

BMW 850 / 840 e31

Roof Rack Project

There been a bit of chatter about BMW 850/840 roof racks over the years, mostly related to the lack of availability of the genuine kit and that fact that no one makes an after-market one specifically for the e31.

Being an avid skier and being too stingy to hire skis, I wanted a ski rack. This is my solution to the problem.

I found that Thule make components that can be adapted to do the job. They will not help you in this as they say that, unless a specific fitment is catalogued, they will not guarantee the rack. That bullshit aside, here's how you do it.

You'll need the following components from Thule;

1 x TK3007 Fitting kit (this is the secret ingredient)

1 x [RT753](#) Foot Pack (this is the lower version that will give you a close to the roof look)

1 x [GL860](#) Bar set (108cm in length)

Before you start – I have assumed you'll not want to have the finished product look agricultural, so I've chosen the AeroBar as the bar for the job. The bar I've used is the GL860 (1080mm) and this gives a very tight and sleek look (but there are issues, as discussed later). You could be equally satisfied with the GL861 (1200mm) as this would negate a few problems. The [RT753](#) Foot Pack is the lower version and the [RT751](#) can be used if you want the rack to sit off the roof an additional 30mm. I saw this as unnecessary, thinking I'd probably not pop the roof on the way to the white stuff.

First things first, make sure these are the mounting lugs you have on your e31, if not, the rest of this is a waste of time.



I took mine out of a 21st birthday clean. They're not just bolted in, they're also glued, so be careful or forget it.

The thing to remember is that the front and rear widths are **NOT** the same. The front width is greater and therefore presents some reverse engineering issues for the 1080mm bar. So, if you don't want to have the hassles, go for the 1200mm bar and play around with trimming it if you like.

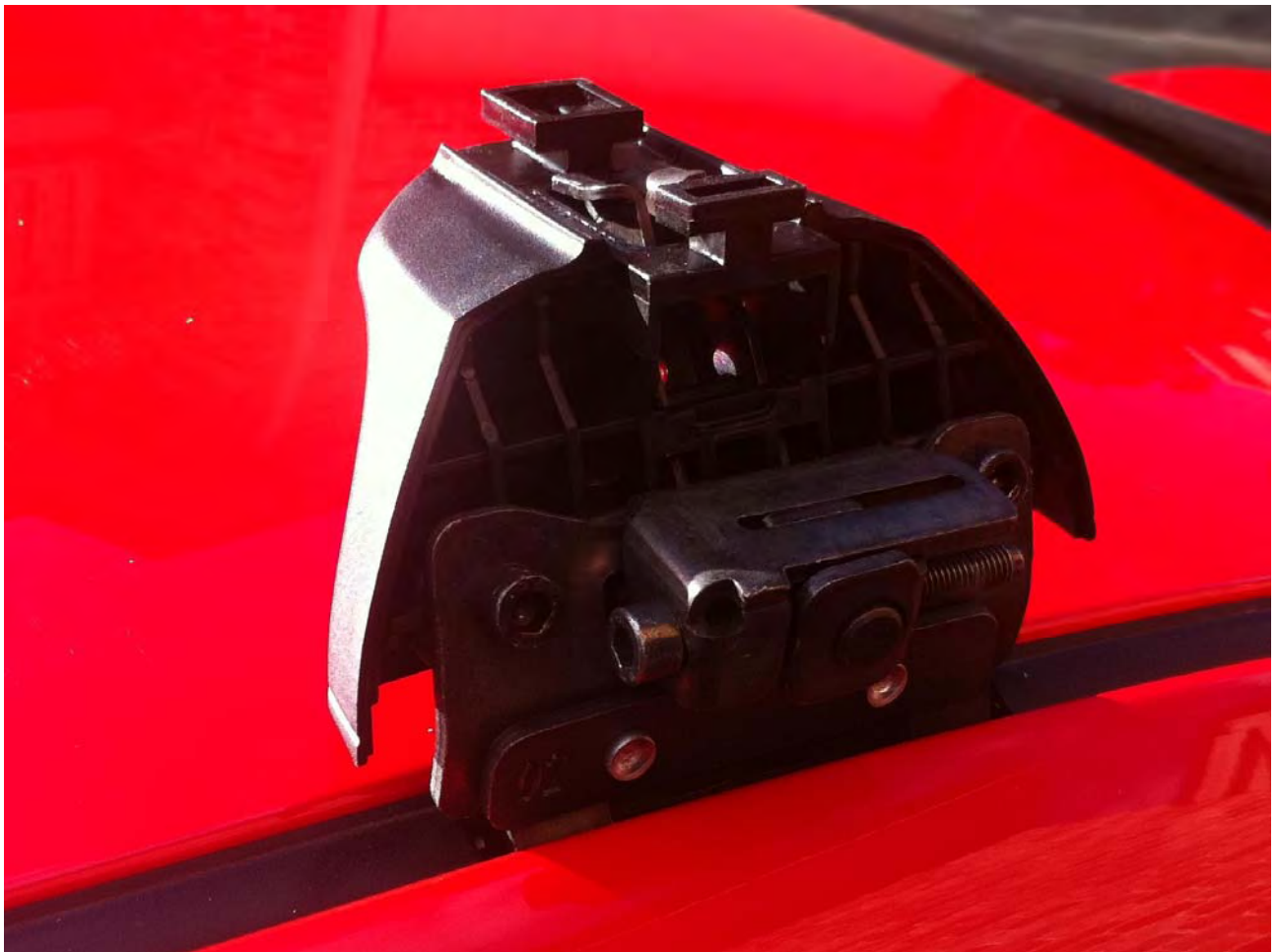
At this stage it's a good idea to mark all the bit so that you can identify their location (i.e. right front, etc.)

