2011-ON NISSAN R35 GTR TRANSMISSION COOLER INSTALLATION

Tools needed:
2 or 4 post garage lift
Small and large flat bladed screwdriver
10mm,12mm and 13mm sockets, long extension, 3/8 or ¼" ratchet
22mm spanner
PTFE tape
Loctite
12 litres of transmission fluid
4mm,5mm and 7mm allen sockets
Side cutters/wire cutters
Soldering iron and solder
Electrical tape
M6 tap
5mm,7mm,8mm and 9mm drill bits with suitable drill
Side cutters
Wire strippers and crimpers

Identification of a 2011-on GTR:
The most obvious change from the 2010 to 2011 chassis (also known as the 2012 in the USA) is the addition of daytime running lights or DRL's, which are located on the front quarters of the bumper. If you have these you have a 2011-on GTR.

Kit contents:

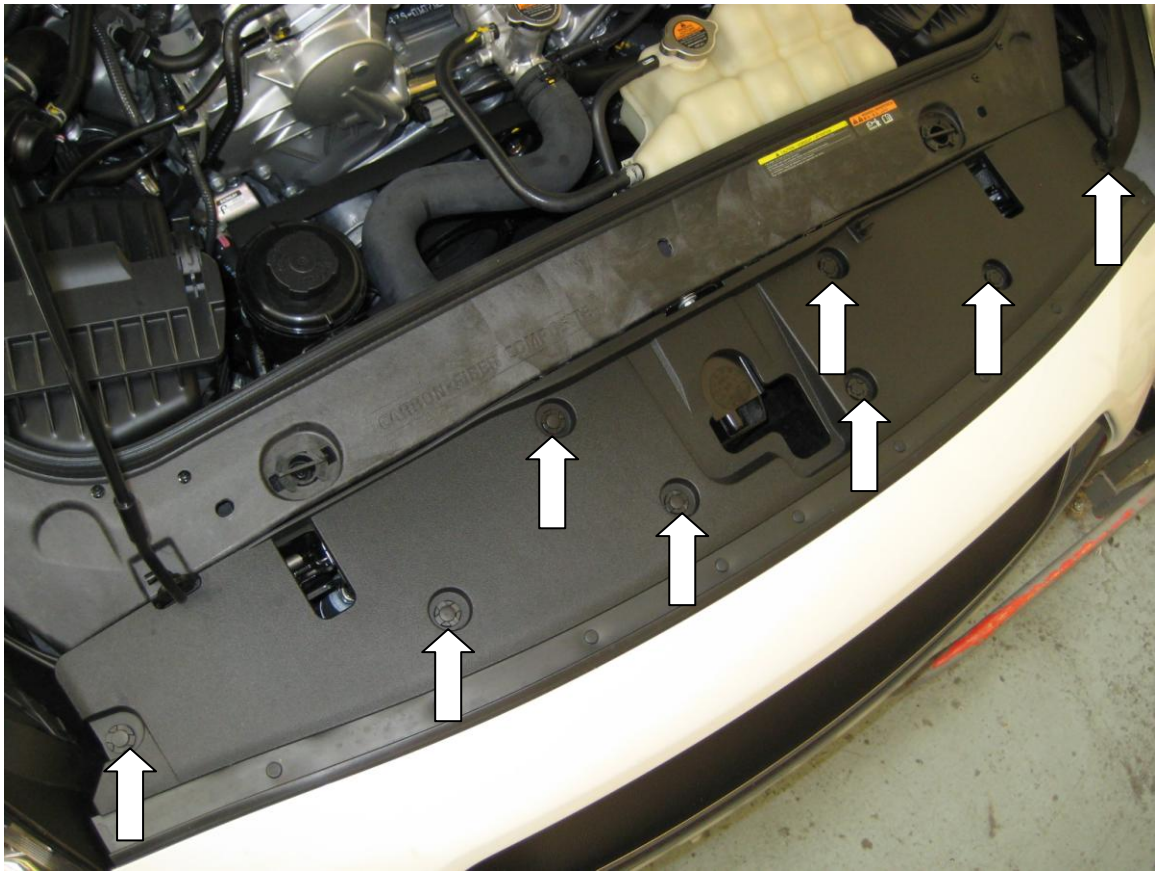
Please check your kit carefully, though it will be time consuming, to ensure you have everything before you start.

1x Aluminium sump
1x Genuine Nissan sump gasket
1x Electrical harness
1x Brass temp sensor
1x M14 bonded seal
1x M16x1.5 to -8JIC adaptor
1x M16 bonded seal
1x M18x1.5 to -8JIC adaptor
1x M18 bonded seal
1x 19 row oil cooler
1x Mocal oil pump
1x 3/8NPTF to -8JIC adaptor
1x 3/8NPTF to -8JIC adaptor 45 degree
2x M22 to -8JIC adaptor
6x 19mm P-clip
1x 16mm P-clip
6x aluminium fabricated brackets
3x special assembled hoses (2 are heatproofed)
2m heatproof sleeving
2m Silicon tubing 16mm ID
20x M6x16 set screw
21x M6 spring washer
2x M6x10 set screw Phillips head MILD STEEL
2x M6 penny washers MILD STEEL
9x M8 penny washer
3x M8 nyloc
3x M8x60 set screw
4x M6x20 allen head bolts
6x M6 penny washer
22x M6 nyloc nuts
30x M6 plain washers
20x small cable tie
2x JCS 70-90mm hose clips

All Forge products carry a lifetime guarantee against manufacturing defects.
All Mocal parts carry a 1 year guarantee from time of purchase
Neither guarantee is valid if a failure is attributed to poor maintenance or fitting of the product.

OIL COOLER INSTALL

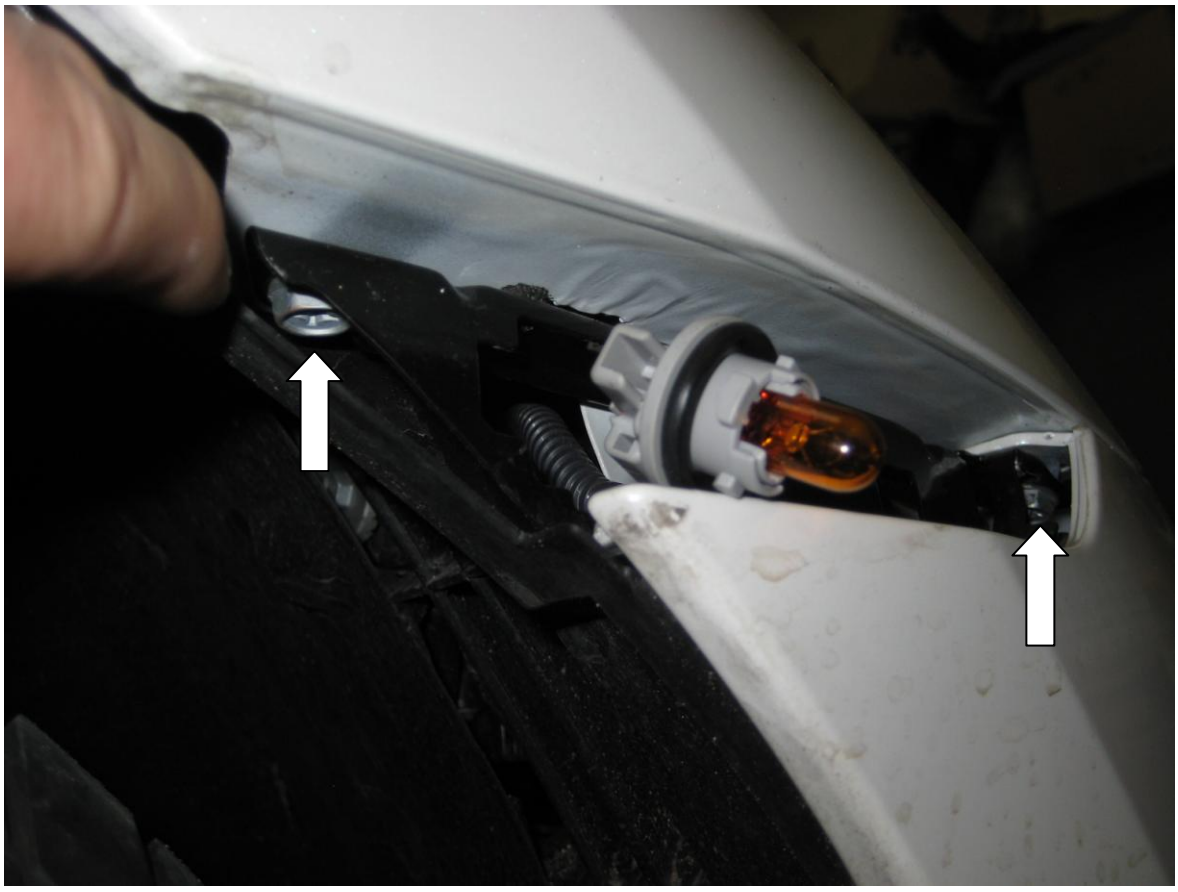
1. Drive the vehicle on to a two post lift ideally (though this can be accomplished on a 4 post lift). Installation on a driveway is not recommended unless you've got lots of time on your hands !
2. Remove the 8 push in clips between the slam panel and the bumper and remove the trim from the car.



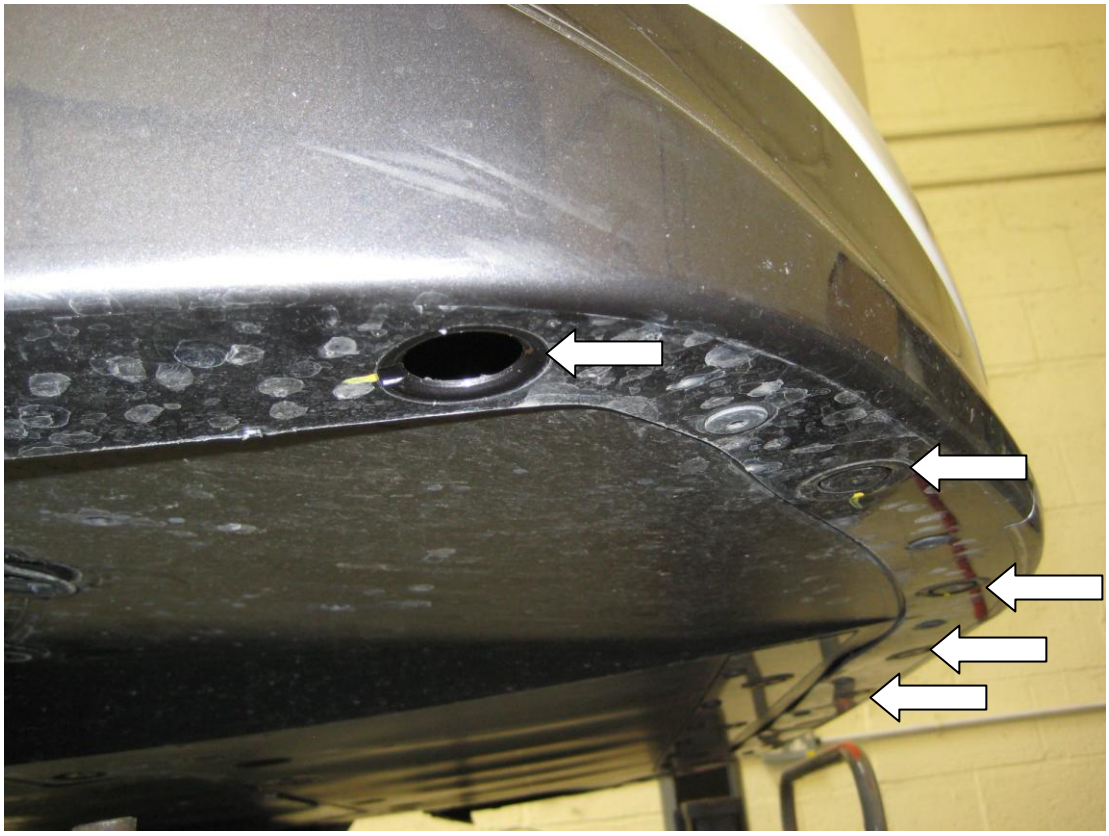
3. Pop the side repeaters out of the ends of the bumper by inserting a screwdriver behind them and levering out until the metal tab is released, then twist the bulb holder to remove the repeater.

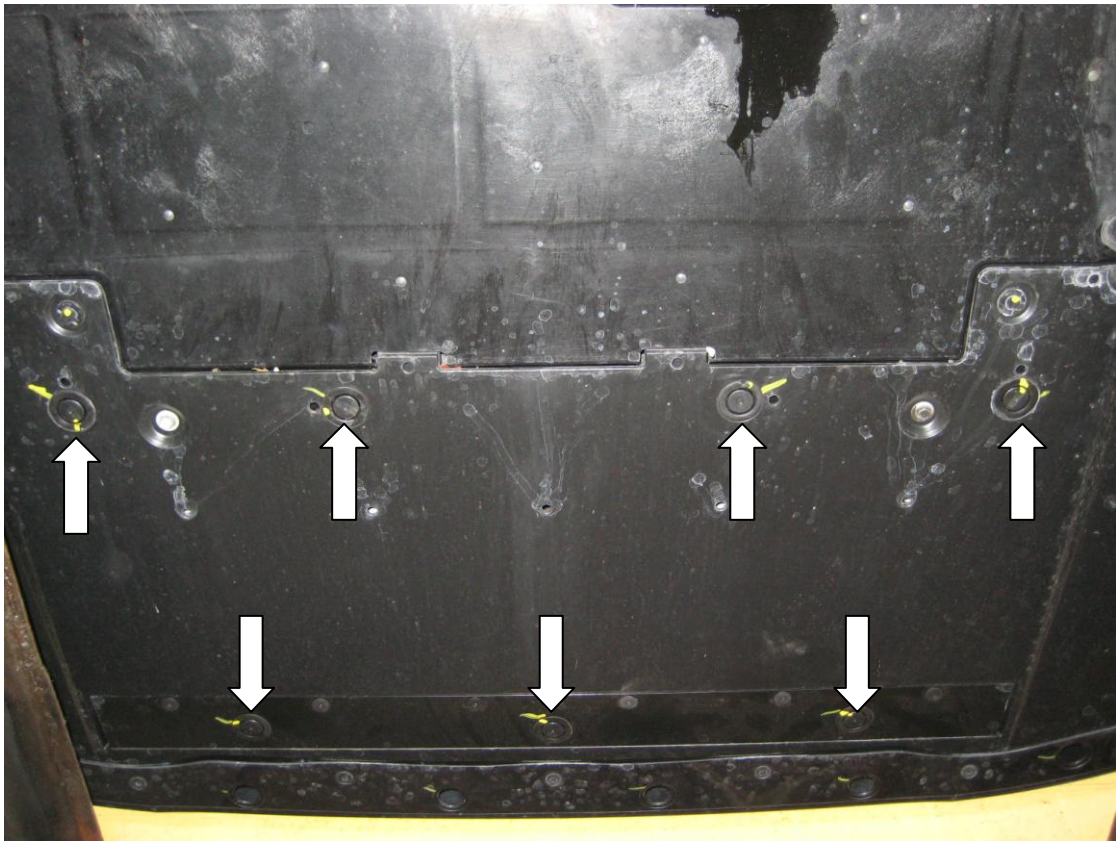
4. Remove the 4 push in clips holding the bottom edge of the arch liner to the bumper, then pull back the edge of the liner from the bumper and undo the single 10mm bolt

5. With the arch liner pulled out of the way, you will be able to easier access the other bolt holding the bumper to the wing. We found it easiest to use a long extension on a 3/8” drive to get onto the bolt.

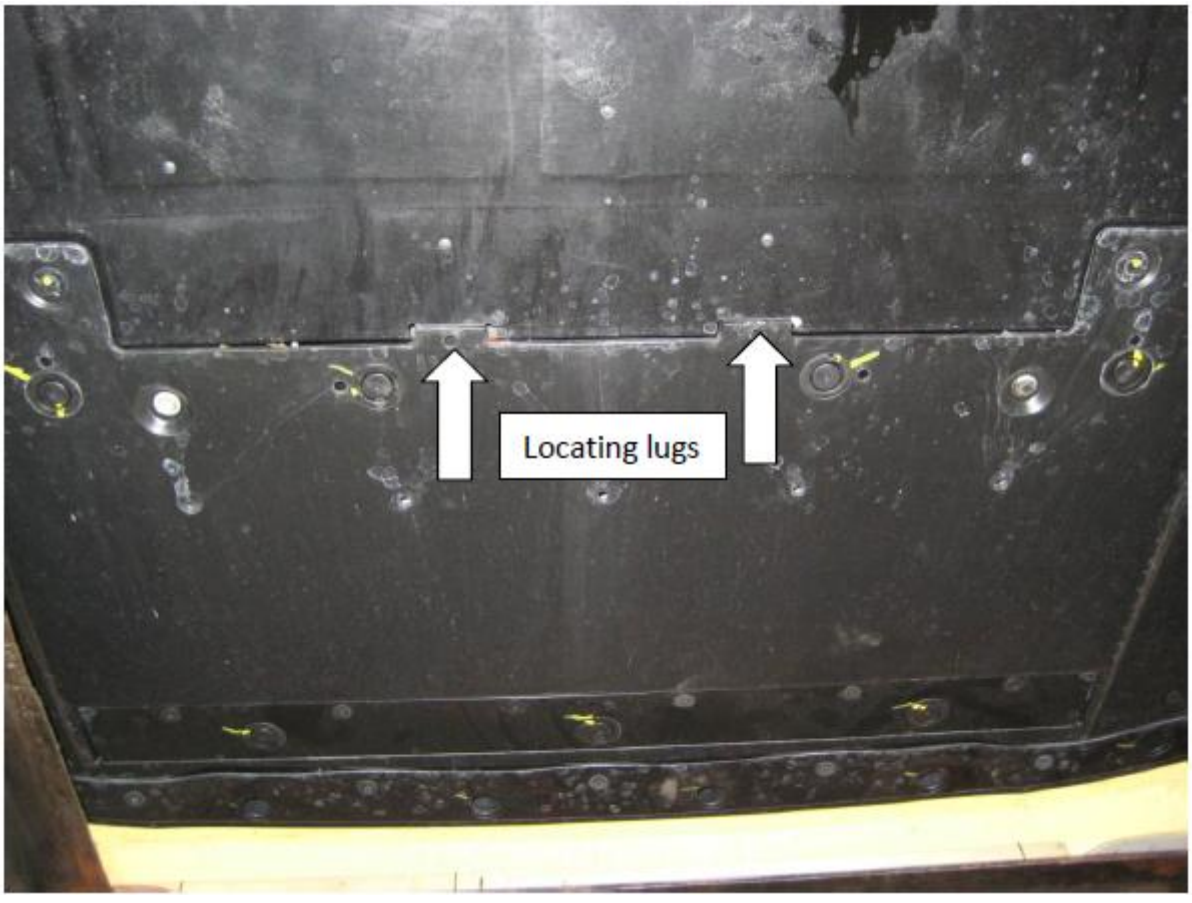


6. Remove the rubber bungs along the front edge of the bumper (10), and the attached undertray (4 at the front, 3 at the rear). You'll notice under the rubber that there is a small slot to enable you to use a small screwdriver to prise them out.

