

Part 4 - Installing the heater

1. Now the wing's clear it's much easier to position the heater and work out where the brackets need to go and how it's going to be held in place. The Webasto needs to be



mounted either horizontally (as mine) or vertically so that limits the choices when mounting.

2. I started by cutting a piece of one inch bar and drilling two holes to accommodate the existing wing mounting bolts as shown in the picture below.



3. I then took a standard Webasto mounting plate and bent two of the wing tips until the angle matched that of the bar – ensure that the mounting plate was level. The mounting plate was then welded to the one inch bar (you could use countersunk screws and nuts instead). It's worth experimenting at this stage to get the heater as close as possible to the front of the car without actually touching. I ended up re-drilling the mounting holes to achieve the same thing.
4. Once you're happy with the position at the front you can make a bracing bar to go at the rear. Initially mine was just a straight bar bent and drilled at both ends however once fitted and with a trial fitting of the air box back in place, it was impossible to get the air box cover off to get at the air filter. So bracing bar



mark 2 has a dog leg in it to provide clearance. I could have also welded this onto the main Webasto fitting plate but chose to use Allen set screws and nuts to give some adjustment when fitting. I fitted dome-head set screws with the nut underneath to avoid problems with the coolant pipes rubbing. Note: the pic shows them the other way round.

5. Captive nuts welded onto the bracing bar at both ends make fitting slightly easier but are not strictly necessary.
6. I used a dome head set screw to fix the bracing bar to the wing. To avoid the problem of the outer wing standing proud once fitted, I drilled a corresponding hole in the lip of the outer wing to accommodate the set screw head.
7. The heater is positioned so that the exhaust points towards the rear of the car and the coolant pump pipe points upwards. There may be alternatives but you need clearance for the exhaust.
8. At this stage I connected the water coolant pipes. I used two Webasto pre-formed coolant hoses. Both have a pre-formed 'U' shape at either end. I connected one (with complete 'U') to the heater outlet laying it as flat as possible.



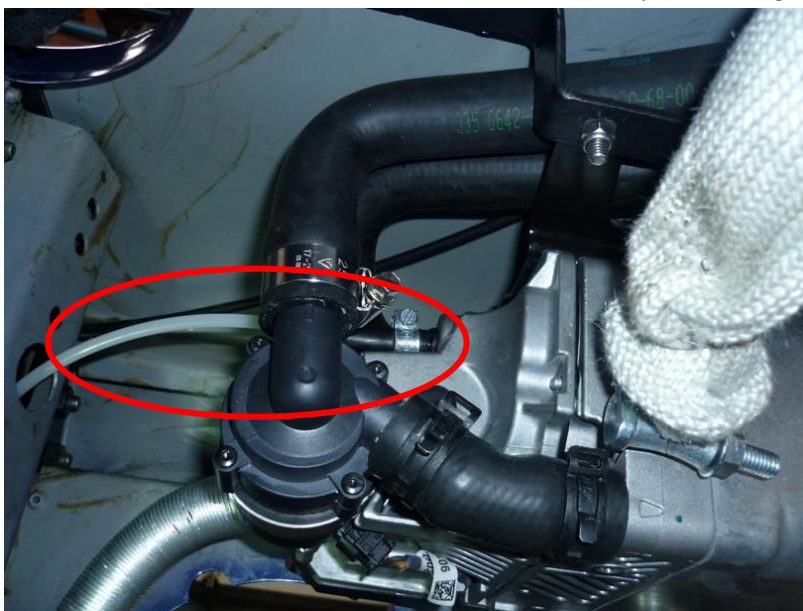
For the other I cut half the 'U' off to make an 'L' shape and connected this to the coolant pump. Note – you could get away with just one of the pre-formed hoses by using connectors and standard 19mm or 3/4inch hose however by the time you've bought the hose, connectors and stainless jubilee clips it's not far off the price of the pre-formed hose.

9. Connect the two electrical connectors to the top of the heater unit and then fix the unit to the mounting bracket using the three self tapper bolts/screws.
10. To fix the exhaust start by positioning the silencer. I fixed mine to the inside of the chassis at the front, using a rivnut to secure it. I then marked a hole in the panel above it and drilled a 24mm hole to accommodate the exhaust pipe.



11. Once the silencer is fixed you can also drill a hole to position the air intake filter/can.
12. Cut the 22mm exhaust tube to length remembering you also need a few inches spare for the silencer outlet. Be very careful when cutting/handling the pipe, the stainless steel edges are lethal.
13. Slide on the exhaust lagging and secure with welding wire or similar. I used a double thickness around the first bend of the silencer.

