

WRX MY99 stock exhaust replacement - DIY

Ver 1.0 – 13-Nov-2006

What is it about ?

I purchased a 3inch exhaust and wanted to fit it myself. When I looked around I could not find a DIY with pics for removing the stock exhaust. As a result I decided to take pics as I fitted my system.

Is this for n00bs ?

Well yes... I took photos of some really obvious stuff, and have also added descriptions for some obvious things. I am trying to accommodate people like myself. People who are happy to do anything electrical with their car, but are not so confident with the mechanicals. So if you are happy installing stereos, alarms, cruise control etc... then this is for you.

A few warnings...

- Yes these are simple instructions, and may look stupid to experienced people. If you don't like it, stop reading it.
- NEVER do anything you are not willing to accept the consequences of. This process may result in your car not starting, or being damaged in some way.
- As per above, I will NOT accept any responsibility for problems, issues, mistakes, misinterpretations or anything else related to this document or problem which arises as a direct (or indirect) result of actions on any vehicle.
- ALWAYS read all the steps and become familiar with all of them BEFORE starting the process. This way you may find you need an extra tool, or component that you never thought you would need.
- If in doubt, DO NOT use these instructions. Get a qualified workshop to do the work. Quite often they are worth the cost, and can save you a lot of problems.

With Thanks

Thanks to many of the people on www.perth-wrx.com. I receive heaps of pointers on various parts of this process from various forum members. Especially Wade who pointed me in the right direction with a few things before I started.

More information...

- This DIY is freely distributable and you can host it on your server etc as long as you keep it FREE. If you paid money for this, then get a refund. Its free at www.fobz.org
- Depending on feedback I receive, this document may get updated. For the latest version go to www.fobz.org and have a look around for the WRX stuff.

Preparation

- **Gasket** – There is a Gasket where the exhaust connects to the turbo. It is probably a good idea to have a new one on the ready. When I did mine the old one was in perfect condition so I didn't need to use a new one. Anyway, here is a picture of one with the Subaru part number.



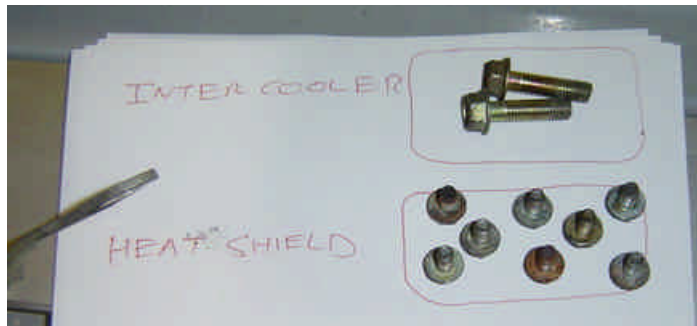
- **Oxygen Sensor** – The oxygen sensor on your car screws into the exhaust pipe. As part of these procedures it will be removed. If you are lucky it will be ok and screw out perfectly (mine did). If it is damaged during removal then you will need to have a new one handy. I found a Bosch generic one made for the EJ205 motor. The plug was wrong, but a bit of soldering will fix that. Anyway, keep one handy in case the old one screws up. Shop around, the genuine one is far more expensive. Here is a pic...



- **Jacking** – You will need to get your car about 40cm off the ground. A pit or hoist are perfect for this. I have not covered this in this document. You will need full easy access to the turbo and exhaust from under your car. Don't be a fool, never get under a vehicle unless it is properly secured.



- **Keeping Track** – A few of us out there are guilty of having a few missing bolts when putting it back together. For you real n00bs out there I suggest using a bit of paper and writing down where bolts, screws etc come. Makes things easier to track, and less likely to lose. Don't be shy to write it down, It is better to admit to being a n00b than lose that important bolt to your intercooler.

