

Building stops for your Festool Kapex using the MFS profiles

Text and photos by Jerry Work
Copyright 2008, The Dovetail Joint, Kerby, OR



Most who use the Festool Kapex compound sliding miter saw will want to add some form of side stops to allow fast and easy repeat cutting of parts the same length. Stops are all the more useful if there is a measurement scale calibrated to the saw blade that allows you to set the desired length of cut without measuring and marking.

In this short tutorial we will see how to easily make such a stop set using the Festool MFS profiles which come with a handy metric scale etched along one edge. All MFS profiles up to 1 meter have this scale. The only modification required to either the Kapex or the MFS profiles is drilling two holes in each removable Kapex wing fence. You can remove the MFS profiles in less than a minute so they remain fully functional for all their other uses.

The photo above shows the set up on my Kapex. In another tutorial I show how I built side extension tables. The addition of the side stops has greatly improved my efficiency and I do most of my cross cuts now using this set up instead of on my European sliding table saw.



Here are a couple of close up shots to show how easy it is to set the desired cut length.

My stops are calibrated to keep the end of the MFS profiles 100mm away from the blade so there is no risk of the blade cutting the MFS profiles in use.

Since the MFS profile scale

starts at zero at the end, that means that I must remember to add 100mm to whatever the scale indicates. In these photos I am set at the 170mm mark which will result in a 270mm cut length.

This also means that the shortest off cut you can set these stops for is 100mm (about 4"). There is an easy way to make that shorter if you wish which I will discuss at the end of this tutorial.

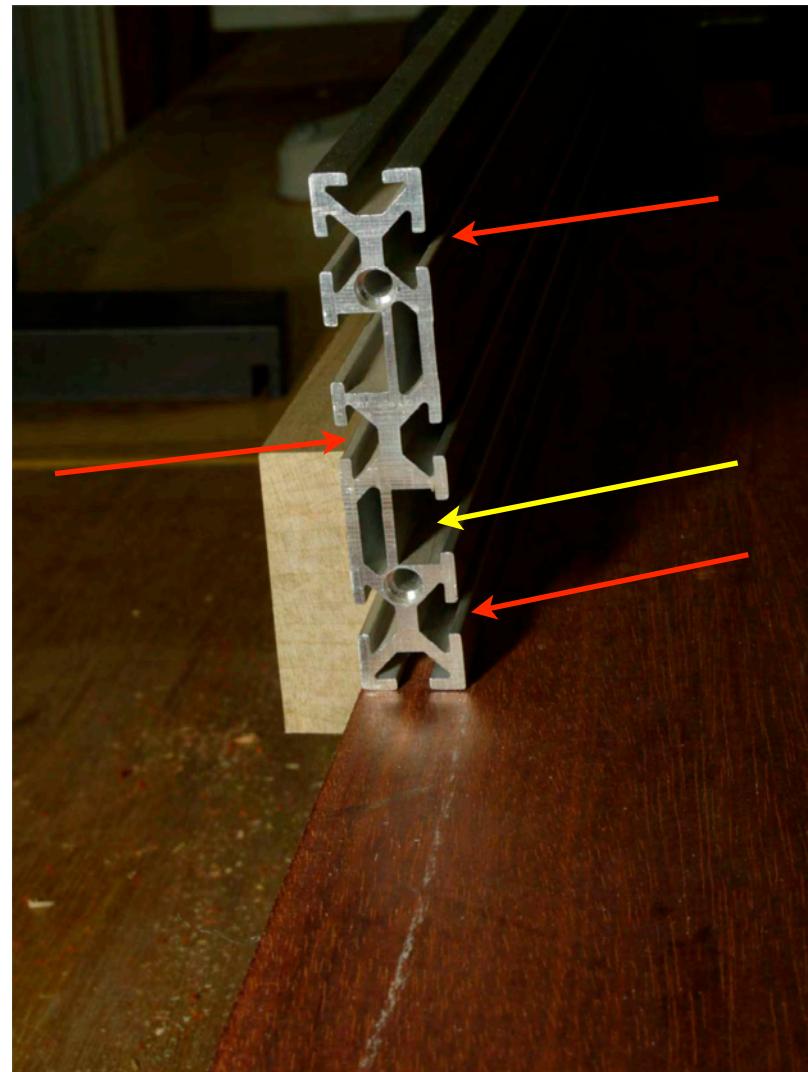
Now lets take a look at just how easy it is to adapt the MFS profiles for this very handy use.