14. At this stage it's worth having a trial re-fit of the plastic inner wing and air box to make sure that everything fits. You'll need to make a cut-out in the top of the inner wing to accommodate the bracing bar you've fitted and I also modified the area at the lower front to provide adequate clearance for the Webasto silencer.
15. It's at this point that you realise how tight it all is. I made a heat shield out of aluminium sheet so that the exhaust wasn't touching the plastic inner wing and also shaved a bit off the front pastic bracing that holds the air box rubber bushes, putting some aluminium sheet on here too. In practice there are no nasty plastic burning smells – well not yet anyway!
16. Use proper exhaust clamps at the heater and silencer end and also fit the small downpipe on the silencer outlet. Also fit an and cap to this downpipe (to save fingers later)
17. Cut the air inlet pipe to fit and secure to heater using a jubilee clip. Screw the air intake filter onto the other end and clip it in using the hole you drilled earlier.
18. Finally, fit the fuel pipe. Be careful about the routing – I routed mine along the chassis and secured with a combination of plastic cable ties and p clips. It's not easy connecting it to the heater. The method I used was to drop the short rubber connecting hose into a cup of hot/boiling water then fit it to the fuel ine first and secure with a jubilee clip. Now dunk the whole lot back in the hot water, dab a drop of fairy liquid on the metal fuel pipe on the heater and the rubber connector should slide on easily (don't forget the second jubilee clip!)



I have known people who've tried to do this the other way round and it's a good job they had a spare supply of rubber connecting hose as once it's on the metal pipe you need to cut it off to remove it.....

19. Connect the relevant connector on the Webasto wiring loom to the fuel dosing pump and clip the wire in place, following the route of the fuel line, using the existing pipe clips and plastic cable ties.

20. Route the coolant pipes from the heater to the passenger side of the car keeping them away from the exhaust. I used a heavy duty plastic cable tie round the brake servo to achieve this. It may be worth checking out Entreq (www.entreq.de) as they do some neat rigid pipes but I'm not sure if they fit UK spec vehicles.

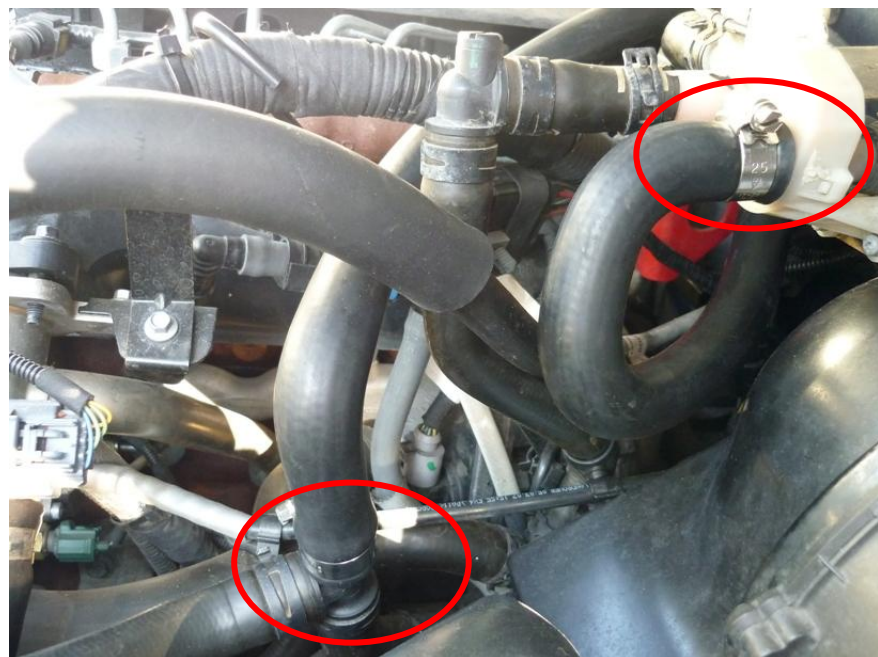
21. Cut one of the coolant pipes as before to achieve an 'L' shape and leave the other as a complete 'U'.

22. Remove the short length of pipe (shown in the picture) and connect the L pipe onto the 19mm connector with either a jubilee clip or the original hose clip.



23. Connect the pipe with the 'U' to the plastic valve. The actual pipe connector on here seems to be 16mm so to do this properly you should fit a 19mm/16mm reducing connector. The pipe however has a 20mm flange (whether by design/accident I'm not sure) but the Webasto hose fits perfectly. This is how I've done mine for now and it works fine however I've got a 19mm/16mm silicone reducing hose and will do it properly at some stage.

Before connecting the hose, fill the pipes with antifreeze solution and top up the antifreeze bottle.



24. So now the heater's in place, the pipes are all connected and the Webasto wiring loom is connected to the heater and the pump. Now's a good time to test it all.

25. Connect the oval 1533 timer to the relevant connector on the Webasto wiring loom.

26. Connect the red and brown wires (the ones with the ring connectors on them - don't confuse with the red/black wires which go the fan, more of which later) to a suitable 12V battery making sure it's sufficiently charged.

27. Double check the fuel line connectors are tight and no air leaks then press the heat button on the timer. The heater should start to fire up but will probably fail due to insufficient fuel. I think it took three goes with mine before the fuel dosing pump had pumped the fuel all the way from the tank to the front of the car. If you look carefully at the fuel pipe you can see the fuel being pushed along the pipe.

28. If everything works at this stage you can afford to give yourself a pat on the back and look suitably smug before cleaning up and clearing off to the pub.