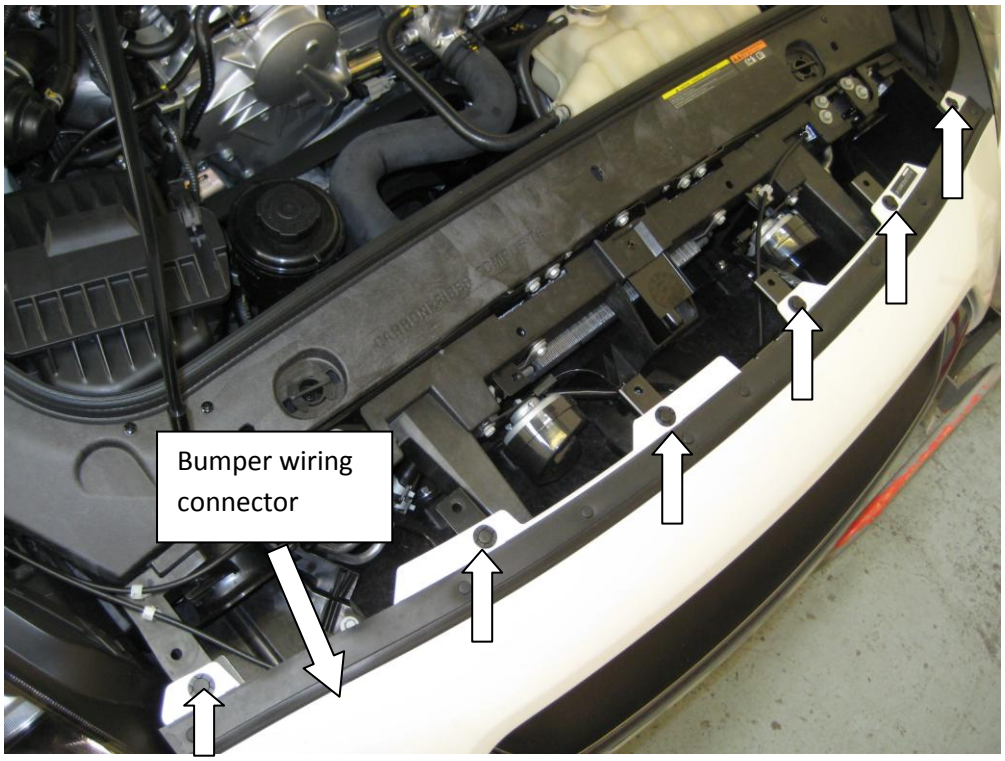




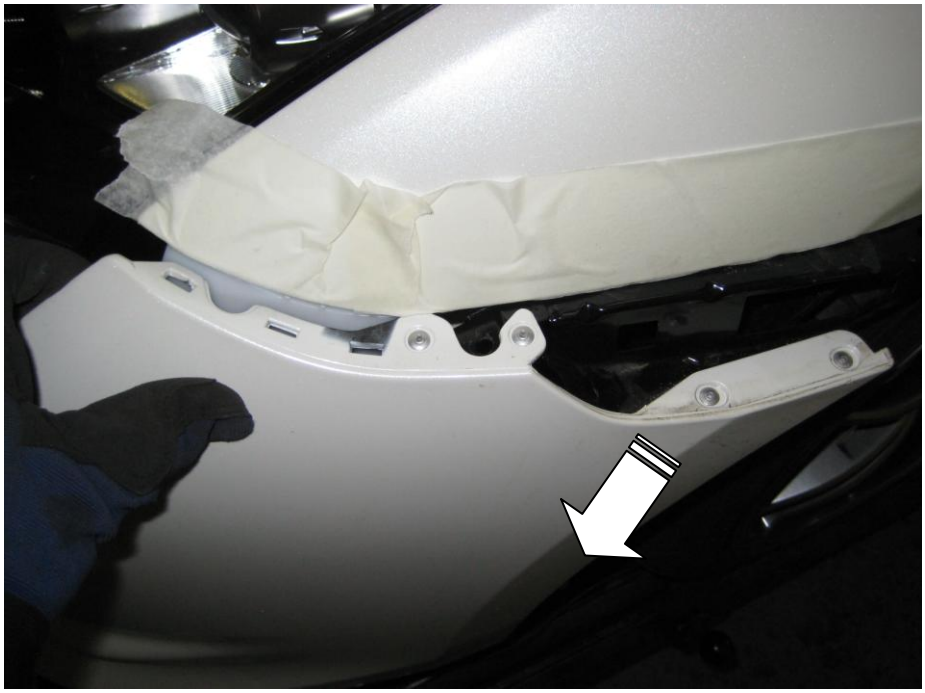
7. Remove the 10mm bolt under each bung. You'll notice that the three bolts at the front of the attached undertray are 12mm, leave these until last. Support the weight of the undertray and remove the 12mm bolts then pull the undertray forwards to release it from the locating lugs at the back and remove it from the car.



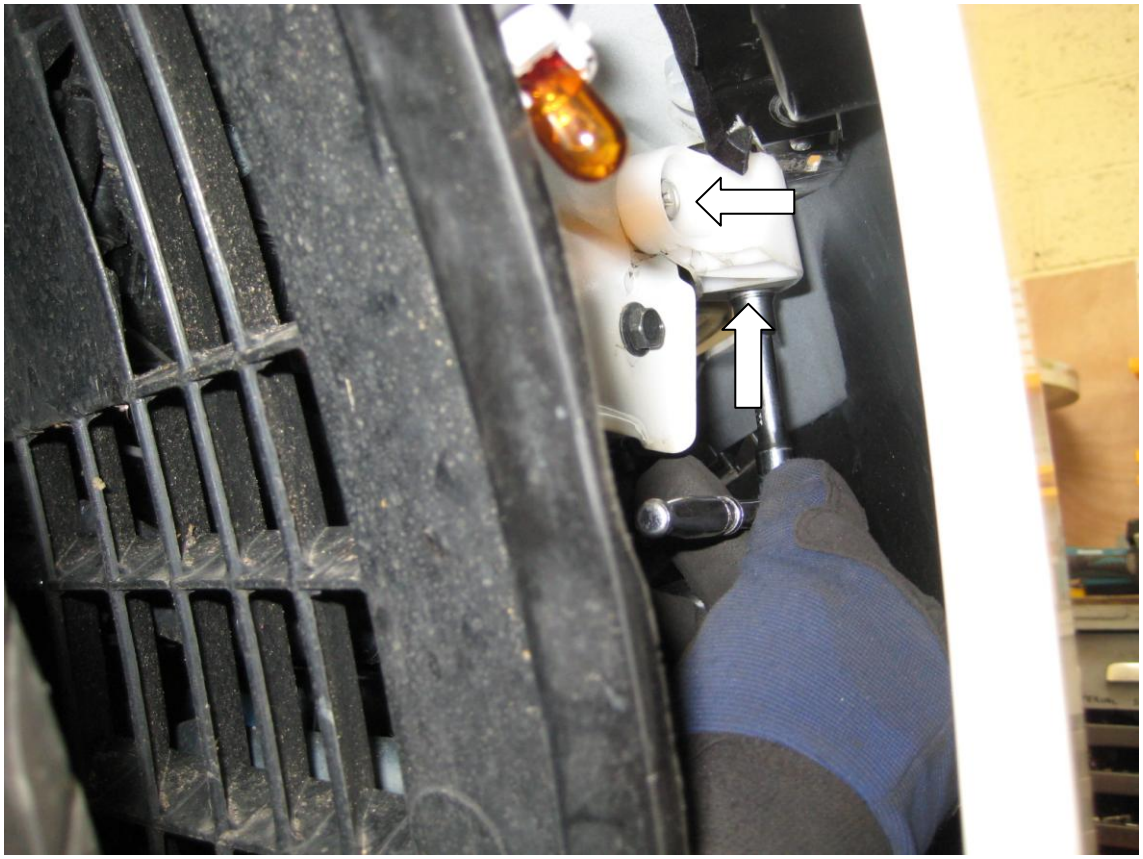
8. Back in the engine bay, remove the 6 clips holding the front edge of the bumper to the slam panel, by prising out the centre of the clip with a small screwdriver. Don't touch the wiring yet.



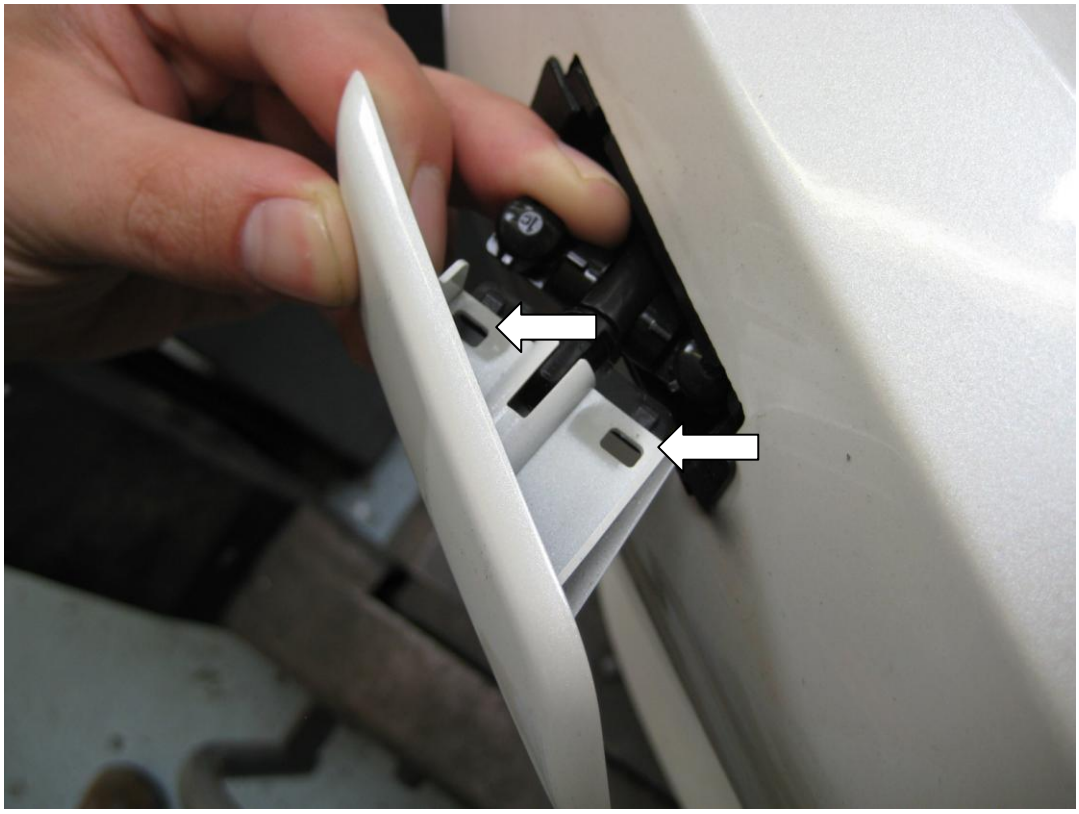
9. Release the edges of the bumper from the clips under the headlights, this can be hard, the most important thing is if you think you're using too much force then the clips themselves can be removed if necessary. See next step.



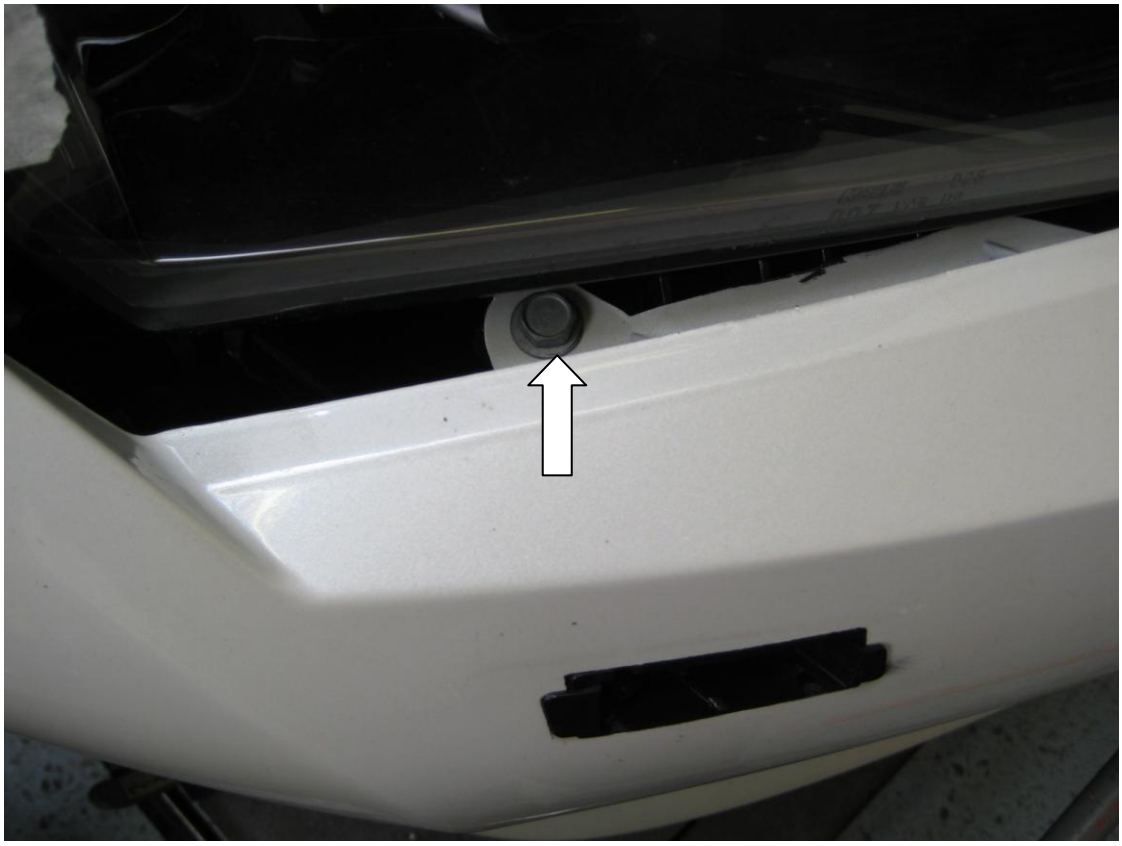
Clips holding the bumper on can be removed if the bumper won't pull off the clips, by removing the two 10mm bolts as shown below.



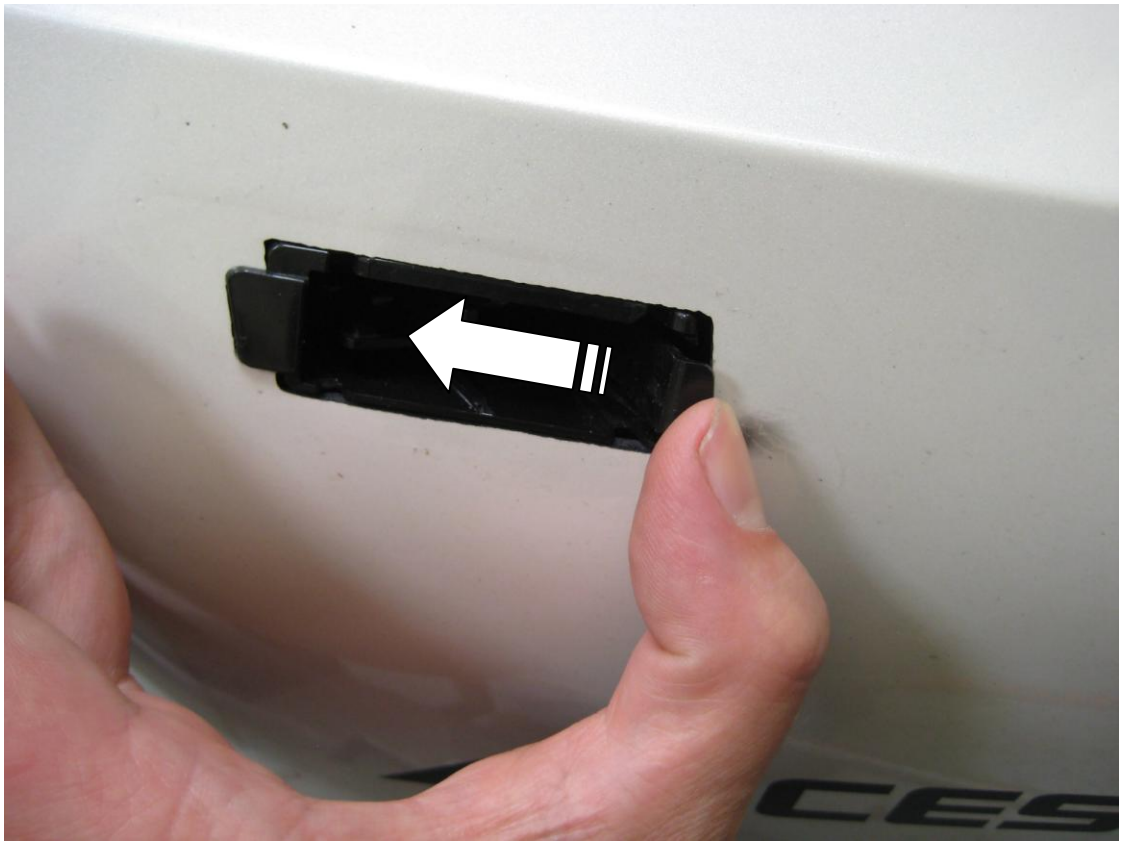
10. If your car is NOT fitted with headlight washers then please skip this step. Pull the washer out of the bumper using your fingers, then unclip the cover.



Pull the bumper forward and undo the 10mm bolt holding the back of the washer in place



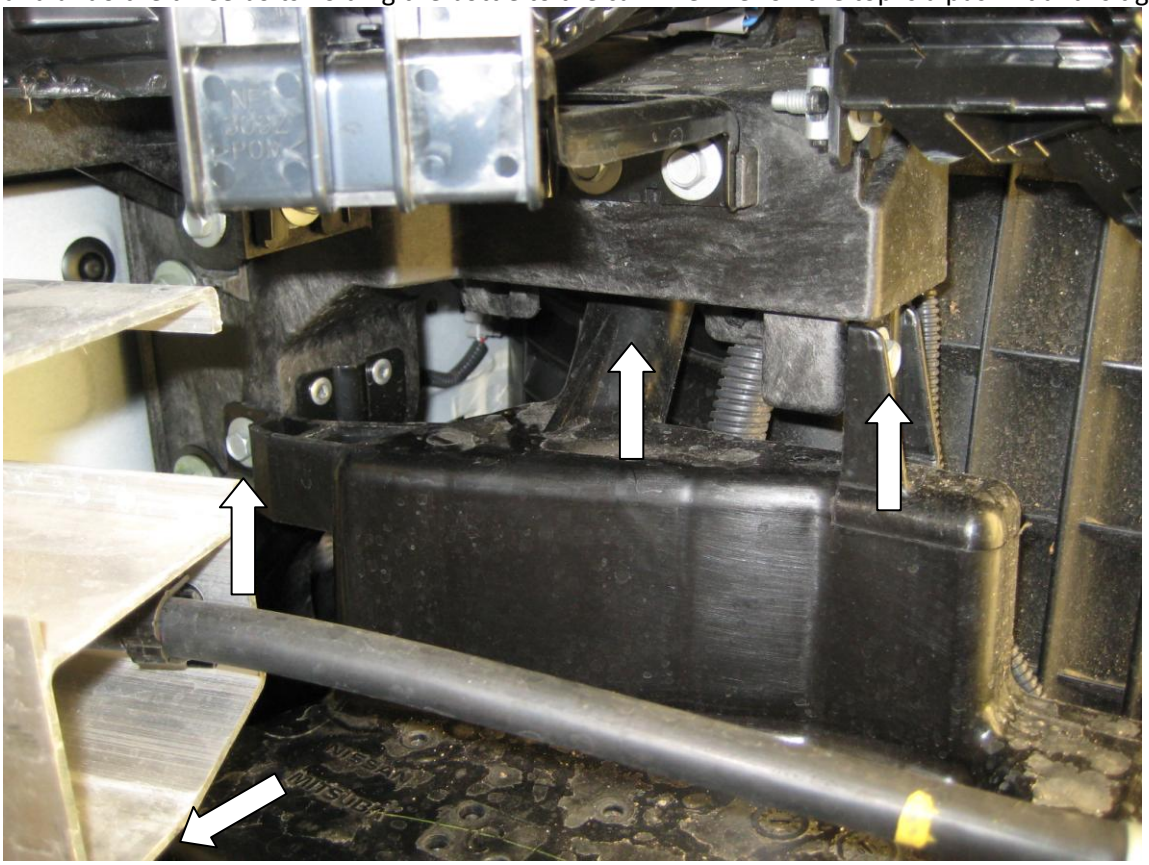
Push the sprung edge of the washer over to release it from the front face of the bumper, then push the washer through the hole.



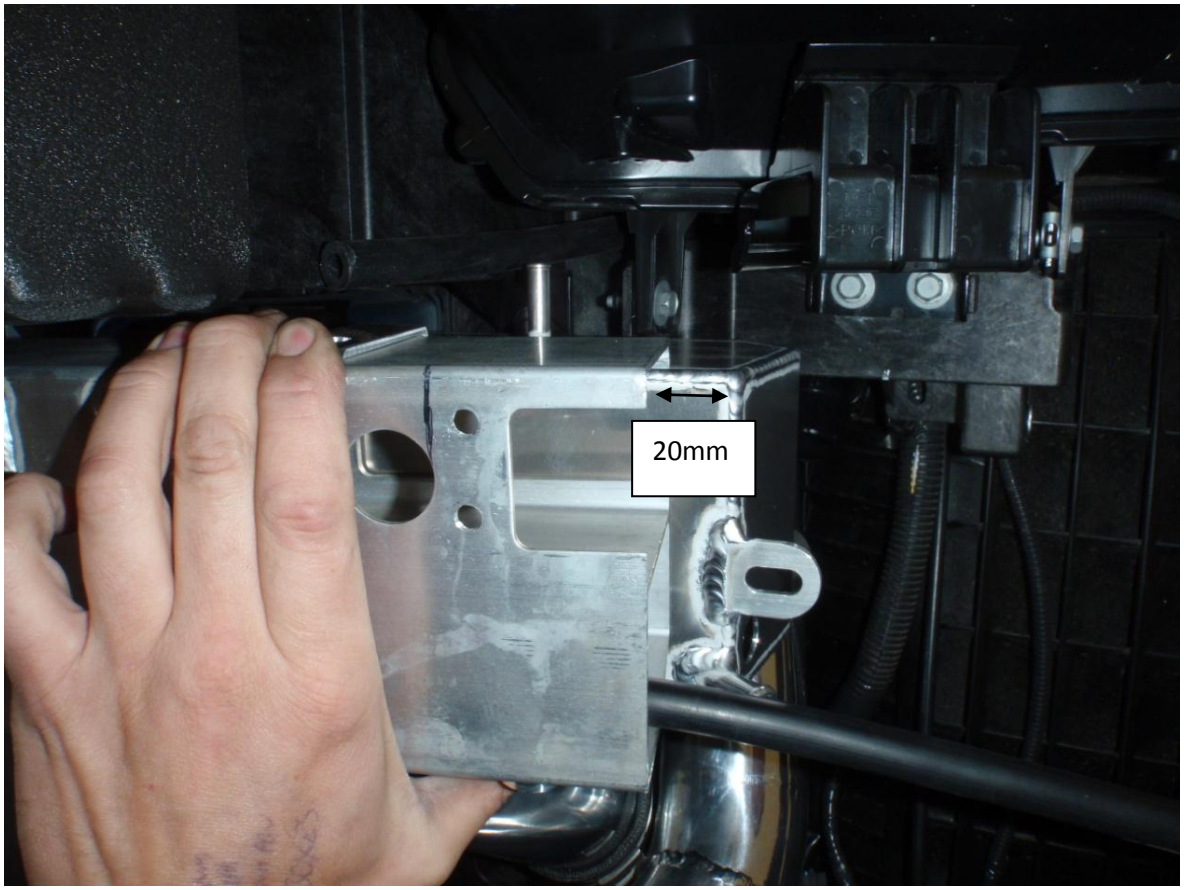
11. Ensure that the ignition is OFF, then separate the plug on the wiring harness to the crash sensors in the front bumper (again, if fitted), which can be found on the left side of the slam panel (see picture in step 8)

12. The bumper can now be withdrawn from the vehicle. TAKE CARE to store the bumper horizontally and not subject it to any impacts i.e. dropping it, as this may break the crash sensors.

