

THE DILUCOT METHOD

A clear shot at an excellent edge

The Dilucot method is unequivocally one of the most artisan ways to sharpen a straight razor. With some experience, results can be obtained that easily withstand comparison with results of high-technological synthetic sharpening setups.

Those who went through the learning curve of shaving with a traditional straight razor, know that within the potential advantages of the straight razor also lie its disadvantages. Modern cartridge razors from the supermarket demand little user skill. The traditional straight razor offers us the promise of a perfectly smooth shave that leaves the skin in better condition than any other method, but at the same time, the potential for messing things up is dangerously more present than with modern shaving gear.

The same is true for the Dilucot method. It is an acquired skill. At the beginning, expect variable outcomes with peaks and valleys in both directions.

The challenge lies in reaching the desired keenness. The legendary smoothness of the Coticule edge arrives free.



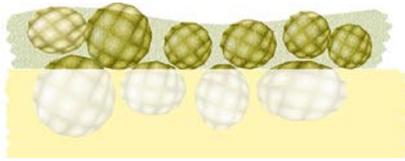
The Coticule rock contains billions of spessartine crystals, also called “garnets”, with diameters from 5 to 15 micron.

Don't expect to meet that keenness at every attempt right from the start. But not to despair, Dilucot honing is not arduous, and even if you don't get exceptional results, your razor will have an impeccable bevel that needs minimal refinement. For that, you can transition to the final (taped) stages of the Unicot method or rely on a pasted strop. These are both easy ways to get past the sharpness barrier. Note that the latter will replace the characteristic Coticule feel with its own.

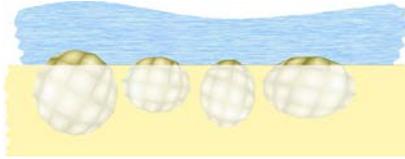
At its essence, the Dilucot method exemplifies Zen-like simplicity. Using a Coticule with slurry, you hone until keenness reaches its limit. From there, you continue to hone while periodically adding drops of water diluting the slurry down to plain water at the end. That really is all there is to it.

Why does it work?

Through use, a razor's bevel will begin to round, and microscopic damage accumulates at its edge. The requisite abrasive power needed to undo that damage on a Coticule requires the use of an abrasive slurry produced by moistening the stone and rubbing it with a small piece of Coticule. This slurry



Magnified representation of garnets within abrasive slurry



Magnified representation of garnets while only water is used atop the Coticule

contains a high concentration of garnets for rapid steel removal. Unfortunately, these garnets also damage the delicate tip of the razor when they impact it (slurry dulling). Eventually, the sharpening and slurry dulling effects offset each other, and no amount of continued honing will improve keenness once a certain limit is reached. This limit depends on the density of the slurry and the properties of the Coticule.

A razor honed on a coticule with slurry typically can not reach the level of refinement needed for a comfortable shave. Yet, you can also use the stone with only water on its surface. Now the garnets stay embedded in the surface of the hone, only slightly protruding above the surface. This mode turns the Coticule into a slow, shallower polisher incapable of catching up with the somewhat lacking keenness coming off a milk-like slurry.

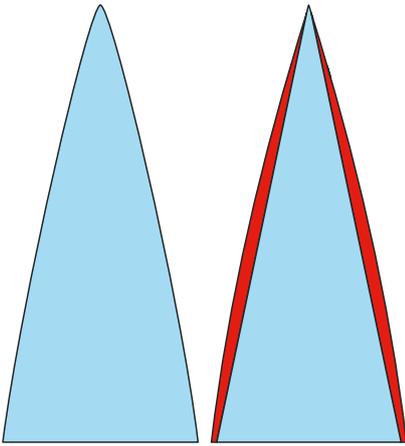
That is where the dilution phases come in. If you gradually dilute the slurry with drops of water, the Coticule will lose cutting speed while gaining a higher keenness limit. The dilution strategy bridges the gap between the the keenness off slurry and the keenness required for finishing on water.

It is important that this dilution technique proceeds gradually. If you dilute too fast, the keenness will stay behind and the stone will become too slow to catch up. If you dilute too slow, there's a risk of the slurry thickening. This thickening is caused by evaporation, steel particles entering the mixture, and because the already present garnets also abrade the surface of the stone, which, however slightly, brings additional particles into suspension.

