
- Hollowing cut

DICTUM DS 150 L
- Vari Grind, protrusion 55 mm, position 2
- Start on the outsides

Or for further working on the Tormek
- OWC-1 converter, TTS-100, hole distance A (both wheels touch the grinding wheel), SVD-186, position 6, protrusion 75 mm

Tormek
- TTS-100, hole distance A (both wheels touch the grinding wheel), SVD-186, position 6, protrusion 75 mm
- Grind to the centre, then the other side

ProEdge
- Due to the limited turning radius, the ProEdge quickly reaches its limits; the length of smaller gouges often is not enough
- Fingernail grind with wings swept far back possible with the fingernail grinding jig extender on position 3
- Precise indications on protrusion cannot be given, because they depend on the length of the gouge worked on
- Otherwise free-handed with support



Video on sharpening Ellsworth gouges available online.

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Bowl gouges

Additional tips on bowl gouges

Rounding off the edges by hand
To remove the sharp edge on the end of the bevel we recommend the HonStar with CBN coating (No. 704849). The result: Better working in curves without canting in the workpiece.

Secondary bevel on the DICTUM DS 150 L
To determine the main bevel, adjust the Vari Grind on a protrusion of 75 mm on position 5 (fifth notch from the front) and slide the arm until the existing bevel is reached. For grinding the secondary bevel loosen the Vari Grind locking screw and adjust the angle on position 7 (last notch). Now grind the bevel until the secondary bevel is approximately half that of the first bevel.

Secondary bevel on the Tormek
To determine the main bevel, adjust the bracket with the TTS-100, hole distance A on the wheel diameter. Take the SVD-186, protrusion 65 mm, back end stop fully retracted. For grinding the secondary bevel loosen the rear screw of the SVD-186 and slide the guidance to the end stop. Now grind the bevel until the secondary bevel is approximately half that of the first bevel.

Grinding the micro bevel

DICTUM DS 150 L
Adjust the Vari Grind to your standard grind on your machine, slide the arm to the front until a space of approx. 1 mm is between the cutting edge and the stone. Now sharpen until you get the desired micro bevel.

Tormek
Adjust the SVD-186 to your standard grind on your machine, now turn the fine tuning on the universal support two full turns to the front, slide the universal support to the end stop and tighten it. Now sharpen until you get the desired micro bevel.

Video on additional tips on bowl gouges available online.

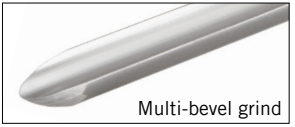
www.dictum.com

Hollowing gouges
Stuart Mortimer gouges (No. 702032 and 702009)

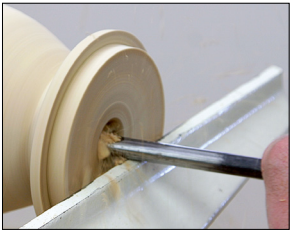
Geometries/grinding configurations Multi-bevel grind

MULTI-BEVEL GRIND

- With special grind especially suited for hollowing out deep objects
- Its short flute leaves more strength in the shaft for increased rigidity, which allows the tool to absorb vibrations
- Ideal for hard wood


Multi-bevel grind

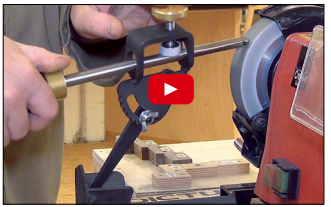
DICTUM DS 150 L
First bevel
Vari Grind, protrusion 75 mm, lateral angle setting device to the very front, arm 17.5 cm back from the front edge of the end stop



Second bevel
Adjust Vari Grind on position 2 (second notch from the front)

Third bevel
Adjust Vari Grind on position 3 (third notch from the front)

Fourth bevel
Adjust Vari Grind on position 4 (fourth notch from the front), then take it out and round off the edge free-handed to a clean transition; you can then file the edge with a diamond file (No. 705374)



Video on sharpening Stuart Mortimer gouges available online.

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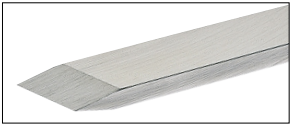
Chisels

Geometries/grinding configurations Grind 45° bevel angle

DICTUM DS 150 L

- Grind free-handed with support



Or for further working on the Tormek

- Tormek Mounting Set BGM-100, TTS-100, hole distance B (both wheels touch the grinding wheel), adjust SVS-50 on 20° inclination, protrusion 55 mm
- Grind until the bevels are the same size; if necessary, grind the first side again

Tormek

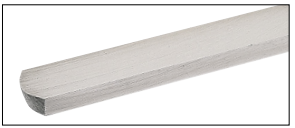
- Place bracket horizontally
- TTS-100, hole distance B (both wheels touch the grinding wheel), adjust SVS-50 on 20° inclination, protrusion 55 mm
- Grind until the bevels are the same size; if necessary, grind the first side again

Scrapers

Geometries/grinding configurations Grind 75° bevel angle

DICTUM DS 150 L

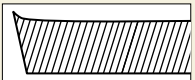
- Grind free-handed with support



Tormek

- Place bracket horizontally
- Adjust SVD-110 to the desired bevel angle

Normally, scrapers cut via a burr on the cutting edge. This burr can be created in a similar way to the burr on a scraper blade, but it usually forms naturally during sharpening. Therefore, wet grinding is not recommended for scrapers, because the created burr is not »strong« enough. You also should not polish the cutting edge after sharpening to remove the burr.



Cross-section scraper with grounded burr

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* When sharpening Japanese blades, the hollow grinding may be reduced depending on the original flatness of the back.

***** »Ruler trick« - The Lie-Nielsen Method***
A thin steel ruler is placed along the long edge of a fine-grit honing stone and the very tip of the back of the blade polished along the opposite long edge of the stone. See expert knowledge »Sharpening Plane Blades« at www.dictum.com

Plus shipping charges (prices include VAT).

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