

Focus ST Air Oil Separator



891610 - Focus ST Air Oil Separator

2015-2018 Focus ST

Congratulations on your purchase of the COBB Tuning Air Oil Separator! The following instructions will assist you through the installation process. Please read them BEFORE beginning the install to familiarize yourself with the steps and tools needed. If you feel you cannot properly perform this installation, we HIGHLY recommend you take the vehicle to a qualified and experienced automotive technician.

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Parts List

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Tools Needed

Sockets

3/8"

- 3/8" ratchet
- 3/8" 12" extension
- 3/8" 6" extension
- 3/8" Socket Swivel
- 3/8" 7mm socket
- 3/8" 8mm socket
- 3/8" 10mm socket
- 3/8" 12mm socket
- 3/8" 13mm socket
- 3/8" 10mm deep socket
- 3/8" 4mm Allen Socket

Hand Tools

- Phillips head screwdriver
- Trim removal tool
- Pick

▼ Engine Spacer Plate



▼ AOS Bracket for FoST



▼ (5) 5/8" Emissions Line



- ▼ (1) 3/8" Fuel Evap Hose



- ▼ (2) -10 ORB barb fittings with o-ring



- ▼ -6 ORB barb fitting with o-ring



- ▼ (5) 5/8" Constant Tension Spring Clamp



- ▼ (4) 15/16" Constant Tension Spring Clamp



- ▼ (2) 5/8" to 3/8" barbed reducer



- ▼ M6 x 1.0 x 16mm Hex Bolt (for Focus RS)



- ▼ M6 x 1.0 Flange Nut (for Focus RS)



- ▼ (8) M6 x 1.0 x 40mm Hex Bolt



- ▼ Breather Plate Gasket



- ▼ (3) M4 x 1.0 x 8mm Button Head Screws (Pre-installed to can)



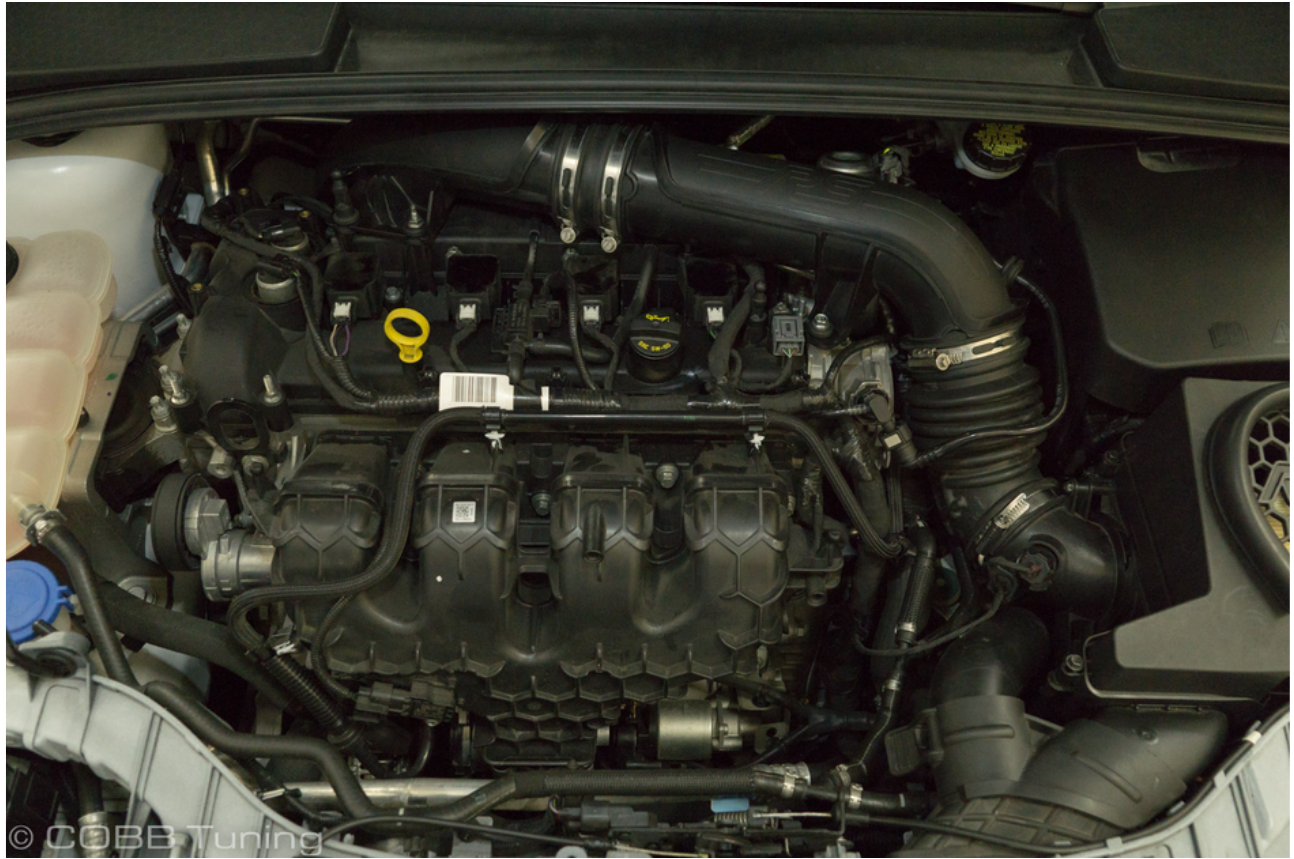
- ▼ O-Ring Lube



Prep, Intake Manifold Removal

1. Remove the plastic engine cover by gently pulling up to release the clips.





2. Loosen the 2 hose clamps connecting the two halves of the intake pipe using a 7mm socket. If you have a COBB intake installed you'll need to use an 8mm to loosen the coupler at the throttle body and move the whole intake as a unit.

