So you may have realized that Mikymu deleted his header install diy. Luckily I saved it to word when I installed mine. Given that it helped me out a lot with my install, I figured I would post it back up here. Nice try Mikymu

Credit goes to (and taken away from) Mikymu. For the most part it is all in his words.
* I added a couple tips in their from my experience. They are distinguished by the asterix *

Here you go!

Tools:

You need a nice set of socket from 8-18mm, open end wrench set, torque wrench, box of glove, flexible head wrench with extendible arms for those hard to reach header hex nuts - Home depot carry the Husky brand and worked well. I got some thick wood headers and cut them to 1'4" long at local lumbar yard to help jack up the car - it also came handy to help lift pipe/muffler if you don't have help.
you need to jack up the car evenly on all 4 sides and leave it on the jack stands before having the reinforcement plate remove to avoid messing up the alignment - do not jack up the car on any side once the reinforcement plate is off - unless we need to pull you out under the car All seriousness, I can not stress the importance to be careful and not get hurt!

Some electrical wire cover/tapes and nylon wire tie to route the O2 and temp sensors to the cats
*some RTV high temp silicon (not required but makes it easier to keep gaskets in place) *

Here are the steps to remove headers:

Remove strut bar before jacking up the car ..... remove left fan cradle

Remove HVAC air filter - follow step 10 from
m3madrussian: http://m3.madrussian.net/diy_alarm.shtml
I did not remove it until later and pay dearly for it with cuts on hands and back pain

Step 10: Under the Hood

- The cover over the HVAC air filter is the first to come out.
- Note the 3 plastic "bolts" each needs to be turned about 1/4 turn in order to release. These are spring loaded and they will pop up as they release.
- Once the three bolts are released simply pull the cover out.
- Once the cover is out remove the air filter.

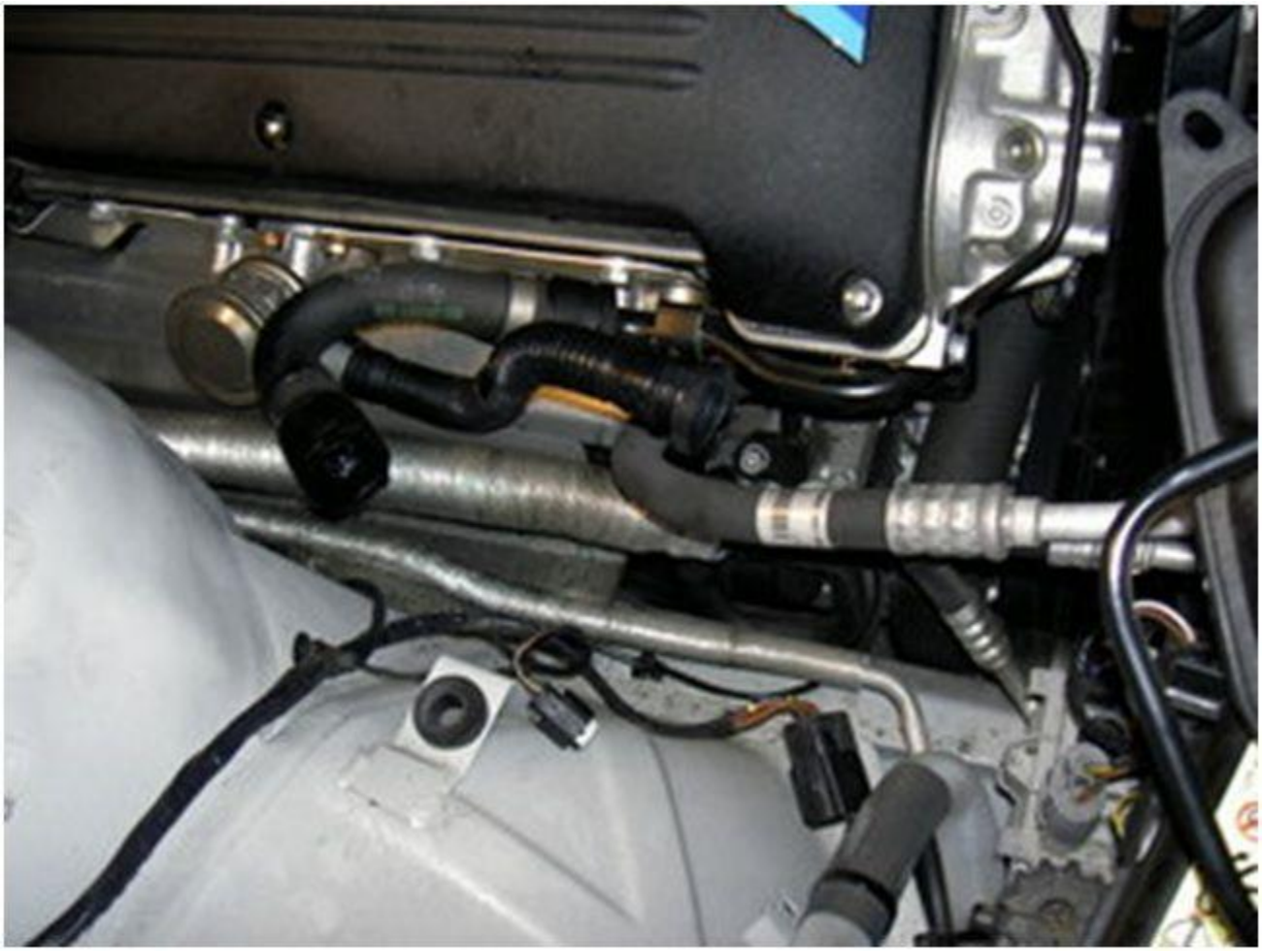
Remove the coolant reservoir and EGR Emission unit held on by a simple bolt - you need to pull off the windshield cleaner filler tube first then squeeze the side of the air hose going into emission unit and pull it off

