How to…fit an intercooler on a 750 turbo

Well, this is what it should look like when you're done;



First, get an intercooler from a salvageyard from a '99 VW Passat Tdi (turbodiesel, Golf or Jetta will have the same engine).
Saw off the long connections so that you keep enough space under the cooler for a hoseclamp and enough material to be 'airtight'.
The cooler itself is mounted with two 6 mm threads through the unit (between the blades from the core) that go into the original mountingholes where the oilcooler used to be, two strips aluminum and thick rubber washers between the cooler and the frame will keep the stuff in place, it should look like this;



Then, you'll need the following materials to assemble these pipes;



3 x feet of copper pipe 35 mm, 4 x 90 degree turns 35 mm, 2 x 45 degree turns 35 mm, an original rubber flange that was mouned between the turbo inlet and the plastic pipe that comes from the original airfilter (after fitting the K&N it's obsolete anyway), 2 x big O-rings and some hoseclamps.

The next items are a little special, to make the connection to the cooler wich is 52 mm, you need 2 x 3-part-couplings that go from 35 mm to 52, go to a well assorted hardware shop for this or your neighbour plummer, here's a closeup from the part you need, only I filed off the sharp edges where you normally put a wrench on;



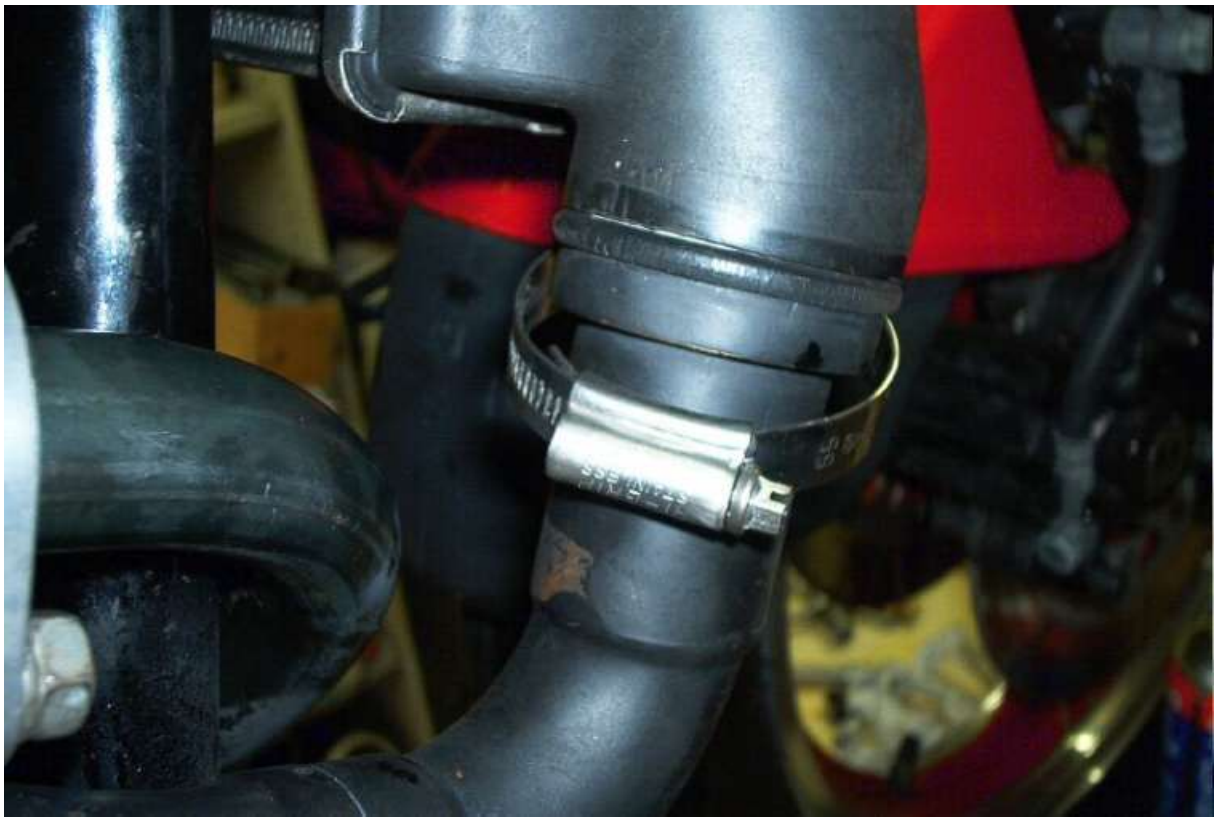
Make a groove in the coupling with a round file, it is supposed to keep the O-rings in place and remove the thread a little so they fit tightly !!! into the cooler.

You really need to make the ‘hot side’ in two parts with the rubber flange or else you won’t be able to get the pipe installed behind the spider.