Here is an end shot of the MFS profile. Note that the slots are the same in both sides, but reversed. On the outboard (right) side in this photo starting from the top is a "V" track which receives the MFS joining elements (red arrow), another "V" shaped track, a square shaped track that will receive a standard 1/4" toilet flange bolt with the flats filed to fit (yellow arrow) and another "V" track.

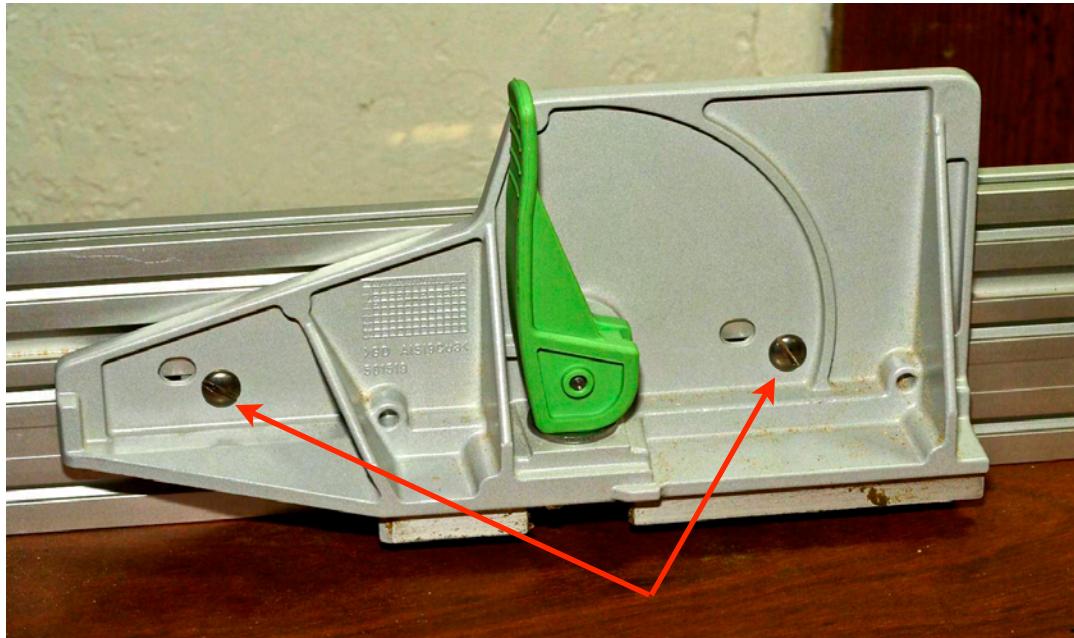
We will be using the top and bottom "V" tracks plus the square track on the outboard side to position and hold our stop blocks, and we will use the middle "V" track on the inboard side to hold the MFS profile in calibration with the Kapex saw blade.

Two of the MFS joining elements will slide into the inboard side middle "V" track to receive 10-32 by 1/2" machine screws passing through holes drilled in the



removable wing fences on the Kapex that align with this middle "V" track while the MFS profile is about 5mm above the Kapex table surface.

It is important to have that 5mm clearance so saw dust does not build up against the face of the MFS profile or the edge of the stop block which could throw the measurement off.



Here is the back side of the Kapex wing fence removed from the saw itself. Note the two machine screws that pass through holes drilled in flat areas on the fence (red arrow).

These holes in no way effect the function or use of the wing fence so it matters not whether the stop fences are mounted or off when the saw is in use.



Note in the photo left that the Kapex has a built in wing fence stop screw (green arrow) that will register the wing fence in the same place time after time even when you remove and replace the fence. To remove the fence, lift the green lock lever, screw down the stop screw and slide the fence off the Kapex. To replace the fence, slide it in place, raise the stop screw, slide the wing fence over to hit the stop screw and press down the green lock lever.