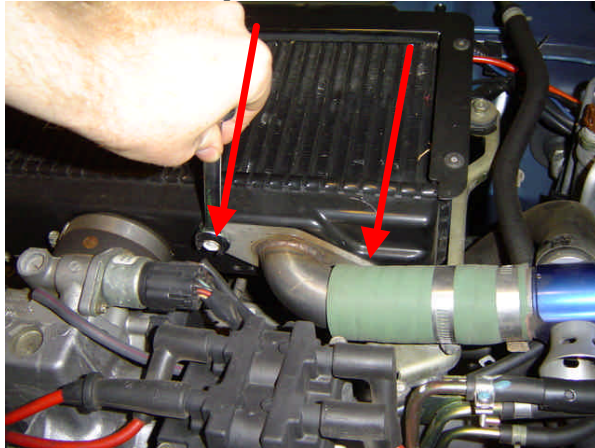


- **Tools-** Many of the pics show a particular tool. For example you may see a ring spanner in a pic. Keep in mind that I took the picture BEFORE trying to remove the bolt. Sometimes I had to switch to a socket, and even use extensions and special joints.. Keep this in mind and use the best tool suitable

- **Lubricant** – Yes personal lubricant. You will need to sneak into your big sisters room to get some. This stuff is great for getting rubber hangers loose on the exhaust. It is better than silicone coz it will degrade once the parts get wet. If you use silicone, then it will keep lubricating the joints and your hangers may come loose later. If there is any lubricant left over at the end of this then use your imagination.

Lets get going... The preamble is over...

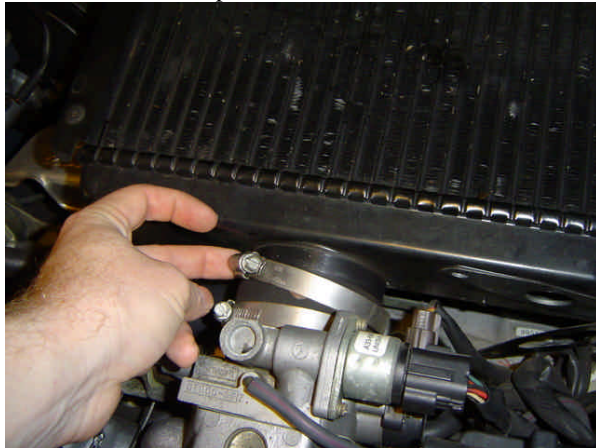
Losen the blow-off valve bolts. There are 2 of them. I have an aftermarket valve, but bolts will be in same place.



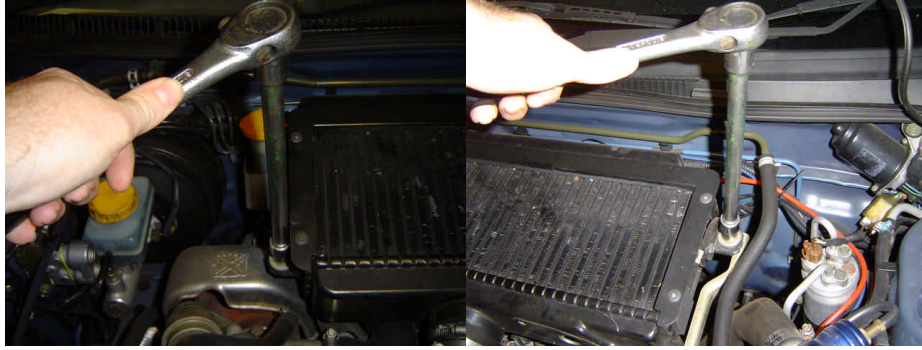
I only had to take the left bolt off to get the valve off. Be careful not to lose the gasket on this one.



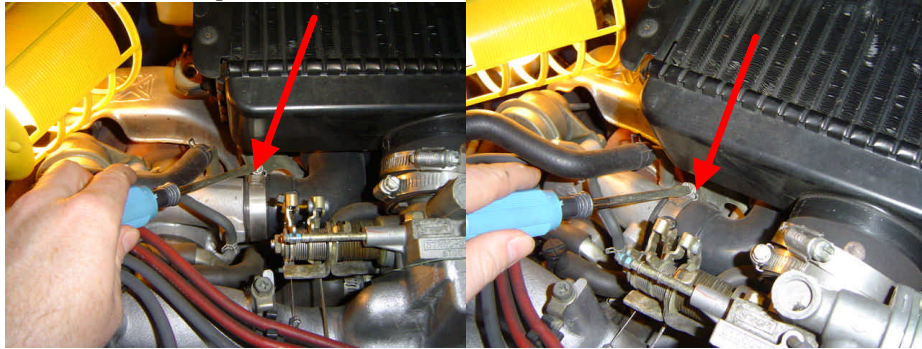
Loosen the utilux clip on the outlet of the intercooler.