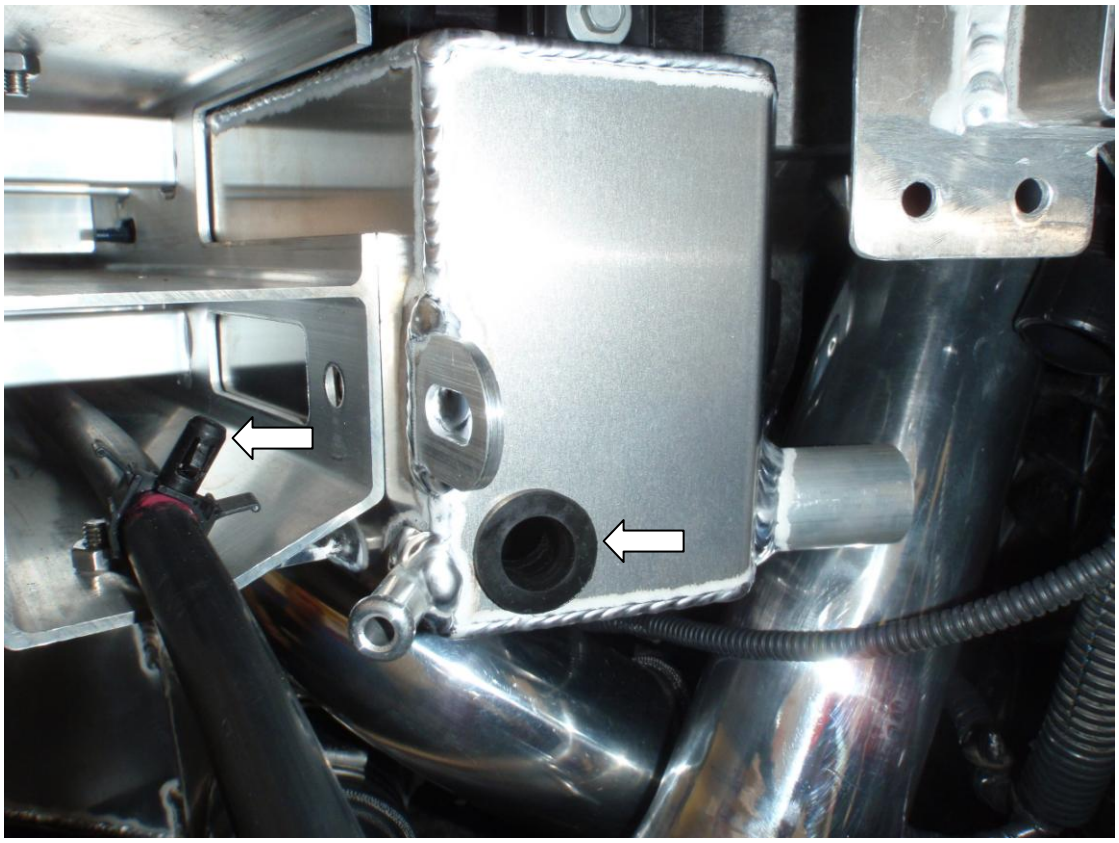
13. Remove the stock washer bottle, by first draining the fluid from the bottle into a suitable container, then undoing the wiring to the level sensor (bottom of bottle), windscreen washer pump (back of bottle) and headlamp washer pump (if fitted – right side of bottle). Remove the pipework to the windscreen washer pump and undo the three bolts holding the bottle to the car. The filler on the top is a push fit and is tight.



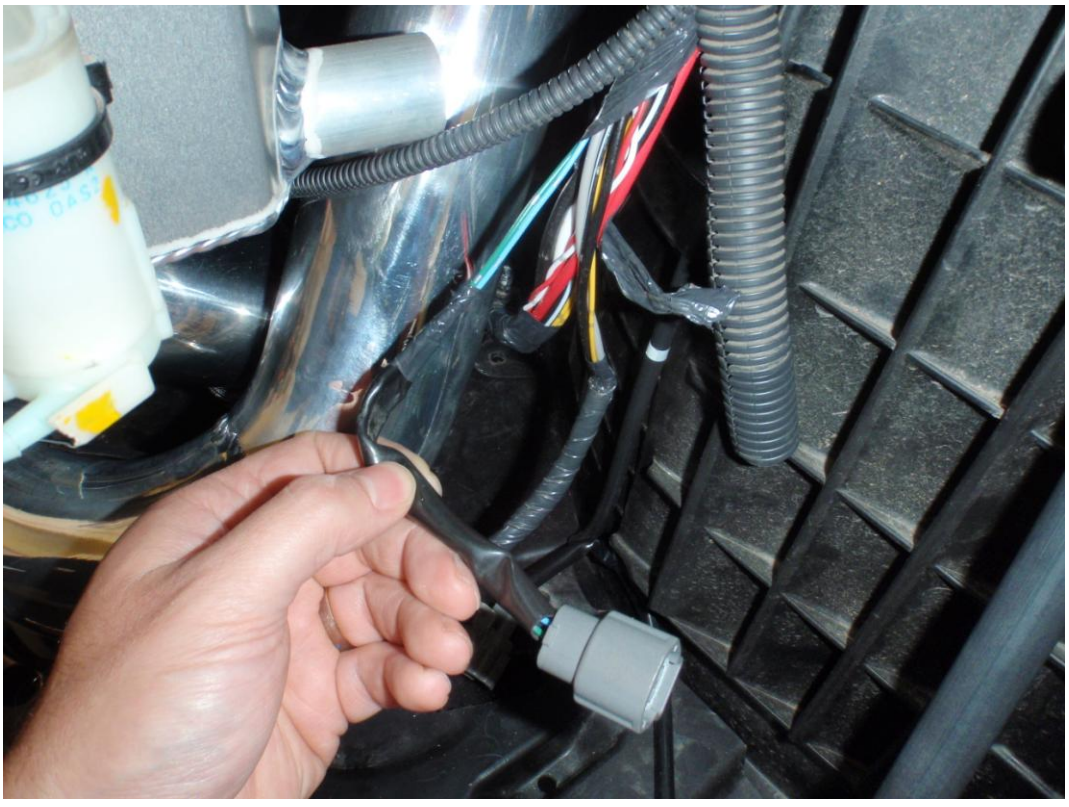
14. With the crash bar loosely mounted to the car, position the new washer bottle such that it protrudes 20mm from the end of the crash bar. Mark two holes on the bar for the top and bottom brackets, then remove the bar from the car and drill it using a 7mm drill bit to accept M6 bolts.



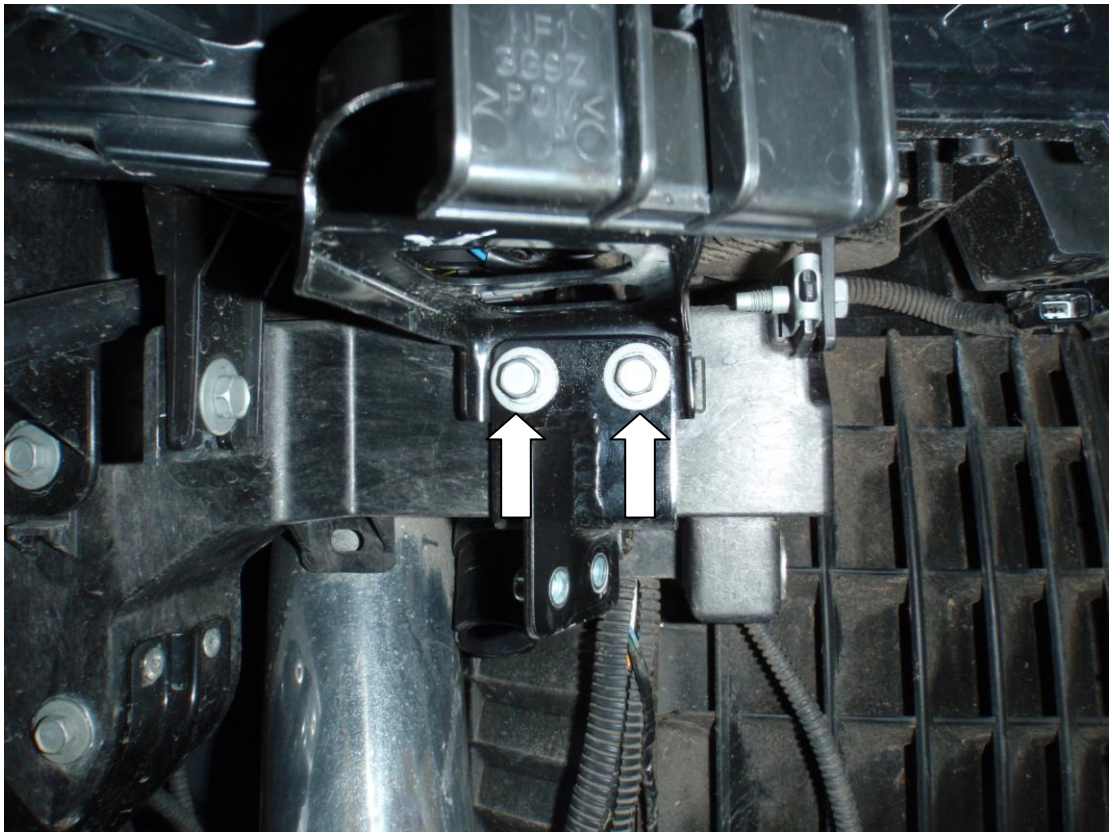
15. Mount the crash bar to the car. Mount the washer bottle to the crash bar using the provided M6x16 bolts, M6 penny washers and M6 nuts. You will have to push one of the clips for the headlight washer pipe through, if you have them fitted. Push the rubber grommet from the windscreen wash pump into the side of the new bottle, and then push the pump into the grommet and secure with the provided cable tie. If you have a headlmap washer pump, this will be fitted later on.



16. The wiring will not be quite long enough to reach the pump, so unwind the tape from the wiring harness and pull the wires for the pump out from the loom. When you have pulled it out sufficiently, re-wrap the loom with electrical tape,

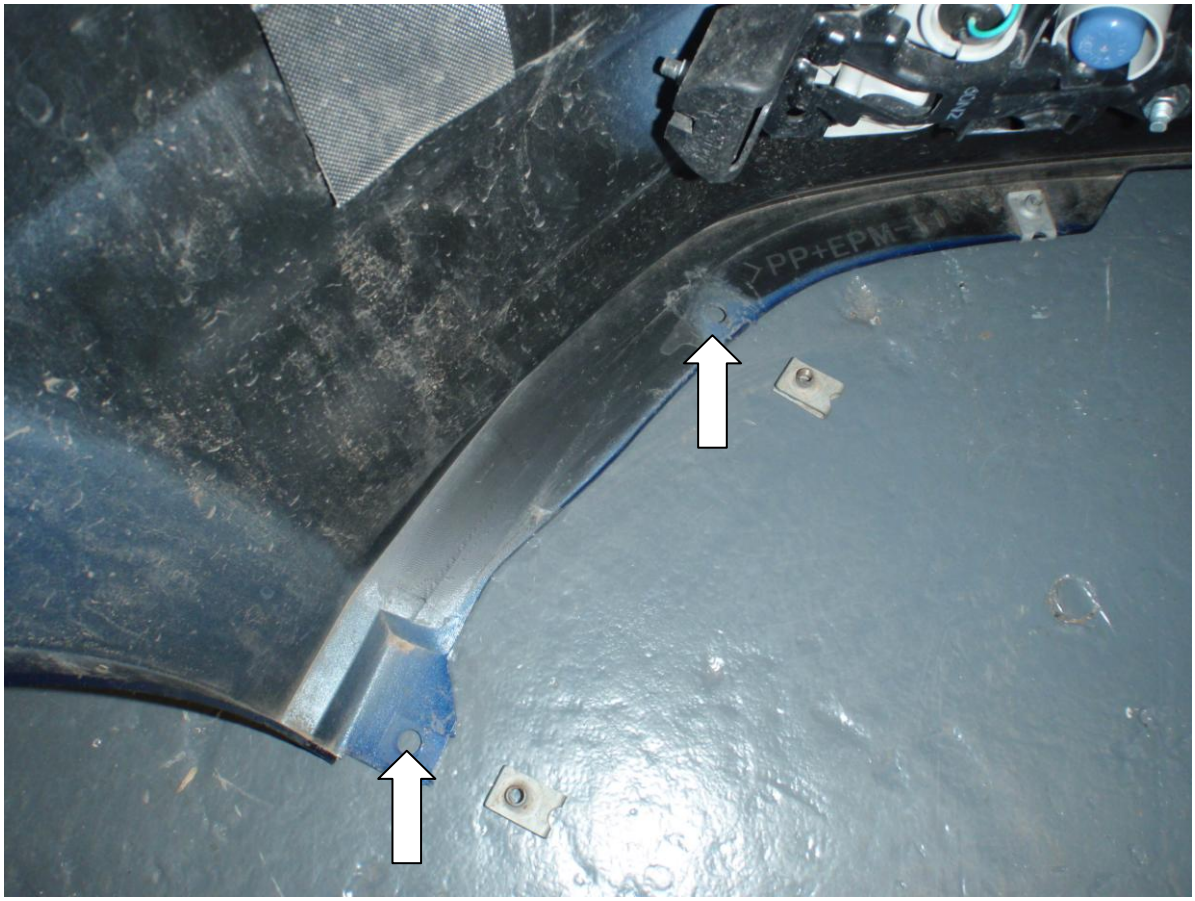


17. The crash bar can now be removed from the car with the the washer bottle connected. Now undo the two 10mm bolts holding the bumper guide under the headlight. Fit the Forge oil cooler upper brace and refit with the bolts you removed.

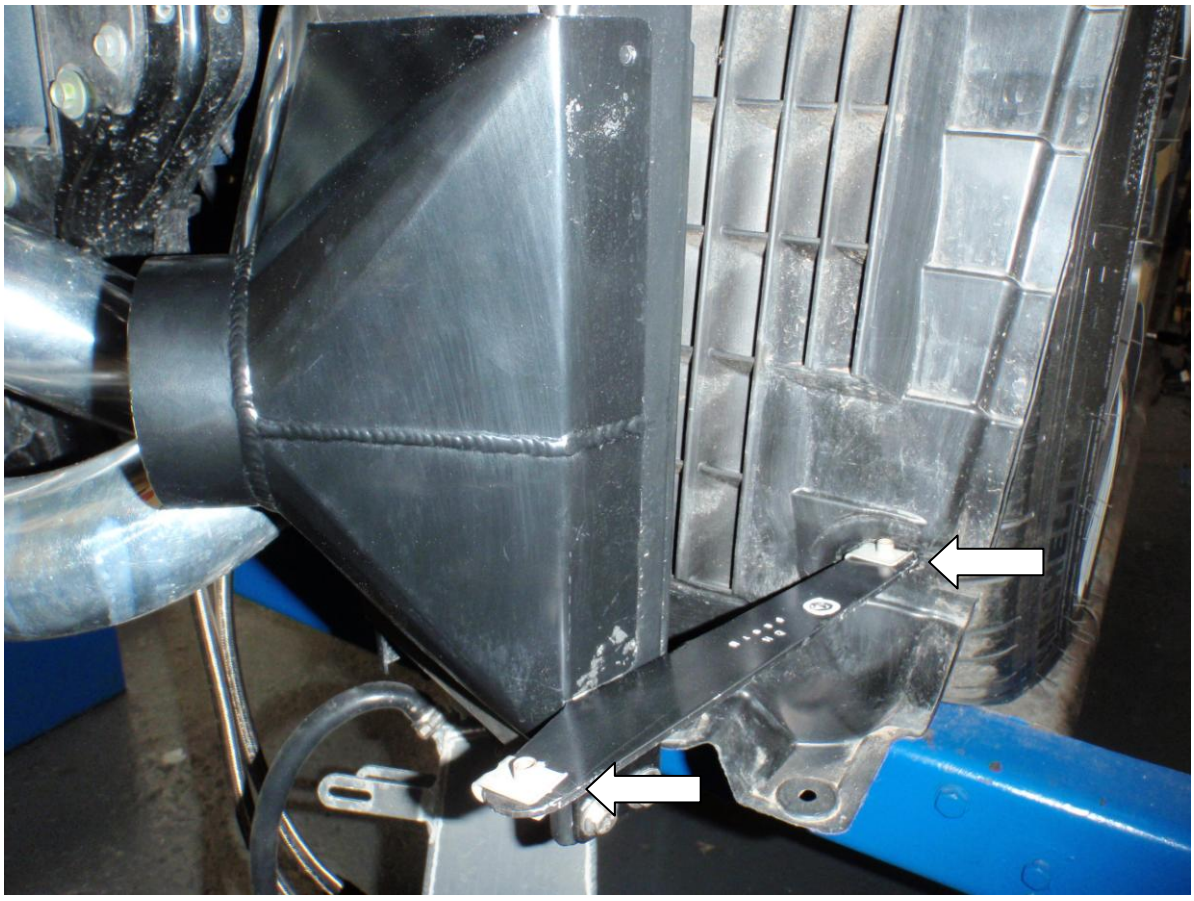


18. Mount the Forge lower bracket to the oil cooler, using the supplied M6 bolts and nyloc nuts, with penny washers each side, as shown in the photo below,

19. Working on the bumper, remove the two clips on the rear left hand side as shown below



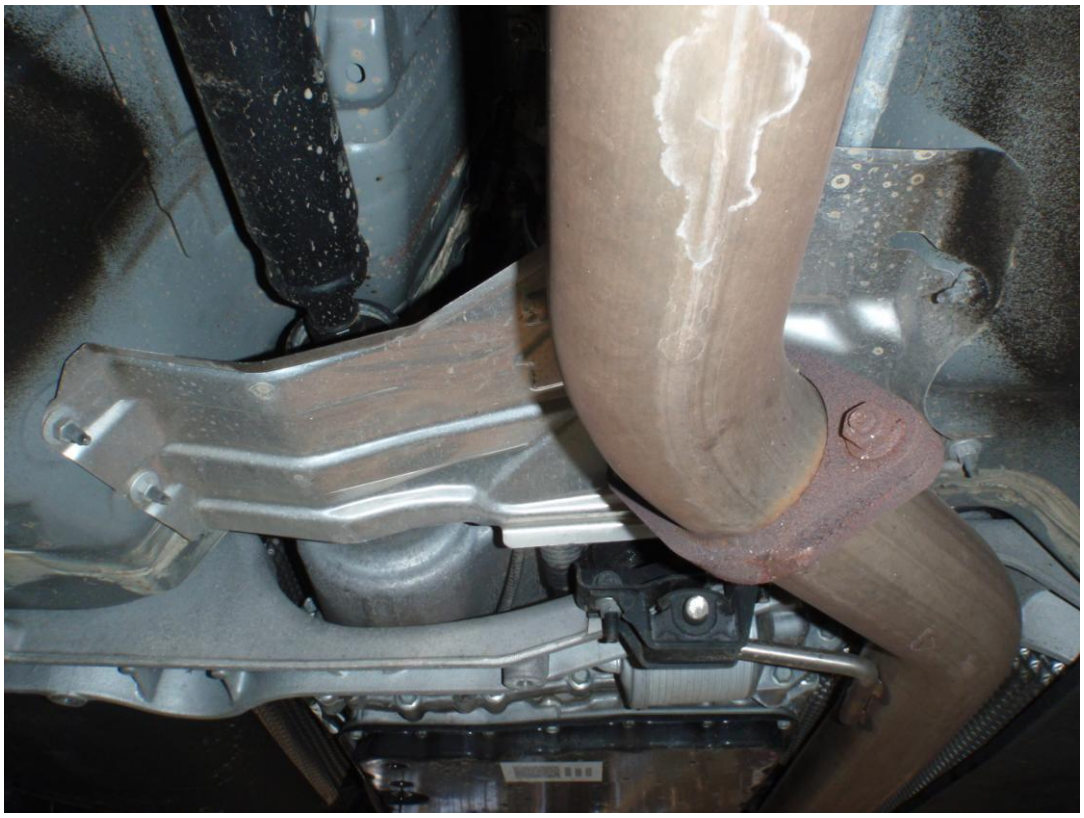
20. Push the clips removed over the outer most holes in the bracket attached to the oil cooler in step 18. Using two M6x16 bolts, attach the assembly to the car using the bracket you fitted under the headlight in step 16. It should now resemble the picture below. Note – the oil cooler is not secure at this point !