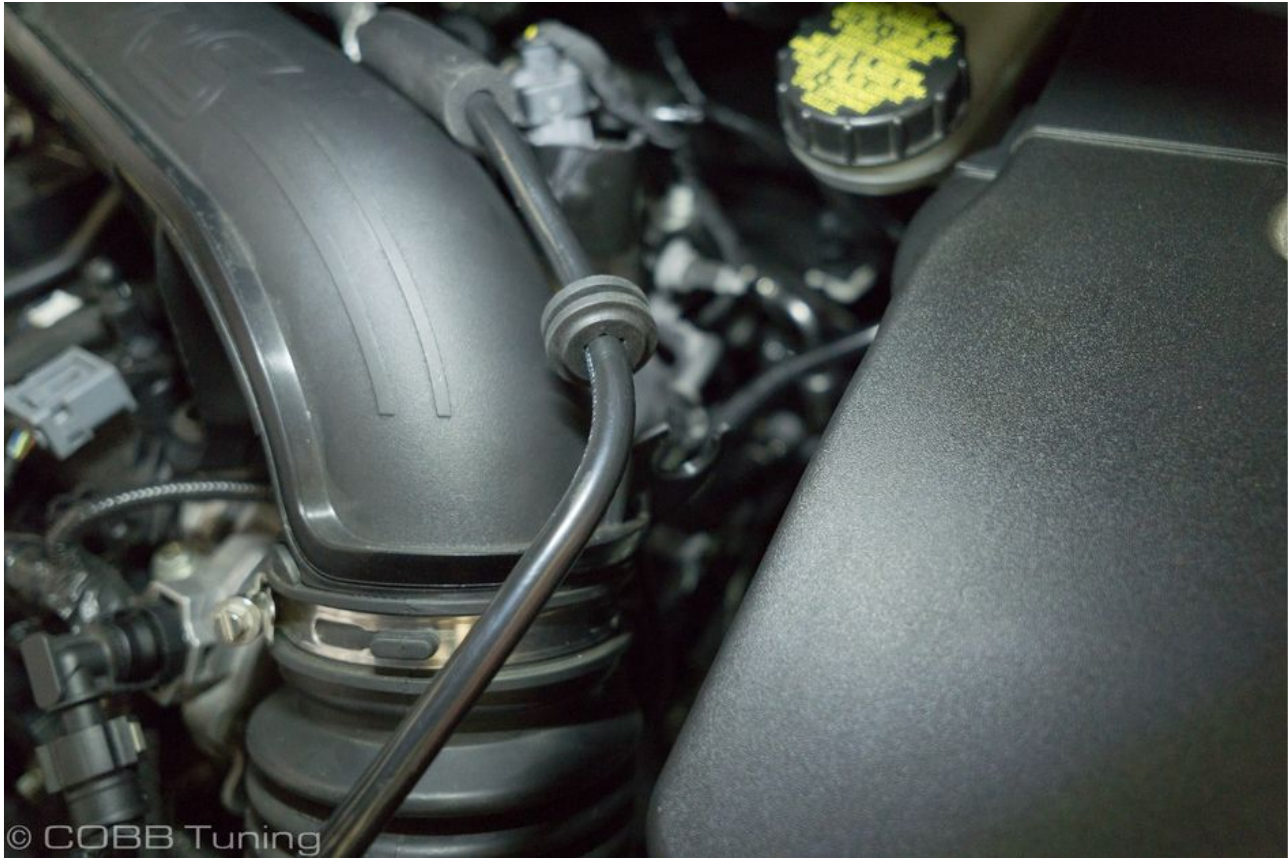


3. Loosen the hose clamp holding the intake pipe to the airbox. (7mm stock, 8mm COBB)



4. Remove the rubber grommet from the mounting location securing the electrical harness to the intake pipe.





5. Unbolt the intake from the top of the valve cover (10mm) and remove it or swing it out of the way.



6. Undo this clip near the master cylinder to allow some movement in one of the emissions lines.



7. Unplug it at the other end by pushing in on the release button. This is located on the upper right hand side of the intake manifold.