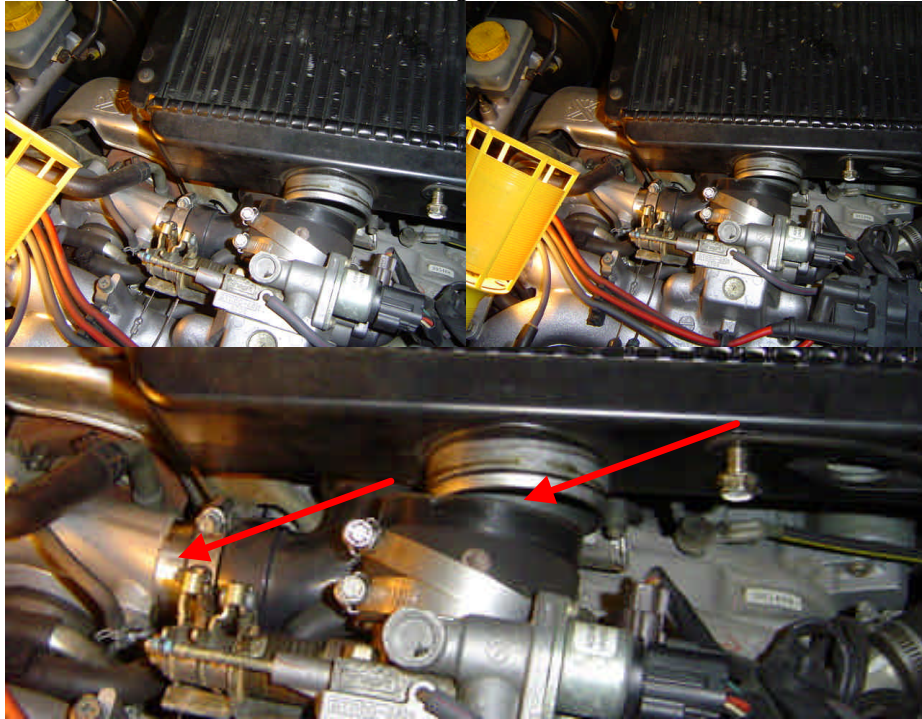
Remove the 2 bolt holding the intercooler.



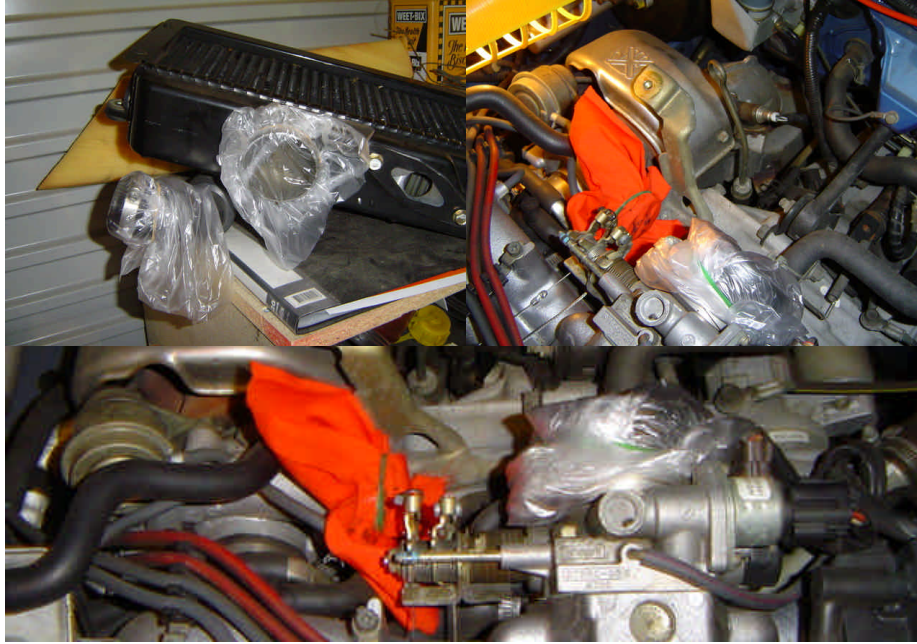
Loosen the utilux clip on the turbo outlet. Don't completely undo it, just very loose.