Remove the coolant hose going into the reservoir - it has a metal clip and just pry it up and pull out both ends to remove - tilt hose upward to avoid spilling coolant - cut off the finger end of plastic glove and cover the opening on the reservoir to prevent lost of coolant

* Use a cork instead of the rubber glove (credit Dafoe). Coolant got everywhere when I was trying to get the glove around it with the rubber band. Rubber band kept slipping off *

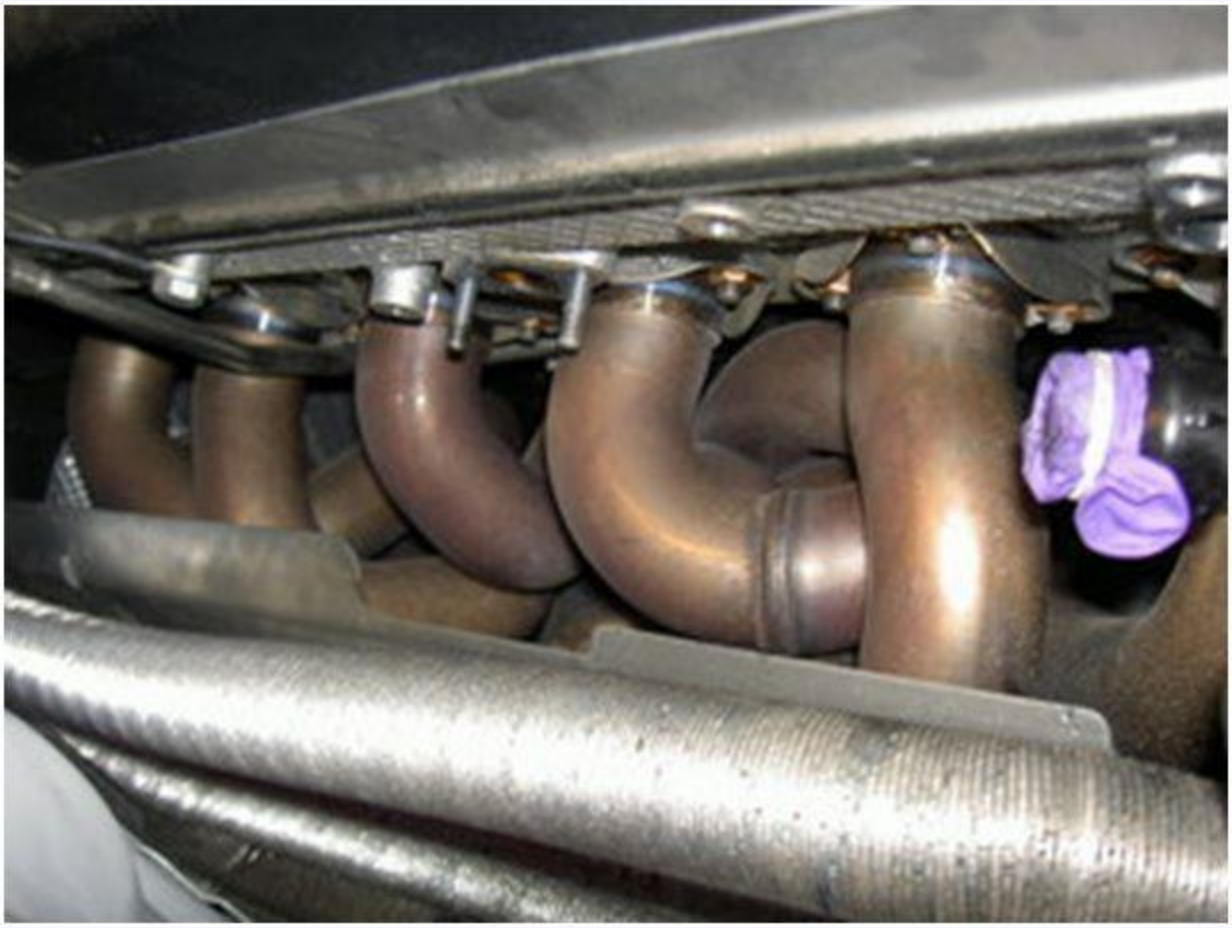
- avoid getting grease mix in coolant. Remove sensors wire plugs under the reservoir and emission unit

Remove the other end of the coolant tube going into the metal pipe on engine block - same metal clip - and cap the end of the pipe with end of rubber glove as above