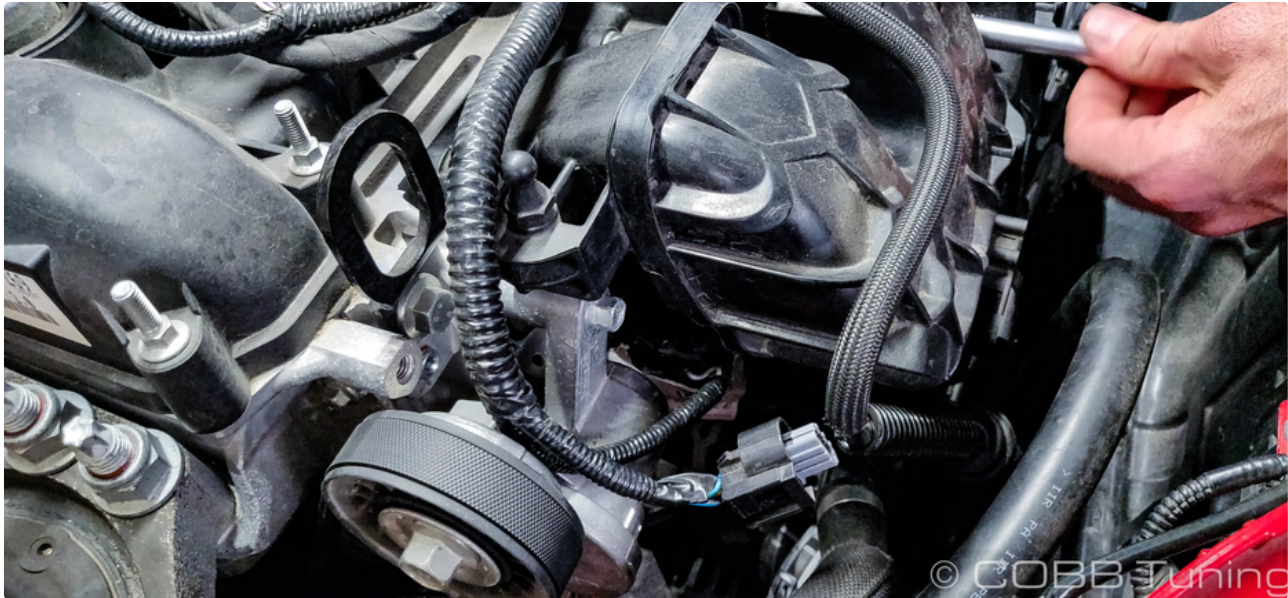




8. Remove the emissions line from the clips on top of the intake manifold.

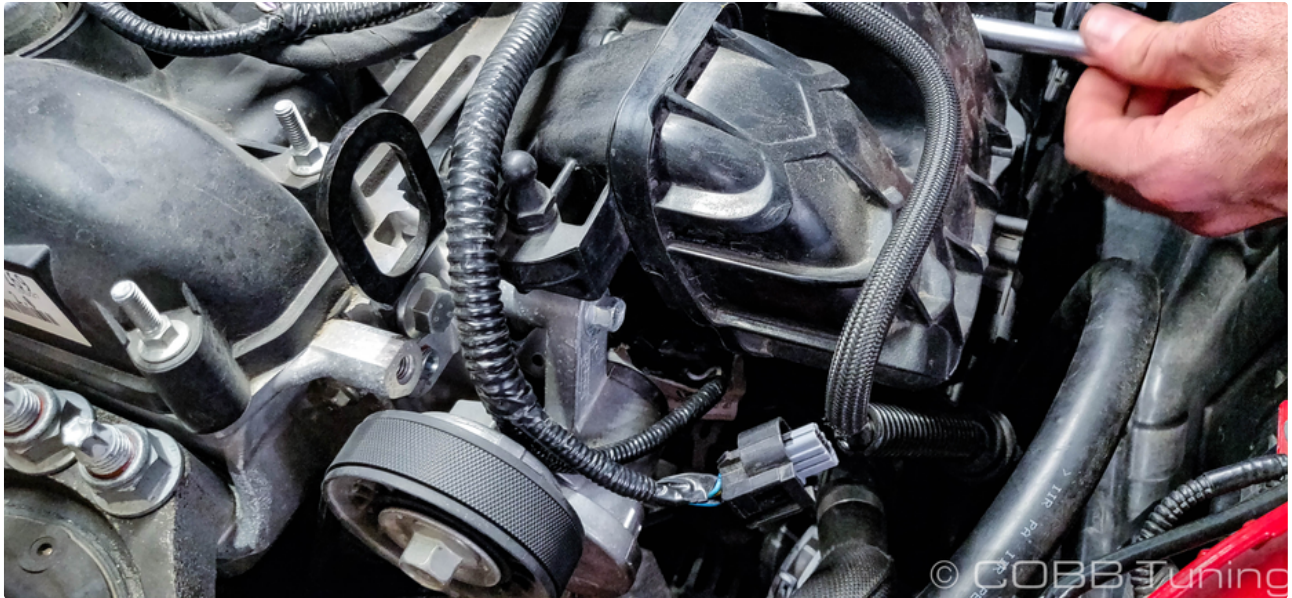


9. Unplug the MAP sensor connector.



10. Unplug the MAP sensor connector.





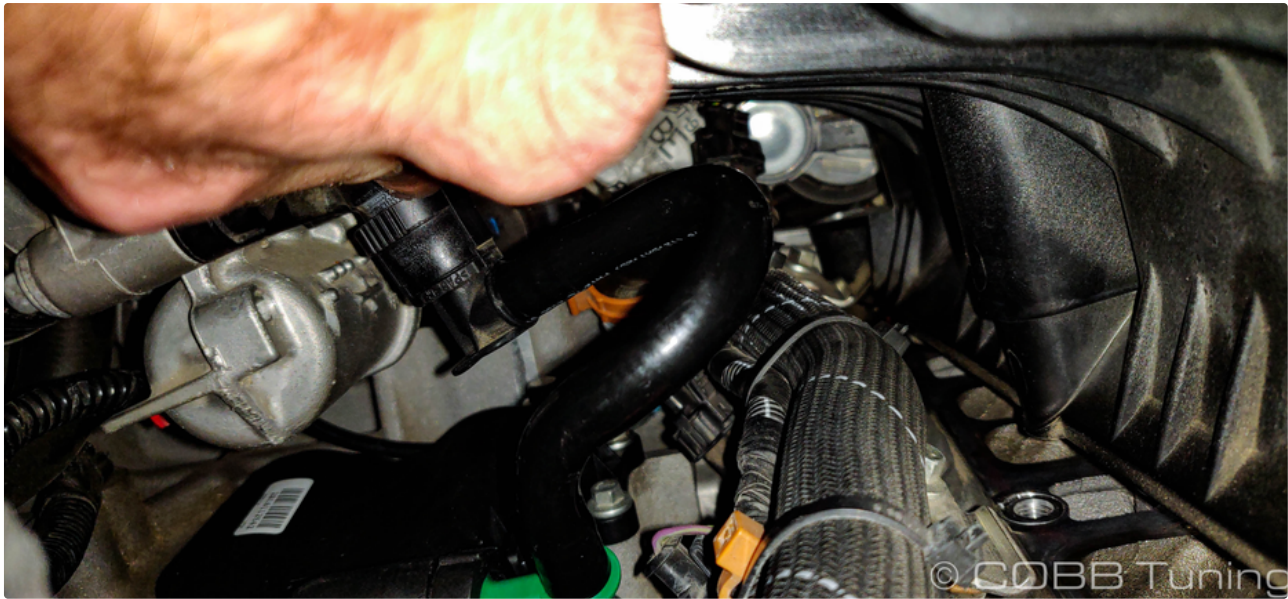