Then, start with the rear one, it's the easiest with the 1080mm bar.

Unpack and assemble the TK3007 fitting kit and place each assy onto the mounting lug. Make sure the prongs grab the lug tightly from underneath. Don't be tempted to tighten the allen screw too tightly yet, a little movement is needed.



Then, mount the foot pack – RT753 (loosely) to the fitting kit. I say loosely, as the bar clamp in the centre tightens onto the bar as you tighten the allen screws connecting the two assys. No modification to the rear foot pack is required.



Do the same on the other side and then fit the bar and equalise it so that everything sits nice and square to each other – this is why we left stuff loose.



Now it's time to start modifying.... Grab the end cap guides and trim off the centre tab from two of them, leaving about 10mm on it. After playing around with the front, I figured you could have cut them off entirely, but it slips into the bar nicely this way.



Next, take the two rear end caps and remove parts of the sheaf as shown so they slide all the way onto the bar.





Due to these modifications, you'll need to secure the end caps to the bar. This can be done in a concealed fashion by using a 6G self-tapping screw as shown by drilling a 2.5mm pilot hole through the bar onto the end cap shaft. Once the location of the pilot hole is marked on each end cap, place it in a vice and drill it all the way through. This hole is still too small for the screw, so use a 3.2mm drill to ream the existing hole out. Then use a 3.5mm bit to enlarge the hole in the bar as you'll not need to tap into the bar.



Once you've done this to both sides, place the loosely assembled bar onto the car and tighten to a snug fit. You can pop the rubber filler strip onto the bar and trim it to the correct length – measure twice, cut once....



The rear is completed.

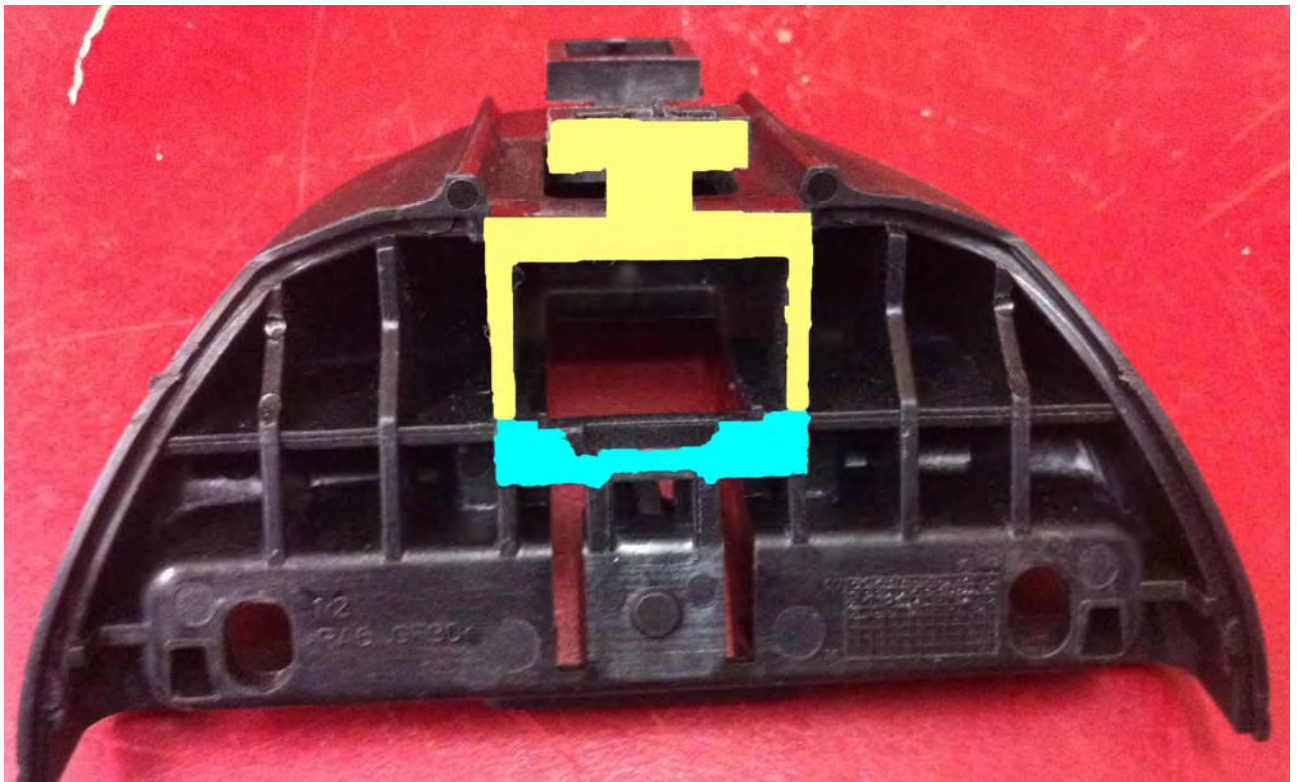
The front is essentially the same, but it's wider, so if you've elected to use the 1080mm bar (like me) you need to make a few additional modification to the foot assy, end caps and guides.