EGR valve removal - I reused the hex nut.....take the cap off from the top of engine - pinch the valve and pull - put the oil cap on afterward - there you see the long black plastic holder for the O2/temp sensor wire

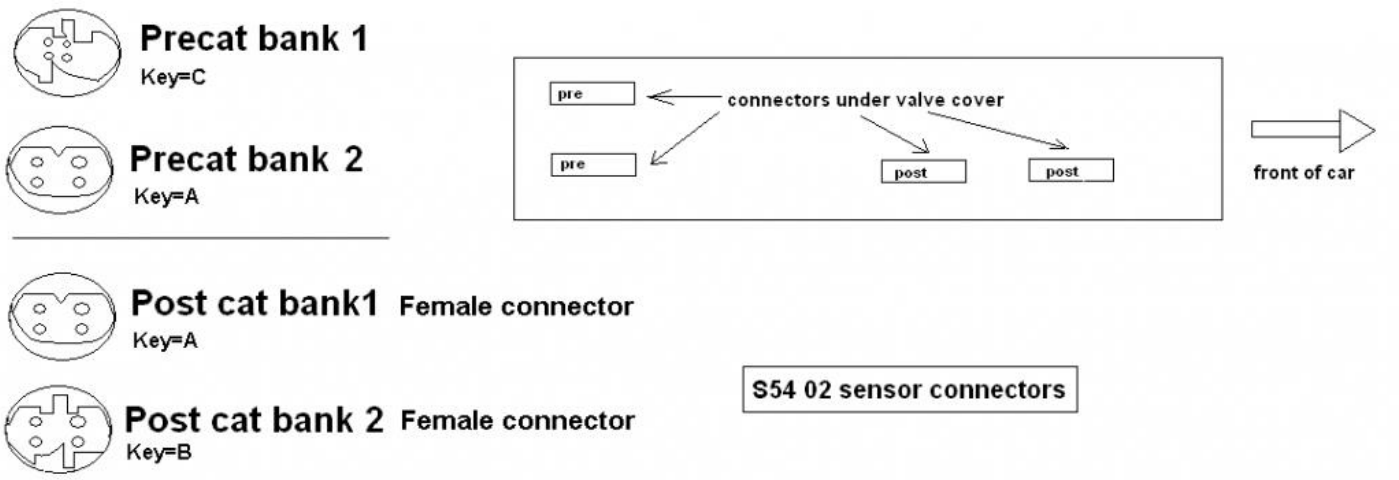
There are 2 flexible metal clips at the back of upper heat shield holding the O2/temp sensors wires - lift open the clips and gently work the wires out. Loosen the bolts holding the upper heat shield and slide it out.....there, you get to see Medusa's hair for the first time



The lower heat shield is kind of a pain in the arse. Loosen the 3 cheap nuts and gently pry the black square plastic holding the brake line clockwise (careful not to puncher the brake line) - don't worry if you break the harder outer shell - there is a softer inner that can still hold the brake line. Remove the black clip with a plier and admire the piece of sh^t and wonder who in BMW designed it. gently lift up the AC pipe and brake line and slide the shield out

Full view of Medusa's hair .... you can remove the first O2 sensor but make sure you label them - I use the system - F1, F2, R1, R2 (F=front header and R= rear header. 1 is before cats 2 is after) and label each plastic bags and put the sensors in accordingly

