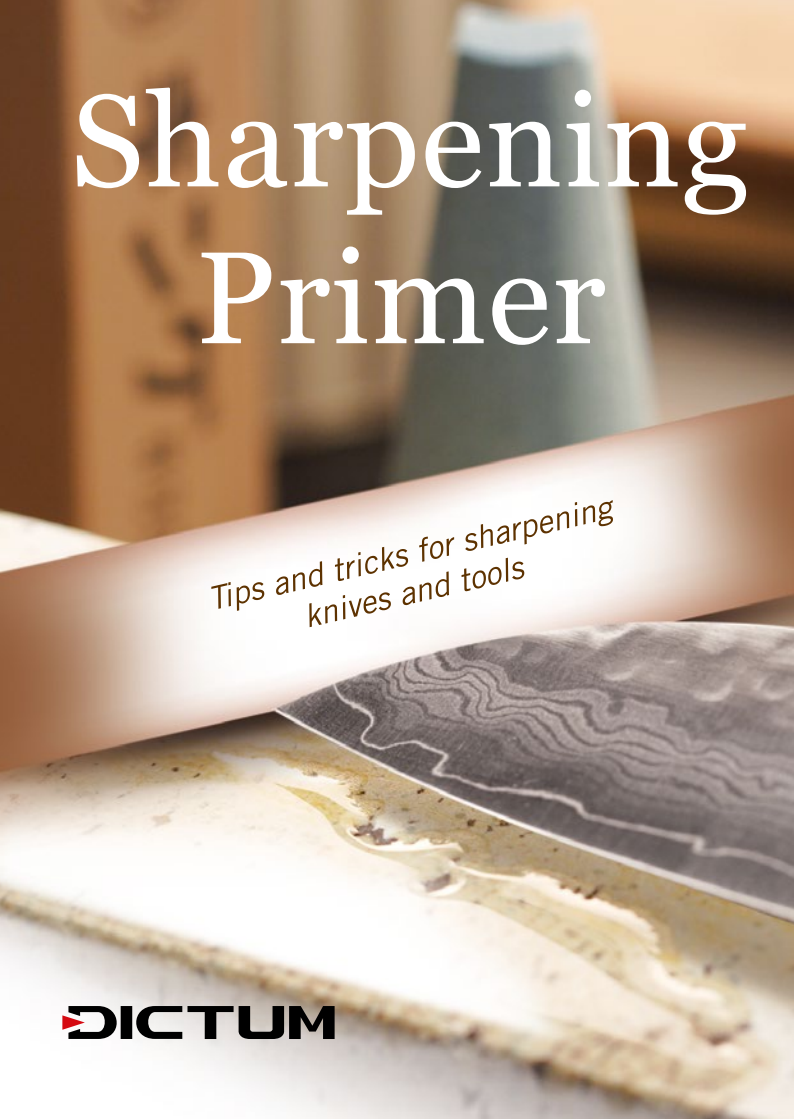
Sharpening Primer

Tips and tricks for sharpening knives and tools



DICTUM

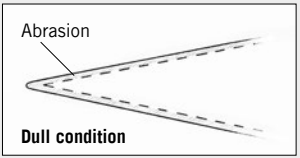
Introduction

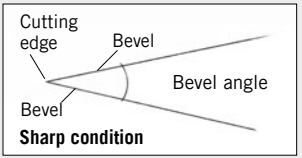
Opinions on how to sharpen a dull cutting edge are widely divergent - even among professionals. We favour the method used for hundreds of years on the sharpest blade of all, the samurai sword:

Sharpening with waterstones.

This method is suitable for sharpening knives and tools alike. It will be introduced in the following as well as a wealth of tips and tricks from our sharpening experts.

What defines sharpness?
Technically speaking, this is where the two bevelled edges of a blade intersect. The bevels define the cutting angle; the point of intersection creates the cutting edge. So the goal of sharpening is to regrind the bevelled surfaces precisely in order to recreate a perfect intersection.





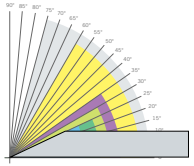
To achieve extreme sharpness, the two surfaces that meet at the cutting edge must be polished as finely as possible.

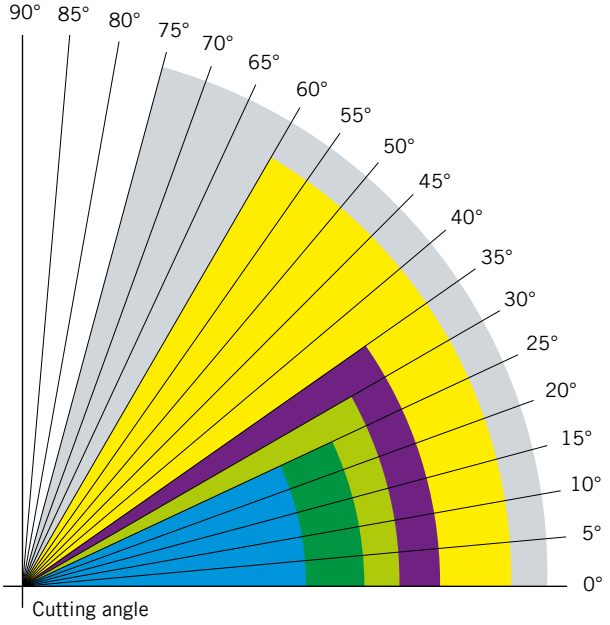
The attainable level of sharpness depends on four factors:
- The **grit of the sharpening stone** (the finer the grit, the sharper the result)
- The **structure and hardness of the blade** (the finer and harder the structure, the sharper the blade can become)
- The **geometry of the cutting edge** (the smaller the cutting angle, the lower the cutting resistance)
- Last but not least, the **proficiency of the sharpener**

Angle chart

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.

Scrapers	up to 75°
Scissors	55° – 60°
Chisels and plane blades	23° – 35°
Splitting and felling axes	25° – 30°
Forest axes	20° – 25°
Knives and carving tools	15° – 25°





Sharpening stones

Sharpening by hand on bench stones has the following advantages:

- The steel's hardness is not affected since no heat is generated
- The cutting edge can be shaped exactly (no rounding like with felt and rubber wheels)
- The sharpening process is not dangerous (no flying sparks)
- Wide array of fine grits available
- The necessary equipment is affordable

Waterstones

Water serves as a rinsing medium which prevents the stone's pores from clogging with abrasion debris and preserves its abrasion qualities. If the stone is not enough rinsed with water, the abrasion debris makes a paste that decreases the stone's abrasion qualities. Professional sharpeners make use of this principle to achieve a finer abrasion in order to compensate greater steps in grit. The stones must be soaked in water for 10-15 minutes before use. Ceramic stones like Shapton stones hardly absorb water. With them, 1 minute of soaking is enough.

Synthetic abrasives

Silicon carbide has especially sharp-edged crystals, but is very brittle. It is mainly used for coarse grits, its structure makes it highly effective.

Green silicon carbide is the toughest and purest form of silicon carbide.

Corundum (aluminium oxide) is the second hardest mineral after diamond, its solid form makes it an excellent abrasive. It provides a finer abrasive action than silicon carbide.

White aluminium oxide is one of the purest abrasives and is also known as »white corundum«.

Why does the grinding performance sometimes feel different between stones of individual manufacturers, sharpening stone series or even within the same sharpening stone series?

Shapton explains this complex interplay of five components in the form of a diagram (see page 7).

1. Ease of use
Every sharpener knows the difference between a stone that removes material well (or at least feels like it does) and a stone that feels like there is no material removal or like it just scratches over the stone. Shapton has tried to measure this »sensation« in in-house tests in combination with microscope measurements.

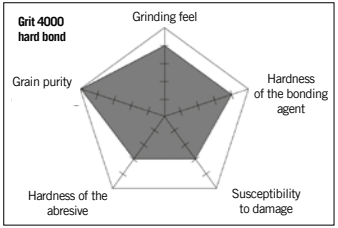
2. Hardness of the bonding material
This could also be described as wear resistance. The value indicates how long an abrasive grain is held before it is »released« from the bond. Hard steels require a softer bond, softer steels a harder bond.

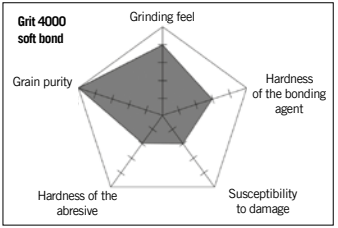
3. Sensitivity
This component indicates how »sensitive« a sharpening stone is.
A »sensitive« stone, for example, cannot be stored permanently in water or it may break sooner than a robust stone.

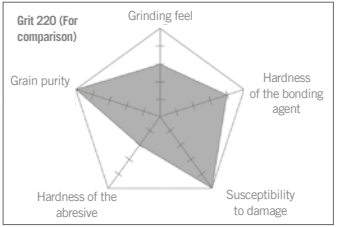
4. Hardness of the abrasive material
The harder the grinding material, the deeper the marks on the tool to be ground and the better the grinding force.