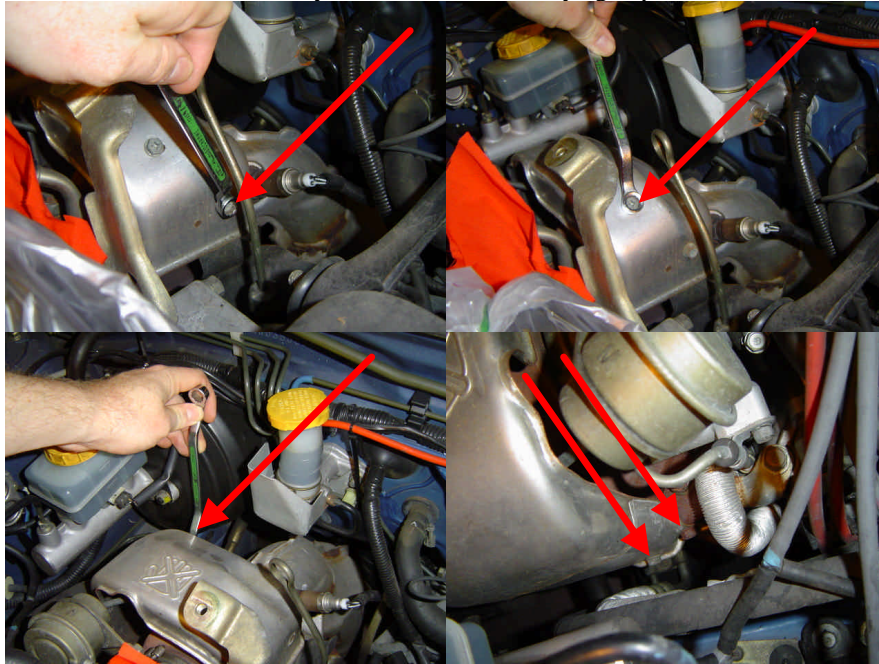
Tricky bit. You must now wiggle the intercooler up, to the right and toward the back of the car. This will move wiggle the turbo outlet off and the intercooler outlet loose. In these pics you can see the intercooler coming loose.



Once you have the intercooler off, cover the inlet and outlet. My system was perfectly cool so I used plastic bags with elastic bands. (Be careful if system is hot as plastic may melt). NEVER use a cloth that is full of lint or dirty. You do not want crap going into your engine. You can see also that I used a red lint-free cloth to cover the turbo as it was still warm enough to melt plastic. I did notice when writing this that I forgot to cover the blow-off valve hole... Doh ! Perhaps you should. Especially if someone is mowing the lawn like on the day I was doing this.



Next remove the turbo heat shield. There are MANY bolts with this...Pics may not show them all. Be patient. Note that there are 2 of the screws that are far easier to remove from under the vehicle. Make sure you read ahead before trying to pull shield out...



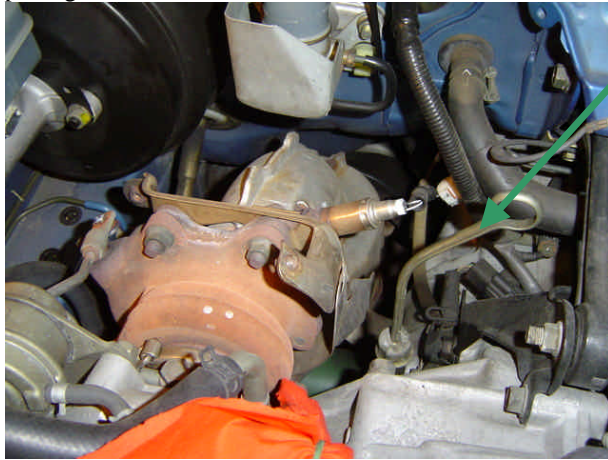
NOTE: This pic of the removed heat-shield show the 2 bolt holes that are easier to remove from under the car.