All connections are soldered with tin, I’m pushing more then 16 psi now and it holds, hard soldering the pipes is better ofcourse but once it’s done you can’t make corrections anymore, with tin you can heat the stuf up and turn the bends a little.

Now…once the pipes are in place and the O-rings are mounted, push the couplings into the cooler and stut them with a 3x4 (peace of wood) or have someone holding them for you, keep pressure on the coupling untill the hoseclamp holds the coupling.

Because the O-ring is thicker then the connection the hoseclamp will push it flat and airtight, also the clamp holds on to the outside of the unit so it can’t come out;



Once installed it should look like this;



This is what the ‘cold’ side should look like once installed;



To ensure everything you've made is really airtight it's easy to have a tool like this hooked up to a compressor with a pressure from approx. 14 psi



With a little soapwater or a can of gasleak-seeker you can detect wether your work was done properly, airbubbles will show where the leaks are;

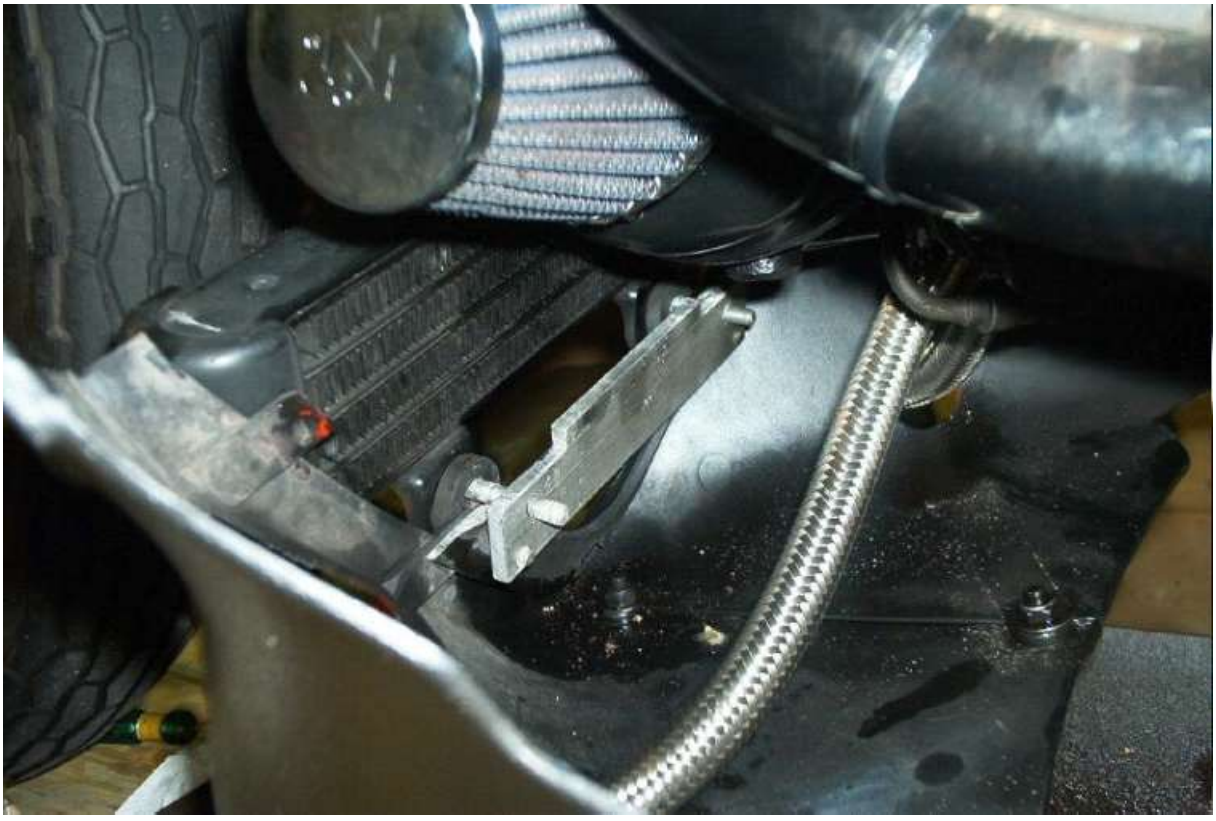


(home-made copper gaskets are not yet what they should be, the heat from the engine did the rest)

The next problem you are dealing with is replacing the oilcooler, believe me, you can't do without it, this is the solution I've found, if you know a better place let me know;



I've mounted the oilcooler onto the V-shaped roster (had a spare one) and sawed off the upper blades to give the oilcooler it's well-needed flow of air, last measurements showed an oiltemperature of 130 degr. celcius (237 F) on a warm summerday



Now….what do you think ?



This intercooler takes off 55 degr. celcius (131 F) from 80 degr. celsius (147 F) at an ambient temperature of 25 degr.celsius (77 F)



Have fun !!