5. Purity of the grain
The more even (pure) the grain, the better the grinding result.
Differently sized grains always weaken the grinding behaviour.

The two diagrams show the difference between a 4000 grit stone with a harder bond and a 4000 grit stone with a softer bond. For comparison, the diagram of a 220 stone with a hard bond is also shown. All components influence each other.







According to which criteria should I choose an appropriate sharpening stone?

Sharpening stones are always designed for certain types of steel and often also for select applications (e.g. razors). This does not mean that a sharpening stone developed for low alloy steels, for example, cannot be used for HSS. If you are looking for optimal performance, however, you cannot ignore this recommendation. Particularly when there are considerable differences between the steel type indicated and the one to sharpen, even amateurs will notice the difference immediately (the blade clings to the stone, the stone clogs immediately...)

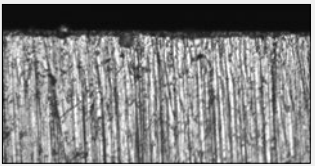
Simply bring your tools with you to our shops or workshops and test our different stone series before buying.

Is the manufacturer‘s indication only serving marketing purposes, or does it have a real effect on both the ease of use and the sharpening result? Before we add a new series of sharpening stones to our range, we check it by microscope photographs.

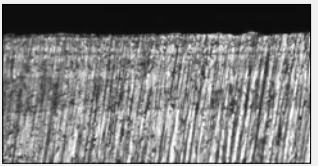
MICROSCOPE IMAGES SHOW THE DIFFERENCES BETWEEN SHARPENING STONE SERIES DEPENDING ON THE STEEL OF THE TOOL TO BE SHARPENED

The microscope images show the grinding pattern and shape of the cutting edge produced by the 6000 grit stone. The blades have all been prepared in the same way (polished back, pre-ground with grit 220, 500, 1000, 3000, 4000). Cutting edges without major indentations are »sharper« because the overall length of blade being used for cutting is greater.

Kunsuto #6000



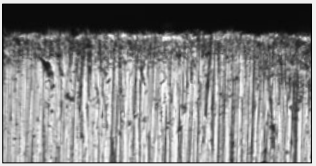
White Paper Steel



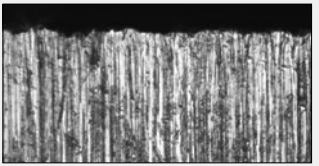
Chrome-vanadium steel

Tests have shown that Kunsuto sharpening stones produce equally good results on high-alloy as well as low-alloy carbon steels.

Other sharpening stones #6000
(recommended for low-alloy carbon steel)



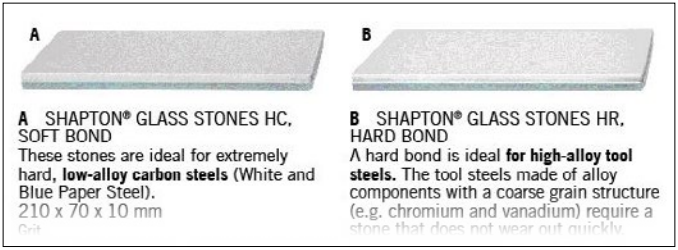
White Paper Steel



Chrome-vanadium steel

The stones shown here for comparison, designed for use on low-alloy carbon steels, do not achieve optimal results on chrome-vanadium steel.

Which sharpening stone for which steel?
We provide this information in the product texts (usually in bold print) of all our sharpening stones. In the »Sharpening Devices« section of our Tool Catalogue you will also find a 3-page overview table.



What steel is my tool made of?
Stone selection deals with groups of materials, not individual steels. The rough distinction (which we also use in our stone descriptions) is:

Low-alloy carbon steels:
- Japanese chisels and plane blades
- Knives with core layers of non-rustproof steels, e.g. White or Blue Paper Steel
- Axes and Hatchets
- DICTUM® carving tools

Waterstones for low-alloy carbon steels:
- KING®/SUN TIGER®
- KING® »HYPER«
- PROFESSIONAL STONE BY NANIWA®
- SUPER STONE BY NANIWA®
- SUEHIRO® STANDARD
- SHAPTON® GLASS STONES HC, SOFT BOND

High-alloy tool steels:
- Almost all Western chisels and plane blades
- Knives with core layers of non-rustproof steels, e.g. VG-10 steel for Japanese knives, and most Western kitchen knives
- Pfeil® carving tools

Waterstones for high-alloy tool steels:
- SHAPTON® GLASS STONES HR, HARD BOND
- NANO HONE®
- MISSARKA

PM steels / HSS:
- Woodturning tools
- Certain knife series, chisels and plane blades (Dictum HSS Cryo / Veritas PM-V11)

The indication »PM« merely refers to the method of production (powder metallurgically manufactured steels). Generally, these are high-alloy steels with a high degree of hardness.

Waterstones for HSS or PM steels:
- PRIDE ABRASIVE©
- NANIWA® DIAMOND STONE

Waterstones for low- and high-alloy steels
- KUNSUTO®
- CERAX® BY SUEHIRO®
- DEBADO S BY SUEHIRO®
- TRADITIONAL STONE BY NANIWA®

If you have any questions we will be happy to advise you on **+49 (0)9931 4058-911**

Diamond-coated bench stones

As an alternative to Japanese waterstones, one could also use diamond-coated sharpening devices. [1]

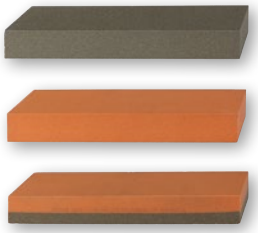
The diamonds are applied to an extremely flat, warping resistant and unbreakable base plate. In this way, diamond stones are extremely wear-resistant and stay flat. No more hollows, no more trueing. The high quality monocrystalline diamonds guarantee remarkable sharpening speed even when working the hardest tool steels like HM-, HSS- and PM steels. We recommend moistening diamond stones with water and grinding with little pressure.

Made with high-quality monocrystalline diamonds, DMT stones (USA) are especially wear-resistant and renowned for their perfectly flat surfaces. The DMT Dia Sharp bench stone (No. 705358) [1] is recommended as a supplement to Japanese stones. It is also excellent for flattening the backs of plane or chisel blades or trueing waterstones.

Oilstones

In combination with oil, some stones make a lubricious slurry which enhances their effectiveness. Porous stones e.g. the Norton India (No. 711053-711053) are normally pre-saturated with oil and only need some drops of honing oil (No. 705263) on their surface before sharpening. Stones with closed pores absorb only small amounts of oil. A few drops of honing oil on their surface are enough. Unlike water, oil does not rinse the stone, it therefore clogs more quickly. It can be cleaned by wiping it with petroleum.

NORTON® INDIA

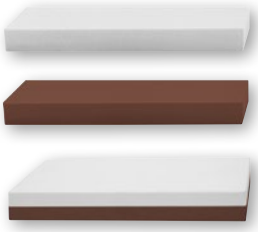


Norton India, approx. 220 grit
No. 711051

Norton India, approx. 1000 grit
No. 711052

Norton India Combination Stone,
approx. 220/1000 grit,
No. 711053

KUNSUTO® OILSTONES



Kunsuto, approx. 2000 grit
No. 711195

Kunsuto, approx. 4000 grit
No. 711196

Kunsuto Combination Stone,
approx. 2000/4000 grit
No. 711197

ARKANSAS (NATURAL STONES)

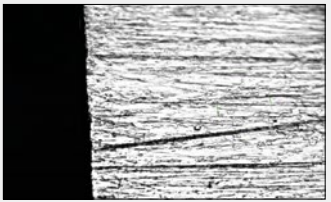
Soft, approx 400-600 grit
No. 711570

Hard, approx. 800-1000 grit
No. 711571

Hard, approx. 2000-3000 grit
No. 711572

Surgical, approx. 4000-6000 grit
No. 711573

Translucent, approx. 8000-
10 000 grit, No. 711574



Microscope image of the cutting edge after grinding with the Norton India, 1000 grit (No. 711052), a Kunsuto oilstone, 2000 and 4000 grit (No. 711195 and 711196) and finally an Arkansas oilstone (No. 711574).

Basic equipment

As a basic equipment, a combination stone with 1000 and 6000 grit is sufficient (No. 711006) 1. For more demanding tasks, stones with 220 grit (No. 711010) 2, 2000 grit (No. 710991) 3 and 4000 grit (No. 711021) 4 as well as a very fine 8000 grit polishing stone (No. 711004) 5 are recommended. A cleaning stone »Nagura« (No. 711302) 6 can be used to produce a polishing paste.