21. Undo and discard the two plastic caps on the oil cooler ports, and screw in the M22 to -8 adaptors supplied. Make sure to include the rubber seal to prevent leaks. At the same time, install the supplied silicon bend to the washer bottle filler pipe with the supplied jubilee clips.

PUMP, SUMP AND OIL LINE INSTALLATION

22. Back under the car, remove all the remaining undertrays up to the transmission (three in total, one under the engine sump, one under the downpipes and one under the transmission sump).
23. Remove the four 10mm nuts holding the heat shield above the exhaust where it passes close to the transmission, and remove the shield.



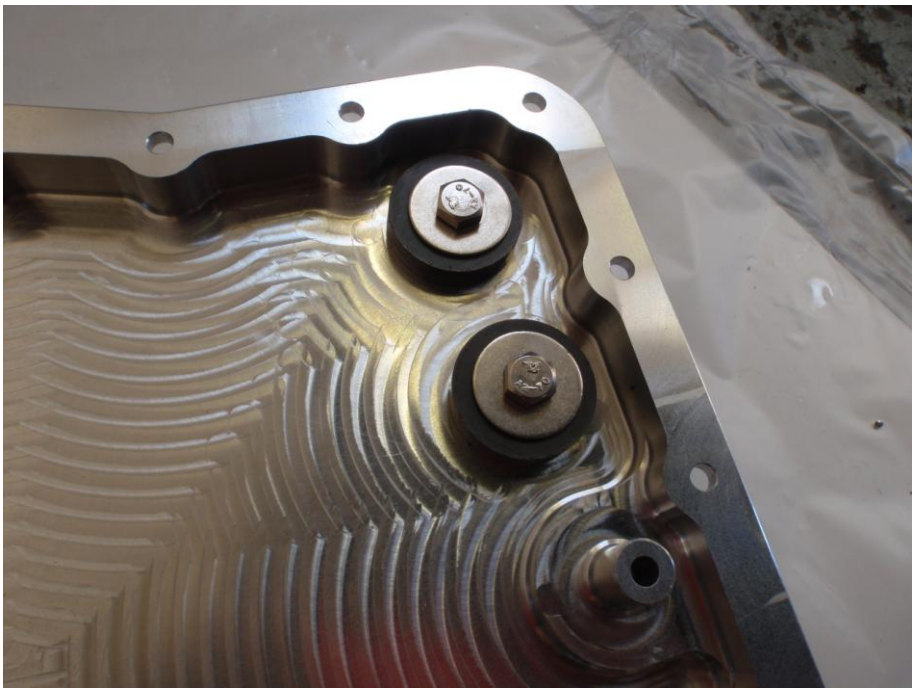
24. Remove the transmission filler plug next to the prop shaft with a 7mm allen key to allow air to enter the transmission casing during draining.

25. Remove the transmission drain plug in the sump with a 5mm allen head socket and the drain plug insert behind that, again 5mm allen head. Drain the oil into a suitable container.

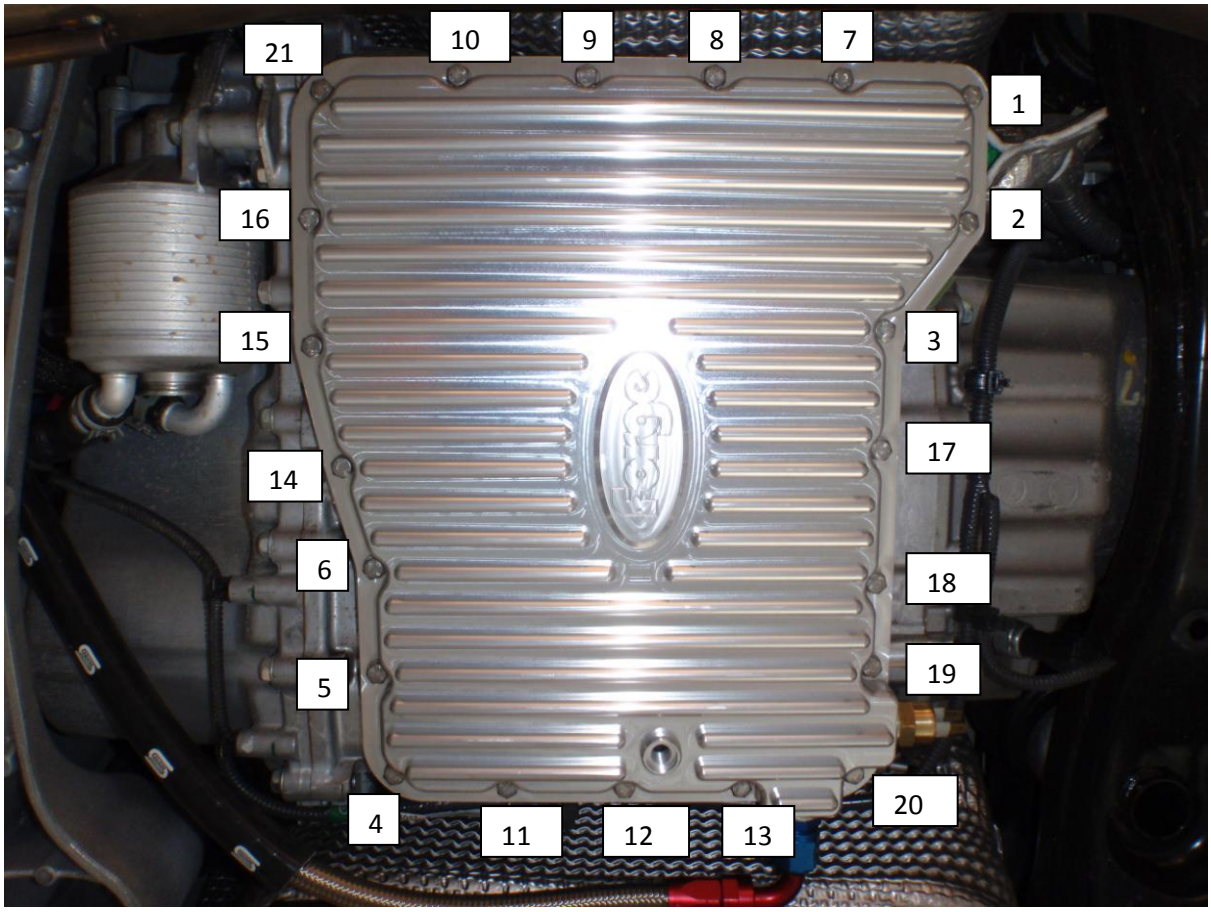
26. Remove the 21 bolts around the edge of the sump, starting with each corner, then one bolt to the left of the corner and so on in a spiral pattern**. When you get to the last two bolts, support the sump as there will be about ¾ litre of oil still in it (you can't ever completely empty the stock transmission through the drain.)** If you have the chance, it's a good idea to leave the car draining overnight so as to drain the oil from the internal walls of the transmission which will make it easier to install the new sump gasket, and less messy.

27. Look carefully at the magnets in the removed sump and study them for any bits of swarf or chunks of metal. Anything other than a light grey metallic coating is unusual and should be addressed BEFORE this installation. Remove the magnets with a strong pull, and clean them thoroughly.

28. Use the supplied mild steel M6x10 phillips head bolts (not shown) and mild steel penny washers, together with some thread lock, to mount the magnets in the new Forge aluminium sump.

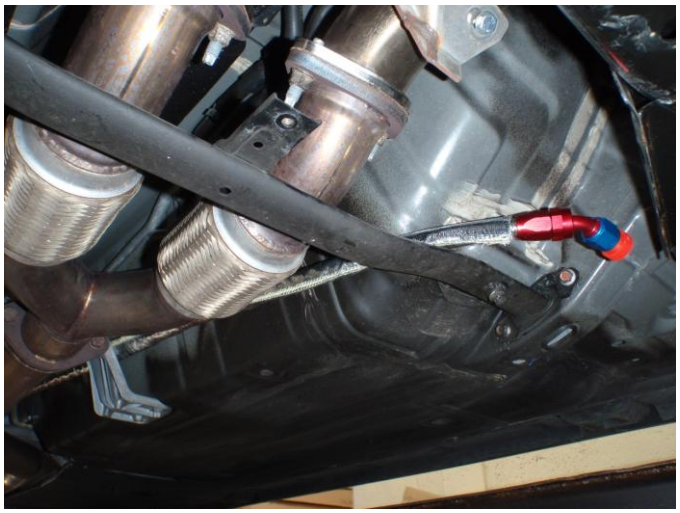


29. Clean the sump mating surface on the gearbox so that its free from oil and remnants of the old gasket, and using the new sump gasket supplied, install the sump with 21 M6x16 bolts and spring washers supplied. Install all the bolts finger tight initially, then tighten in the following sequence to **7 ft/lb (8.5 Nm)**

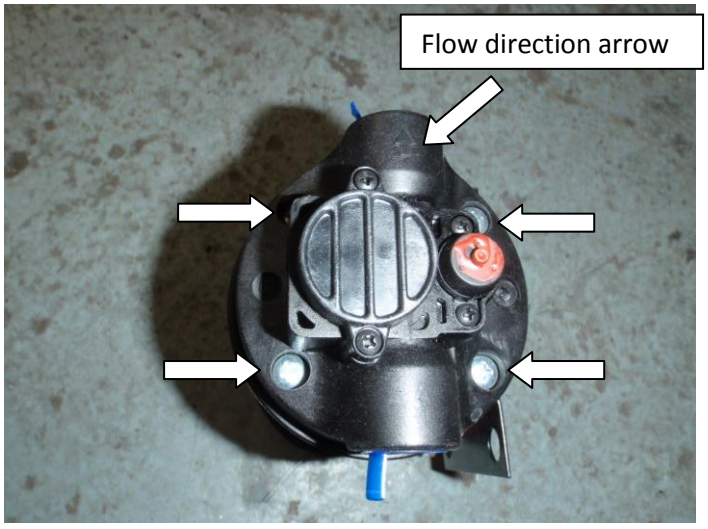


30. Find the M14 bonded seal, and the M16 bonded seal and push them down over the temperature sensor and M14x1.5 to -8 adaptor respectively. Screw them into the ports on the sump and tighten with a 22mm spanner.

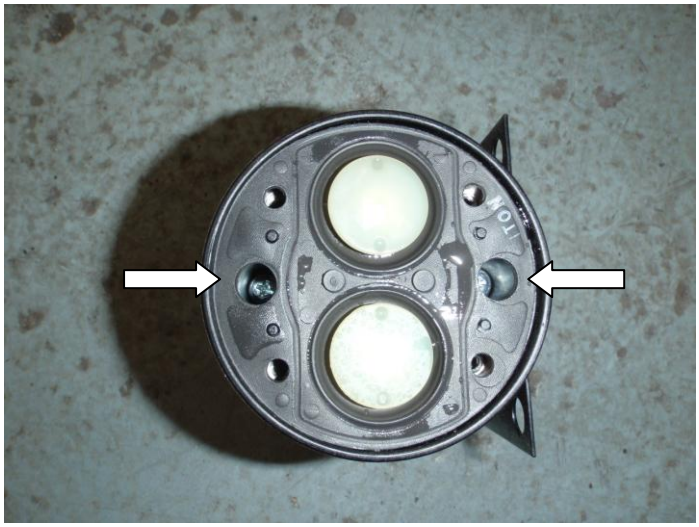
31. Separate out the three custom braided hoses, and locate the one with a long swept 90 deg fitting one end, and a 45 degree fitting the other (the shorter of the two hoses with a 45 degree fitting). This will be the pump feed line. Position the 45 degree fitting in the space by the downpipes, then thread the hose down the transmission tunnel, above the rear beam supporting the gearbox, and loosely screw the 90 deg fitting into the side of the sump. Don't worry about it touching other pipes at this point.



32. Find the Mocal oil pump, and with the mounting bracket vertical on the right hand side, normally the Mocal pumps are supplied with the flow arrow pointing UP (as shown below). This needs to be rotated so that the flow arrow points to the RIGHT. Follow the instructions below to rotate the housing.

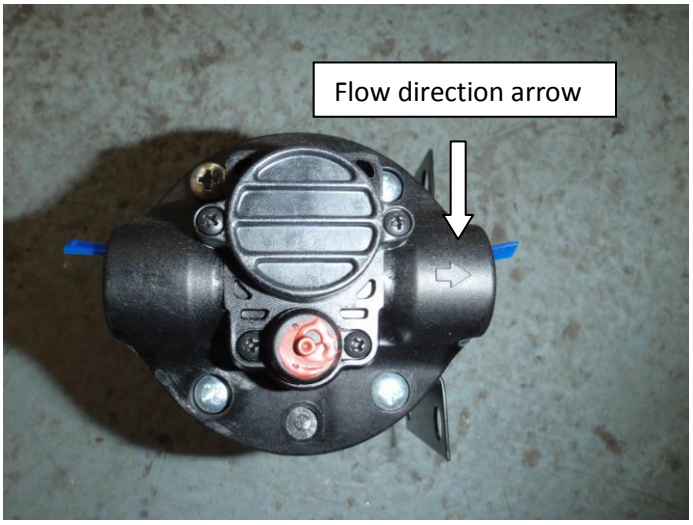


Undo the four screws indicated and remove the top cowl



Undo the two screws indicated and rotate the top housing 90 degrees to the right. The top housing doesn't separate from the main pump body

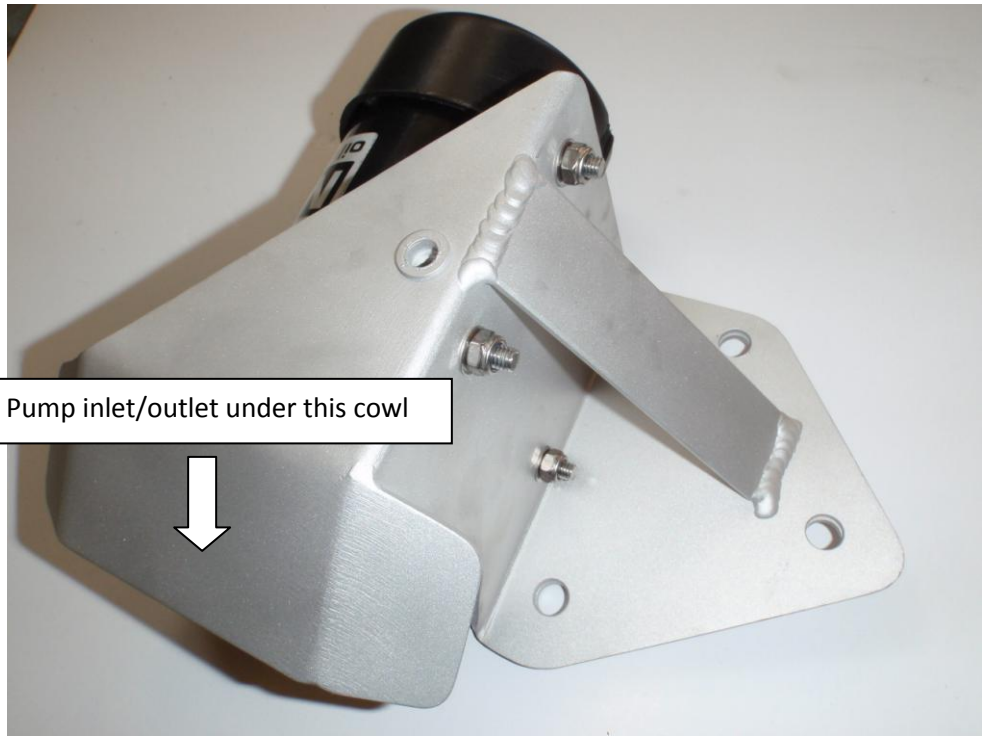
Reinstall the screws



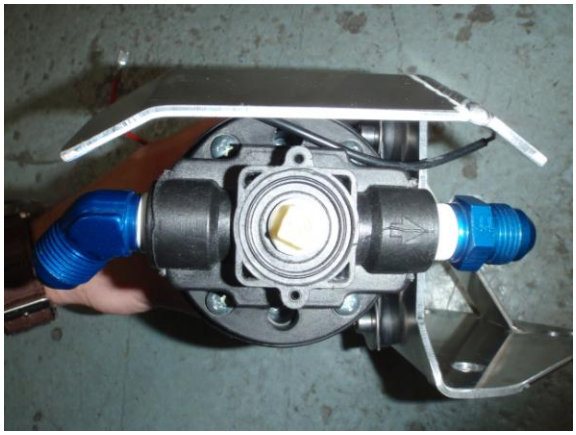
Ensure the flow direction arrow now points to the RIGHT with the mounting bracket vertical on the RIGHT

33. Use the four rubber mounts included with the pump and push them through the pump bracket, but cut them off flush with the face of the bracket as shown.

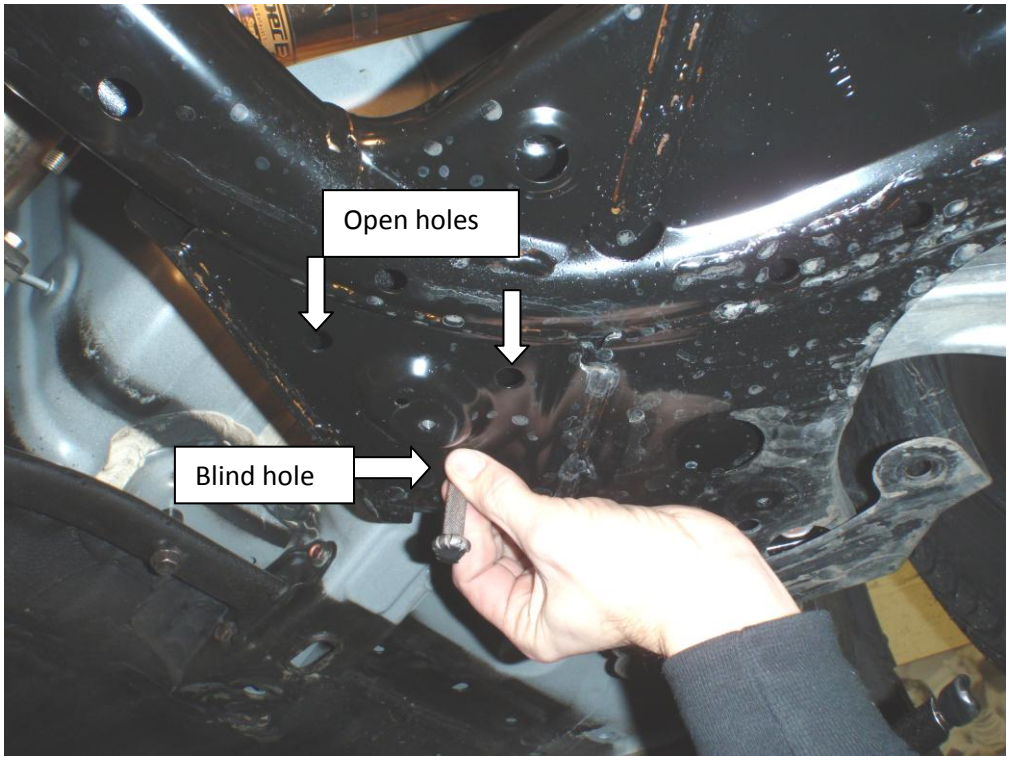
34. Mount the pump to the Forge bracket supplied, using the M6x20 allen head bolts, nyloc nuts and plain washers both sides of the bolt. See picture for orientation.



35. Find the 3/8NPTF to -8 JIC straight adaptor and the 3/8NPFT to -8JIC 45 degree adaptor. Use PTFE sealing tape on the 3/8NPTF ends before screwing them into the pump itself. Observe the orientation shown below for the 45 degree fitting, which goes on the inlet, the straight fitting on the outlet. Don't overtighten the fittings as they are tapered and will seal without being too tight.