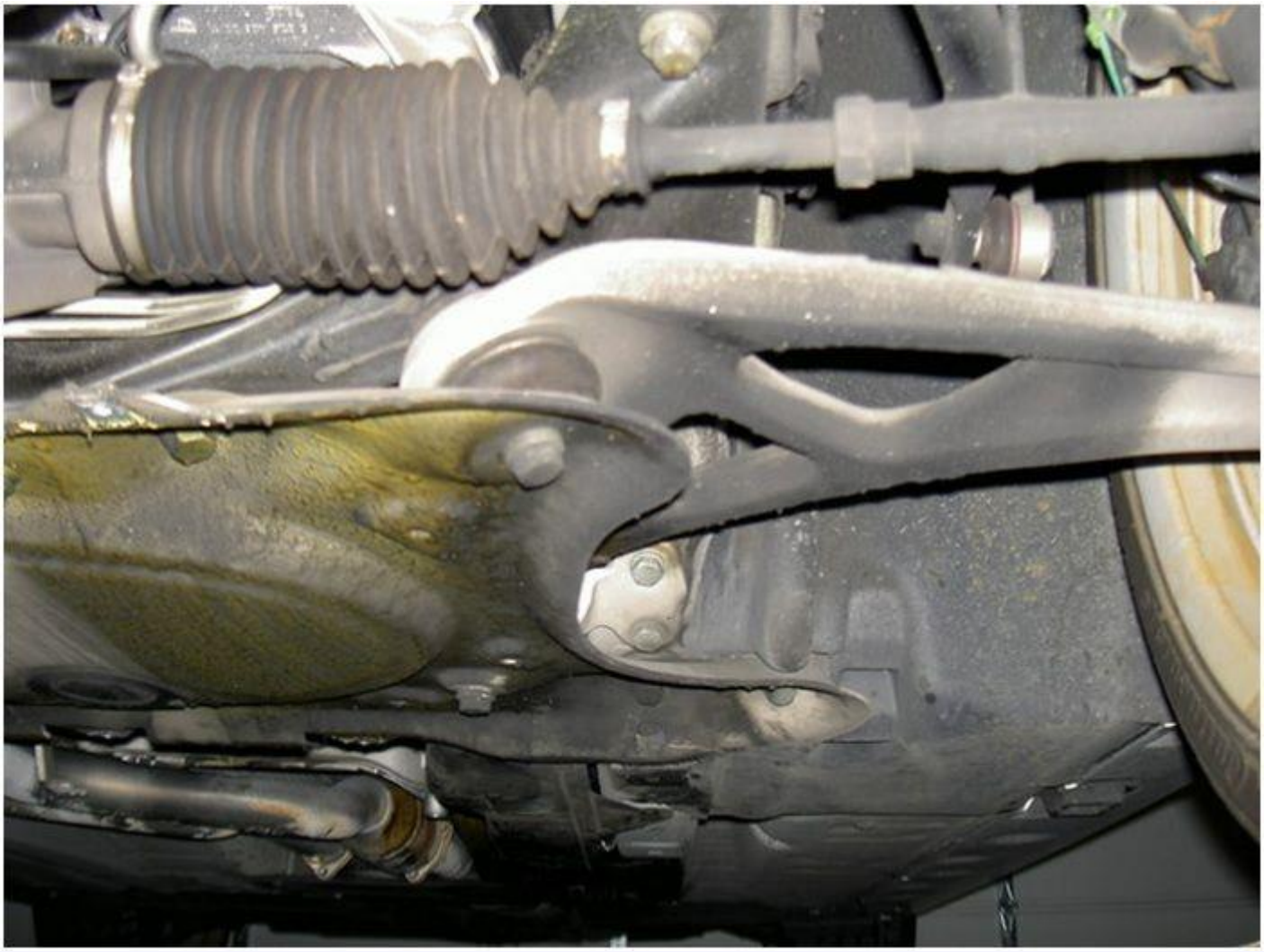
* I taped off each wire with painters tape before removing from the plastic harness. Then labeled/wrote on it which wire each was along with its specific orientation on either the plastic harness for egt and post cast or the pre cat harness. Here's a diagram.



(Diagram Credit MattMan)
If this is done wire's being mixed up is a none issue. *

- you need a 22mm open end wrench and muster that sucker loose

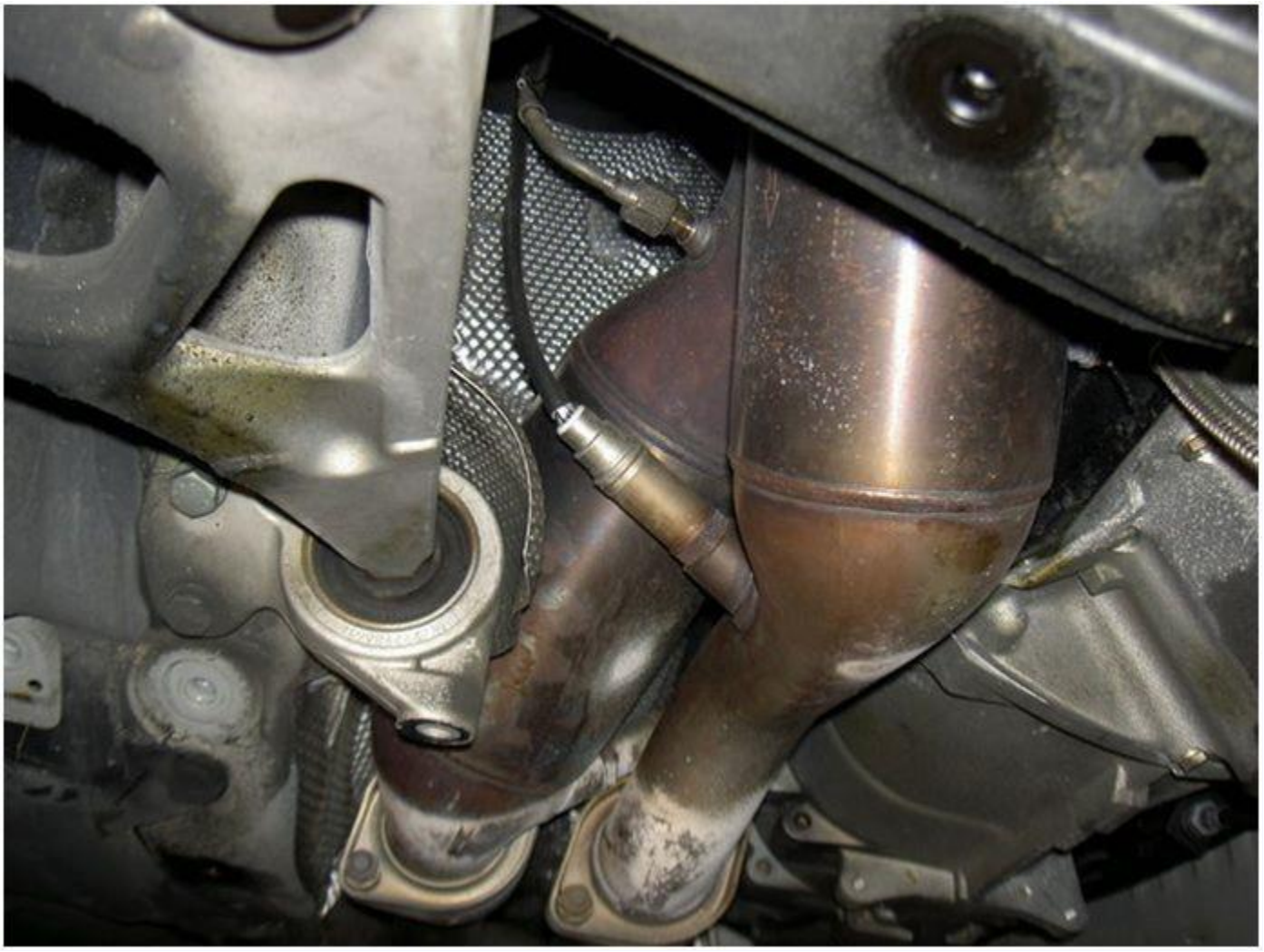
Remove the black plastic lower front engine cover (seven 8mm screws) then Remove the 12 reinforcement plate's bolt - notice 2 of them - one each side - are bolt right into the front wishbone - hence do not jack up car on any side once plate is off to avoid messing up alignment



