Kenjig Knife Setting Jig for Tormek Instructions

My goal with this project was to provide a method of setting knives on the Tormek for sharpening with a bare minimum of necessary measuring. I used the three kitchen knives which I believe will cover most needs: a 100mm (four inch blade) paring knife; a 150mm (six inch blade) slicing knife; and a 200mm (eight inch blade) chef's knife. I decided to use a thirty degree edge bevel (two fifteen degree bevel angles), which is the European Standard.

In the interest of simplicity, the jig is designed only for this thirty degree edge bevel. Similar jigs may be made up for any practical angle, if desired, once the principles involved are understood.

Measuring the three knives in the standard Tormek SVM-45 knife sharpening jig, all three knives shared a common range of 134 to 141 millimeters. (The paring knife was used in the SVM-00 Small Knife Tool to bring it into the desired range.) The SVM-140 for longer knives is also compatable with this jig.

I settled on a jig plus knife length of 139mm. For a full size 250mm grinding wheel, 139mm length needed a distance of 80mm from the top of the universal support bar to the grinding wheel to produce the desired thirty degree combined bevel. The scribed pencil line on the jig is 139mm from the far end. The jig is best seen in the first three and seventh photograph. The seventh photo shows the jig being used to set the distance from the universal support to the grinding wheel. The length of the groove is 80mm. (The only difference between the jigs for the T7 and T4 is that the groove is 86mm instead of 80mm for the T4. This is because of the difference in wheel diameters. Everything else is identical.)

In use, the jig is used to first set the distance from the universal support to the grinding wheel. This setting will remain constant with most kitchen knives. Second, the jig is placed on the adjustable stop of the knife jig. The length of the knife jig plus the knife is aligned with the pencil line. At this point, the knife is ready to be sharpened. No tedious angle measuring is required. With the jig set like this, the knives will have a consistent edge angle of thirty degrees.

Although this jig is simple im appearance and use, it is based on some high power mathematics. Ton Nielesen, "Dutchman" on the Tormek forum, has compiled an excellent booklet of setting the Tormek for different bevel angles. I used Ton's work when making up the jig. Understanding Ton's trig tables was a stretch for my 1966 high school geometry, however, it was worth the effort and I would recommend using Ton's booklet to the forum members.

The jig was purposely designed very simply. My goal was to make it “stone simple and indestructable” (quoting a retired woodshop teacher). I had three groups in mind.

First was new users. I think the Anglemaster is a useful and well designed tool. I would not want to be without it. However, it is not always easy to use. My sinple jig is designed to require new users to learn only how to hold and control the knife in the jig to sharpen it. The Tormek can be both simple and versatile. The jig allows new users to develop confidence before advancing.

The second group is those who use the Tormek infrequently. This group would include those who only sharpen their own household kitchen knives, perhaps two or three times a year. With the jig, there are fewer skills to remember.

The third group is those who sharpen a lot of knives frequently. This group includes chefs, traveling mobile sharpening services and those who either for profit or out of the goodness of their hearts sharpen their church’s or other group’s kitchen knives. By simplifying the operation, the work is done quickly leaving more time for fellowship.

As with many ideas, this jig is more a different application of existing ideas than a new idea. The concept of the 80mm groove to set the universal support to grinding wheel distance closely resembles traditional Tormek wood gage blocks. In fact, earlier prototypes of the jig used the gage block method. Switching to the groove enables the jig to be much narrower.

Photo one shows the jig placed next to the knife jig and knife. Note the scribed line (139mm from the bottom) and the groove on the left side of the jig 80mm long to set the universal support to grinding wheel distance.

The scribed line will be designated the Projection (projection from the universal suppport to the tip of the knife edge. The length of the groove will be designate the Distance (distance from the universal support to the grinding wheel).