One other thing to note is that not only is the front wider, the mounting lugs are not parallel (thanks to some Friday afternoon Oktoberfest engineering, no doubt). There are several ways to overcome this and I'll go into that soon.

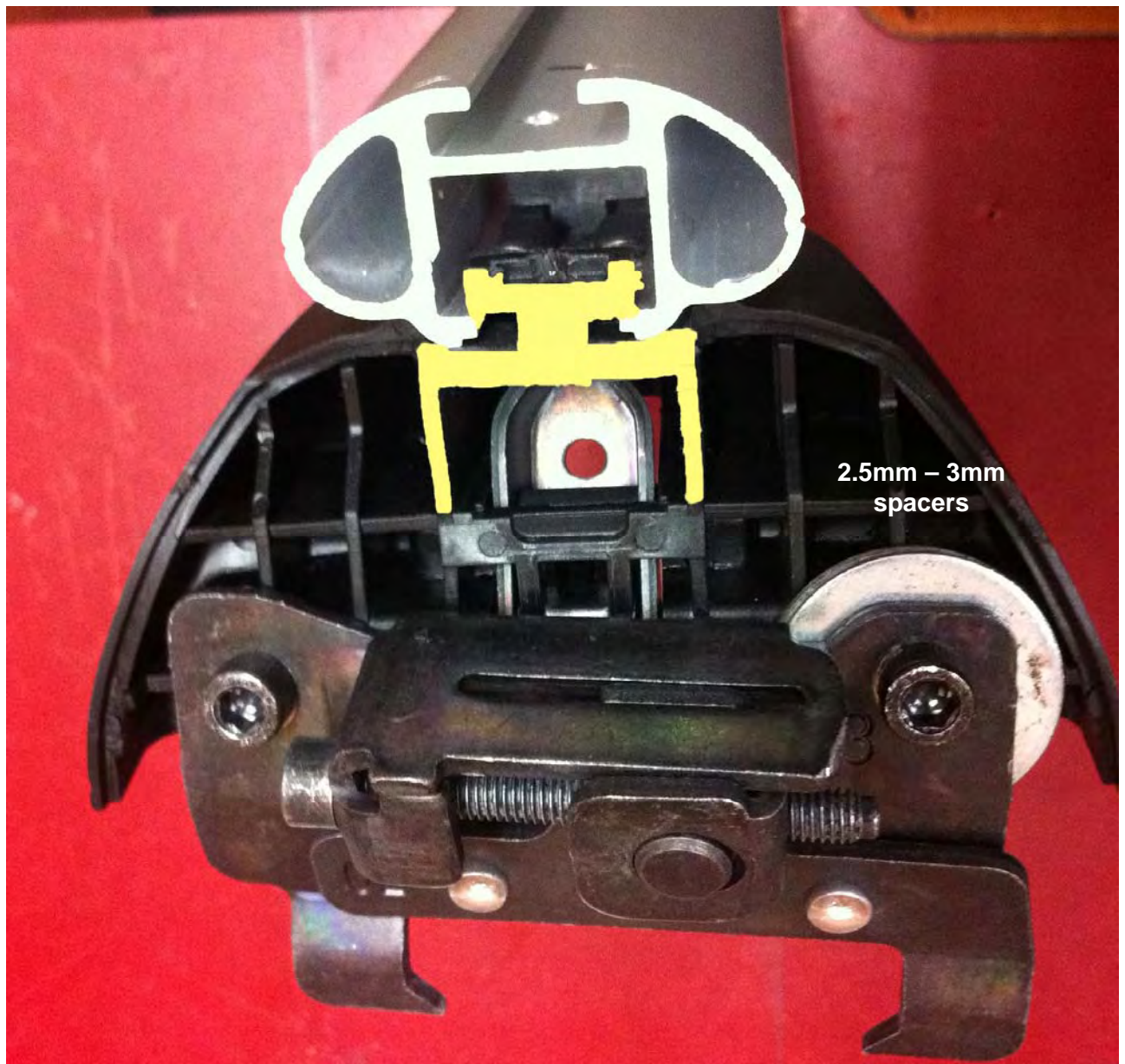
The picture below shows the relationship of the bar end with the foot assy. Note the bar overhang is about 10mm or so. This is the case with the rear bar ONLY. This will NOT be the case with the front bar. The front bar is approximately 45mm wider at the mounting lugs, so some creative geometry is needed.