1 

4 

2 

5 

3 

6 

During use, waterstones must remain rigid and not-slip. To ensure stability, use a sharpening stone holder with non-slip rubber jaws (No. 711101) 7, a rubber underlay, or a non-skid mat (No. 705364) 8.

7 

8 

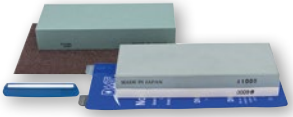
Sharpening sets

To provide you with the best basic equipment for the individual tools and steels, we have put together various sharpening sets for you:

Basic sharpening set for all tools
No. 711107

Sharpening set for straight razors
No. 711110

Sharpening set for knives of low-alloy carbon steel (e.g. Blue and White Paper Steel)
No. 711111



Sharpening set for knives of high-alloy steels (e.g. VG-10, PM steels, 440 C, SKD 11)
No. 711240

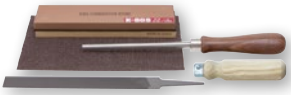
Sharpening set for chisels and plane blades of high-alloy tool steel (Western chisels and planes)
No. 711239

Sharpening set for chisels and plane blades of low-alloy tool steel (Japanese chisels and planes)
No. 711104

Sharpening set for axes and drawknives
No. 711105

Sharpening set for axes and adzes
No. 711106

Sharpening set for sculptor's gouges
No. 711114



Sharpening set for scrapers
No. 711108

Sharpening set for pruning shears
and scissors, No. 711109

Combination stone with stone holder
No. 711050

Magna-Tec® Delta-S sharpening
system
No. 708560

Edge Pro sharpening system,
DICTUM® Kit
No. 708558

Trueing of waterstones

When sharpening tools with straight cutting edges, it is essential that the sharpening stone is completely flat. Check that the stone is plane by placing the edge of a ruler (No. 707290) on top of it. If light shines through at any point, the stone is uneven and must be ground down using one of several methods.

Diamond lapping plates have either a full-surface diamond coating (No. 705429) or an interrupted diamond coating (No. 711220, No. 711221, No. 711222 and No. 711223). With lapping plates with an interrupted diamond coating, it is not the plate's entire surface that is brought to bear, but only the virtually indestructible and sharp edges of each of the raised parts of the pattern distributed over the plate's surface. This design has the following advantages:

- Makes shaping a lot quicker thanks to the abrasive slurry being able to quickly drain away
- Requires less force thanks to the smaller contact area
- Significantly longer lapping plate service life
- Extremely even surface and hence the ability to create even surfaces on the stone being resurfaced

DIAMOND TRUEING BLOCK WITH FULL-SURFACE DIAMOND COATING

DMT® Dia-Flat Lapping Plate, No. 705429 or No. 706419

DIAMOND TRUEING BLOCK WITH INTERRUPTED DIAMOND COATING

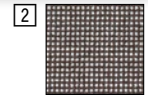
Nano Hone® Lapping Plate Ridge Tech™ NL-4, No. 711220

Nano Hone® Lapping Plate Ridge Tech™ NL-5, No. 711221

In contrast to full-surface diamond coated trueing blocks or conventional trueing blocks on which the stone is soaked and rubbed in circular movements on the trueing block, the interrupted diamond coated Nano Hone trueing blocks are moved over the watered stone. Due to its high weight and a flatness tolerance of < 0.05 mm, the dressing block lies firmly on the stone, trueing therefore requires very little force.

Bright areas indicate the flat parts of the stone, while the darker areas have had no contact with the dressing block. Continue working until the surface is continuously light. Rinse the paste continuously.

As an alternative, you can use a truing set (No. 711115) 1 with 100 grit water sandpaper placed on a flat granite stone plate. A specialized truing grille (No. 711297) 2 functions similarly.



Storage of waterstones

When storing synthetic stones, you must differentiate between those that need to be stored dry and those that can be permanently stored in water, preferably in a sealable plastic box. You will find information on the correct storage in the enclosed instruction manual.

A dash of vinegar or disinfectant should be added to the water to prevent algae growth. Household cleansers, however, should not be used since they attack the stone's bonding. In order to prevent cracking, sharpening stones should never be exposed to frost! When using highly calcareous water, do not let the stones dry out too often; otherwise, lime builds up and reduces the stones' efficiency. Sharpening stones should be handled carefully. Keep them flat, clean and free of oil since oil prevents the stones from absorbing water, limiting their abrasive effect.

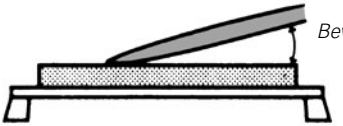
Knives

Sharpening with bench stones

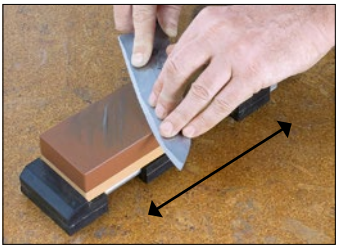
The appropriate method for sharpening a knife depends on the quality of the steel. Many common kitchen knives made of stainless steel have relatively soft blades (52-56 HRC). Routine use causes the cutting edge to bend, making the blade dull. Sharpness can be restored by reforming the cutting edge with a burnisher. However, the durability of the edge still will be weak. For good edge retention, hard steel - like that used in Japanese kitchen knives - must be used. And since abrasion is required to sharpen hard steel, sharpening stones are the ideal sharpening method. For sharpening knives, a waterstone with a grit size of about 1000 (e.g. No. 711008) should be used first. Soak the stone in water for a few minutes before placing it on a slip-proof surface (e.g. No. 705364).

HANDLING THE KNIFE

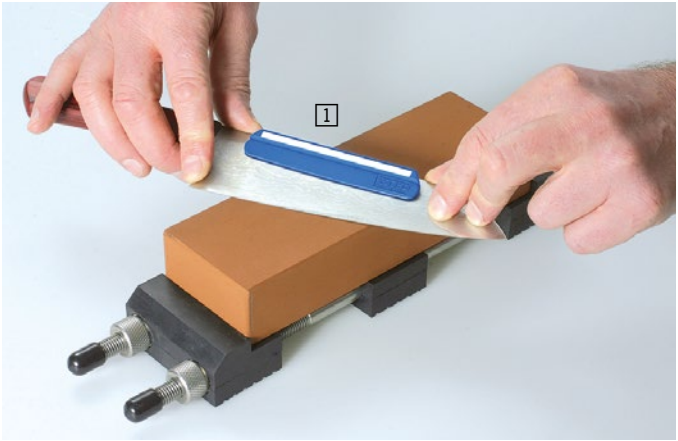
Position the knife blade diagonally on top of the stone at an angle as close to the recommended angle as possible.



While maintaining the desired angle, use straight movements to grind the blade lengthwise on the stone, and be sure to use the stone‘s entire surface. Use your right hand to hold the knife‘s handle and rest your right index finger on the blade. The fingertips of your left hand should be spread close to the cutting edge and used to exert pressure.



When guiding the knife, keep your fingertips away from the stone‘s surface to avoid scraping the skin and causing a painful injury.



Vide *For a video on sharpening with bench stones see* ***www.perfect-sharpening.com***

Pressure should be exerted on the cutting edge when grinding in both directions and extra care should be taken to **keep the recommended angle as constant as possible.** Rocking and tilting movements will round the bevel, creating uneven blade geometry. If you have problems with free-hand sharpening, simply put the Togeru knife sharpening device (No. 705377) 1 onto the back of your blade. The handling of the knife is shown in the photo.

DVD »Das Schärfen japanischer Messer«
A Japanese master blacksmith with a legendary reputation in Japan shows you how to professionally sharpen kitchen knives on water stones. He introduces different types of water stone, shows the correct sharpening motions for sharpening single- and double-bevelled knives and provides information on knife care. Knives sharpened in this way not only make your work easier but are also a pleasure to use and allow you to treat your food with respect.
DVD, 15 minutes. **In German.** No. 713806

HONING

The term honing refers to the process used to remove the burr created during sharpening. Before beginning, rinse the blade to remove the particle remains of the prior stone. For honing, use a stone with a minimum grit size of 4000. Place the blade lengthwise onto the stone and **grind it in the direction of the cutting edge.** At this stage, the blade can be held at a slightly steeper angle (1°-2°) than that used for grinding to ensure the burr is removed completely. As a rule, a few light strokes are required on each bevelled edge in alteration before the burr can no longer be felt with the fingertips.

With increasing delicacy, reduce the amount of pressure placed on the blade - too much pressure will distort the finely ground cutting edge. When finished, rinse the knife thoroughly in warm water. Carbon steel blades should be treated with a little oil to prevent rust.

CHECK

If you rinse with water regularly, the stone has its highest efficiency. If you rinse less, some slurry will build up. This polishing paste may be welcome to smooth out the grit steps between the different stones. To see how the blade and the stone are interacting, look at the sharpening tracks on the wet surface of the stone. A balanced and rhythmic sound is another good indicator that the blade is being sharpened evenly.