11. Loosen the hose clamps from the throttle body to the intercooler using a 7mm, 8mm, or screwdriver depending on what fits or is easiest.



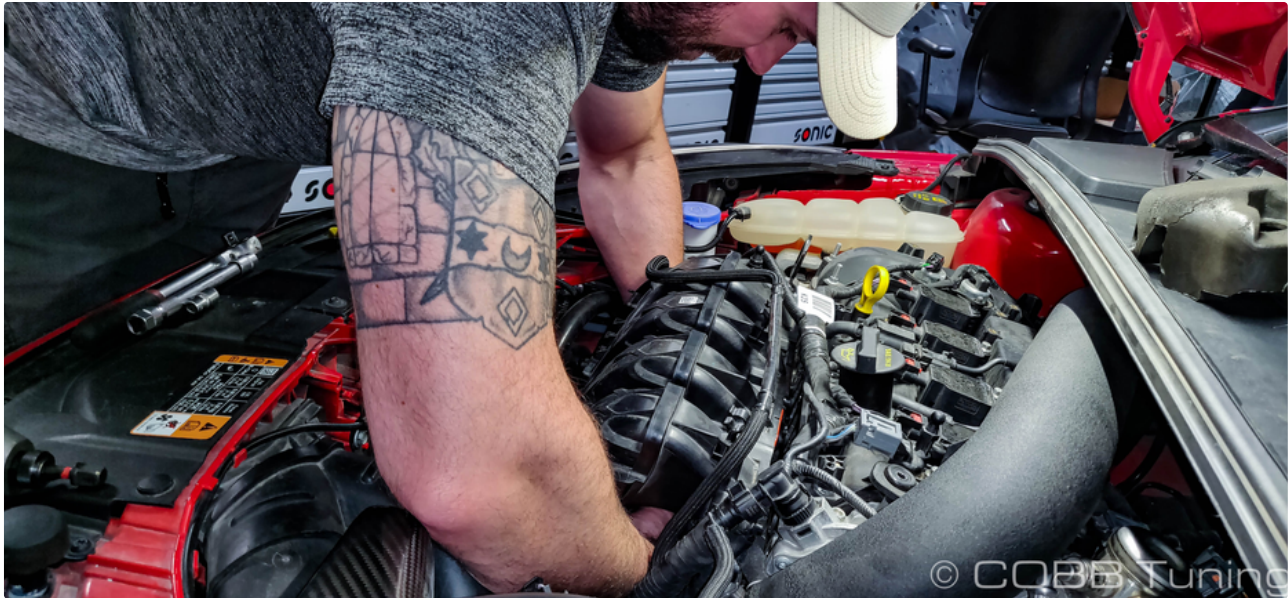
12. Using a 10mm and an extension to remove the bolts holding the intake manifold to the cylinder head.