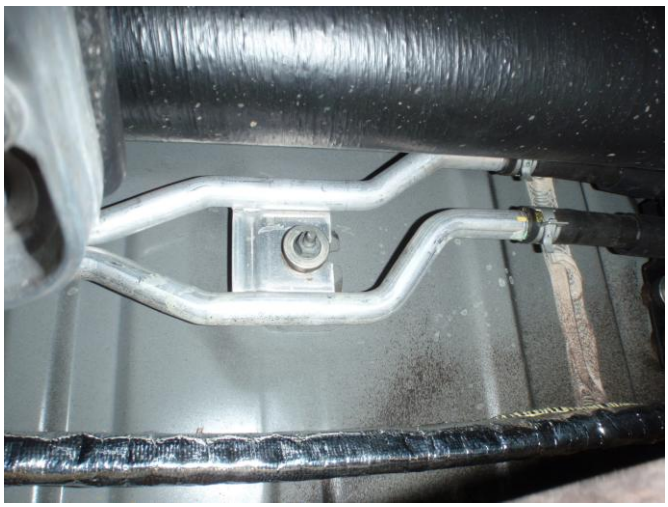
36. On the rear edge of the front subframe, on the passenger side (for RHD) locate the section shown below, under the downpipe. Two of the holes go straight through the subframe, the third is blind and needs to be drilled out with an 8.5mm drill (8 or 9mm will do, just so you have enough clearance for an M8 bolt). Use a centre punch and drill the hole out. The material is quite soft.



37. Use the M8x60 bolts supplied together with penny washers on both sides and nyloc nuts to secure the pump to the front subframe as shown, tighten the bolts securely.

38.

Find the longest oil cooler hose (with 45 deg fitting one end, and a sharp 90 deg fitting on the other). This is the oil return pipe. Pass the 45 degree fitting over the front anti-roll bar and under the driveshaft, then over the top of the oil cooler pump and along the transmission tunnel so its within 5mm of the filler on the front of the gearbox. DON'T attach to the filler yet.



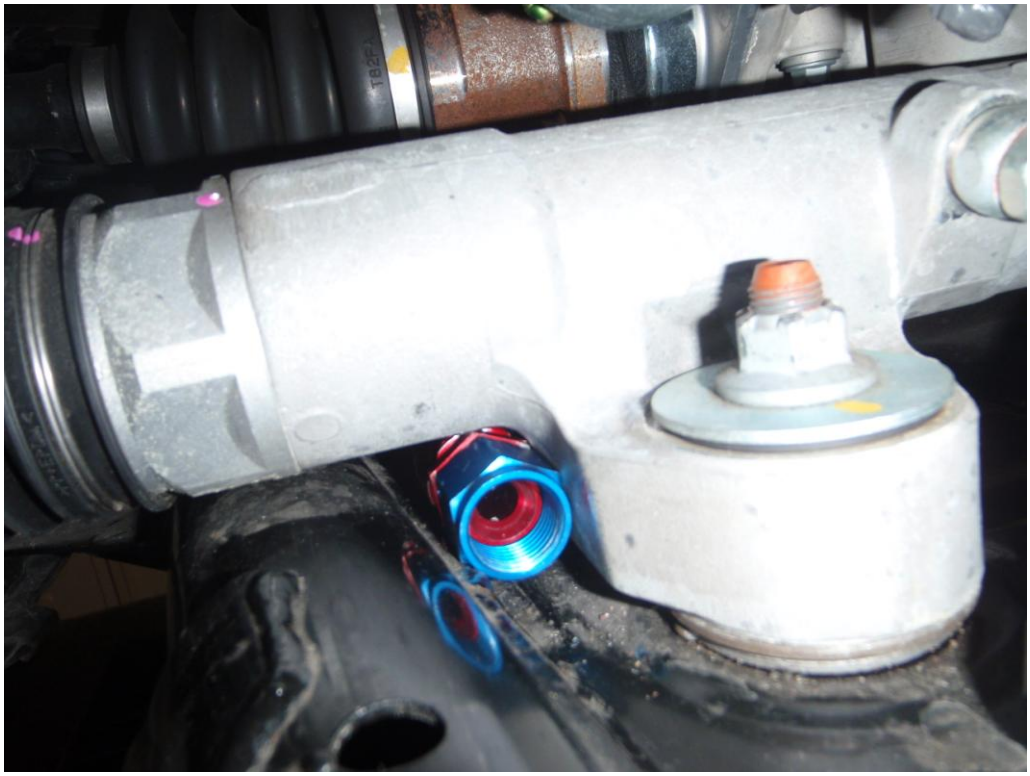
Remove the 10mm nuts that hold the coolant pipes to the transmission tunnel (front and rear)

Use the provided straight bracket on the front fitting (it screws on using the M6 threaded boss welded on to the bracket). Orientate the bracket so that it is vertical with the mounting holes below the attachment point, which may mean that its still loose, which is fine.

Use two of the 19mm p-clips and M6x16 bolts with plain washers to LOOSELY secure the p-clips to the brackets to support the two hoses (feed and return) now running down the transmission tunnel

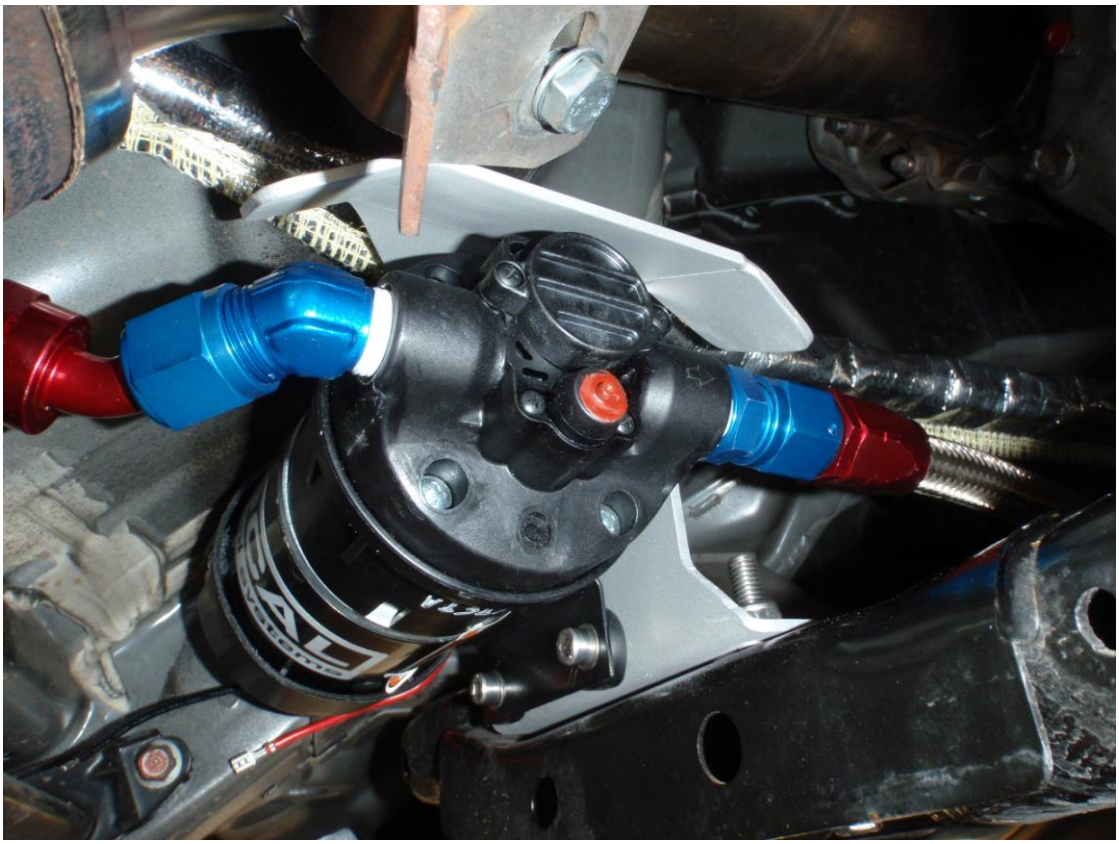
On the rear fixing near the gearbox, use the angled bracket and mount it with the 10mm nut you removed earlier. Use two 19mm p-clips again, as above LOOSELY fitted.

39. The third and final hose is the feed from the pump to the oil cooler. Take the straight fitting and follow the path of the last hose towards the back of the car (i.e. over the anti-roll bar and under the driveshaft) but this time run it between the power steering rack and the subframe. There is a small channel that it fits through beside the steering rack (photo taken looking forwards).



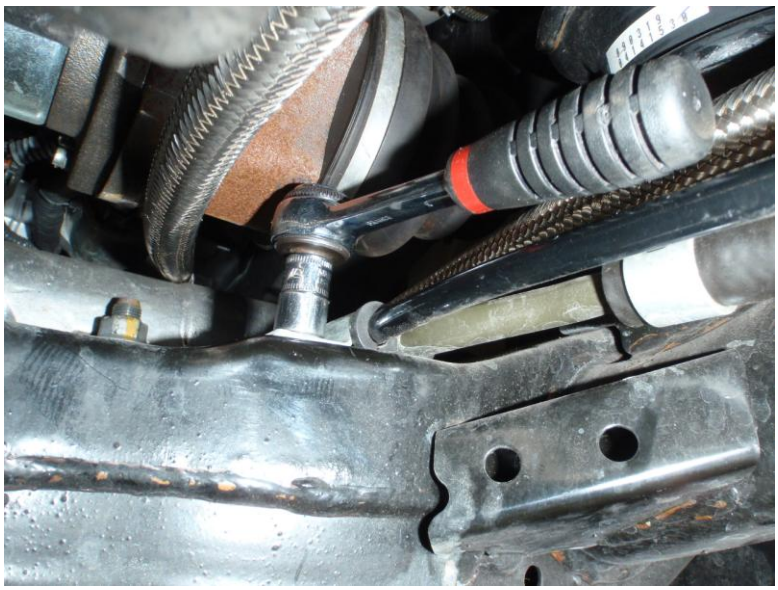
If you struggle to get the fitting through, you can loosen the bolts and nuts securing the steering rack to the subframe, and lever the rack slightly whilst you push the pipe through.

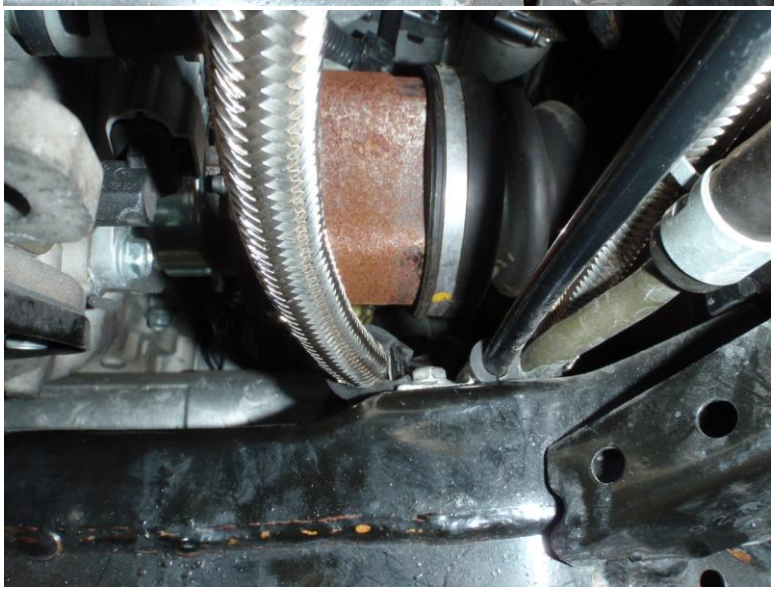
40. Loosely screw the 45 degree fitting from step 24 onto the pump . Also screw on the straight fitting from the pipe going to the front of the car you just installed.



Use another 19mm p-clip with M6x16 bolt to secure the return line to the top of the pump bracket (there is a rivnut to accept the bolt).

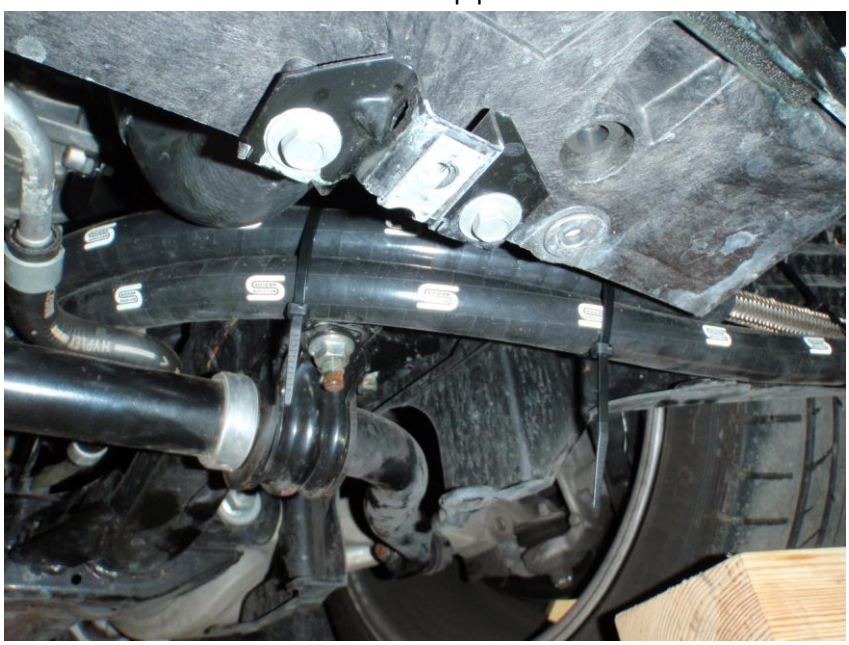
41. You should now have a 45 degree bend and a straight connector on the oil lines at the front of the car. The 45 degree fitting goes to the top port of the cooler, the straight fitting to the lower. Direct the oil lines around the intercooler pipework, then screw them both in loosely. All oil cooler lines (apart from the return to the gearbox) should now be loosely fitted where they have got to go.



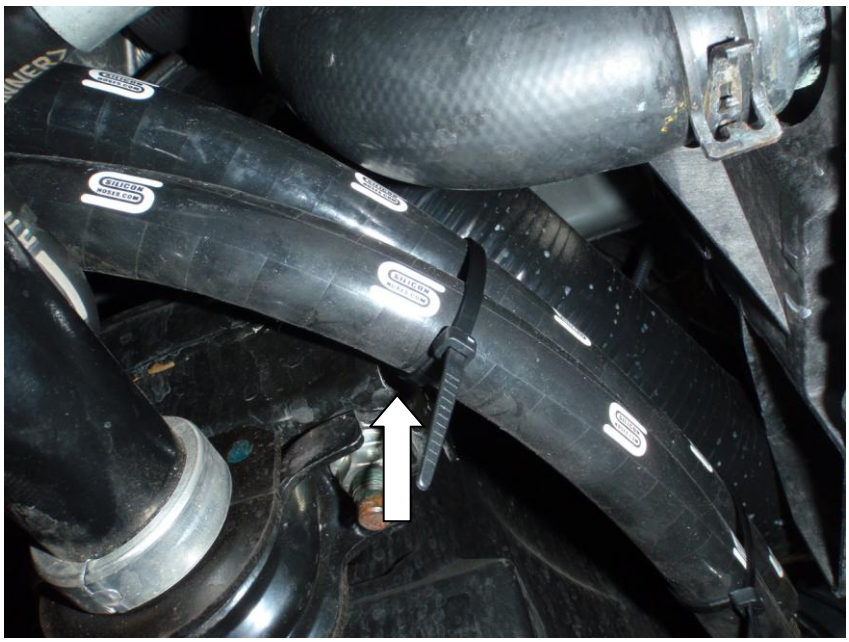


To secure the return to gearbox pipe under the driveshaft (NOT the one that goes under the steering rack), undo this 10mm bolt securing pipes to the subframe, then reuse the bolt through the 16mm p-clip provided.

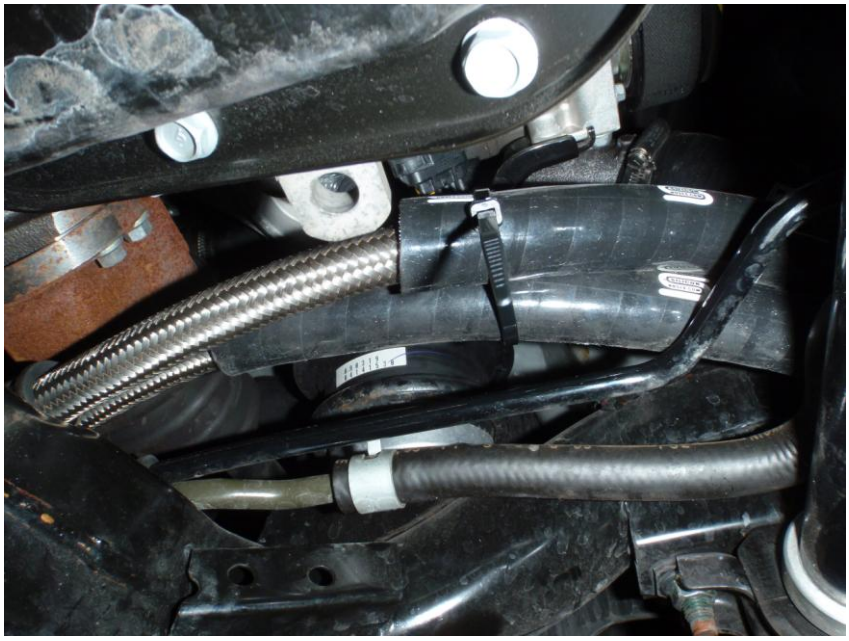
42. Use the silicon hose provided to prevent the braided oil hoses from rubbing against other pipes and anything that can be worn away. Cut the silicon hose into lengths then split it along its length with a sharp knife. Slip the silicon hose over the cooler pipes then secure them together with cable ties. Make sure it is protected where it runs close to the intercooler pipes.



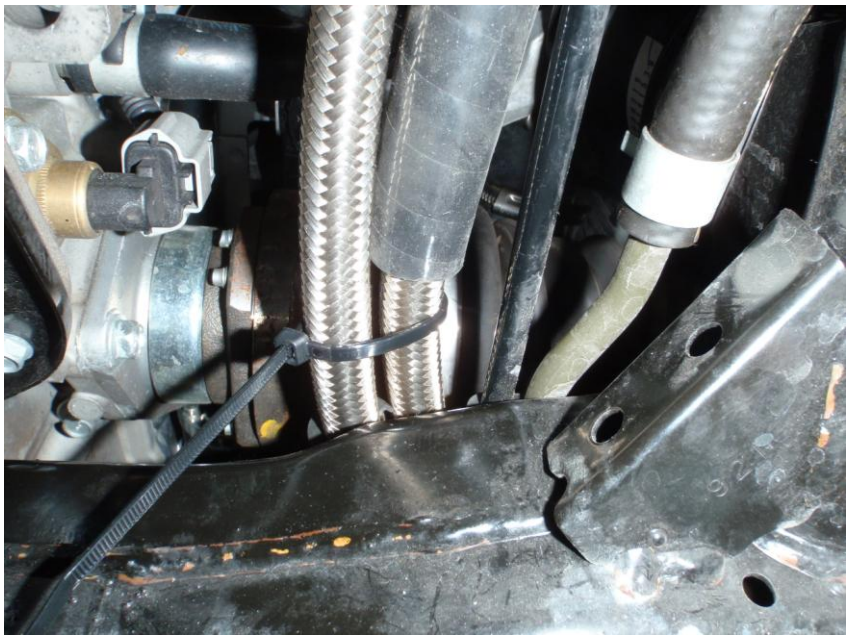
Around the rad pack and end of the front subframe



The pipes can be secured to the end of the front subframe to avoid the lower radiator hose – pass the cable tie between the two holes in the end of the subframe to secure.