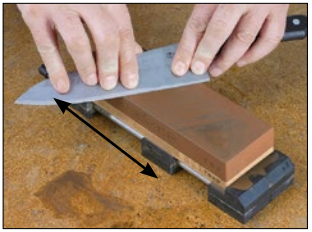
Sharpening on coarse or medium-grit stones creates a visible burr, which is later removed during honing. You can feel it with your fingertip if you run your finger over the bevel away from the cutting edge, applying slight pressure.

SINGLE-BEVEL KNIVES

Japanese knives with a bevel on only one side of the blade are slightly hollow-ground on the back side. For this reason, only the cutting edge and the back of the blade should touch the sharpening stone when laid flat. Only the bevelled side should be sharpened, but both the bevelled and back sides should be honed. During honing, the entire surface of the blade can rest on the stone, whereas the surface of the sharpening stone must be **absolutely flat.**

DOUBLE-BEVEL KNIVES

Standard, double-bevel knives require sharpening on both sides. After the entire length of one side has been sharpened, turn the knife over and sharpen the opposite side - the handle is now held in the left hand. For blades that are simply dull from use, not damaged, about 20-30 strokes per side should suffice.



SHARPENING THE TIP

To sharpen the tip of a knife, raise the handle until only the front of the blade touches the stone. Using one or two fingers, press the tip down and grind it lengthwise on the stone using a straight sharpening motion.

Sharpening with knife sharpening systems
Abrasive-guided knife sharpening systems make it incredibly easy to create perfect knife edges.

BENEFITS OF THE ABRASIVE-GUIDED KNIFE SHARPENING SYSTEMS
Handling and use do not require any specific knowledge, even novices will achieve very good results. The fixed support of the knife and the guided grindstone enable a precise sharpening angle, which is crucial to producing razor-sharp blades. This method is particularly suited to Damascus knives and etched blades, as the abrasive guide and the local restriction of material abrasion prevent from scratching the flat of the blade. The angled grinding bench with smooth-running sharpening arm enables the user to work ergonomically, the hand-guided mechanism ensures a low operating risk. Synthetic waterstones ensure cold and gentle sharpening and therefore avoid heat generation on the cutting edges, the adjustable sharpening angle facilitates the reshaping of bevels. The system is transportable and does not require a mains connection.

A continuously adjustable sharpening angle and an adjustable tool stopper for different blade widths allow for precise, homogeneous sharpening angles.

The sharpening kits Edge Pro Sharpening System (No. 708550 1 or No. 708558) as well as the Magna-Tec Delta-S Sharpening System (No. 708560) 2 include sharpening stones of different grits, tool stoppers for different blade widths, a video guide (DVD), a cleaning set and a robust carrying case.

Please find an overview of our knife sharpening systems in our Tool Catalogue, Knife Catalogue or online in the category **»Abrasive-guided knife sharpening systems«**

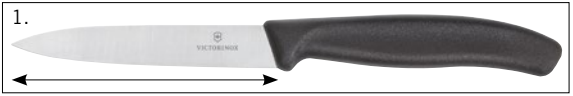
For catalogues and all knife sharpening systems see:

www.dictum.com

CONSISTENT BEVELS
Sharpening results are reproducible at any time by documenting stopper position and grinding angle.

Example: Magna-Tec Delta-S Sharpening System (No. 708560) and Victorinox Vegetable Knife

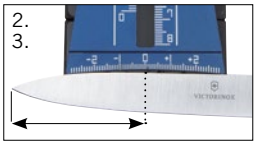
1.



Vide *For a video on knife sharpening systems see* ***www.perfect-sharpening.com***

1. Measure and document the blade length
2. Document the module in use
3. Insert the blade and transfer the scale centre (0) to the blade; document the distance from the marking point to the tip of the blade
4. Use the scale to document the position of the tool stopper and the side of the blade stopper currently in use (narrow or broad)
5. Document the sharpening angle identified on the digital display

2.
3.



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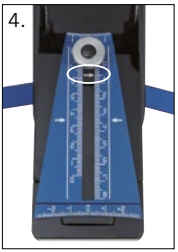


5.

Knife	Blade length	Module	Supporting point / Blade	Position of the tool stopper / Orientation	Sharpening angle
Victorinox Vegetable Knife	100 mm	1	50 mm	5 mm / broad	22.2°

Sharpening with the Tokico Knife Sharpener

The majority of commercial knife sharpeners are not suitable for Japanese high-quality knives. One exception is the Tokico® knife sharpener (No. 705373) 1. With this tool, all single- and double-bevel blades can be sharpened easily and quickly. Simply moisten the blade and pull it through the slits 3-10 times. The attainable degree of sharpness is limited by the relatively coarse grit 400 of the stone.

1

Damaged blades

Damaged cutting edges and broken tips are not reasons to discard much-loved knives. Finely ground, very hard Japanese knives in particular can suffer an occasional nick when handled roughly. Place the blade perpendicular to the stone and grind the entire length of the cutting edge down to the damaged spot. The bevel can now be ground onto each side of the blade in the desired angle using coarse-grit followed by fine-grit stones. Thereafter, follow the guidelines provided above.

Protect yourself from injury, especially when working with damaged knives or when using sharpening machines. We recommend »ProHands« cut resistant gloves (No. 707650) 2.

2

1

2

To achieve the required high level of abrasion, use a coarse stone (220 grit or 400 grit), a coarse diamond block or a water-cooled grinder, e.g. Tormek T-8 (No. 716034) 1 or Shinko (No. 716020) 2.

Maintenance and storage

Store the knife separately in a cutlery tray or knife block. **We advise against magnetic holders,** as these magnetise the blade and thus hamper sharpening (abrasive particles remain stuck on the blade during sharpening). **Never clean high-quality knives in the dishwasher,** even if they have »rustproof« blades! The atmosphere of high temperatures and salty water leads to intercrystalline corrosion and therefore destroys the blade. Even today, (not rustproof) carbon steel is still the blade material with the finest structure and highest possible sharpness. Maintain these knives by oiling them regularly with odourless, food-safe camellia oil (No. 705280) 3.

3

A black oxidised coating on the surface or light surface rust can be removed with the rust eraser (No. 711161) 4. With a little water, it actually erases the oxide coating. Chromium polish, e.g. Gundel-Putz Polish and Whetting Paste (No. 705262) 5 can also be used.

4

5

Rust (iron oxide) is simply an aesthetic flaw that does not harm living organisms. As a trace element, iron is actually essential.

Checking sharpening results

The softer the material to be cut, the sharper a blade must be to cut it. That is why the sharpness of Miming - the fabled sword of the Nibelungen from the Germanic saga »Wieland the Smith« - was tested on a felt hat floating in a stream. When it sliced the hat effortlessly, its sharpness was proven. A similar test was performed on a blade created by the legendary Japanese samurai-swordsmith Masamune. According to legend, his sword was placed in a creek where a maple leaf swam around it out of respect for the blade's sharpness. A ripe tomato is perfect for testing a blade's sharpness. The ability to slice one without exudation is one of the most veritable tests of a kitchen knife's sharpness.

Book Recommendations

»Messerschärfen wie die Profis«
Carsten Bothe: Knives need regular care and must be sharpened correctly. This book introduces suitable sharpening tools and explains the correct sharpening technique for each tool. It also explains the correct way to sharpen axes, scissors and tools. Numerous tips by the author make sharpening a pleasure. 112 pages, paperback, about 60 colour photographs, 158 x 213 mm, **in German**. No. 713167

Japanmesser schärfen
Everything you ever wanted to know about sharpening Japanese knives: Step by step and with numerous illustrations, expert Dr. Rudolf Dick explains an exact and practical sharpening technique. This book also helps you select the correct sharpening stones and details the special characteristics of Japanese knives. Important practical tips for care and correct application complete this comprehensive work. 125 pages, hardcover, colour photographs on every page, 165 x 235 mm, **in German**. No. 713920

Tools

For sharpening tools, the same types of stones used for knives are sufficient.

Video *For videos on sharpening the individual tools see* ***www.perfect-sharpening.com***

Chisels and plane blades

For chisels and plane blades to work effectively, their backs have to be absolutely flat. The back of new tools is often not 100 % even or still shows traces of grinding from the manufacturing process. To obtain a sharp cutting edge, the back must be smoothed. Depending on how deep the grinding traces or how even the back is, it may have to be roughened first. Western chisels and plane blades can be trued on a diamond block (e.g. No. 705358), in which case it is sufficient to true the first two-thirds of the back. After that, the back is ground further with finer grit stones and honed with the finest sharpening stone.