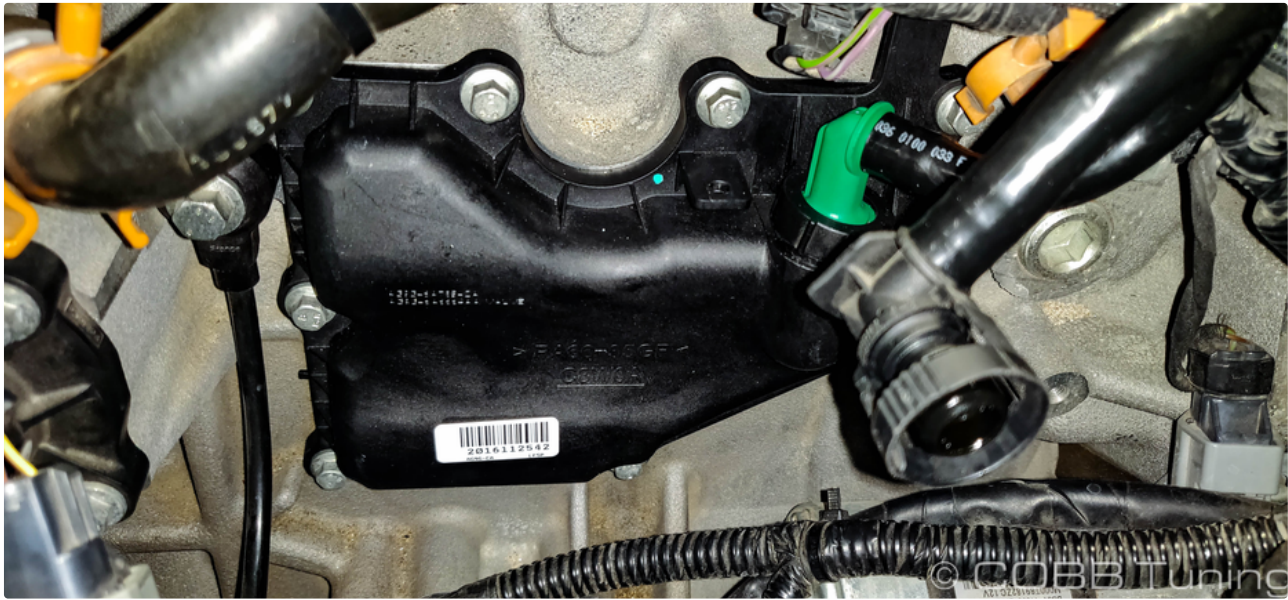
13. Gently pull the intake manifold away and reach behind to squeeze and release the pcv hose on the back of the manifold.



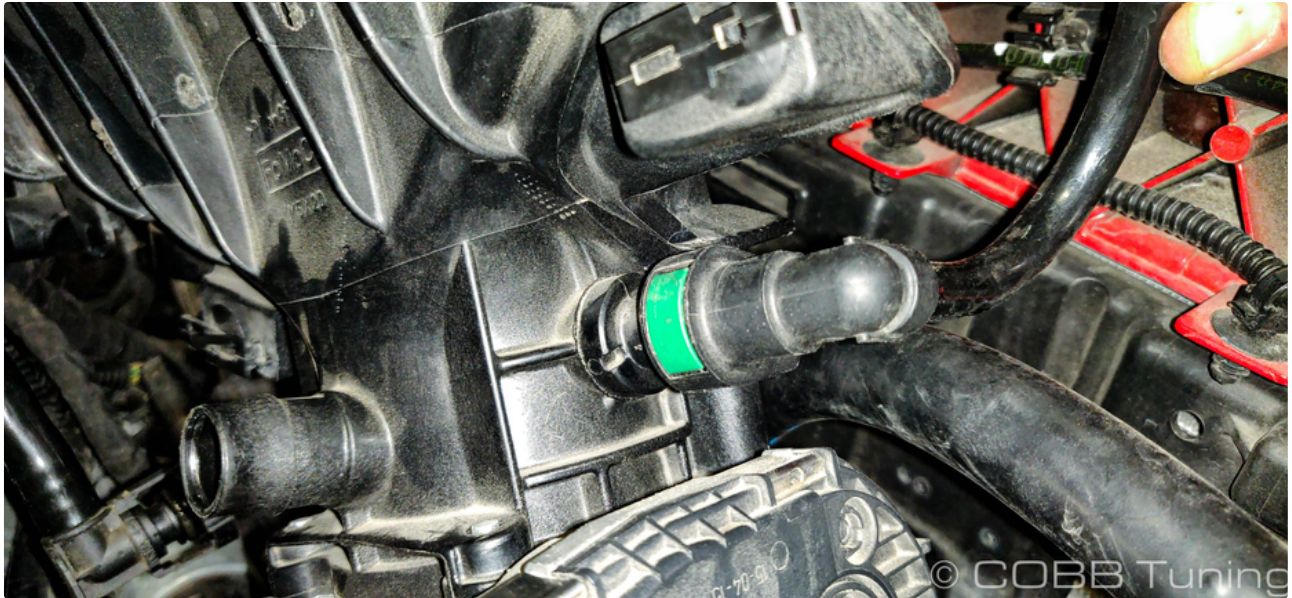
It's sometimes easier to reach around the manifold and depress the clip with one hand for each side. (Hugs are nice)