Disassemble the foot assy and carefully and grind off the area shown in yellow so that it's flush with the area shown in blue. This is to allow the foot assy to be as far along the bar as possible to compensate for the additional width of the front.



You will now need to find some spacers to shim the front of the front of the foot assy as shown. These will need to be 2.5mm to 3mm but no thicker as you'll not be able to get the foot assy locking cover on if these are too thick. If this presents a problem you might (in addition to the spacers) try to laterally elongate the mounting lug holes slightly and refasten them back onto the roof. Care should be taken here and larger diameter washers should then be used.



Next, grind away the end cap guide as shown.



...and place onto the bar.

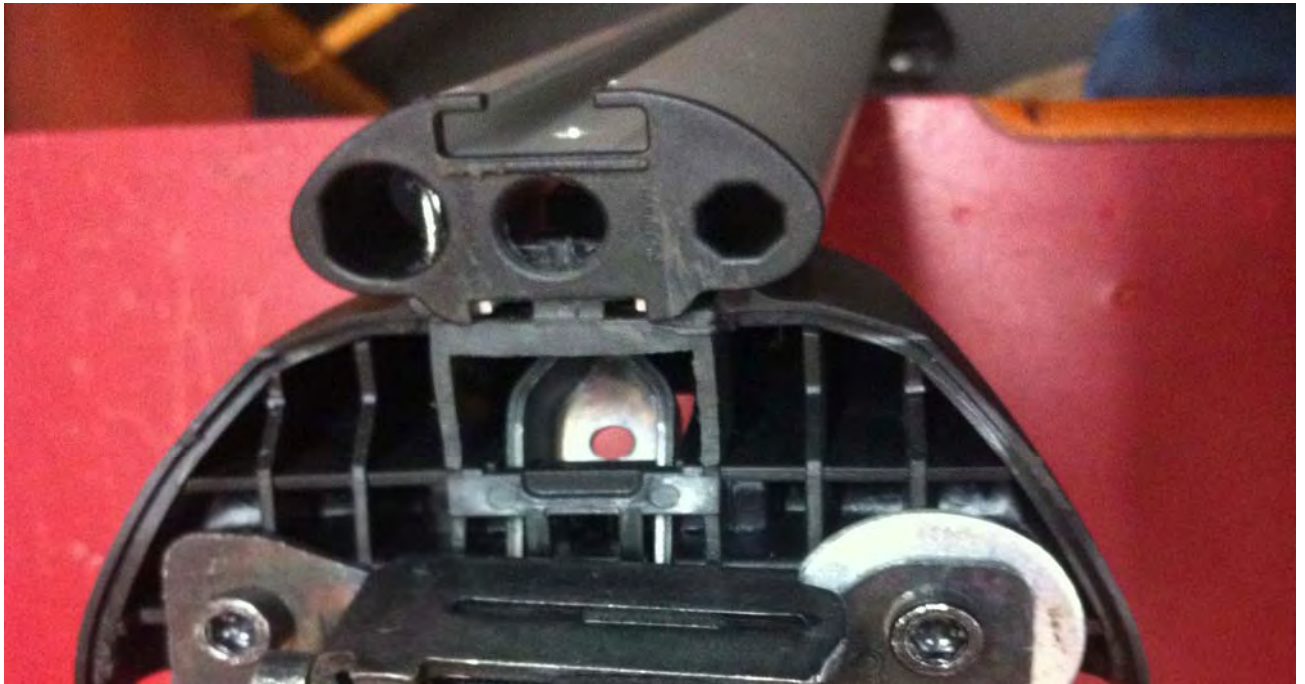


...and assemble the bar, guide and foot assy



Now it's time to modify the front end caps. Remove plastic shroud as shown with a razor knife and cut back the centre shaft as far as the inner ribs so that the cap sits hard against the end of the bar.





....and finally, tighten all the allen screws same as the rear and you've done it... 😊