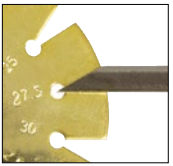
- Lay the back onto the sharpening stone at a 90° angle to the long side of the stone
- Choose a fixed point on the neck up to which you want to sharpen
- Move the blade back and forth on the stone, applying light pressure and guiding it with your fingers
- Shiny areas indicate the even parts of the back, while the darker areas have not yet had contact with the sharpening stone (pay particular attention to the front section near the cutting edge, approx. 3 mm, and the edges)
- Pre-sharpen on the 1000 grit stone and finish on the 6000 grit stone until all scratches are removed

Japanese blades can be trued on diamond blocks (No. 705382) or using a steel lapping plate (No. 713600) and silicon carbide powder (No. 713603 or No. 713604).

On the lapping plate the blade is worked with silicon carbide powder and water under high pressure. For easy pressure distribution a piece of wood will serve best. The powder grinds into a fine paste that has an additional polishing effect. The back is normally only trued once on brand-new tools using flat, trued hones. After that, the back is only honed on a fine sharpening stone.

SHARPENING THE BEVEL

Subsequently, the blade's bevel is sharpened at an angle between 23° and 40°, depending on the tool's purpose. For checking the bevel angle, we recommend using a bevel gauge for tool edges (No. 707261) [1] or a mini protractor (No. 717141) [2].

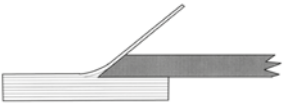


[2]

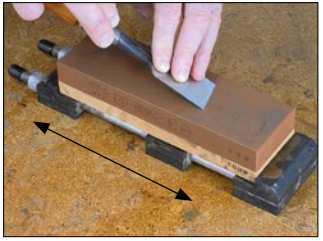
[1]

The smaller the bevel angle, the lower the cutting resistance and the more delicate the cutting edge. Determining the optimal bevel angle is a process that depends on the type of wood, the cutting method, and the quality of the tool's steel. Several trials may be required. The angle table at the beginning of these instructions serves as a guideline.

Low cutting resistance



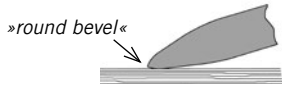
High cutting resistance



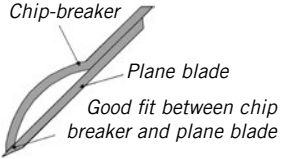
To a large degree, tools are sharpened in the same manner as knives. First, the bevel is ground using a 1000 grit stone. The bevel is placed on the stone diagonally and ground using straight movements while the angle is kept as constant as possible. Rocking and tilting movements should be avoided. In order to work efficiently and to wear the sharpening stone evenly, the entire surface of the stone should be used.

HONING

When finished, proceed to a 4000 or 8000 grit stone and hone both the bevel and the back of the blade. To improve the honing effect and give the blade a mirror polish, a Nagura stone can be rubbed onto the sharpening stone to create a fine-grain polishing paste. A rocking motion while sharpening will cause the blade to take on an **inaccurate rounded geometry.** Similar rounding of the bevel is caused by fast-moving felt polishing wheels, which we do not recommend.



To ensure that a plane functions well, it is not sufficient to sharpen the blade alone. The chip-breaker also needs to be flat in order to guarantee a secure fit with no play and to prevent clogging with wood shavings.

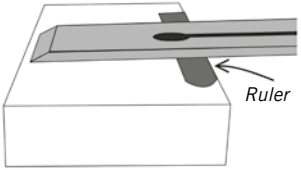


When sharpening thick (Japanese) blades that have a large contact surface area, maintaining a constant angle is easier than with thin blades. One way to check how evenly pressure is being applied is to look at the tracks on the sharpening stone. A honing guide is very useful for helping maintain an exact bevel angle (e.g. No. 707168).

PLANE BLADES – THE LIE-NIELSEN METHOD

As a manufacturer of premium metal planes, Lie-Nielsen Toolworks in close collaboration with David Charlesworth has created a sharpening system that allows you to achieve the sharpest cutting edges on plane blades quickly and easily.

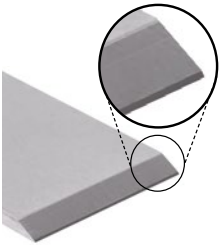
First, polish the back of the blade with the so-called ruler trick. This involves placing a thin steel ruler (No. 707270) along the long edge of a fine-grit honing stone, which allows you to polish the very tip of the back of the blade along the opposite long edge of the stone.



Additionally, you hone a micro-bevel onto the blade. This means that a smoothing plane with a 25° bevel, for example, gets a second bevel (e.g. bevel angle 30°) that is a few degrees less acute.

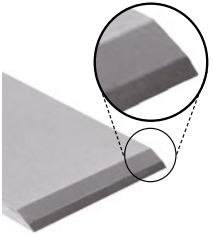
Using the honing jig (No. 711400) 1 and a home made template (see page 33) to set the angles, you first hone the primary bevel on a rough sharpening stone or diamond block.

1



Once you have adjusted the sharpening angle to the required final bevel angle (30°, 35°, 40°, 45°), you hone on a secondary bevel on a finer stone (e.g. 1000 grit). This requires only a few passes across the stone. The result is an ultra-thin secondary bevel that needs to be polished on a polishing stone e.g. 6000 grit.

Finally, polish the back with 10-20 passes using the ruler trick. To resharpen, you hone the secondary bevel and polish the back using the ruler trick.



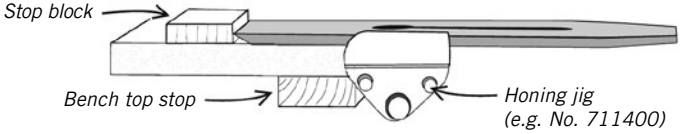
With time, the secondary bevel will become wider and wider, i.e. the surface to polish becomes larger. To speed this up, from time to time you should regrind the primary bevel on the coarsest stone you have to such an extent that the resharpening goes quickly. Alternatively you can use a honing guide and self-adhesive abrasive paper (e.g. No. 718489-718492) [1] stuck on a granite stone plate (No. 711294) [2].

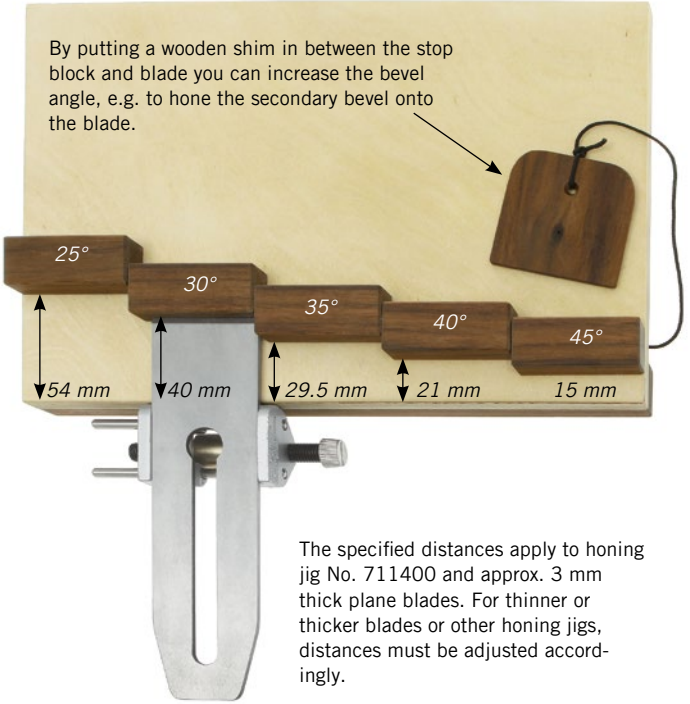
1

2

You can also sharpen chisels using the Lie-Nielsen method - but not with the ruler trick. The back of a chisel must remain absolutely flat, as it serves as a guiding surface in precision work.

TEMPLATE FOR SETTING BEVEL ANGLES





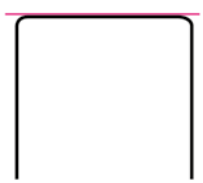
The specified distances apply to honing jig No. 711400 and approx. 3 mm thick plane blades. For thinner or thicker blades or other honing jigs, distances must be adjusted accordingly.

CAMBERED PLANE BLADES

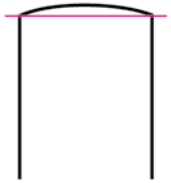
Most planing applications require precisely ground straight cutting edges. There are, however, situations where the sharp outer corners of the plane blade leave steps when planing wider surfaces. In order to avoid this you can grind a slight curvature to the cutting edge or round the corners of the plane blade bevel.

GRINDING A SLIGHT CURVATURE

As a rule of thumb, the corners must only be rounded slightly more than the shaving is thick - i.e. for a smoothing plane approx. 0.05 mm. When dealing with thicker shavings, e.g. with a scrub plane, the cutting edge is rounded over its complete length.



Smoothing plane



Scrub plane

Sharpening guides with barrel-shaped rollers (e.g. No. 703839) [1] allow for honing slight curves into plane blade edges whilst still maintaining an accurate and consistent bevel angle.

