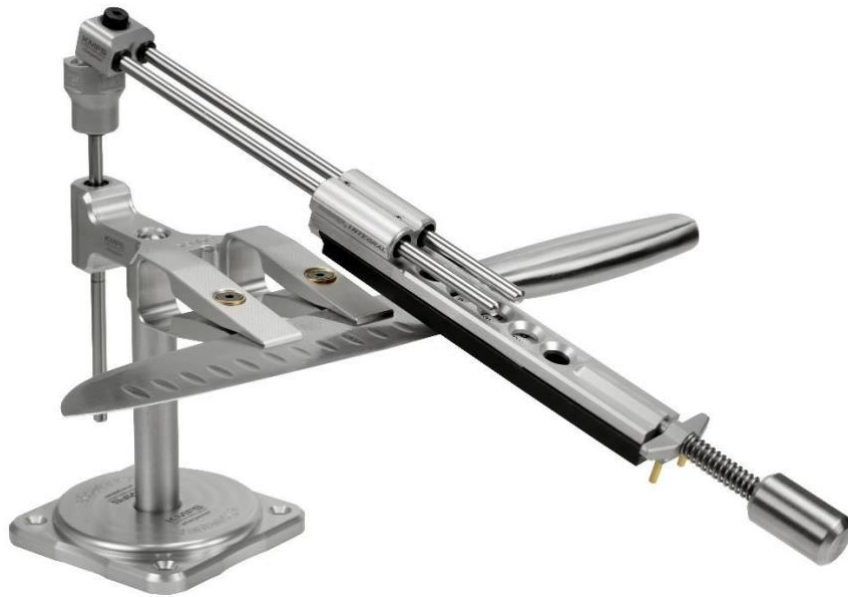


## KMFS VantaEdge® INTEGRAL



(1)

Thank you for purchasing our patented reverse kinematic sharpener. We hope, it brings you great results of sharpening and you enjoy the sharpening process as well. Please read this manual before using or any manipulation with your KMFS Vantaedge INTEGRAL knife sharpener.

Maximum blade thickness for sharpening in Vantaedge INTEGRAL system is 7,5 mm. Maximum blade length for comfortable sharpening in one clamping is ca 225 mm.

- Never use Water on any part of the sharpener or left it be in contact with water.
- During clamping knife, and during sharpening be extremely careful, avoid any contact with edge for you and people around, danger of cutting or stabbing must be minimised .
- You could use your sharpener holding by the clamp, placing it on stand and holding by the stand and clamp, or fasten the stand to the base or the table. You can also place the stand safely on a workbench or in the optional base (8) for stable positioning.

- For maintenance use only dry wipe with soft cloth and use drop of added FP-10 Lubricant elite to protect steel parts against oxidation and put one drop of this oil in each linear bearing each 2 - 5 hours of sharpening, excessing oil wipe with paper towell.
- Diamond stones in package use without any lubrication and dry sleen with brush after sharpening
- The use of the optional Ruby 3000 natural stone is recommended for use with honing oil (not the included SP-10). Just wipe the natural stones with a dry cloth after use. Also another natural stones with higher grids in case are also used in the same way.
- Store system in case fully closed, which prevent, or minimize it from damage of water or falling.

### **Preparing the knife sharpening and selecting the ideal sharpening angle.**

Chose angle you preffer to sharpen on your knife:

**15°** For fine Kitchen knives

**17,5°** For kitchen knives

**20°** For pocket knives

**22,5°** For outdoor knives

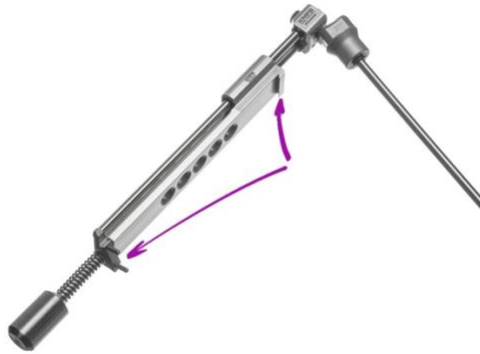
*(Ideally it is advisable to copy the angle chosen by the manufacturer of the knife.)*

Then put screw from guide rods to hole in angle head with preffered angle and fasten the screw with added 3 mm allen key from kit (2).



(2)

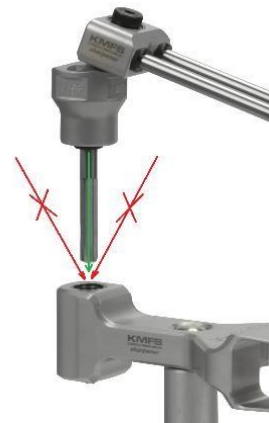
Fasten the sharpening stone to stone holder and screw together stand plate and stand rod with 5 mm allen key from the set.