Full view of the glorious US headers and cats with reinforcement plate off

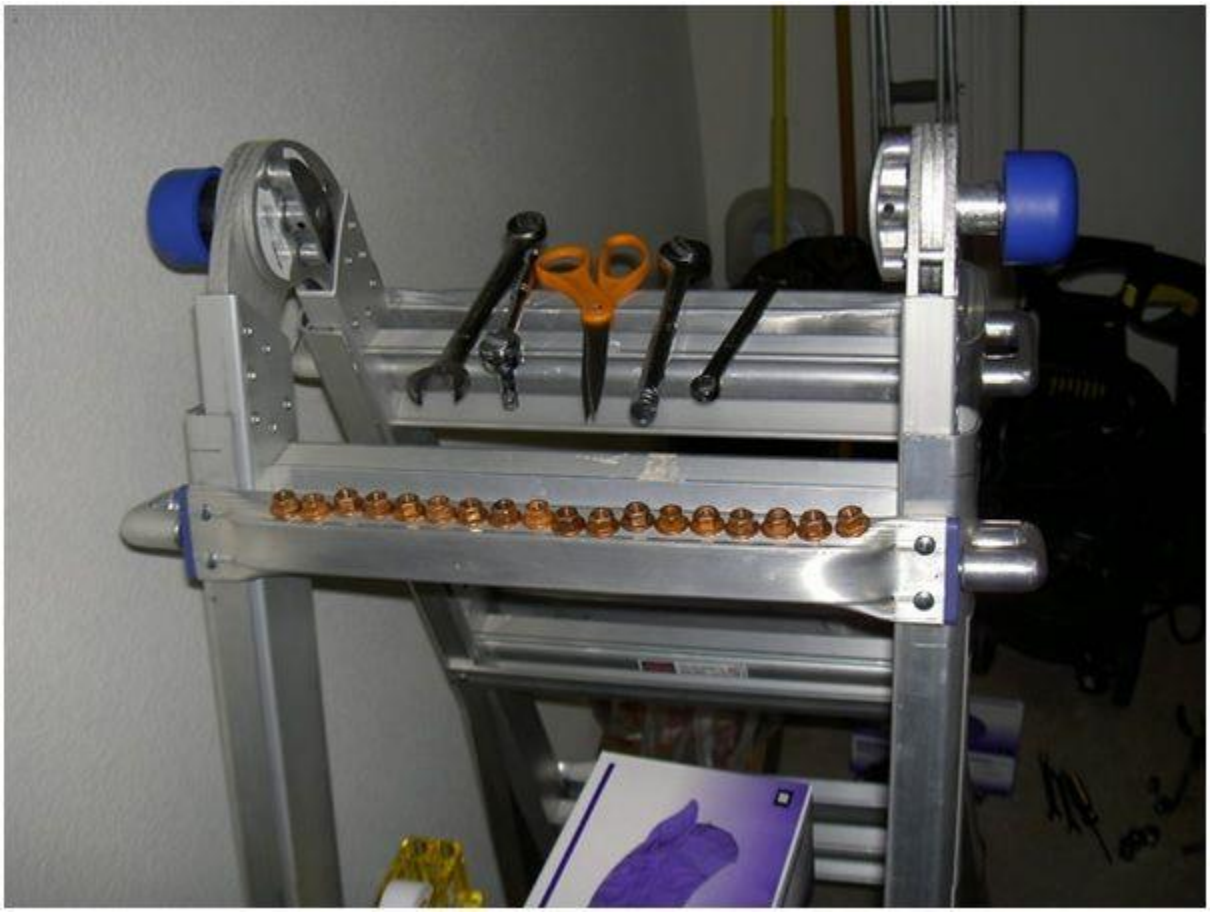
soak the 4 nuts and bolts connecting the headers with section 1 with PB blaster. They are often rusted pretty bad. Then soak the 18 header 2 block nuts as well. The Let it soak a bit. (Credit Dafoe)