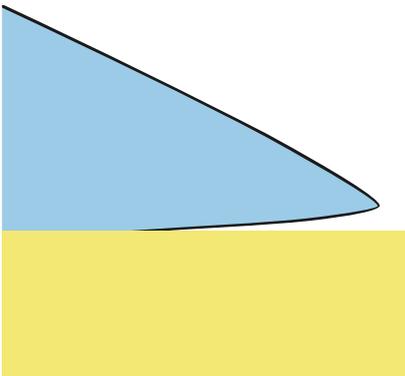
THE 3 STAGES OF THE DILUCOT METHOD:

1. Bevel correction.

During the bevel correction stage, you correct rounded bevels and microscopic damage to the razor's edge, leaving flat bevel faces and a straight, clean edge. For this, a Coticule is used in its fastest mode: with a slurry of milky consistency and



Cross-section of a razor's bevel. Left: the convex-shaped bevel of an edge that was maintained on a pasted strop and now in need of correction. Right: in red is shown how much steel needs to be removed to restore flat bevel sides. It is also apparent that the tip of the new bevel resides only marginally below the old one, hence a sharpening job never demands a visual decrease of the blade width.



Shows how the tip of a convex bevel can't possibly make contact with the surface of a flat sharpening stone, before the bevel sides are flattened.

“halfstrokes”. These are diagonal honing strokes, performed back and forth, without flipping the razor. A finger rests atop the razor, applying mild pressure. Measured with the razor on top of a zeroed kitchen scale the exerted pressure is 250-330g (8.8-12oz).

A separate article exists with additional information about the stroke variations used for honing a razor, and for dealing with special cases, such as curve edges, or even blades with a slight warp.

More pressure will, especially in the case of full hollow ground razors, flex the blade. This will compromise the outcome. Avoid placing the finger in the middle of the blade all the time. Instead, regularly shift between the tip and the heel area, or place the finger on a part that needs extra attention as seen in an arm hair or a thumb pad test. This habit avoids that (over many sharpening sessions) we end up with a frowning curve along the edge.

If the razor is in bad condition and requires a lot of bevel correction work, do keep an eye on the symmetry of both bevel sides and the shape of the edge. The process is slow enough to steer things in the right direction.

Work with sets of 20-30 halfstrokes, flip the razor (on its spine), and repeat. The slurry will turn gray. This is a sign that steel particles have entered the mixture.

*A good bevel
is the foundation
of all razor honing*

1. Razor sharpening demands a stable honing stroke that ensures even contact between the razor and the surface of the hone, and it takes considerable practice to develop a competent honing stroke. Aim for precision rather than speed because speed comes naturally as you gain experience.

2. Because in slurry mode a coticle removes steel at a fast rate, the effect of a thick slurry on the very edge is that of pushing it through mud. You could reduce the width of the razor considerably without ever reaching a keenness required to shave arm hair. Therefore, you must ensure the slurry is not too dense and is not allowed to dry. Bear in mind: the next “good bevel” is never far behind the original bevel. So, unless there is visual damage to be honed out, the new bevel will not

cause a visual narrowing of the blade.

To keep the slurry within limits, add a drop of water at the first signs of dehydration. Err on the thin side because erring on the thick side can be an exercise in futility.

THE TRICK WITH THE BOTTLE.

The easiest way to know when you are done is to pre-dull the edge by performing one “downstroke” over a glass object (a beer bottle works very well) using no more pressure than the weight of the razor. If your arm hair is very dense and easy to shave, it might be necessary to repeat this downstroke a second time. It typically takes one or two sets of halfstrokes to undo the effect of a downstroke. Hence, any extra sets needed to reach shaving arm hair level, is work that was required to establish a flat bevel in the first place.

The bevel stage is unquestionably completed once the razor shaves arm hair along its entire length (assuming you utilized a downstroke). Although the TNT or TPT both are excellent methods to probe the edge, they can be difficult to read without proper experience. The ability to shave arm hair after a downstroke eliminates any guesswork and prevents us from either doing too much or too little work.

2. *The dilution stage*

There’s no need to refresh the slurry if some is still present on the hone at the end of the bevel setting stage. The honing stroke remains the same, but reduce the halfstroke count per set to 15. The pressure remains the same as during the bevel correction stage.