Straight roller for straight cutting edges

Barrel-shaped roller for cambered cutting edges

[1]

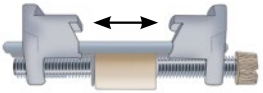
Vide *with Garrett Hack on cambered plane blades available online.*

www.perfect-sharpening.com

SHARPENING AIDS

Sharpening aids normally have two jaws and allow for reproducible, precisely straight sharpening of all blades with straight cutting edges. Also suited for short, irregular, conical and Japanese plane blades as well as slightly cambered or skewed blades.

There are two different kinds of sharpening aids:

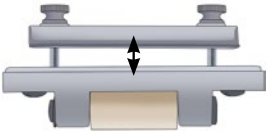


1

1. Sharpening aids with side clamp
(e.g. No. 711400 1 , No. 701211, No. 703844)

Properties:

- Only suitable for machine-produced chisels/planes that therefore possess 100 % parallel or angled edges (Western chisels)
- Broad edges cannot be clamped
- Good handling without cumbersome horizontal clamp screws
- Long pressing surfaces to achieve firm attachment



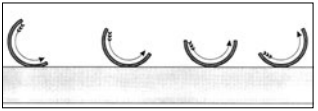
2

2. Sharpening aids with horizontal clamp
(e.g. No. 703666 2 , No. 707149)

Properties:

- Ideal for chisels/planes that are crafted by hand and therefore do not possess 100 % parallel or angled edges (Japanese chisels)
- Suitable for conical chisels
- Laborious to adjust, as they do not have an angle scale
- For angled bevels as well

Sculpting tools



CARVING GOUGES

The outside of a gouge is sharpened on conventional bench stones using a kind of rolling movement. This technique requires some practice but provides good results. Depending on the degree of wear (nicks), you will either need to pre-sharpen the gouge on a roughing stone or just hone it on the sharpening or honing stones.

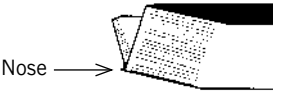
- Place the gouge in the middle of the bench stone with the bevel side down
- Roll the gouge lengthwise over the bench stone; to reduce the risk of cutting into the relatively soft stone, you sharpen at right angles to the cutting edge with a slight turning motion, while maintaining the existing bevel angle as precisely as possible

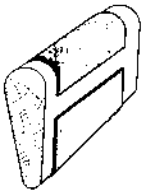
The insides of gouges are normally polished by the manufacturer, so it should be sufficient to hone them on an 8000 grit multiform stone. Hold the gouge with one hand and move the stone with the other from the inside outwards towards the cutting edge. Let the stone rest on the inside surface and make straight movements. Gouges and turning tools are often polished with leather on the inside and outside, either by hand on a so-called strop or on a machine, e.g. the Tormek. The Tormek provides (as an accessory) a profiled leather honing wheel (No. 705227) that makes polishing very quick and easy.

V-PARTING TOOLS

V-parting tools are laid down on the outside bevel and moved along the sharpening stone, similar to paring chisels. It is important that pressure is only applied to the bevel, so that the bevel angle does not change. You must also make sure that you remove the same amount of material on both sides to ensure consistent blade geometry. Use a multiform stone for honing the inside as shown above. If the edges of this stone are not sharp enough, you can work on the sharpening stone first.

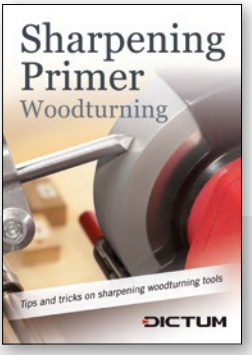
During sharpening of the V-tool, a small projection (nose) often forms in the middle of the cutting edge, because the blade is thicker in this angle than on the side walls. To prevent the unwanted projection, you should therefore round off the angle slightly before sharpening.





POLISHING

Finally, sculpting gouges are often polished on leather. By sticking leather onto a shaped piece of wood, you can create polishing blocks of any shape you want. Make sure you do not damage the leather with the sharp cutting edge when you polish it.



Our Sharpening Primer for sharpening techniques on tools and knives is available free of charge at **www.dictum.com**

Scraper blades

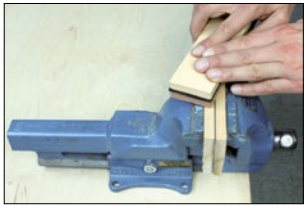
TRUEING

Scrapers are usually stamped, which means the edges must be worked with a file to obtain an evenly square edge, using one of the following methods: There are file holders with a 90° fence which allow even less-experienced users to control the file securely. You can make similar holders of wood yourself. But the simplest and cheapest method is clamping the scraper between two pieces of wood.

- Find two pieces of wood (90° edge at the top) or bits of board with which you can fix the scraper in a vice (alternatively, you can clamp the scraper between these two supports on a large beam with a clamp)
- Let the scraper project by about 1 mm
- Work on the projecting scraper with the file until it is almost flush with the supports
- Make longitudinal or slightly diagonal strokes until the file almost touches the supports
- The wooden supports now provide a large support area that makes it easy to guide the file or stone at a 90° angle

FINISHING THE BLADE

- Hold the combination stone in your hand and guide it along the support area you have just created (scraper-support combination in the vice)
- A few strokes with the 1000 grit side and then with the 6000 grit side should be enough



RAISING THE BURR

- Slide the scraper further up between the supports
- How far the scraper should project depends on the required angle (normally 10°-15°)
- To estimate the angle, place the burnisher not only onto the scraper edge but also onto the edge of the support; viewed in profile, you can estimate the angle
- Drawing the burnisher along the edge of the support creates a consistent angle
- Pull the burnisher over the entire edge in a single stroke, applying sufficient pressure (a slightly diagonal stroke enables accurate application, even at the end of the scraper)

CHECKING THE BURR

You can now feel the raised burr with your fingertips. Depending on how hard the scraper and the pressure applied, you may need to burnish the edge again. However, you should not burnish more than three times, as each process may ruin the even burr. The deeper the angle used in burnishing, the larger and more »aggressive« the burr. How large a burr is required depends on the intended use: Removing varnishes and coats requires a large burr. Surface finishing requires a small burr.

Video *For a video see*
www.perfect-sharpening.com

REBURNISHING A BURR

You can also right the burr with the burnisher and raise it anew, but this process does not usually produce consistent results. We therefore recommend completely removing the burr on worn scrapers with a file before raising a new one.

Scissors

Scissors should be disassembled prior to sharpening, and only the bevels of both the upper and lower blades should be sharpened. For this purpose, a fine-grit diamond block is ideal. While keeping an exact bevel angle and adding a bit of water, a few strokes are usually sufficient to restore sharpness. When using a Tormek sharpening machine, the special jig makes it easier to hold the correct angle. The burr created on the back of the blade should be removed with a finishing stone, as with single-bevel knives. Apply a little oil to the joints and reassemble. Finally, make sure the cutting action is smooth and not too tight.

Axes

When sharpening axes, it is important to keep the wedge angle suitable for the type of axe and usage. Cutting axes, used for example for felling trees or limbing, have a slim, double-bevel blade with a relatively acute cutting angle of 20°-25°, while splitting axes have strong and heavy blades with a relatively shallow cutting angle of 25°-30°. The wedge shape of the blade (curved or straight) is also important. Heavy-duty axes (e.g. felling axes, splitting axes) have a curved blade, while axes used for precision work, such as carpenter‘s or sculptor‘s axes, have a straight blade.

- Hold the axe securely with one hand (or clamp it) and move the folding sharpener over the blade from the front or from the back (less risk of injury)
- Make sure you keep the shape of the bevel (curved or straight)
- The radius of the blade is adjusted to the axe‘s purpose and should be kept
- Sharpen double-bevel axes from both sides
- Following this rough pre-sharpening, hone with a 1000/6000 combination stone (e.g. No. 711005) [1]

[1]

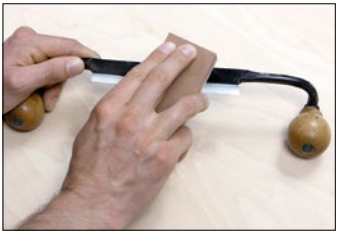
For outdoor tools like axes, sheath knives or pruning shears, compact, retractable, multipurpose diamond sharpeners are particularly practical (e.g. the DMT® Diafold® fine/coarse, No. 705391 [2]).

[2]

Drawknives (straight blade)

HONING THE BACK

- Hold the drawknife securely in your hand or fix it with a clamp
- Pre-sharpen the back with the DMT folding sharpener
- Shiny areas indicate the even parts of the stone, while the darker areas have not yet had contact with the sharpening stone or folding sharpener (the front part of the blade, approx. 3 mm, is important here)
- Move the combination stone (e.g. No. 711007) [1] over the entire surface, first with the 1000 grit side and then with the 6000 grit side, until all scratches are removed



If you often sharpen the drawknife, you do not normally need to hone the back, or only with the 6000 grit stone.