- looks like fat boys to me - you can see the smaller temp sensor and the
F2 O2 and part view of the R2 O2 (sound like R2D2) sensors. Remove and properly label sensors - take care not to bang them around - they are very expensive to replace

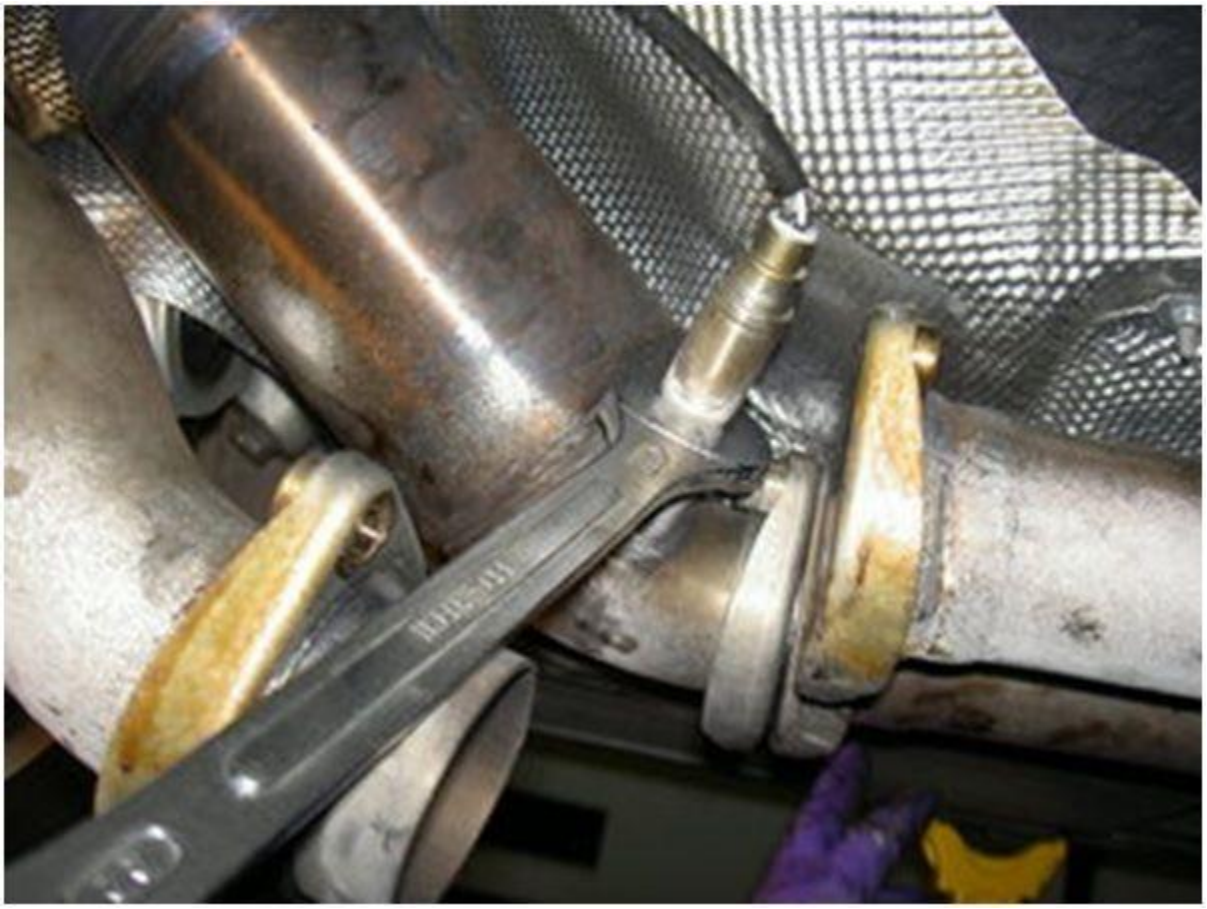


Get couple socket extensions, universal joint socket adopter, a nice flexible head wrench with extendible arm and some time just the open end wrench - you will have to work in all kinds of wired angles and body contortions and some time under the car to get all 18 hex nuts off. Not an easy job at all due to very acute angles of the US headers - blame that cold start emission requirement - high ridding cats. I would recommend loosen the various nuts connecting the mid resonance pipe first if you are planning on changing it - it will be harder to loosen them when the headers nuts are removed - the whole exhaust pipe may rock back and fourth. You do not want to damage the sensors or the header/engine block.