To add water, do NOT use a spray bottle because this offers poor control over the dilution rate. Instead, keep a cup of clear water at hand, and use one “finger load” of water to start (dip the tip of one finger into the cup and immediately transfer the water that drips off onto the middle of the Coticule).

It will mix with the present slurry automatically. More water may be necessary depending on your Coticule, its size, and your climate.



Careful observation is important. With every dilution, the abrasive feedback of your Coticule will diminish until it feels similar to use with plain water. This can be both heard and felt in the fingers that hold the razor. Here is the catch: if you dilute too fast, your edge will stay behind, but if the slurry becomes drier, your edge will revert to a previous keenness limit. In quickly drying conditions, it may be necessary to add a drop of water at the turning point as well, but normally this is not necessary.

One of the most frequent mistakes is made at the turning point: the new stroke is hastily started before the blade rests stably on the hone. Avoid this at all cost. The blade must never move without the spine in contact with the surface of the hone. Even a small slip-up can set you back considerably. Should this happen, do not rely on wishful thinking. Make at least 4 sets of halfstrokes without adding water. The slurry will thicken some. From there onwards, restart the dilution process.

How many dilution steps varies from Coticule to Coticule, but there is no downside to moving slowly. 10-15 steps is a good starting point. With more experience, and better understanding of your Coticule, you might be able to reduce this to 7-10 steps. In spite of all thinning, the water will appear very dirty in the end.

Add a good splash of water without actually cleaning the hone and perform another set of halfstrokes. Next, clean the hone and razor under a running tap and perform a last dual set of halfstrokes. Time to finish!

3. The finishing stage

Rinse the Coticule and razor well, and do 30-50 X-strokes without any significant pressure. That's it. Success can be measured with a HHT.

The HHT

The razor should be able to easily sever a clean, thick hair at 10mm (1/2") from the holding point. The hair needs to be clean, as greasy hair is significantly more resilient. A somewhat thicker, stiff hair type works best. Dry the razor with a paper tissue and hold it with the edge facing up. Drag the hair, against the growth direction, across the edge. If everything checks out, the edge will almost immediately catch and sever the hair. For more information, a separate article exist, that elaborates on the HHT.

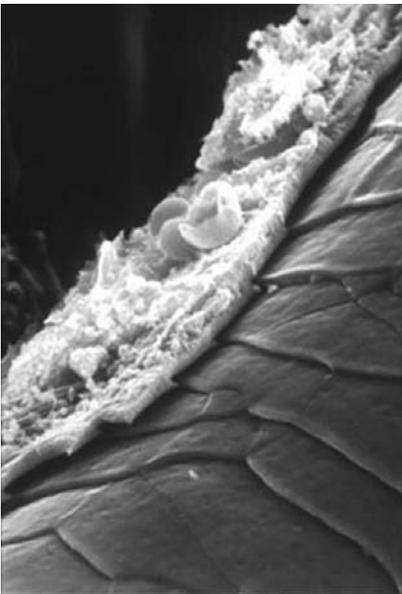


image of a human hair, as seen through a scanning electron microscope (at left, we see part of the follicle tissue). The hair itself clearly shows its scale-like structure of the exterior shaft. This structure causes the hair to be more easily severable against its direction of growth. For this reason the hair needs to be held by the tip end, for performing the HHT.

Stropping

A freshly honed Coticule edge absolutely demands a good stropping. Expect to observe an improvement of HHT results of 1 or 2 points on the HHT-performance scale. For stropping after honing, 60 laps on clean linen and 60 laps on clean leather are recommended. For maintenance stropping prior to each shave, 20 linen and 40 leather should suffice. Also the topic of stropping is extensively treated in a separate article.

Closing remarks:

If you are an inexperienced honer, it may be wise to start on full-hollow razors because they generally have smaller bevel faces, making them easier and quicker to hone. Aim to learn a steady, even honing stroke. Work slowly but precisely. The speed you see in demonstration videos comes naturally with experience.

Sharpening razors is a very meticulous job. Someone skilled may appear nonchalant while sharpening a razor, but nothing could be further from the truth. Sharpening razors demands precision and concentration.

written by Paul Richmond and Bart Torfs

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