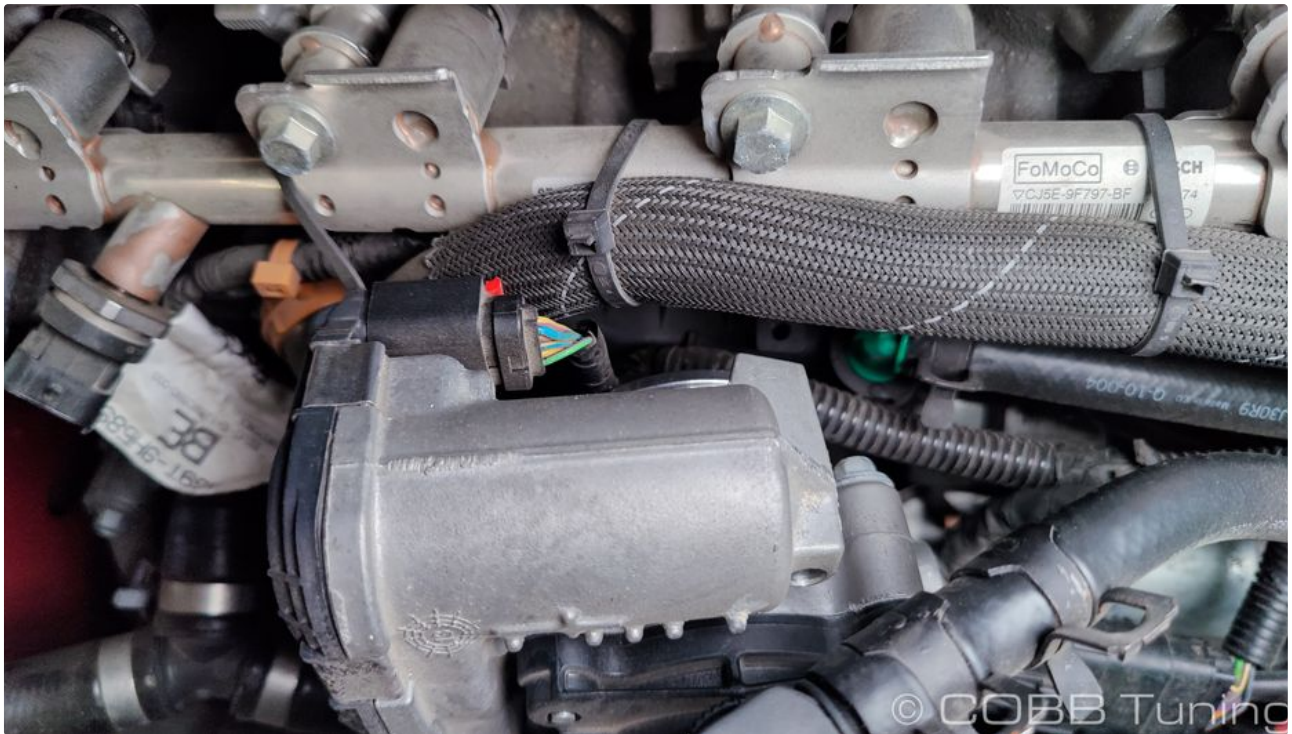
The textured parts of the clip are the sections you'll want to squeeze in to release the hose.



14. Squeeze the sides and pull out the green connector to release the hose above the throttle body on the left-hand side.



15. Pull the manifold up so you can disconnect the throttle body. Pull the red locking tab out first, then squeeze the tab to remove the connector.