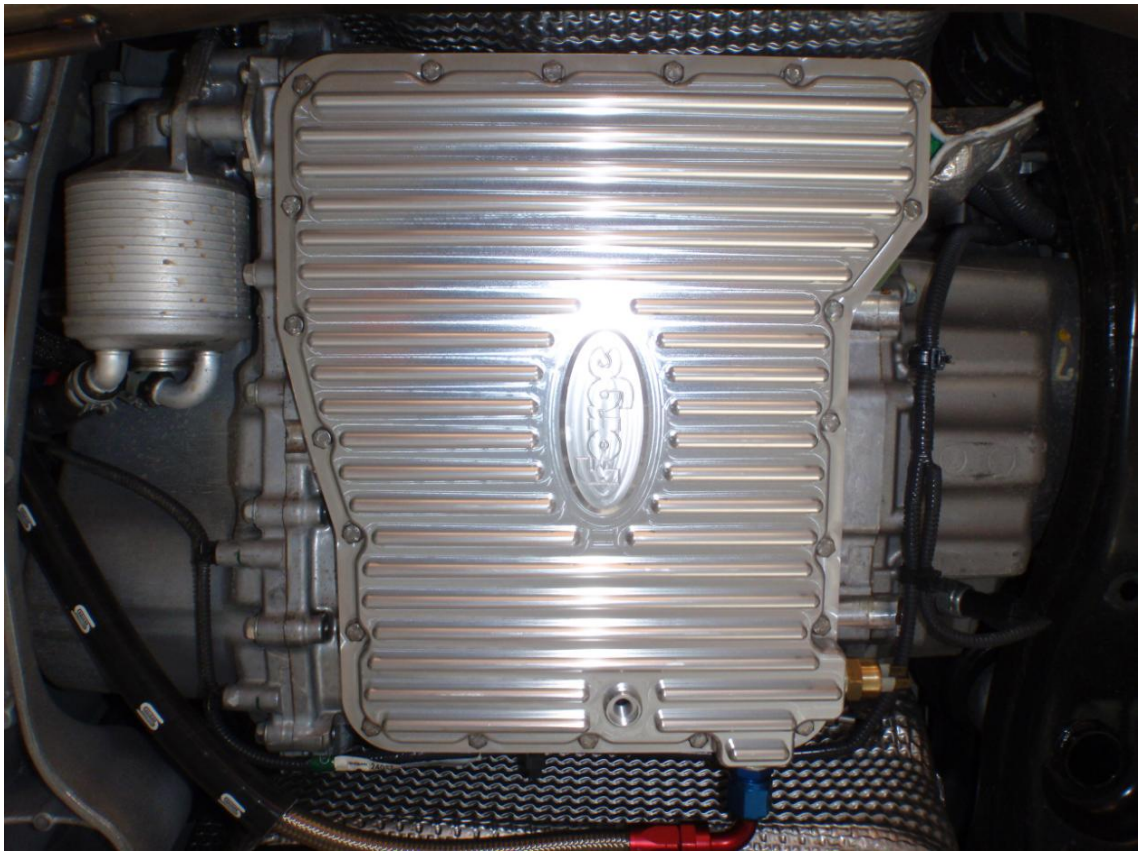


Where pipes go under the driveshaft

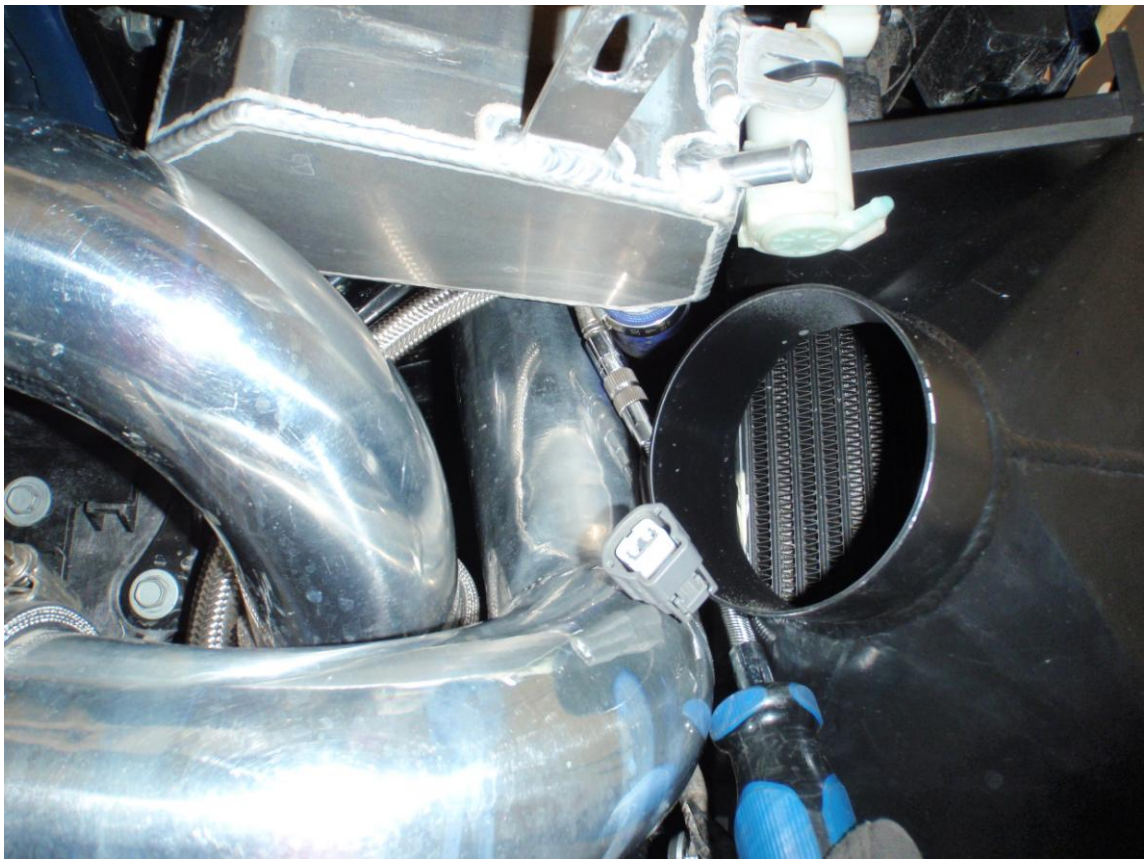


Secure both pipes together close to the p-clip installed in step 36 to prevent movement of the hoses near the driveshaft.

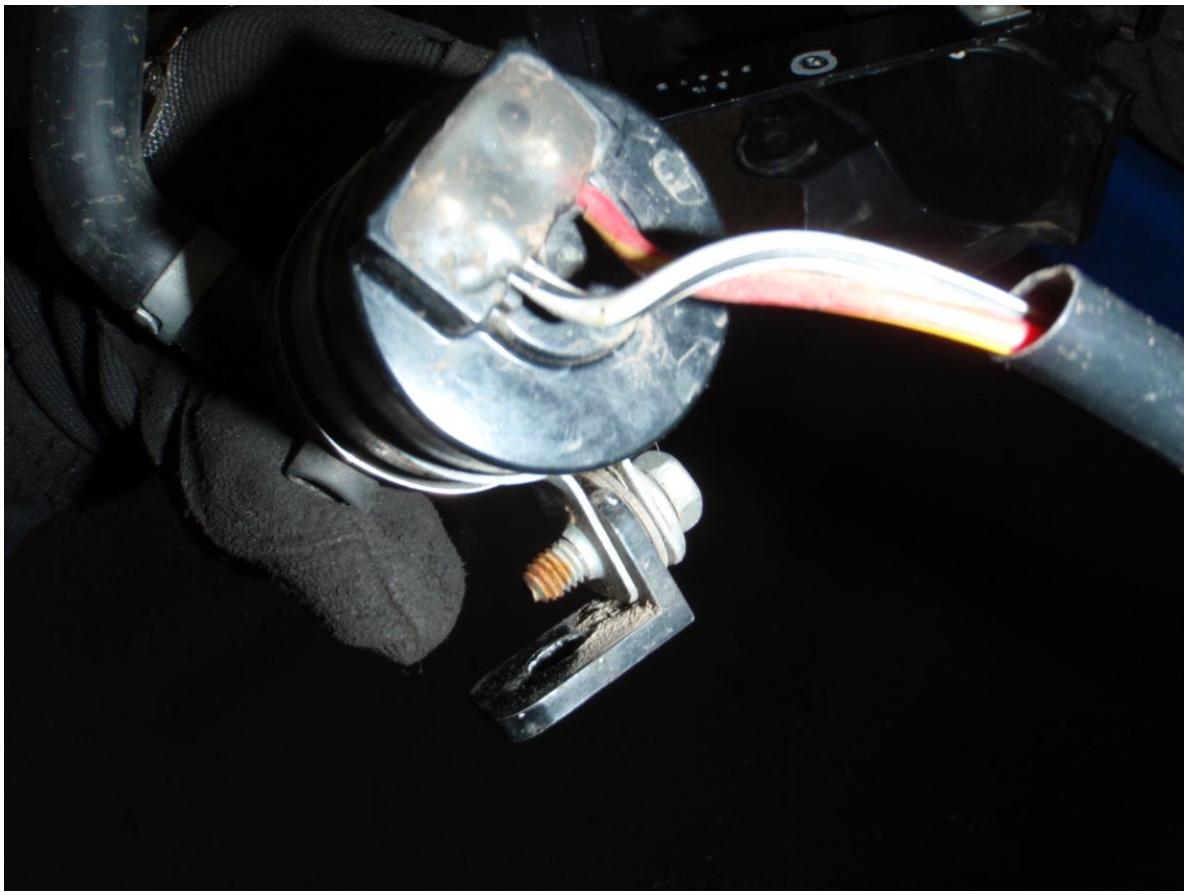
You can use more of the silicon hose over the pump feed pipe near the gearbox where the pipe touches the gearbox support and could come into contact with the coolant pipes.



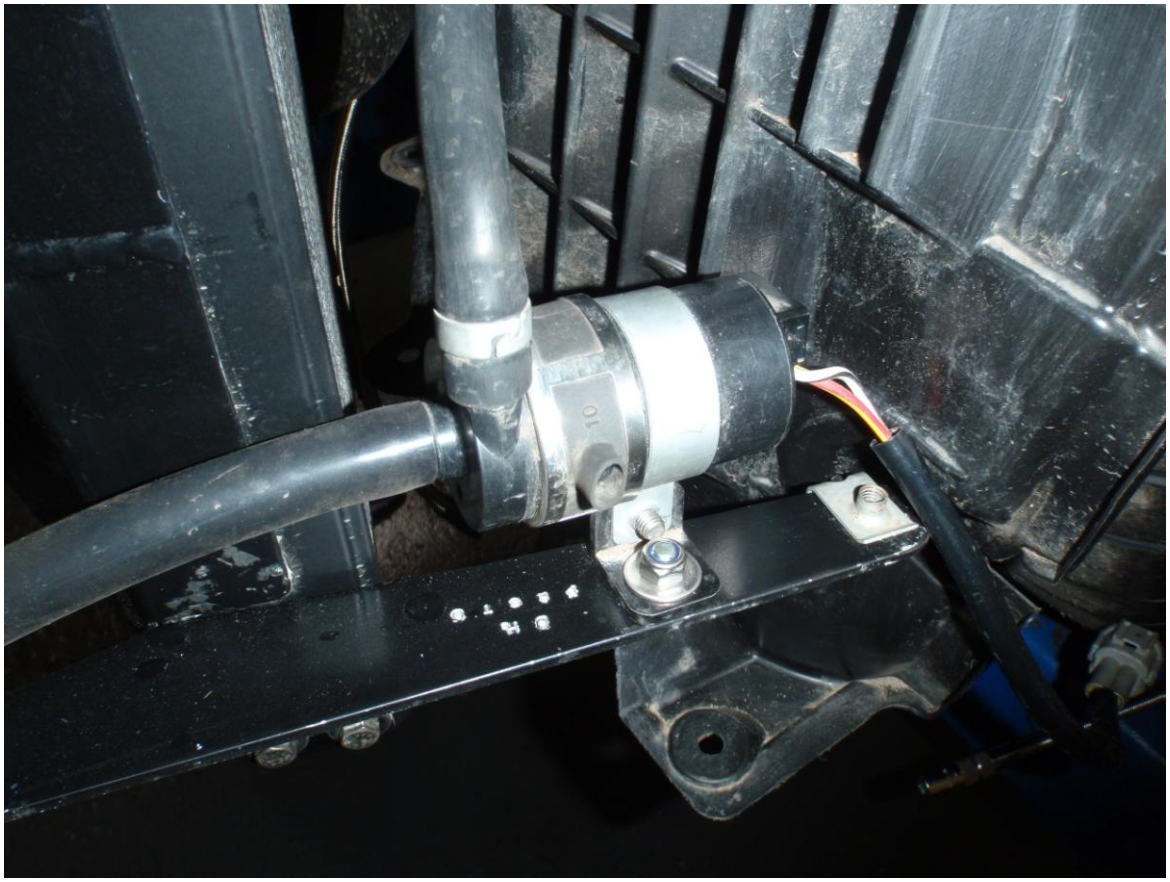
43. Refit the front crash bar with the washer bottle bolted to it. As you fit the crash bar, make sure you get the filler for the washer bottle into the silicon hose you fitted earlier, then do up the jubilee clip – access is tight see below for how to access the lower jubilee clip.



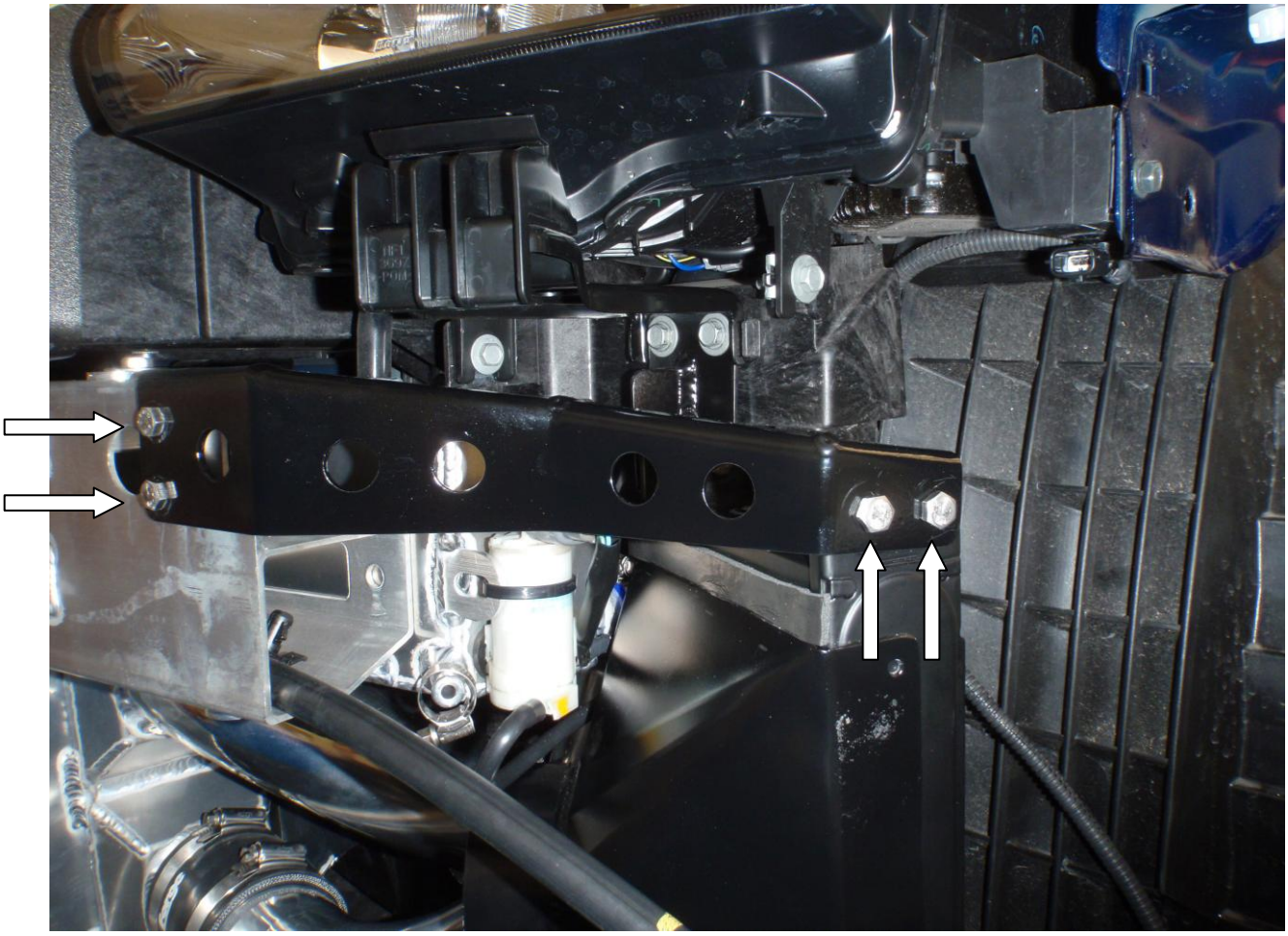
44. IF you have headlight washers, use the right angled bracket supplied, together with the bolt from the stock washer and washer, and attach the bracket to the pump as shown.



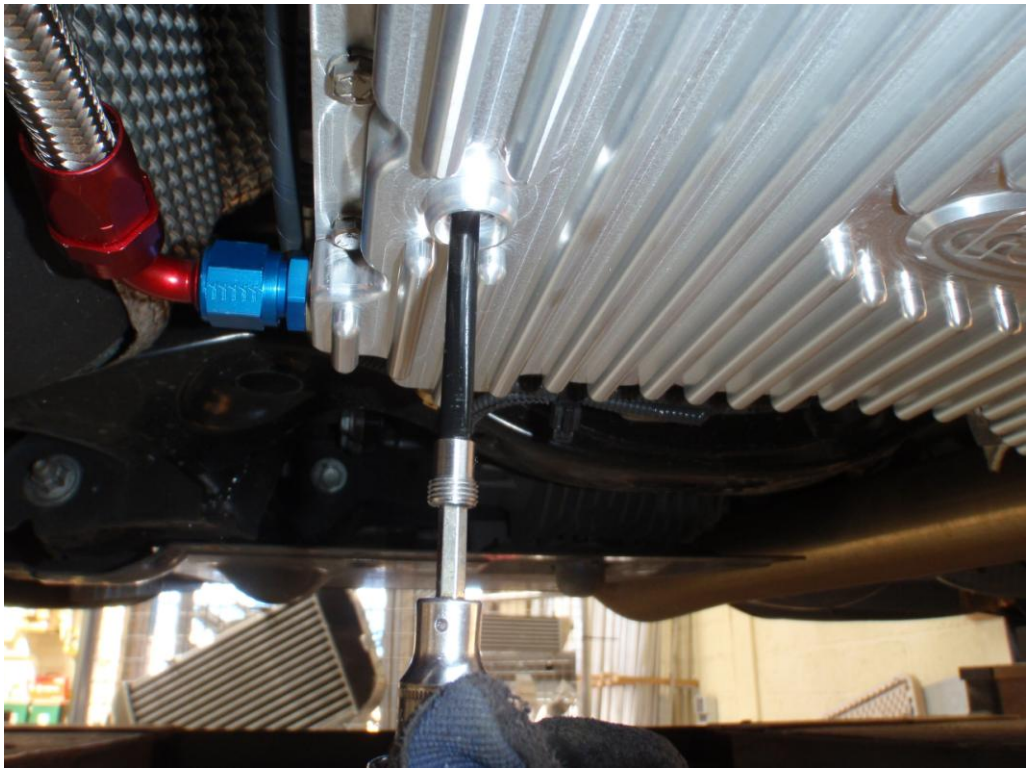
Bolt the right angled bracket to the lower oil cooler support using another M6 bolt, washer and nyloc nut.



45. Fully bolt the crash bar in and use the last bracket to connect between the oil cooler and the crash bar. Align the bracket with the cooler and mark the position of the bracket on the crash bar. Drill two 7mm holes and then bolt the bracket to the crash bar and oil cooler with the supplied M6 bolts, washers each side and nyloc nuts. Your car should now resemble the pic below.

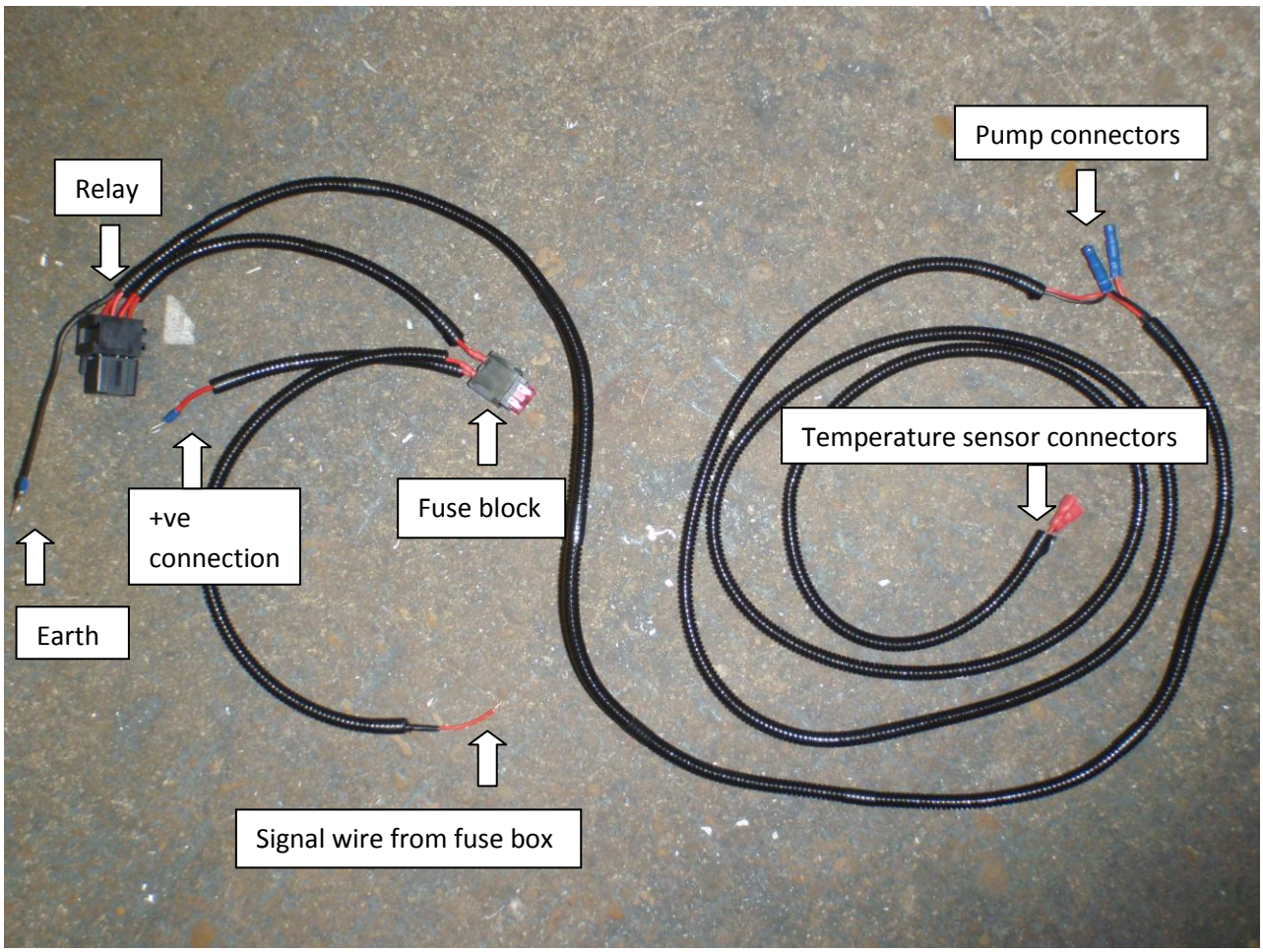


46. Check and tighten all the hose ends, and ensure that none of the braided hoses are rubbing on any rubber or electrical wiring in the car. Ensure that the hoses cannot touch the front driveshaft – if they can then secure with cable ties. Refit the sump level insert, but leave the drain plug off the vehicle for the moment.