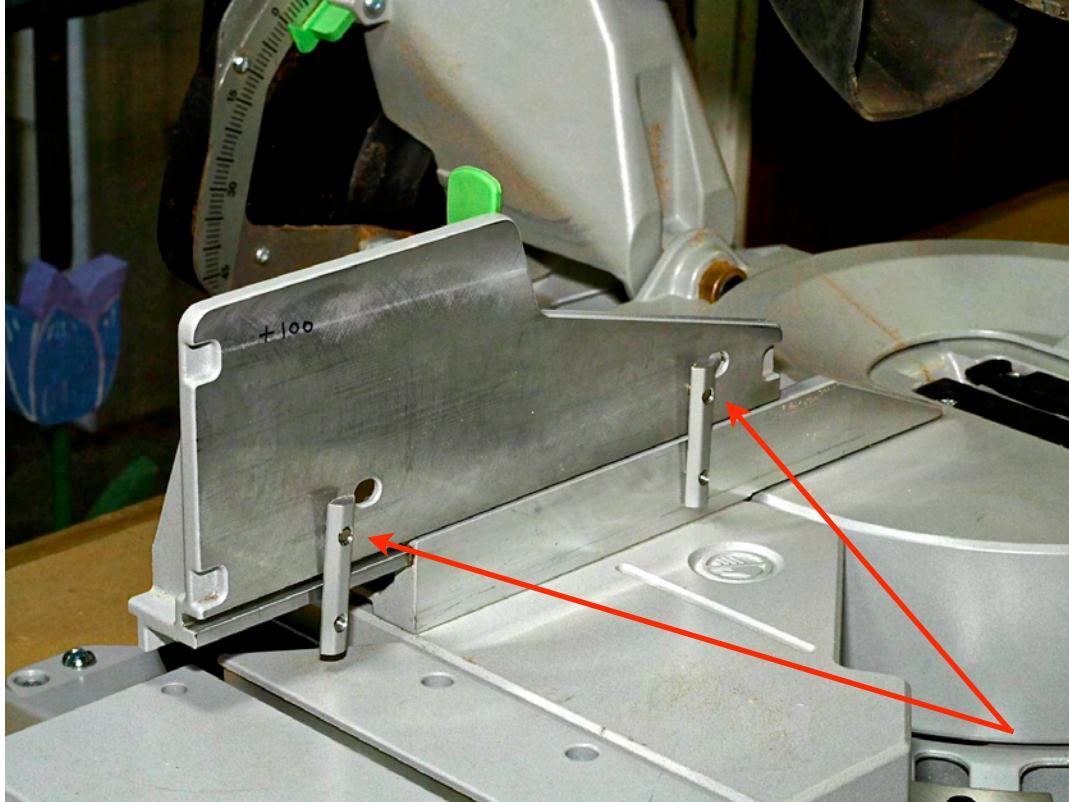


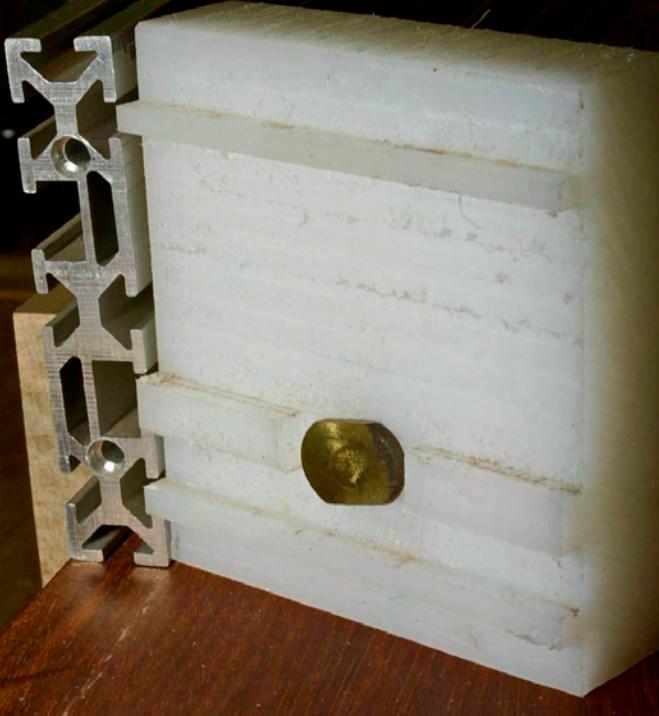
Here is what it looks like with the holes drilled in the wing fence, the wing fence in place on the Kapex and the two MFS joining units (red arrow) screwed partially onto the 10-32 x 1/2" machine screws.

The lower photo shows the MFS profile sliding into position on one of the two joining units. Slide it over the second joining unit and position the end of the MFS profile approximately 100mm from the edge of the saw blade. Tighten the two machine screws.

Before this set up is ready to use, we will need to do the final calibration to make sure the metric scale is spot on. But, before we do, we need to build the stop blocks themselves.

Note that the MFS joining units are drilled and tapped for standard 10-32 thread, NOT a metric thread. You can easily find 10-32 machine screws in a variety of lengths in any hardware store.