(3)



(4)



(5)

Fasten knife in clamp by using 3 mm allen key from set so it is firm - no need use both of the clamp end, you could use only one clamp if small knife, or unusual blade shape. Build up the sharpener together (4)

Always put all linear guide rods in bearing straight and freely. If you push hard in angle position it leads to loose ball from linear bearing cage. (5)

For comfortable sharpening, try to clamp the blade in an imaginary circle around the angle head. (6)



(6)

Hold sharpener like on the picture with one of your hand. (7)



(7)

With the other hand, gently push downwards on the grinding stone holder and let the angle head rise. Keep pushing down lightly on the stone holder (this ensures contact between the grinding stone and the blade facet at the correct angle) and carry out alternate up and down strokes along the entire length of the blade. Once one side has been sharpened, i.e. a slight burr has formed along the entire length of the blade, slide out the grinding stone holder and the angle head and turn the clamp with the knife 180°. Repeat the whole grinding process.

**Always start with a coarser abrasive (lower GRIT number) on both sides of the blade and gradually move to a finer abrasive (higher GRIT) to finish the sharpening.**

The angled head rises normally during sharpening and its variable height ensures a precise angle even when the blade approaches the back of the knife, e.g. at the tip of the blade. With the optional hover spring kit (9) it is possible to stabilise this movement to a certain extent. This hover spring kit also includes stop springs which can be used to adjust the extreme stops of the grinding stone holder.

To allow for more precise adjustment of the desired angle, a multiangle angle head (10) can be purchased where the desired angles can be adjusted from 10°- 29°.

The KMFS Vantaedge integral sharpening system is the latest evolution of all sharpening systems.

Patented sharpening system solution- completely designed and manufactured in the Czech Republic by KMFS.

This sharpening system is the first in the world, which is able to completely eliminate the effect of the raised facet at the tip of the knife and enables absolutely precise repeated sharpening of the knife without any demands to repeat the knife clamping position.

The biggest change compared to all sharpening systems is the implementation of reverse kinematics, where the system, based on the exact angle on the blade, adjusts the other components

of the set so that the angle on the blade is always the same regardless of the depth of the knife clamping.

The sharpening system in the set includes a head with grinding angles of 15°, 17.5°, 20°, 22.5°, which are precisely followed along the entire blade and with each grinding. The set's additional accessories enable sharpening of other angles as well.

Thanks to the Integral clamp (chassis) completely milled from a solid block of Ergal 7075 T651 material, a perfectly precise clamping orientation of the knife is achieved, maximum strength and easy clamping. This is made possible by a double clamp chasis equipped with spherical bronze bushings of clamping screws, which eliminate unwanted clamping forces and enable perfect adaptation to the knife blade profile. It is not necessary to clamp the blade in both clamps when clamping the knife, even just one clamp provides secure clamping for sharpening.

**Maximum blade thickness is between 7,5 – 8 mm**, maximum blade length to be sharpened in one clamping is 200 - 250 mm (knife could be clamp more times in one sharpening without any issue).

The KMFS Vantaedge integral clamp is symmetrical and by simply turning it upside down, it is possible to sharpen the other side of the knife without having to rotate the knife in the clamp.

The set is completely equipped with ball bearings for absolutely smooth operation without backlash. There are 4 pieces of fully shielded bearings for rotation about two angular axes and 3 pieces of double linear four-row bearings.

The set has a sharpening stone holder which is able to clamp all KMFS Rival stones and also most stones from other manufacturers, when there is no problem with the change of the abrasive, there is no need to adjust the set in any way for a different thickness of the abrasive, the kinematics always reaches the right angle. The clamping segment of the stone held by a stainless steel spring has integrated brass pins to protect the hand against contact with the knife edge during sharpening process. At the same time, the control wings of the segment enable precise guidance of the sharpening stone.

Sharpening is possible either by placing the integral clamp on the stand supplied in the package, or it is possible to sharpening only by holding the integral clamp in the hand (advantageous when there is no table when sharpening, for example outdoors).

## Package include:

- plastic waterproof case with foam organizer
- sharpening system KMFS Vantaedge integral
- Stand for placing the integral clamp
- 1 piece of grinding diamond 240 grit with DLC coating
- 1 piece of grinding diamond 600 grit with DLC coating
- 1 piece of grinding diamond 1000 grit with DLC coating
- Allen keys for assembling the stand, clamping the knife and tightening the segment of guide rods on the angle head
- FP-10 Lubricant Elite oil for system maintenance

## Additional accessory:

(8) Stable plate





(9) Hover Spring kit



(10) MultiAngle head



## Used Materials:

<b>main material used</b>	ergal ENAW 7075 T651
<b>surface finishing</b>	hard clear anodizing
<b>linear guide rods</b>	X90CrMoV18 hardened surface stainless
<b>bearings</b>	tool steel
<b>stone clamping spring</b>	stainless steel
<b>spherical clamp bushing</b>	bronze
<b>screws of kinematic and clamp</b>	hardened blacked steel

## Main advantages of KMFS Vantaedge integral:

- Complete production by CNC machining centers from a block of material for maximum rigidity and precision.
- Precise adherence to the angle setting from the selected values.
- Identical grinding of both sides of the knife in one clamping.
- Thanks to the reverse kinematics, it is possible to sharpen even with different thicknesses of stones, always along the entire blade to the same set angle without any additional adjusting.