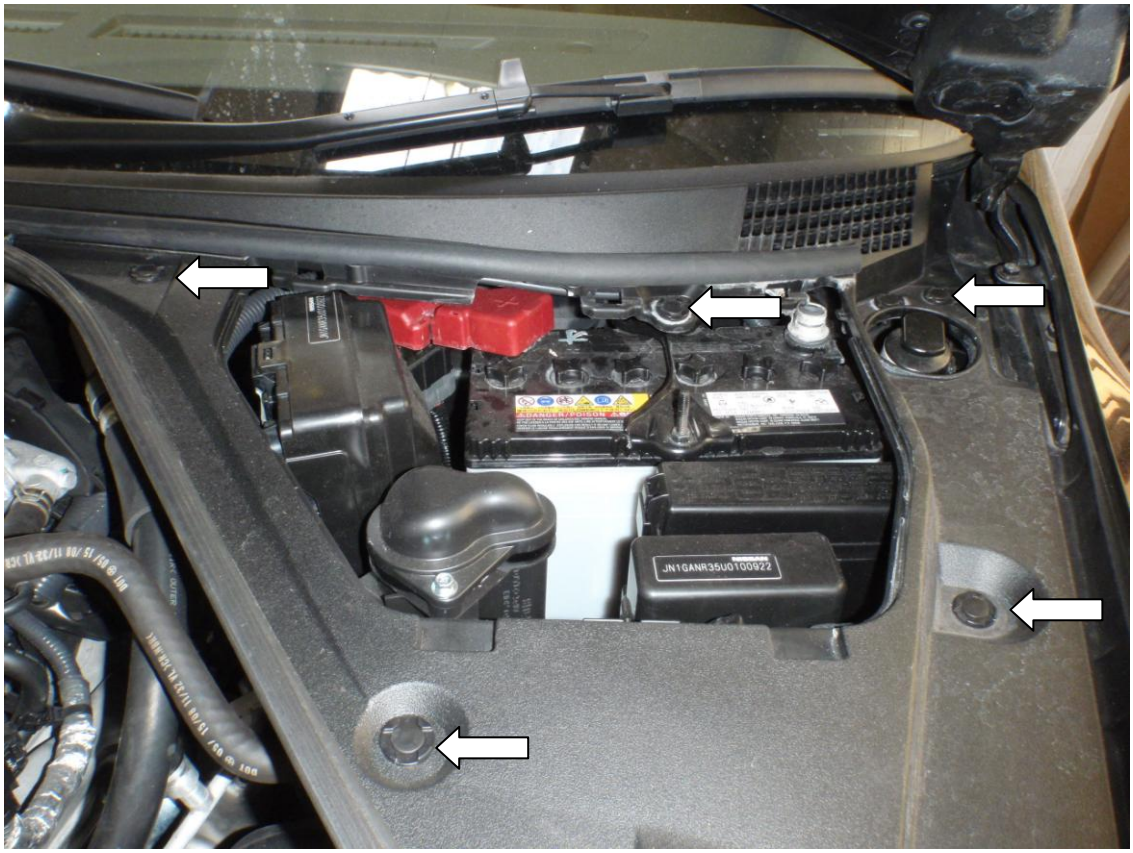


ELECTRICAL WIRING

47. Below is the wiring loom laid out which you will install in the car.



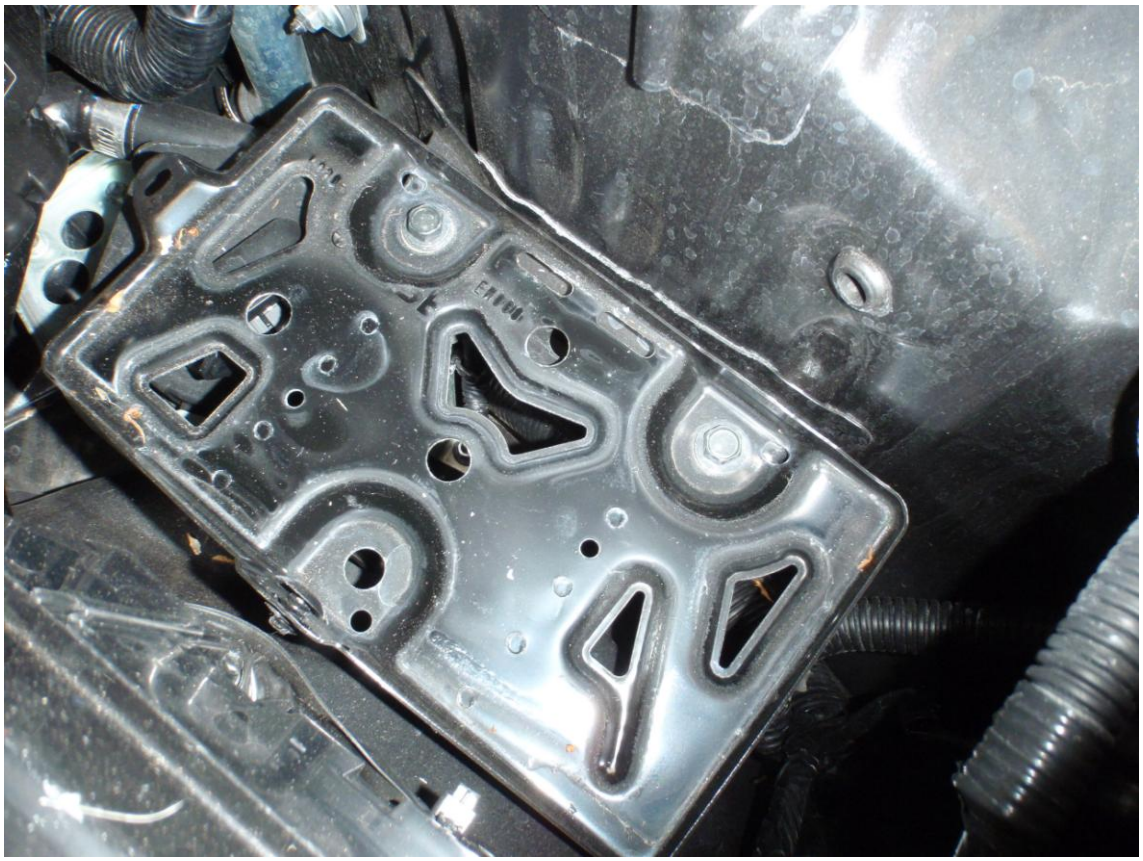
48. This assumes the vehicle is right hand drive. Working in the engine bay, remove the battery cover, and pull out all the clips that retain the main cover over the wing and remainder of the battery. Pull the cover out then fold it over onto the engine so that you don't have to remove the rubber edging.



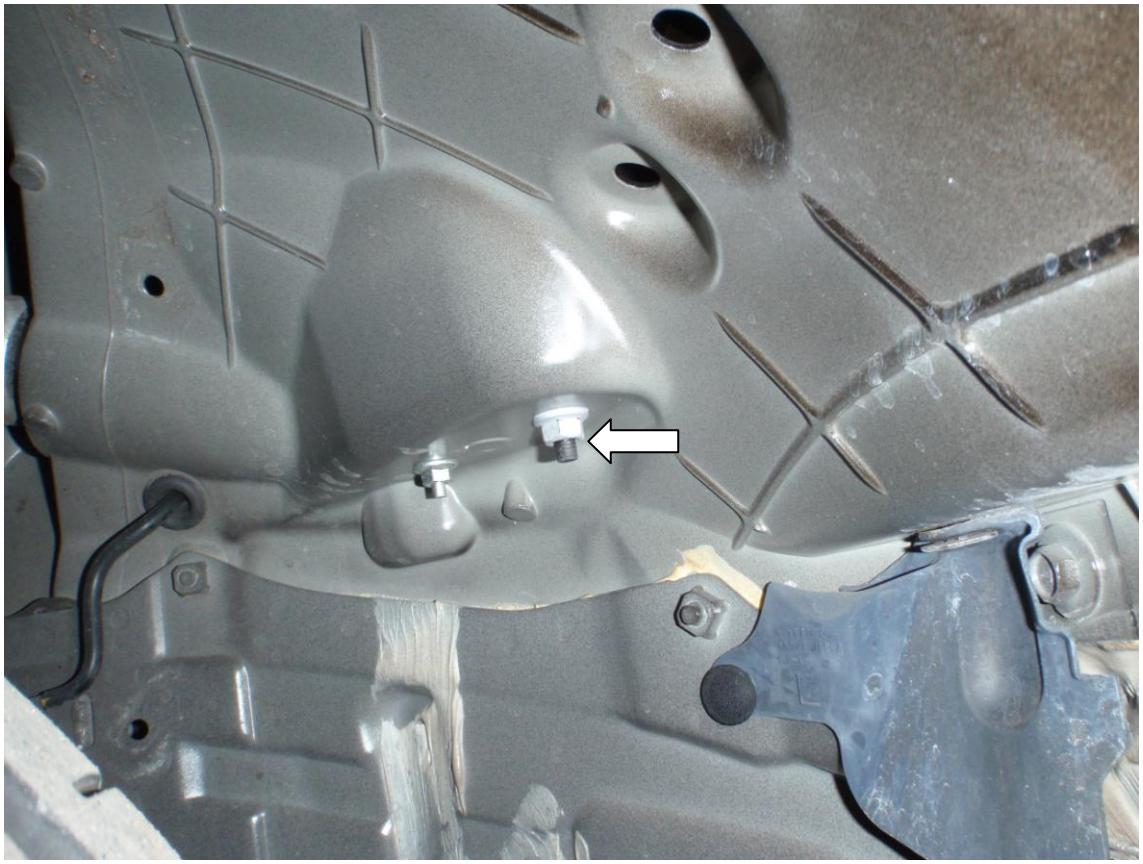
49. Remove the windscreen washer tube from under the remaining plastic panel, then unclip the panel from the wing and the centre of the car, and pull it out from under the windscreen to remove it from the car.

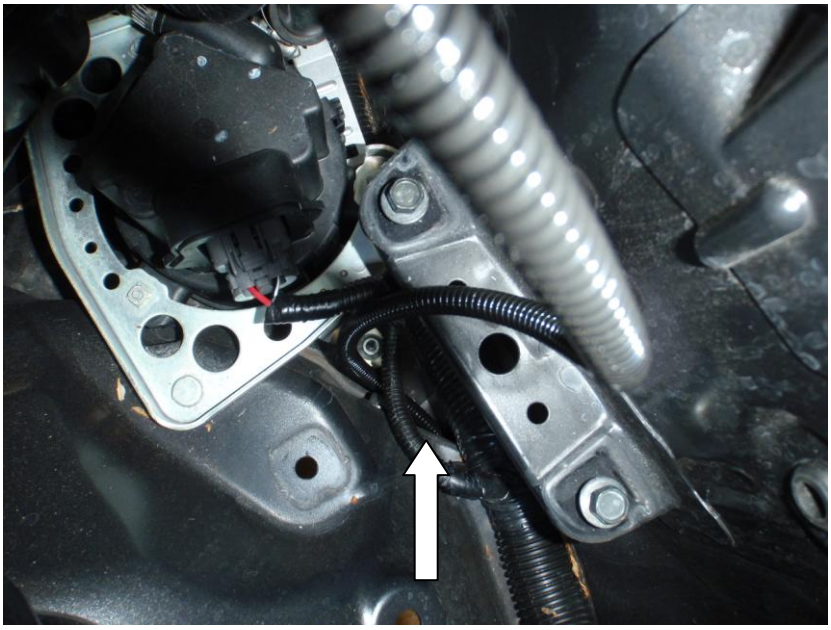
Remove the two 10mm nuts holding the clamps on to the battery, then remove the negative terminal, and positive terminal wiring from the battery and remove the battery from the car.

With the battery removed, remove the plastic battery tray, and then underneath that, remove the two 12mm bolts securing the battery holder from the top (it will still be fixed in place underneath)

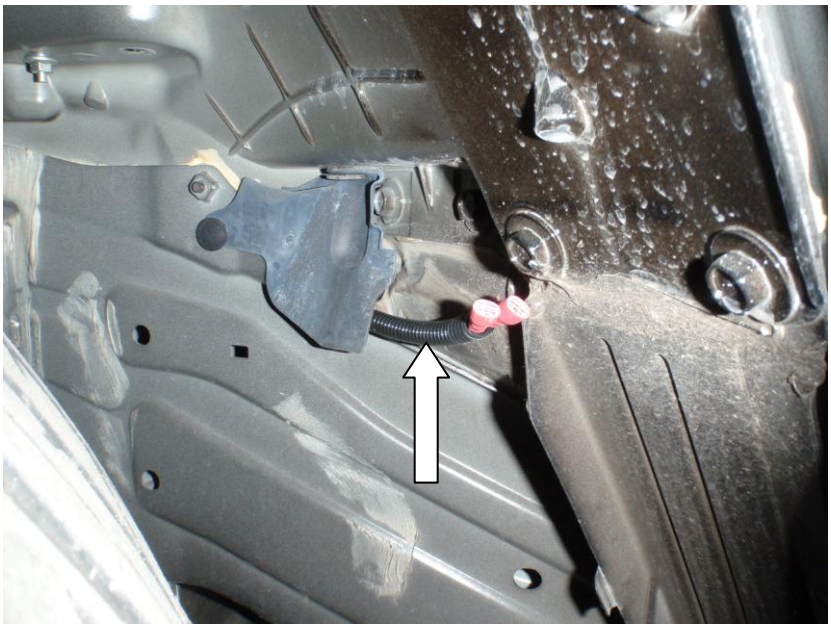


50. Working in the passenger side wheel arch (RHD car), remove the rear arch liner and locate the 12mm nut as shown below. Remove the nut and the battery holder should be free to be removed from within the engine bay. (It may be easier to remove the road wheel for access, though we just used a jack and put the wheel on full lock.)

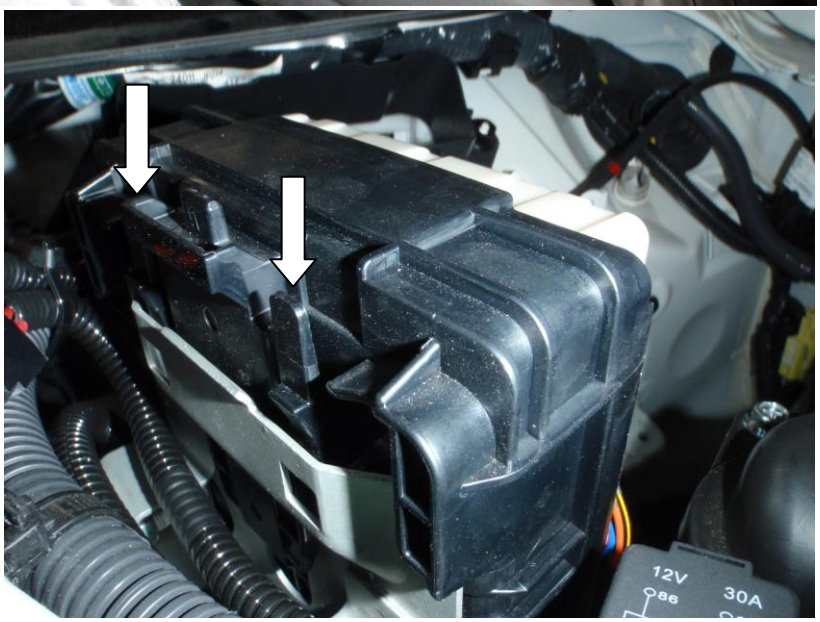




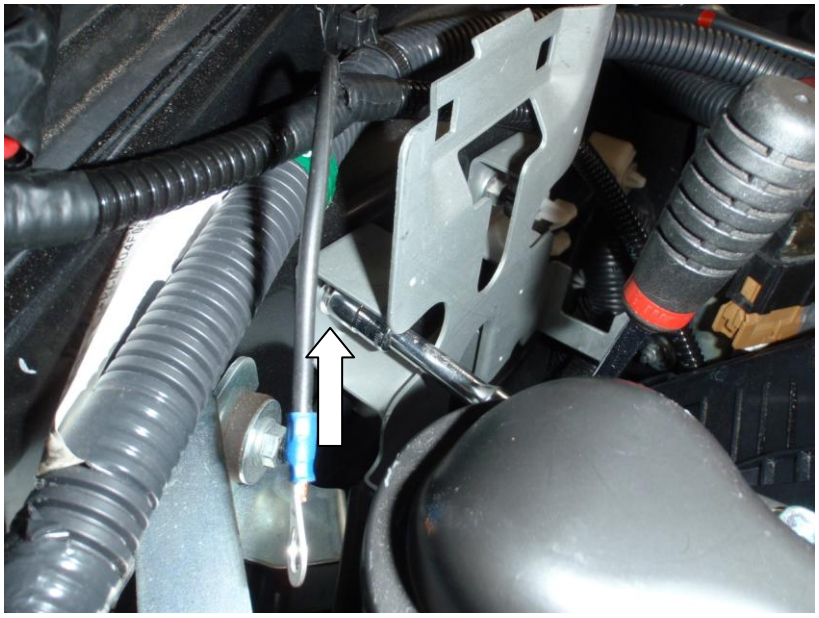
Unravel the wiring harness, and locate the end with two spade connectors for the temperature sensor which are on the end of the loom. Push the end of the harness through the hole shown opposite, under the battery holder. The end of the harness will appear in the inner



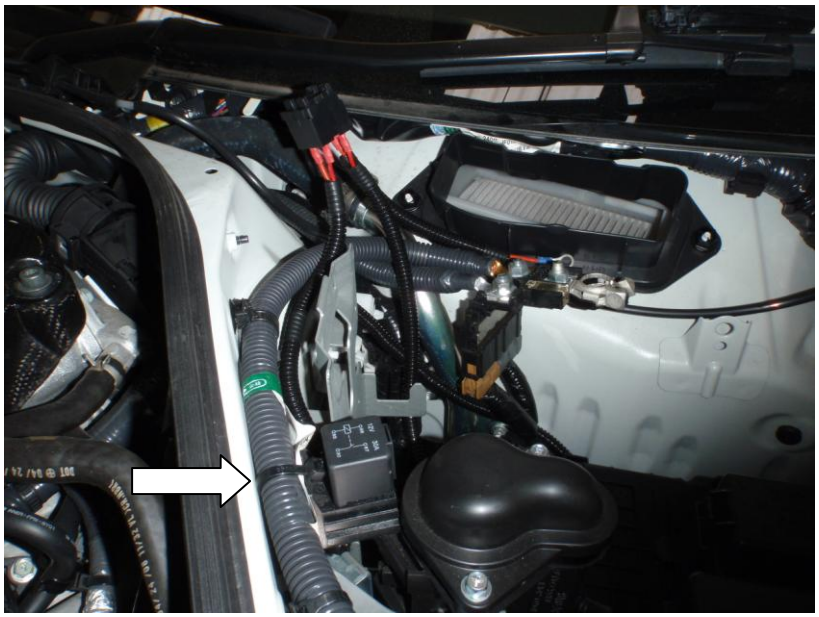
Pull the wiring harness through so a couple of metres are under the car.