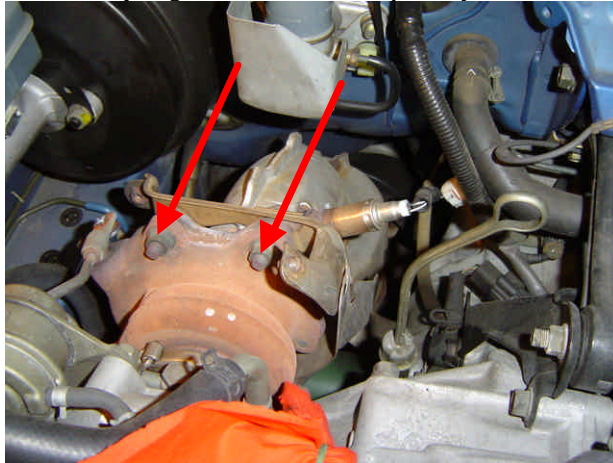
Once you locate and remove all the heat shield bolts you will need to remove one of the intercooler mounts to allow the heat shield to actually come out. This pic shows one of the bolts. The other is obvious...



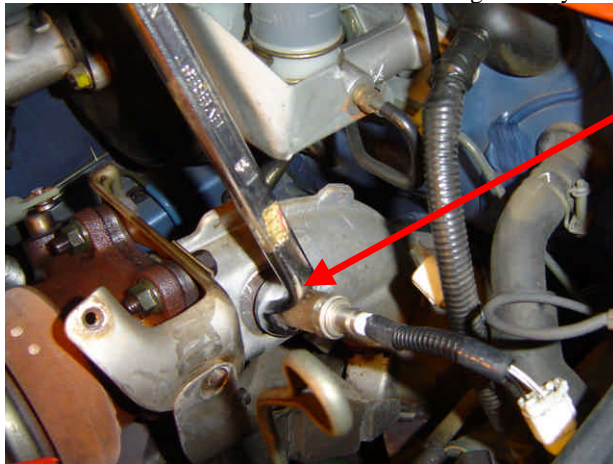
This is a pic with the heat-shield removed. Not the dip stick (highlighted in green). I pulled it out and moved it across to the right. It makes it a bit easier to work on things. NOTE: You MUST switch it back to hanging to the other side (towards the turbo) before putting intercooler back later.



At this stage you should spray a little CRC (or some other bolt loosening agent) on the bolts on the turbo. DO NOT spray it on the oxygen sensor. This pic only shows 2 of them, but try to give all 5 of them a squirt if you can. It will make life easier a bit later.



Next you will need a 22mm ring spanner (that's what mine was). Unplug the oxygen sensor and then put the ring spanner over it to GENTLY remove it. DO NOT use any CRC on this. I have been told it can be damaged easily so be VERY careful.



Next you must loosen the 5 bolts holding the exhaust to the turbo. I could do 4 of them from the top of the car using ring spanners, but the last one I needed to be under the car and needed a socket teamed with a angle joint and 2 extensions. If you don't have this then it will be VERY difficult. The flexi joint was very useful in this case. Here is a pic of what I needed for the last nut. Note: Only loosen things. Don't undo them yet.



Get under the back of the car and undo 2 bolts on the flange to the middle section.