Don't give up - take time to rest between different ports of the headers. There are times you feel like just giving up or smack around the guy that came up with the US header design. Eventually all 18 of them will be out - you will be very proud of yourself. I named every one of them - Bashful, Doc, Dopey, Grumpy, Happy, Sleepy, Sneezy...etc



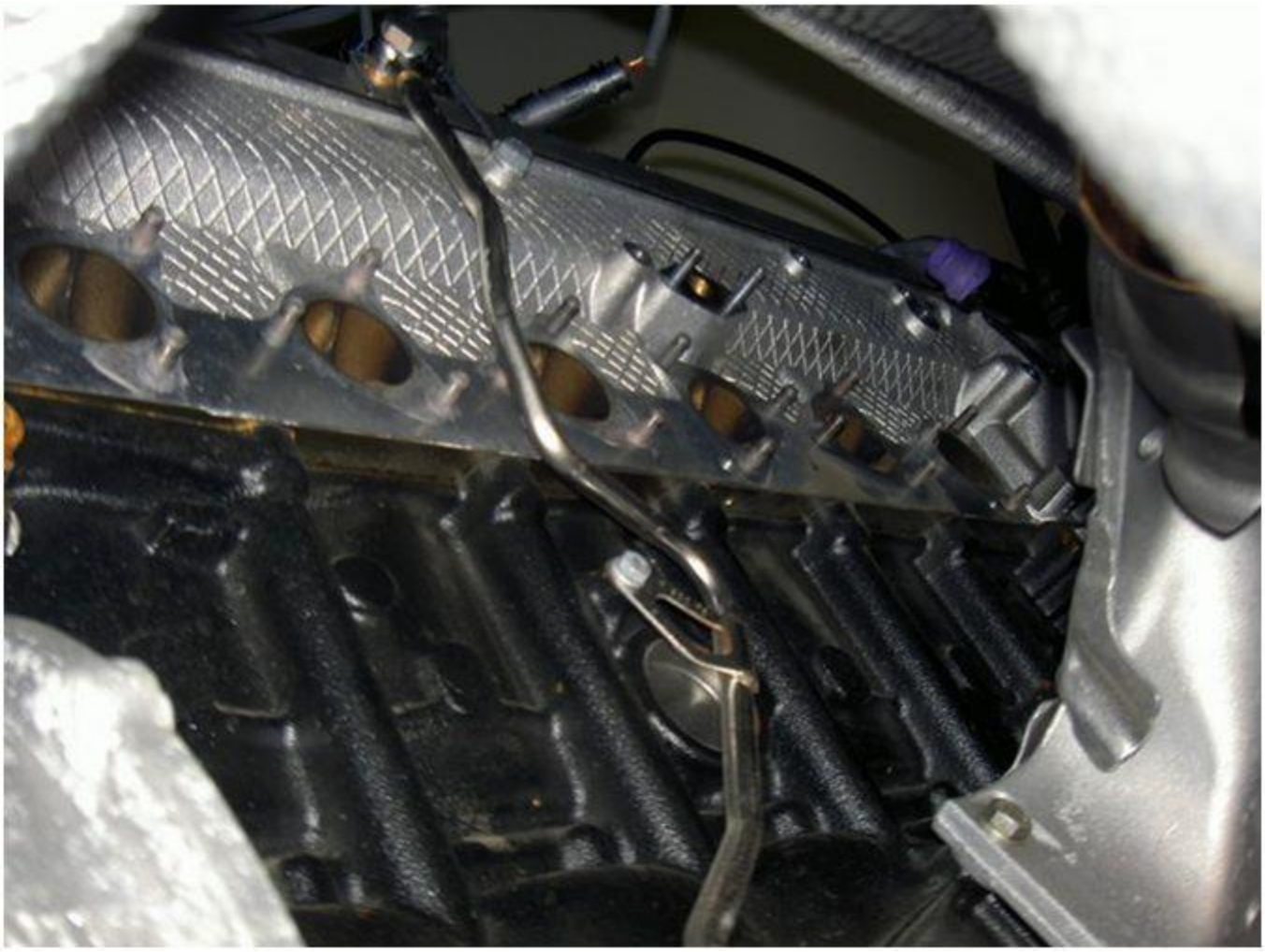
Separation of the headers from engine block and remove the lower connecting nuts- you will have to separate the front headers from the section 1 to get access to the top hex nuts connecting the rear header/section 1. Remove the R2 O2 sensor and label



^ I removed all my sensors from the headers after they were off my car. I did this just for the ease of removal and labeling. I taped all wires together from the top and gently fed them down to the bottom and then pulled (struggled) the headers out.

R1 O2 sensor exposed for removal after lowering it. Delivery of the headers from the bottom of the car - I tried getting it from top and no go. kind of like delivering a set of breech twins - feet first. Proud parents of fat boy and dumpy - got a little emotional. The mid resonance pipe came off easily after removing all the hex nuts. Now you are done with the hardest part - header removal