SHARPENING THE BEVEL

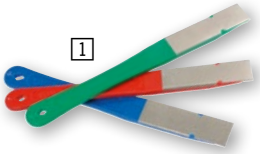
- Hold the drawknife securely in your hand or fix it with a clamp
- Move the DMT folding sharpener over the bevel from the front or from the back (less risk of injury)
- Moving the folding sharpener or stone slightly diagonally increases the contact area (no tilting)
- Move the combination stone over the entire surface, first with the 1000 grit side and then with the 6000 grit side, until all scratches are removed
- Finally, you can hone off the burr that has formed on the back while you were sharpening the bevel

[1]

Pruning and hedge shears

If possible, pruning and hedge shears should be disassembled before sharpening. Only the bevels (facets) are worked on both blades (upper and lower). Use the coarse (blue) DMT mini-hone for rough corrections or to remove nicks from the blade. Use the fine (red) mini-hone for finishing.

DMT® Dia Sharp® Mini Hone® Set (No. 706282) 1 .



ASSEMBLY / DISASSEMBLY

- Make sure you use appropriate wrench sizes to avoid damaging the screws
- When assembling the tool, you also adjust the blades; do not overtighten the screw, and check that the tool works smoothly and easily

SHARPENING PROCESS

- Hold the shears securely on a stable surface with one hand
- Move the hone over the cutting edge from the front, keeping the bevel angle

REMOVING THE BURR

- To remove the burr, carefully guide the fine hone along the back of the blade

MAINTENANCE

Pruning shears can get quite dirty because they tend to be used outside and get contaminated with plant juices.
To ensure that the shears operate smoothly and to remove the dirt, use Ballistol spray (No. 705445) 2 . Spray some oil into the joint and onto the blade and polish the blade with a dry cloth.

2

Straight razors

SHARPENING

Use 800-8000 grit sharpening stones for sharpening, with the 800 grit stone for the actual sharpening process. In the following steps, you only remove the scratches that were created during sharpening. To make sure you do not damage the back of the razor, we recommend that you tape it up.

Video *For a video see*

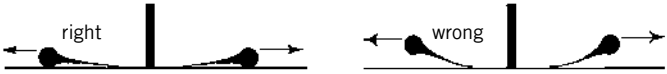
www.perfect-sharpening.com

- Lay the blade down at a 90° angle to the long side of the stone and guide it carefully with two fingers
- Pull the razor over the stone, leading with the back of the razor, and when you get to the end of the stone turn the razor over its back; your fingers only guide the razor without applying any pressure
- We recommend 15-20 strokes per side
- Repeat this process until you obtain an even edge without any nicks
- Repeat the sharpening process on all other stones, each time removing the traces of the previous stone

STROPPING THE RAZOR

- Hang the strop on a fixed point (hook, door knob) and tighten it with one hand
- Open the razor wide and place the blade absolutely flat onto the strop; always guide the blade at a 90° angle to the strop, with the fingers clasping the tang (the thin section between the blade and the handle)
- With each movement, keep the razor flat on the strop; lifting the back even slightly would damage the leather; work with a flowing, precise movement but not fast; above all, do not apply any pressure; draw the razor in the direction of the back of the blade

Caution: If you guide the razor with the blade at the front, you will cut the strop!



- Just before you reach the end of the strop, turn the razor over; do not lift the razor off the strop but roll it over its back; this keeps the razor in contact with the strop

- Repeat the same movement, drawing the razor in the opposite direction with the back of the blade facing towards you; when you reach the end of the strop, turn the razor over its back as described before

USING THE THIERS ISSARD SHARPENING PASTE

This paste (No. 709019) [1] is normally used for razors which are already in regular use to delay the basic sharpening or to make the blade even sharper for the daily shave. Before shaving, we recommend polishing the razor on the cotton side of the hanging strop with the aluminium oxide-based polishing paste, followed by un-pasted stropping on the leather side. Rub a small amount of paste evenly onto the cotton side of your hanging strop. Then work the paste thoroughly into the cotton surface of the strop, using the heel of the hand. The cotton should absorb the paste so that there is minimal coating on the surface. Wipe any excess paste off the surface with a rag or paper towel. As with all sharpening pastes, a strop surface coated with a particular grit size or abrasive should be dedicated to that grit size or abrasive alone. You can reuse this strop surface later for a larger-sized grit, but never for a smaller-sized grit. The motion used on the pasted surface is identical to that used on the unpasted leather side.

[1]

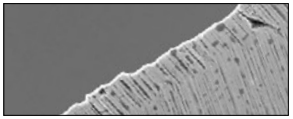
Polishing of cutting surfaces

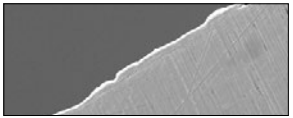
WHAT ARE THE BENEFITS OF POLISHING CUTTING EDGES

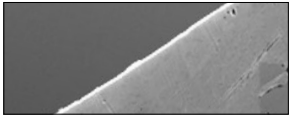
Prevention of rust:
In principle, the smoother a metal surface is, the less susceptible it is to rust. Polishing considerably reduces scratches on cutting edges. It is therefore quite useful, especially with blades made of classic, non-rustproof carbon steel (i.e. many Japanese kitchen and outdoor knives).

Increasing the mechanical resilience:
The micro-relief structure on the cutting edge is reduced by polishing. The cutting edge is more compact and less prone to breaking out. However, this also depends on the tool type and the material to be cut. For kitchen knives and woodworking tools, polishing increases the mechanical strength. For sailing knives (e.g. for cutting ropes) an unpolished blade is more stable. When cutting ropes or cables, a polished blade slips off more easily, and the cutting process therefore requires more pressure.

Improving the sharpness:
If more points meet at the cutting edge, the blade is sharper. However, if the polishing time is too long or the polishing agents are too soft, the cutting edge will be rounded off.







1000x magnification of a knife blade with a cutting layer of VG-10 steel:

1000/6000 grit and polished on leather without paste.

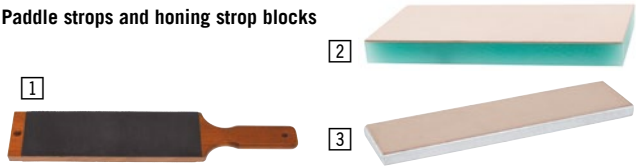
1000/6000 grit and polished with Jende Nanocloth Acrylic Strop Block and Jende Poly Diamond Emulsion, 4 Micron.

1000/6000 grit and polished with Jende Nanocloth Acrylic Strop Block and Jende Poly Diamond Emulsion, 4 and 0.5 Micron.

REMOVING THE BURR AFTER SHARPENING

Another important application for polishing is removing the burr after sharpening. This is not absolutely necessary for woodworking tools, as the burr usually falls off by itself during work or can be removed by the user on the wood. With knives, the burr formed by honing on hard waterstones can be difficult to remove simply by using the blade. Such burrs can only be removed with a softer material.
However, polishing for a long period of time on soft material (leather) or with a lot of pressure would round off the cutting edge. Note: Less is more

Paddle strops and honing strop blocks



For polishing knives or tool edges, you need a paddle strop or a honing strop block. Basically, these are wooden or warp-free plastic bases covered with leather. You can easily make one yourself or purchase it ready to use. We recommend e.g. the Strop for Small Cutting Tools (No. 708059), the Two-sided Paddle Strop (No. 709162) 1 or the Jende Leather Honing Strop Block, Cowhide (No. 729595) 2. If you work with knife sharpening systems, we recommend the KME Leather Strop (No. 720434) 3 or the Magna-Tec Delta-S Strop (No. 708586).

Smooth or rough side of the leather?
Opinions and experience differ in this matter. However, two important properties of the leather need to be taken into account:

1. the hardness of the leather surface
2. the ability of the leather surface to absorb polishing paste

The smooth leather side is the harder one. This side allows a more precise polishing result without rounding off the bevel. It cannot absorb much paste and is therefore suitable for cutting edge polishing with a very fine and hard polishing paste, e.g. the Jende Poly Diamond Emulsions (No. 729581-729587) [1] or the Magna-Tec Delta-S Polishing Paste, Zirconium Oxide (No. 708583) [2].

Grit
0,025 Micron, orange
No. 729587
0,10 Micron, yellow
No. 729586
0,25 Micron, green
No. 729585
0,5 Micron, red
No. 729584
1 Micron, blue
No. 729583
2 Micron, lila
No. 729582
4 Micron, pink
No. 729581

[1]


[2]

The rough leather side is the softer one. It removes the burr better than the smooth leather side and can absorb a lot of paste. Fine polishing pastes, however, get lost in the fibres. Ideal for this leather side is e.g. the Gundel-Putz Polish and Whetting Paste (No. 705262) [3].