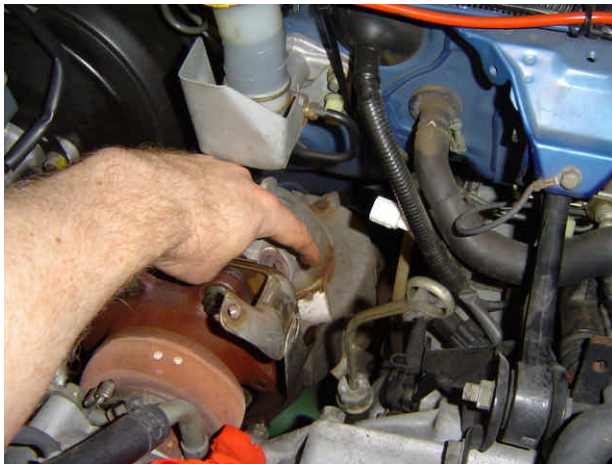
Next wiggle the 3 rubber hangers that hold the rear part up. This pic only shows one of them. Use the lubricant you borrowed off your sister. This pic is a bit rusty coz I had an existing dif-back unit with some mild steel hangers.



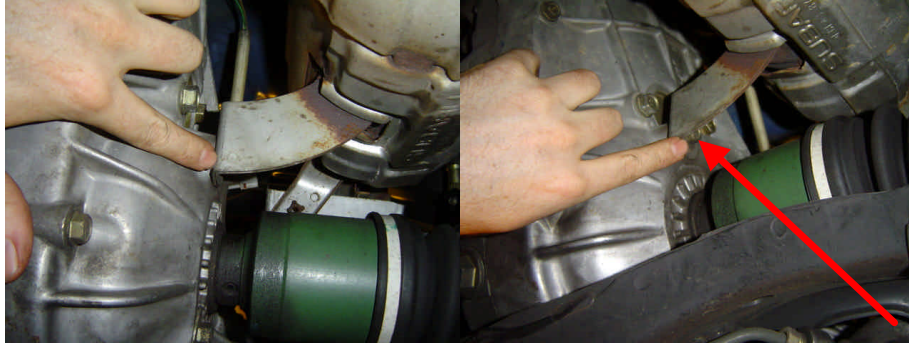
Once off it should look like this... No rear part...



(Back to engine bay) There will be a few extra small bolts holding things at the turbo end which we need to take care off. The first is the same size as the other bolts holding the heat-shield on. It is hidden down the back. In this pics you cant see it, but I am pointing down towards it. You must get it off, so have a look and you will see. Its down over the back and can be access best from above the turbo.



Next bolt is quite hidden. From memory you will need a 14mm socket for best results. From under the car there is a bracket holding the stock exhaust to the drivetrain. It is behind this bracket and you can just see it in the second pic.



The next bolt is also accessed from under the car. The angle of this pic is a bit funny, but once you are under the car then a picture speaks a thousand words. Remove it and keep to one side. Many aftermarket exhausts use this mount so the bolt will be reused.



After removing this bolt, you can remove the bolts which hold the mid section of the stock exhaust on (The bit of pipe that extends to your rear dif). They have springs on the flange which are annoying, but get them off. The mid section will then only be held by a rubber hanger. Time for more lube and off she comes.

Once these are off, you can remove all but one of the top turbo bolts. It is best with 2 people. With you under the car holding the pipe to the turbo get an assistant to remove the final bolt from the turbo. The pipe will come away and can be remove from under the vehicle.

Before putting the new system on, decide if you are going to use your gasket. I was lucky and my old one was perfectly in tact and looked great. I didn't use a new gasket. If you are going to use a new gasket, then this is the time to remove the old one and put on the new one.

To put the new system on will be easiest with an assistant. From under the car, you can push the new pipe up to the turbo and get an assistant to secure one of the top bolts to hold it in position.

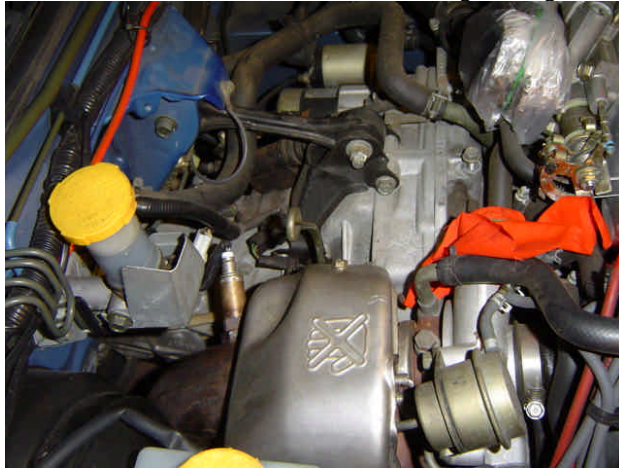
Secure the new system to the bolts and hangers and required. Not all systems use all the mounts. Mine used all the hangers, but did not use the bolt which connects to the drivetrain at the front.