Glorious view of the S54 engine without the headers



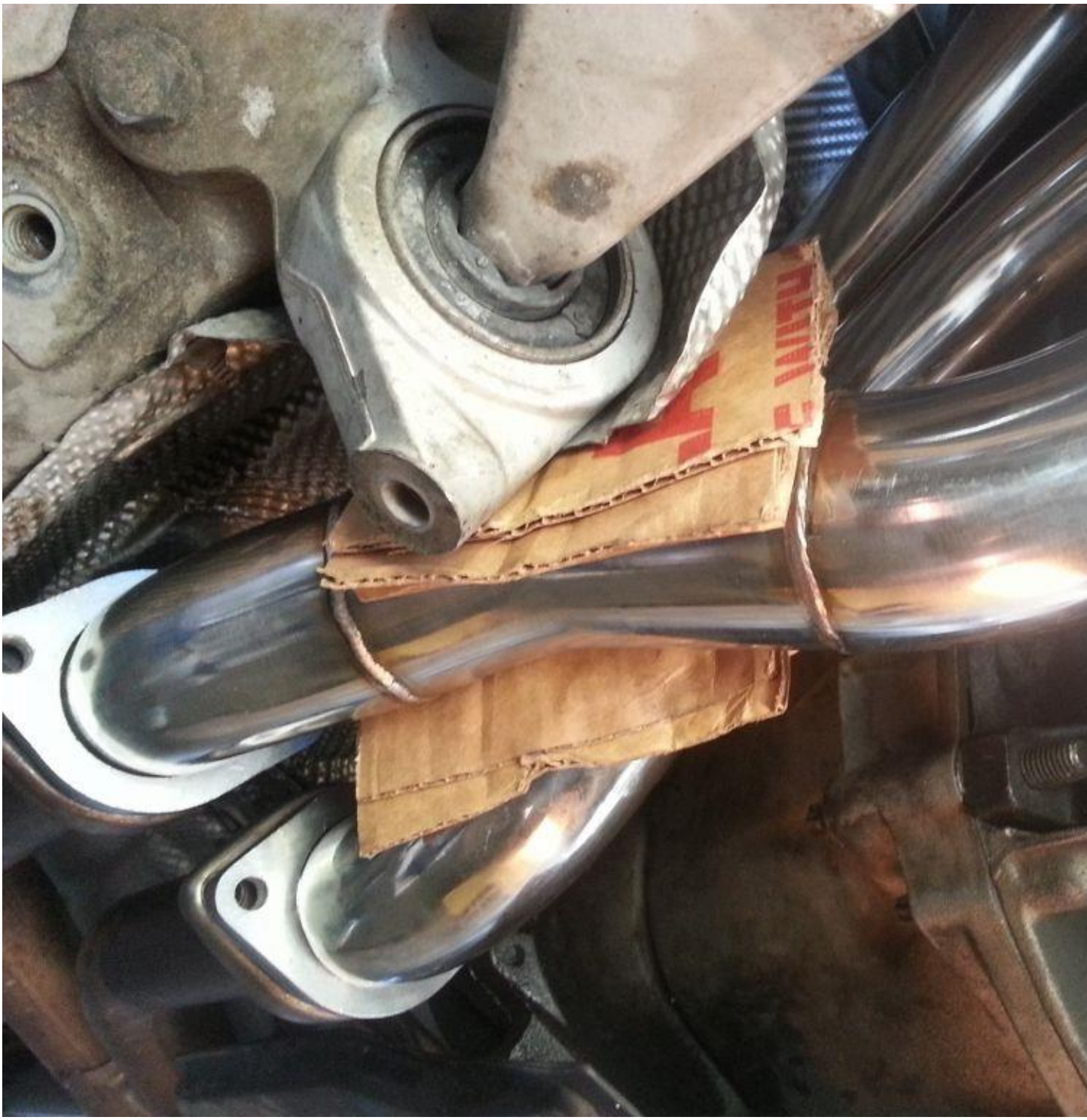
Installation is just the reverse of all above steps - that sum it up pretty much. Make sure again all sensors are install at correct locations. You will be amazed at how much extra room the CSL header create. The rear header end pipe will be on the left and front header on the right.

* Use just a dab of RTV high temp silicon on the new header gaskets just to get them to stay in place and not fall off (credit Mr. Wolfe). This is a HUGE help if your doing the install by yourself *

Use new hex nuts and gasket and tighten them - the correct torque is 23nm but it is impossible to get the torque wrench in there - so I just get them fairly tight - do not gorilla them - you will strip the nut/bolt. Same principle goes with the rest of the nuts/bolts on the cat pipes.

*After you have all you nuts loosely on the headers, connect section 1 to headers. To ensure the headers do not touch each other causing rattling issues, I placed a folded up piece of cardboard in-between the two headers and one in-between the header pipe and

FCAB/heat shield.
Like so.



Now tighten all the nuts including the sec 1 and remove the cardboard afterwards. Ensure the heat shield it not touching the FCAB. If it is bend back slightly.
*

The torque for reinforcement plate is 59nm and my dealer mechanic told me to also do extra 90+30 degree torque after that with a old fashion torque wrench - the ones with a needle I think he is just pulling my leg - I just torque it to around 65nm and good to go. line up the bolt imprints on the surface of the reinforcement plate as much as possible before tighten - to help prevent messing up the alignment.

Install the strut bar after the car is lowered and level on the ground. The body do flex a little when the car is on jack stands so you want to install the strut bar after the car is lowered. The Torque for strut bar was 24nm. Gently tighten the ///M top cam cover very slightly or you will bend the cover.
You might want to install the coolant hose next to the engine block first and keep it elevated to prevent coolant loss - since the reservoir have been moved around and all the excess coolant might be sitting at the lower end ready to pour out once you remove the glove cover.