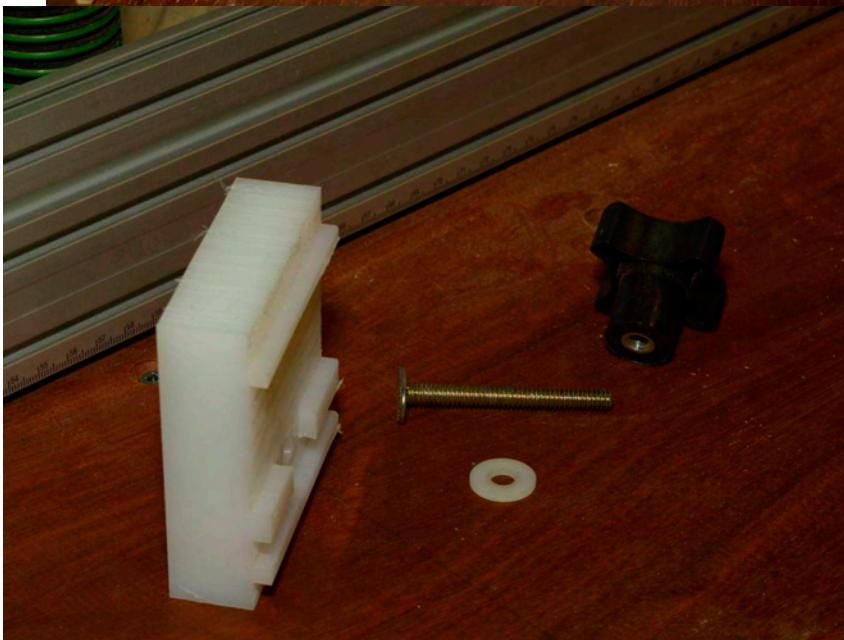




I made the stop blocks from scrap UHMW (a high density soft plastic that is easy to machine on a router table) but you can use wood, aluminum or other material just as well.

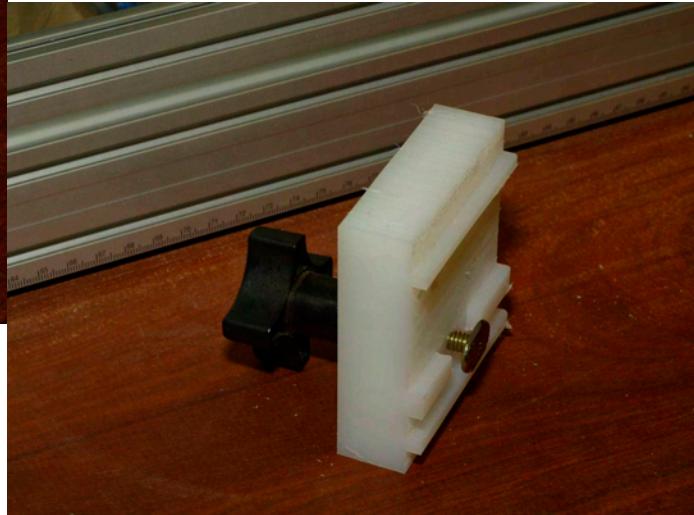
Machine away a 5mm deep area on the back side of the stop block leaving horizontal runners that will engage in the top and bottom "V" track and the square shaped track on the MFS profile as shown in the left top photo.

Now drill a hole to receive the standard 1/4" toilet flange bolt through the middle of the horizontal runner that will go into the square shaped track. Cut away the center part of that horizontal runner to allow the toilet flange bolt to bottom out on the 5mm recess,



Place the bolt through the hole and screw on a 1/4-20 set knob available at hardware, hobby and woodworking stores.

Slide the stop blocks into the outside of the MFS profiles. Note that since both profiles have the metric scale on the same side and starting at zero at the same end, the profile on the left side of the Kapex will be inverted relative to the profile on the right side of the Kapex as shown on the next page.