Start by pressing down both tabs on the back of the fusebox and pull it upwards to release it from the bracket



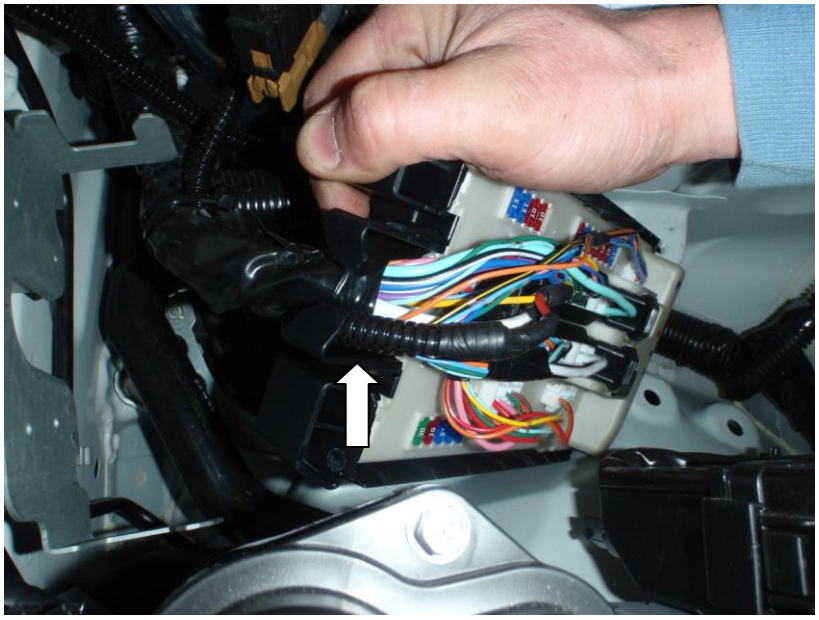
Undo this 10mm mounting bolt for the fusebox bracket, and attach the earth cable from the harness before doing it back up



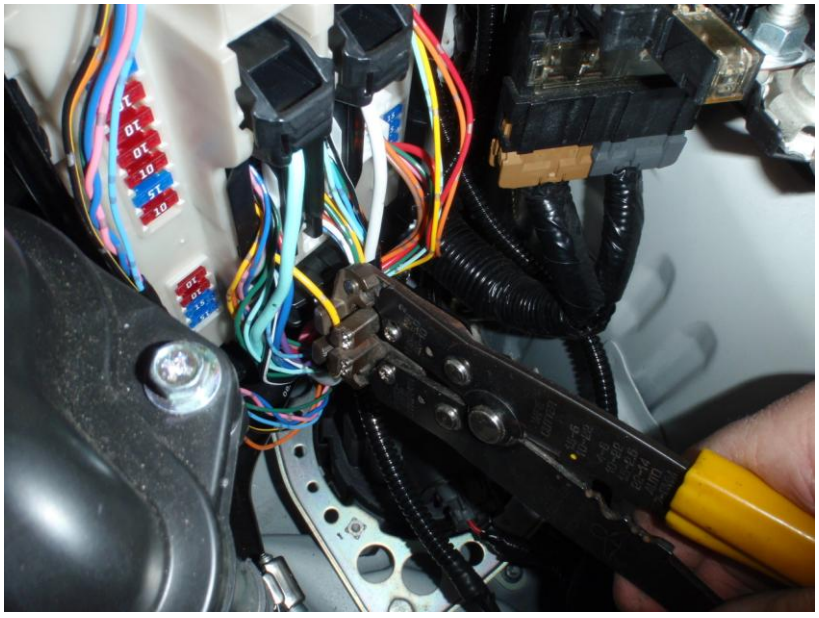
Cable tie the relay to the stock wiring loom, and pass the transmission cooler loom back behind the fusebox bracket so that the fuses end up between the fusebox and the battery

Remove the red plastic cover over the positive terminal of the battery, undo the 10mm nut nearest the front of the car and attach the red +ve wire from the loom before reassembling

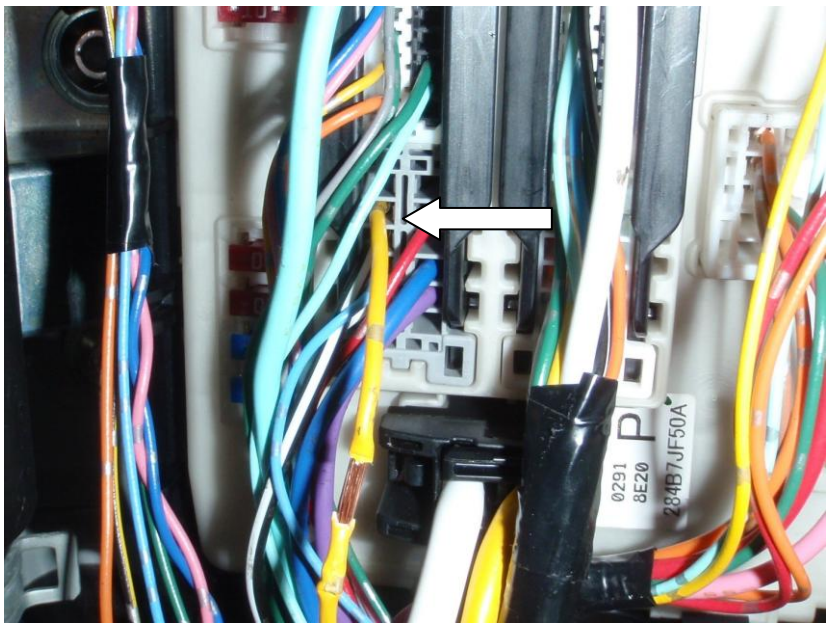
Position the fuses here so that when the covers are reassembled you will have access to the fuses through the battery inspection cover



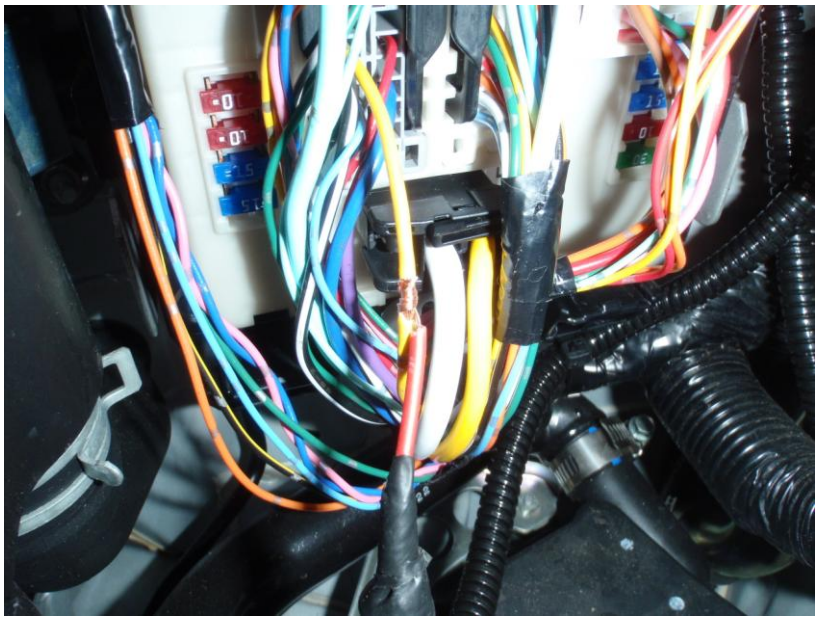
Find the bare ended red wire from the loom that needs to be connected into the fusebox, and route it alongside the stock loom into the fusebox with a cable tie, tucking it into the clip on the bottom of the fusebox.



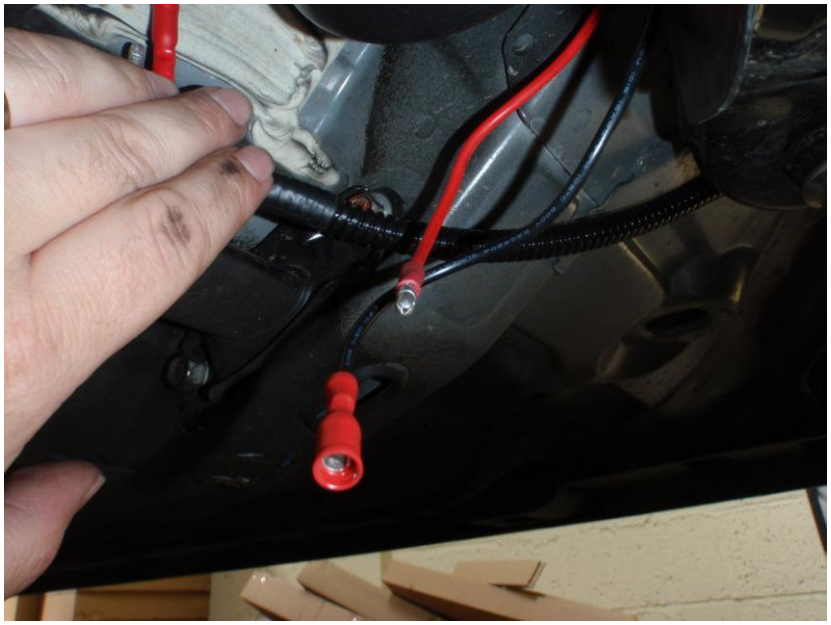
Remount the fusebox and remove the cover. Use a wire stripper to remove 6-8mm of sheathing on the yellow wire with grey stripe located on the bottom left connector, 5th wire up on the left.



Another view

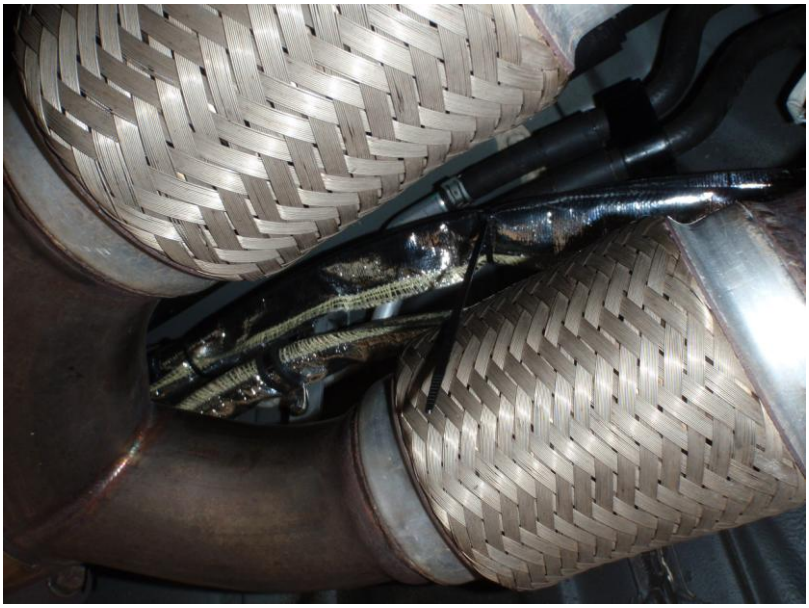


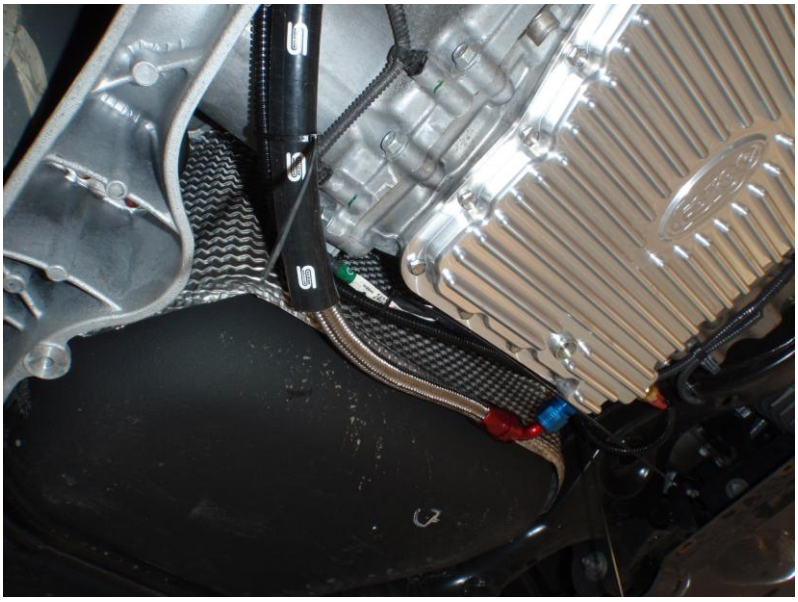
Wrap the red wire around tightly around the exposed part of the yellow wire and solder in place. After the solder has cooled and you've checked the joint is good, cover with insulation tape. Make sure the loom is tight so that the fusebox cover can fit back on.



Pull the wiring harness down until the connections for the pump are in the right position. Strip the ends of the pump wires back, and crimp the provided male bullet connector to the red (+VE) wire on the pump and the female bullet to the black (-VE) wire on the pump as shown. The connectors may be loosely fitted on the harness already to save them from getting lost.

Connect the pump up. The remainder of the loom needs to be pushed through the heat shielding provided – we supply 2 metres, but only 1 to 1.5 metres is needed to get the wiring loom to the other end of the transmission tunnel. Secure the loom to the chassis brace bar with one of the provided cable ties.





Run the wiring loom along with the feed from the sump and connect it to the temperature switch you installed earlier (it doesn't matter which way the connectors go). Secure with cable ties.

The battery can now be reconnected and all the panels in the engine bay replaced that were removed in steps 39-41

FILLING AND BLEEDING PROCEDURE

51. **IF YOU IGNORED EVERYTHING ELSE YOU MUST AT LEAST FOLLOW THESE INSTRUCTIONS VERY CAREFULLY.**
If all has gone to plan, all the hoses should now be tight, the electrics all hooked up, and all wiring and pipework secured. The return to the gearbox will still be disconnected, and the gearbox filler removed from the car. The sump level should have been inserted, but the sump plug should still be off. Ensure that the return to the gearbox will not foul on the propshaft whilst its loose !!
Fill the gearbox with appropriate oil until it drips from the sump plug. This should be approx 10 litres of oil. Temporarily refit the gearbox filler plug, and sump plug, and start the car.

-Press and hold the brake pedal, then shift the shift lever to 'N', then the 'M' range 1st gear (wait for 5 seconds), 'M' range 2nd gear (wait for 5 seconds), 'M' range 1st gear, shift to 'N' and stop the engine.
- Remove the filler plug and drain plug, then fill the gearbox again until it leaks from the drain hole, and refit both plugs.
- Run the engine again until the transmission oil reaches 50 deg C (122 deg F) on the data monitor
- Press and hold the brake pedal, then shift the shift lever to 'N', then the 'M' range 1st gear (wait for 5 seconds), 'M' range 2nd gear (wait for 5 seconds), 'M' range 1st gear, shift to 'N' and stop the engine.
- WAIT FOR 5 MINUTES
- Remove the drain and filler plug, and top the transmission oil up until it drips at the rate of 1 drip per second.
-Refit both plugs and restart the engine
-Wait for the transmission oil temp to exceed 75 deg C (167 deg F) - this will take approx 10 minutes.
-With the engine still running, get an assistant to hold the return line into a jug and using a short length of wire with two spade connectors on the end, remove the connectors on the temperature sensor and connect them to the wire. This will override the temperature sensor and fire up the pump to bleed the system. The system should bleed through in less than 10 seconds, and will pump out very quickly so be prepared. You want to pump out about 0.5 litres to flush the lines and prime everything. Stop the engine, and discard this oil.
- Remove the drain plug once more and top up the transmission oil again until the drips subside, then tighten the sump plug for a final time.
-Use the remaining M18x1.5 to -8 JIC adaptor and M18 sealing washer, and screw this into the filler plug hole on the gearbox. Attach the return line and tighten, ensuring that the hose is out of the way of the roatating prop shaft. The 45 degree bend on the hose should allow you position it correctly.
- Run the engine again, and making sure that the oil is still above 75 deg C, bridge the contacts on the temperature sensor. This time, keep the pump running and visually inspect all of the joins on the pipework for leaks. There should be none of course ! Tighten as necessary. When you are happy, remove the bridging wire, and reconnect the connectors to the temperature sensor.
- You can now reinstall the heatshield that you removed in step 17 and all of the undertrays.
- In the future when you need to change the oil, there is no need to remove the sump like you did when it was stock. Simply remove the temperature sensor from the rear of the sump and allow all the oil to drain, before cleaning and refitting it. Once the gearbox is full of oil, follow the steps above again, but at the point you bleed the cooler system, allow 2 litres of oil to be pumped through to completely change the oil in the cooler and lines.

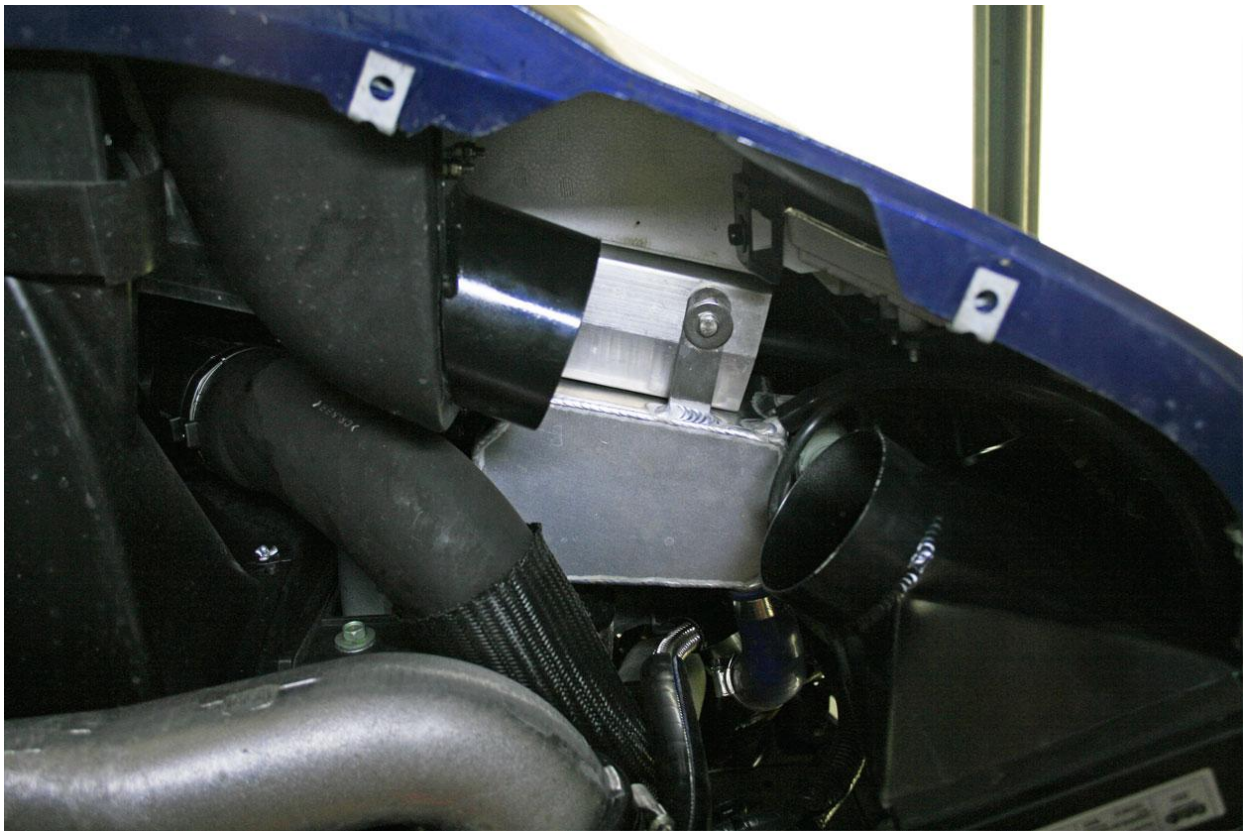
UNDERTRAY MODIFICATION

52. Due to the size of the oil cooler, a slight modification needs to be made to the undertray to accommodate the metal tangs on the end of the core. The undertray is double skinned and this will not effect its strength. Offer up the undertray to the car and loosely bolt it in place using the three 12mm bolts that come down through the intercooler ducting. Mark the position of the metal on the oil cooler that interferes with the undertray.

Cut the undertray out with a cut off wheel and dremel (or similar tool) until you are through the top skin, allowing the cooler to sit down inside the skin. When you are happy with the fit, remove the undertray from the car.

BUMPER MODIFICATION

53. The spare duct in the front bumper has to be cut away in order to force feed air through the cooler core. With the bumper off the car, offer up the supplied duct to the rear of the duct on the bumper as seen below. Mark the position of the round cutout on the rear of the duct, and the four bolt holes then using an 80mm holesaw, drill the large hole, and with a 7mm drill bit drill the four remaining bolt holes.



Using the four cap screws and nuts provided, bolt the duct to the bumper, and mount the bumper to the car following steps 12-1 in reverse order. Note that the oil cooler now fits in between the bumper and the undertray on the left side of the car so make sure the bolts go up into the oil cooler bracket.

54. Using the flexible hose and jubilee clips provided, connect the duct on the bumper to the duct on the oil cooler.

55. Your car can now be lowered to the ground and driven as normal. During hard use, the transmission cooler will turn on at approx 100 deg C (212 deg F) and turn off again at approx 95 deg C (203 deg F). Different rating switches are available from Forge Motorsport for a small cost, though we have found this to be an ideal balance – it allows the transmission oil to get warm enough to boil off any water based contaminants, yet not get too hot where heat soak in the components means its difficult to bring the temperature back down.

    The cooler will ONLY operate with the engine running – if the engine is off but you leave the ignition on, even with the oil over 100 degrees, the cooler will not run so as to preserve the life of your battery.