[3]


Since leather is a natural product and therefore does not have the same hardness in all areas, which thus absorb different amounts of paste, there are also special, synthetically produced backing layers.

This is the case, for example, with the Jende Nanocloth Acrylic Strop Blocks (No. 729588-729594) [1].

[1]

A similar principle exists for wet sharpening machines. You can choose between the Tormek Leather Wheel LA-145 (No. 705197 [2]; use with polishing paste No. 705262 or No. 705213) or the Tormek Composite Honing Wheel CW-220 (No. 716194 [3]; also use with diamond polishing pastes No. 729581-729587).

[2]

[3]

For a blog post »Five methods of sharpening knives« see the DICTUM Tool knowledge Blog - www.dictum.com/blog

Maintenance products and accessories

After sharpening, each blade needs some special care. To prevent corrosion, apply an acid-free rust-prevention oil, like camellia oil (No. 705280) 1 or Ballistol (No. 705270) 2. For removing dirt or grime, we recommend the polish and whetting paste Gundel-Putz (No. 705262) 3 for cleaning resinified tool blades we recommend Ballistol Resin Solvent (No. 708538) 4.

1

2

3

4

A thin application of oil does more than prevent rust. It also improves the running action of many tools, like chisels, scissors or the soles of bench planes.

To combat slight rusting you can use a rust eraser (No. 711160-711163) 5, for tenacious rust take rust remover (No. 705487) 6. A waterproof and non-slip rubber mat (No. 705198) 7 is ideal as a work pad for sharpening with waterstones. The raised rim will retain any water spillage. The relatively soft material also protects freshly sharpened tools placed on the mat.
A water-filled spray bottle (No. 800495) 8 serves to moisten the stones and to rinse off abrasion debris.

5

6

7

8

Workshop recommendations

We recommend that you attend one of our sharpening courses. For more information, visit **www.dictum.com/workshops**

Workshop Scheduler available for free

Under the guidance of experienced master craftsmen, our courses provide the most important basics for you to create perfect blades. The same applies to sharpening as to all crafts techniques: »**Practice** makes perfect!«

WORKSHOP - Wetshaving with a Straight Razor

Content: Practice in handling the straight razor, the perfect shave with the blade, sharpening of the straight razor with Japanese waterstones, stropping it on the leather, caring for your straight razor, and background information about wetshaving.

► *Participants must bring a straight razor (can also be purchased before the course begins).*

WORKSHOP - Sharpening of Cutting Tools

For perfect results:

Content: Perfect and gentle sharpening of knives, chisels, plane blades, carving blades using and so on. You will practice the sharpening by hand on waterstones and with abrasive-guided knife sharpening systems.

► *Please bring suitable tools!*

WORKSHOP - Sharpening High-Class Knives

We recommend sharpening high quality cutting steels by hand with waterstones, as this method has several advantages: It results in ultimate sharpness, it is gentle to the steel, you can do it anywhere, quickly, and at a low cost.

Content: You will learn how to perfectly sharpen your knives on water stones while preserving the blade.
The course will also feature an introduction to specially developed knife sharpening systems such as the Sorby ProEdge or the Magna-Tec Delta-S, and you will be given the opportunity to test them yourself. You will acquire background knowledge on steel and sharpness. Demanding exercises under professional guidance will help you achieve perfect results.

► *Please bring your own knives along!*

WORKSHOP - Sharpening Carving and Sculpting Tools

Sharp tools are essential for successful carving. Carving and sculpting gouges in particular often have a complex blade geometry, for which only a few sharpening jigs are suitable. This makes sharpening very tricky and requires skill and know-how from the sharpener.

Content:
In this course you will learn step by step the different techniques and all important aspects of sharpening carving and sculpting tools on both waterstones and machines.

► *Please bring suitable tools!*

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General sharpening service

Our sharpening experts - who are trained in Japan - are happy to sharpen your blades at discount prices.

Knives (full flat grind of hunting and carving knives only on request)	**€7.00**
Axes, plane blades, woodturning tools, carving and sculpting tools, scissors	**€9.00**
Chisels (only bevel and honing the back)	**€6.00**
Chisels (bevel and back) *Inclusive additional **trueing** and **polishing** of the back**	**€13.00**
Plane blades (bevel and »Ruler trick«** on the back of the blade)	**€6.00**
Plane blades (bevel and back) *Inclusive additional **trueing** and **polishing** of the back**	**€13.00**
Garden and hedge shears	**€12.00**
Hair cutting scissors (only products from our range) and razors	**€19.00**

For extremely time-consuming sharpening processes that require additional effort, we reserve the right add a surcharge of € 7.00. In this case, our sharpening expert will get in touch with you before starting the work.

If products are sharpened prior to dispatch on the customer's instructions (special order), these are excluded from the right of return and exchange.

** When sharpening Japanese blades, the hollow grinding may be reduced depending on the original flatness of the back. Plus shipping charges (prices include VAT).*

***** »Ruler trick« - The Lie-Nielsen Method***

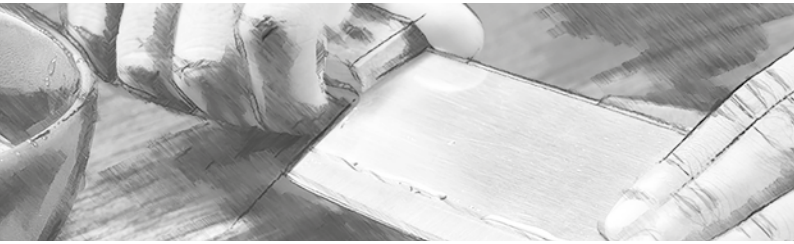
A thin steel ruler is placed along the long edge of a fine-grit honing stone and the very tip of the back of the blade polished along the opposite long edge of the stone. See expert knowledge »Sharpening Plane Blades« at **www.dictum.com**

Sharpening advice: +49 (0)9931 4058-971

If you wish to use our Sharpening Service, please send the blades to be sharpened along with the properly completed Sharpening Order Form (available at www.dictum.com/schaerfauftrag) to DICTUM GmbH • Sharpening Service • Gottlieb-Daimler-Str. 3 • 94447 Plattling • Germany. We will return your sharpened cutting tool within a few days. You only have to pay the shipping costs.

Everything abo ut SHARPENING

Techniques, tools and knowledge



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

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Tutorials

Tips

www.perfect-sharpening.com

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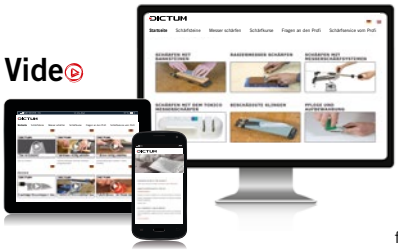

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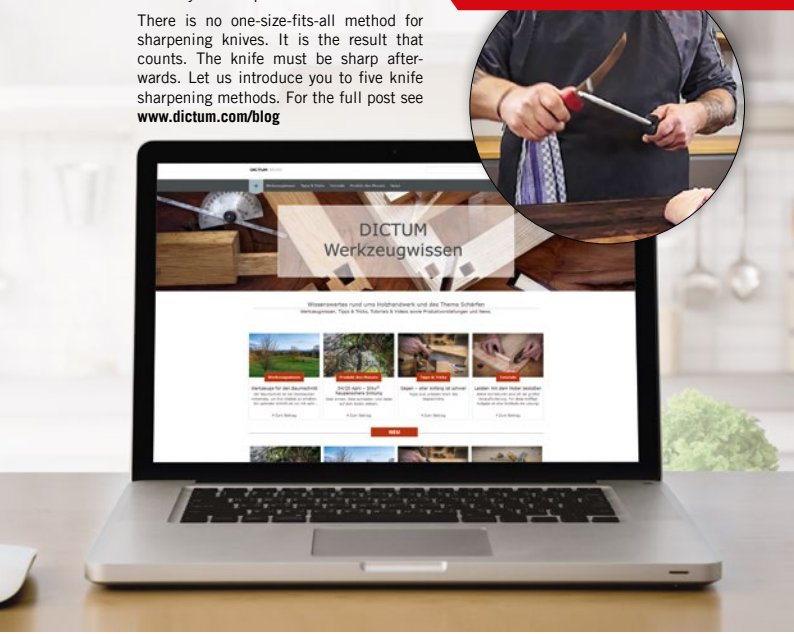
TOOL KNOWLEDGE!

Interesting facts about woodworking and **sharpening,** tool knowledge, tips & tricks, tutorials and videos, as well as product presentations and news.

SHARPENING TOOLS:
Five ways to sharpen knives

There is no one-size-fits-all method for sharpening knives. It is the result that counts. The knife must be sharp afterwards. Let us introduce you to five knife sharpening methods. For the full post see **www.dictum.com/blog**

www.dictum.com/blog



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