Once hangers and other under car bolts are done tighten the 5 turbo bolts.

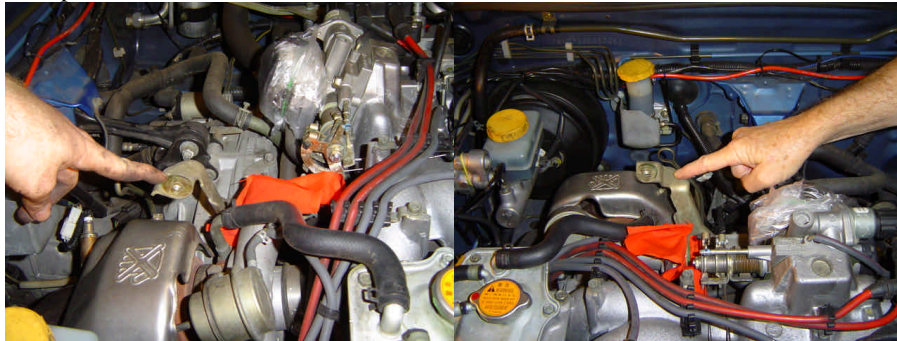
Next you may need to trim your heat-shield for it to fit back in place. This is because many aftermarket exhaust systems have a bigger neck that the stock system. This is pic of mine. Note there is a huge section missing compared to the earlier heat-shield pic. I just used some tin snips to cut it away. Feel free to do a neater job than I did. Be careful not to slash yourself on the sharp edges left.



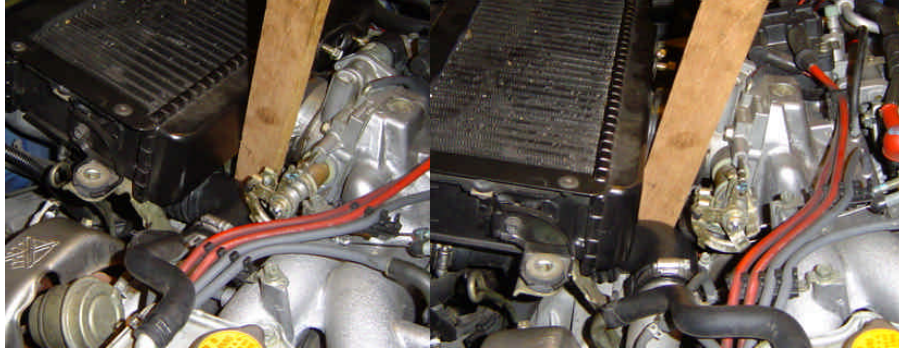
BEFORE you fit your modified heat-shield, ensure you fit the oxygen sensor to the new system and plug it in. You can then fit the heat shield. It took me a couple of goes to work out how much to trim off the shield to get it to go back on and not hit the new pipe.



Next put the intercooler mount back on...



Now the fun bit. I used many curse words on this bit. Remove the covers for the turbo and manifold inlet. Wiggle the intercooler back into position. I had trouble getting the turbo pipe back on fully and found once the pipe was on a bit I could gently lever it with a bit of wood. Be VERY careful not to crack your pipes or damage anything.



Almost there. Replace the 2 bolts that hold the intercooler down. Then retighten the 2 utilux clips on your turbo, and the manifold inlet.

Testing time: Start the car (obvious to make sure it is not in gear) and make sure it idles ok and your “check engine” light does not come on. If all is ok then stop engine, get of hoist/jacks and you are good to go. Test drive slowly and check again for problems.

If there are problems then go back and check your work. If problems persist then a flatbed truck to a quality workshop is the only way to go. Don’t take chances. It can kill your engine.