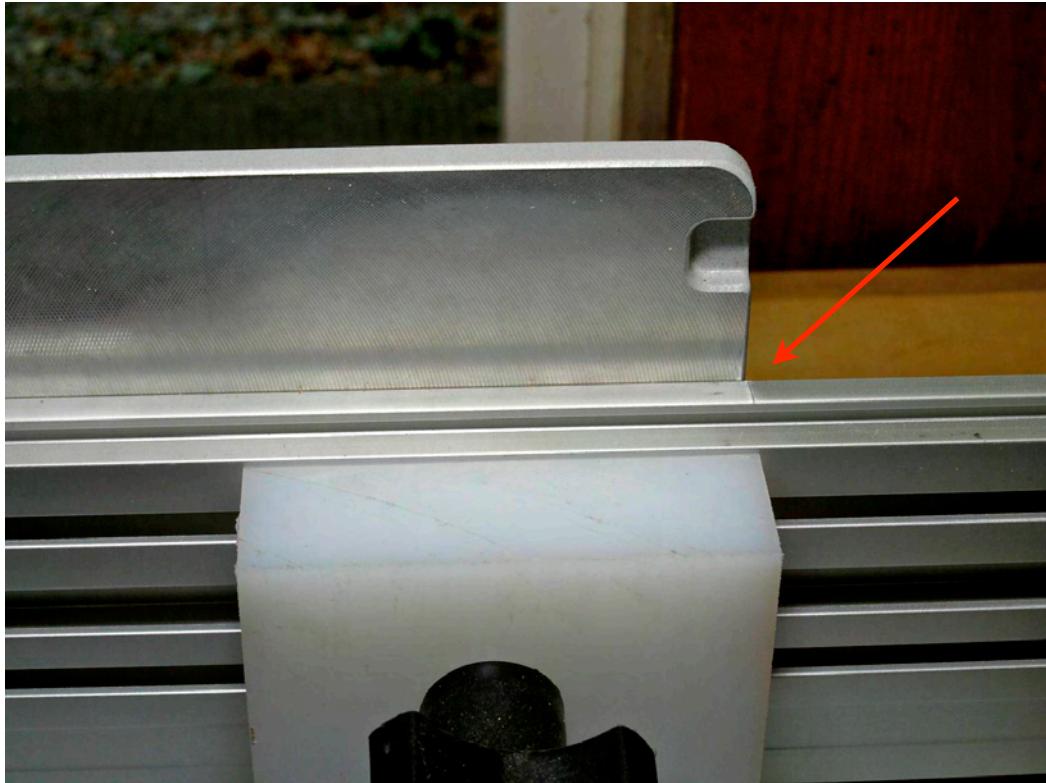
Here is the completed unit. To the right of the blade the metric scale is right side up and on the bottom of the profile. To the left of the blade the profile is up side down and the



scale is on the top of the profile. They are easy to read either way.

To calibrate, set the stop block to a number like 700 and make a cut in a scrap piece. Always cut one end square and place that against the stop block before making the cut off. Measure the cut off piece with the ruler you most often use. If it is not exactly on the mark, loosen the two 10-32 machine screws, slide the MFS profile to correct and retighten the machine screws. Now make another test cut off. Keep measuring and moving the MFS profile until you are dead on on both sides.

Note that the Kapex wing fence is fixed by the stop bolt we saw earlier so it can always return to the same place.



The last step is to use a chisel to make an alignment mark on the top of each MFS profile so whenever you remove the MFS profiles from the Kapex wing fence you can return them to proper alignment easily. I recommend you always make a quick calibration cut just to check anytime the MFS profiles are removed and replaced, but I

find mine are spot on just by returning to my reference mark (red arrow).

What are the down sides to doing this?

The obvious one is that you will lose 16mm of cutting width on your Kapex as that is the width of the MFS profile.

The less obvious downside is shown right. Your hold down will not clear the top of the MFS profile without modification. Since I use this set up primarily when cutting finished stock to proper width for my furniture, this is not an issue. Square, flat stock is easy to hand hold with little risk of kick back. My normal work pattern is to use the left stop with the right stop removed so the measured cut off is held in place by my left hand while the rest of the work piece is free to move to the right unimpeded and free from kick back. In the future I do plan to examine ways to safely modify the hold down foot so it can clear the MFS profile so I can use it to more safely hold the cut off piece that is against the from kick back.



Appendix

Earlier we discussed how this set up keeps the MFS profiles 100mm away from the saw blade so there is no chance of cutting into the profiles in use. With the stop blocks shown, that means that the shortest cut off piece you can measure is 100mm.

If you feel you need closer measurement distances, machine your stop block from wider stock so the blade end of the stop block can project beyond the end of the MFS profile. If you use wood or UHMW for your stop blocks you can make them zero clearance to the blade if you wish although I do not recommend doing so. Really short cut off pieces that are registered against a stop block can be caught by the blade and thrown back at the operator. That can happen even with longer cut off pieces, but the longer they are the less likely that is to occur. And, pieces shorter than about 200mm are not safe to hand hold under any circumstances!

If you do decide to build stop blocks that will project out over the end of the MFS profile, you will need to machine a window along the bottom edge of the stop block to the right of the saw blade so you can see the metric scale. Calibrate using that window.

Jerry Work designs and hand crafts fine furniture in the 1907 Masonic Temple building in historic Kerby, OR. Visitors are always welcome! 26 miles SW of Grants Pass, OR, on US199, The Redwood Highway. glwork@mac.com