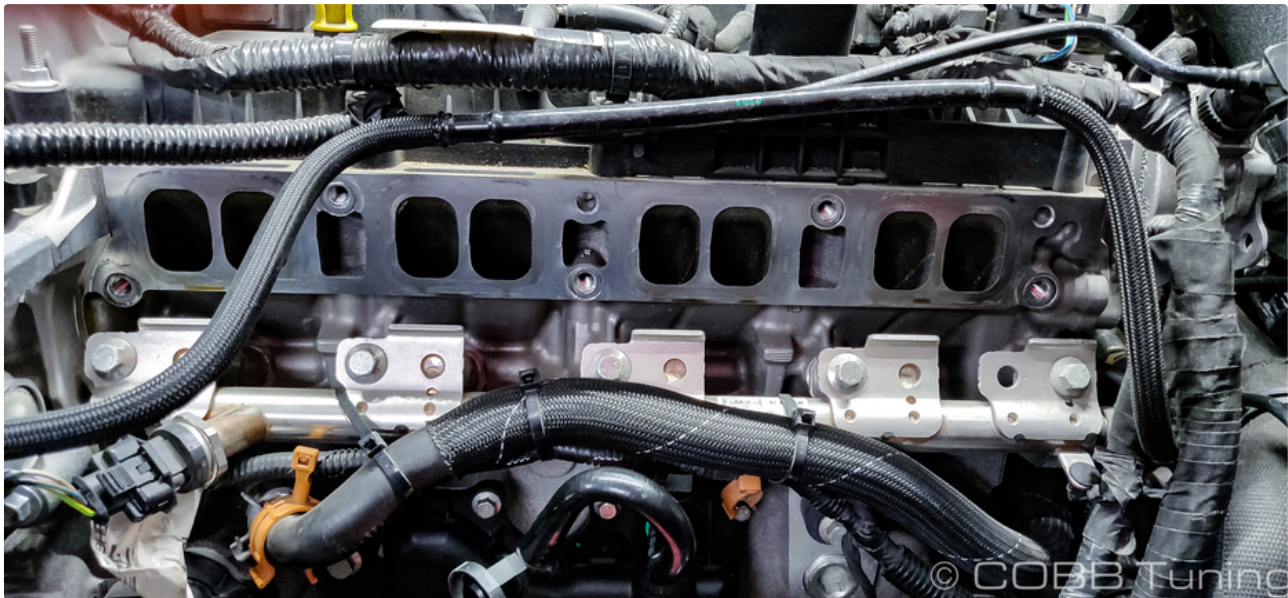


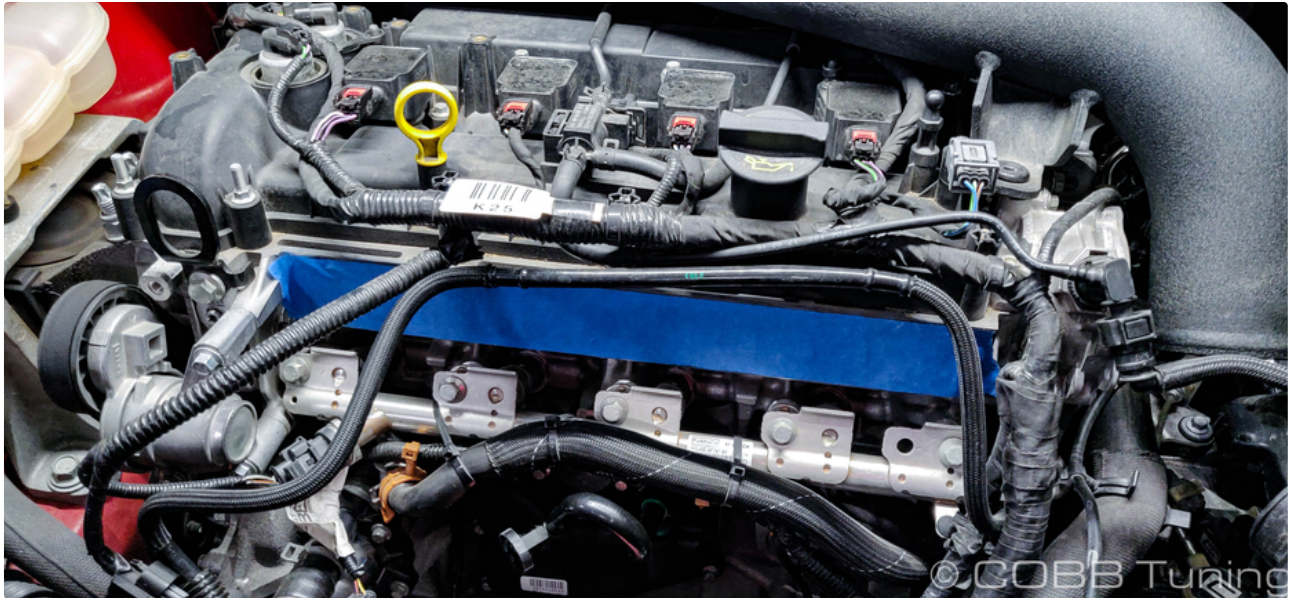
16. There are also two electrical connectors clipped to the intake manifold on either side that will need to be popped off with a trim tool.





17. With those removed you should be able to remove the intake manifold from the engine bay. Tape off the intake ports and cover the coupler going to the intercooler to make sure nothing gets inside the engine.





18. Using an 8mm socket remove the factory breather plate from the car. You may want to put a towel underneath it as there will probably be a small amount of oil that drips out once the plate is removed. You will probably need to use an 8mm wrench for the bottom one closest to the cabin of the car, as the motor mount can be quite tight to it.