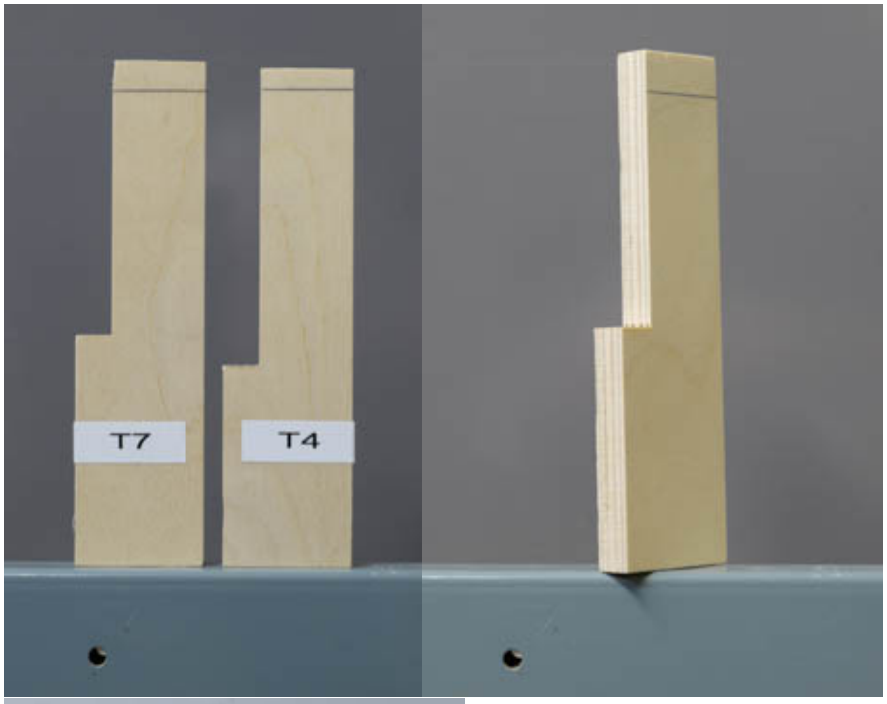

Photo one shows two jigs, one for the T7 and one for the T4. Note that the 139mm line is the same. The only difference between the two jigs is that the groove for setting the Distance between the universal support and the grinding wheel is 6mm longer (86mm instead of 80mm) This is because of the differences in diameter of the two wheels. Photo two shows one jig askew to illustrate the depth of the 12mm baltic birch plywood.

Photo three shows the jig placed next to the SVM-45 knife jig with the paring knife held in the SVM-00 small knife tool.

Photo four shows the paring knife in the small knife holder (SVM-00) in front of the setting jig. Note the pencil line just above the knife blade. The jig and knife combination is correctly set for 139mm Protrusion.

Photo five shows the slicing knife in the jig, also set to 139mm. Again, note the 139mm Protrusion pencil line above the knife.

The sixth photo shows the chef's knife in the jig and set for 139mm Protrusion.

Photo seven shows the jig being used to correctly set the Distance between the universal support and the grinding wheel. No use of the anglemaster or black marker is required.

Photo eight shows the slicer knife in the jig ready for grinding. Setting the jig plus knife length to a Protrusion of 139mm and the top of the universal support to grinding wheel Distance to 80mm will produce consistend bevel angles with no further measuring.
(please ignore the piece of electircal wiring with white insulation. It is only in the photo to support the knife and jig for the photo.)

When the grinding wheel is eventually reduced to a diameter of 240 mm instead of 250 mm, compensation may be done in one of three ways:

1)Following Dutchman's chart for a wheel diameter of 240mm, a net knife setting tool may be constructed with the Distance groove lengthened to 81mm to match the chart. The original knife setting tool is then set aide until a new grinding wheel is required. The easiest way to do this is to make up a set initially.

2)The original knife setting tool may be modified by extending the groove to 81mm, per the chart. The difference between this and method 1 is that a new knife setting tool must be made when the grinding wheel is replaced. Neither of these methods is time consuming or difficult.

3)The 139mm pencil line may be erased and a new line drawn at 138mm (per the tables). I do not recommend this method, as several repated jigs have been developed on the Tormek forum centered around 139mm Protrusion.

I believe the 12mm baltic birch plywood is a good material for the jig. Earlier prototypes were made out of cardboard, which is adequate for the job. The plywood seems longer lasting. I chose the 12mm thickness partly because I happened to have a number of off cuts on hand. The thickness is not critical. I even made two earlier models from Sherwin Williams paint stirring paddles. I made these for Stumpy Nubs, in keeping with his folksy show routines. The choice of material is not critical.

I made all the cuts with the 1/8" blade on my bandsaw. Most of the cuts could have been made with a table saw. A jig saw or small handsaw would have worked just as well.

The outer dimensions of the jig are not critical. It should be more than 139mm long and wide enough to sit easily on the knife jig's adjustable stop.

The calibration mark (139mm) and the length of the groove (80mm for the T7 and 86mm for the T4) are based on Ton's tables and should be accurate.

I made up several of these jigs, and would recommend at least making both the T7 and T4 jigs, even if you have only a T7 and have no plans to acquire a T4. The extra 6mm length of groove for the T4 also happens to be the correct setting for a forty degree bevel angle (two twenty degree bevels) when used with the T7. I intentionally made this jig for only a thirty degree edge angle for simplicity. I believe this very simple one setting will serve you very well for all your kitchen knives. Once you become fluent with the jig, you may want to make up similar jigs for other angles. The jig for forty degree edge angle would probably be the second jig you might want. Consulting Ton's charts (Do a member search on the Tormek forum under "Dutchman" and list his posts.) I have it both printed out and in my

ibooks page on my ipad. I recommend the same for you if you are interested in grinding different bevels.

This simple jig will allow you to produce consistent bevels with your most used kitchen knives with no further measuring, regardless of where you live or how often you sharpen. I would welcome comments posted on the Tormek forum.

Ken Schroeder