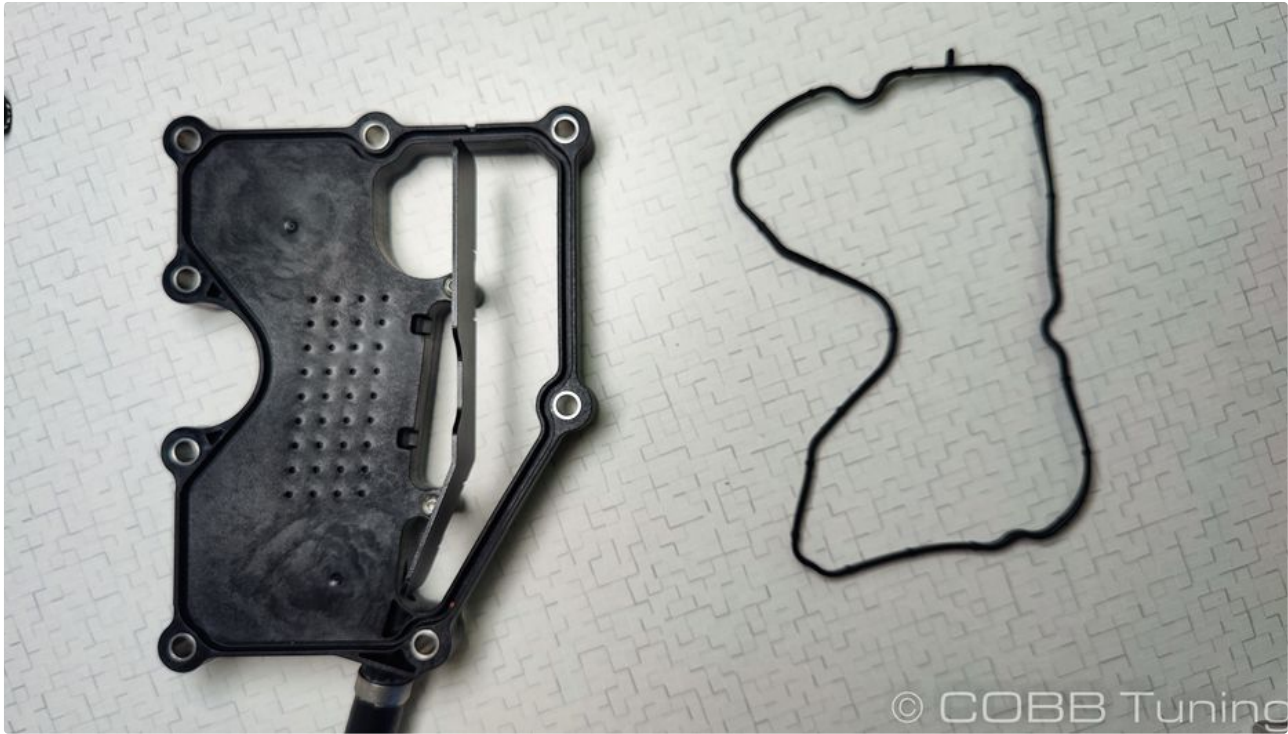
19. Using a heat gun gently heat the pcv line coming off the breather plate and take the factory connector out. Alternatively you can carefully use a razor blade and cut it out, but that would cause permanent damage to your factory parts. Set that fitting in a safe place for now as you'll need it in a later step.



20. Do the same to process remove the opposite end of the hose from the PCV valve.

Pre-Assembly

1. Pull out the provided gasket and breather plate. Lightly grease the gasket with the provided silicon lube on all sides then install it into the plate. The gasket is molded and will only go in one direction, there is a small tab on the gasket that sticks through an opening on the plate, from there it's just a matter of seeing if it's upside-down or not.



2. Lubricate the o-rings and install them on the threaded ends of the barbed fittings. Then add some additional silicone grease to the barbed end of the fitting to allow the hoses to install more easily later.





3. Install the fittings into the AOS can in the directions shown below. The fittings will just be tightened until they come to a stop, you don't need to torque beyond that point as the O-Ring does the sealing. The smallest fitting will go to the bottom of the can and tightened with a 19mm wrench. The two larger fittings will get tightened with a 27mm wrench.





4. Using the fittings you took from the stock pcv plate, Install them into a short length (around 3") cut from the smaller 3/8" loose hose provided in the kit. Secure it with one of the provided spring clamps, then slide an additional spring clamp on to the opposite end of the cut hose, before installing it into the smaller end of the provided plastic adapter fitting.



5. Cut the 5/8" hose into a 23" section. (you can cut these to different sizes if you want to route them a different way) Using the adapter section you just made, add the hose onto the larger end of the plastic adapter using the 15/16" clamp, then pre-install a clamp on the other end of the hose to get your first breather line that will go from the AOS to the intake manifold. You can pre-install it on the intake manifold if you so desire.



6. Repeat the process with making a short length of 3/8" hose, to the plastic adapter to 17" of 5/8" hose (making sure to secure it with spring clamps along the way). This will be installed to the stock breather plate PCV valve later.

7. Lastly cut around 6" off of the drain line on the PCV plate.



Breather Plate Installation

1. The breather spacer plate will sit behind the stock plate to allow the installation of a drain line to make the AOS can service-free.
2. Stack the stock breather plate together and slide two of the provided longer m6 bolts to the bottom two holes of the plates to hold them together. These are also the hardest to get into place since they're so far down. Slide this into place against the block (making sure nothing is behind the plate, and get the two lower bolts started by hand.



3. With them started but definitely not anywhere near close to tight, route the drain line up and towards the driver's side (usdm) strut towerkeeping it away from the shifter and routing it under hoses and wiring harnesses. If you're happy with the routing of that one you can go ahead and install it to the bottom fitting on the AOS can using the provided 3/8" spring clamp.





4. Go ahead and install the remaining bolts for the breather plate assembly. You'll want to tighten these in a star pattern going across the plate rather than to the next bolt on the outside, this should help the gasket seal. They can be torqued to factory specs. (89 in/lbs)



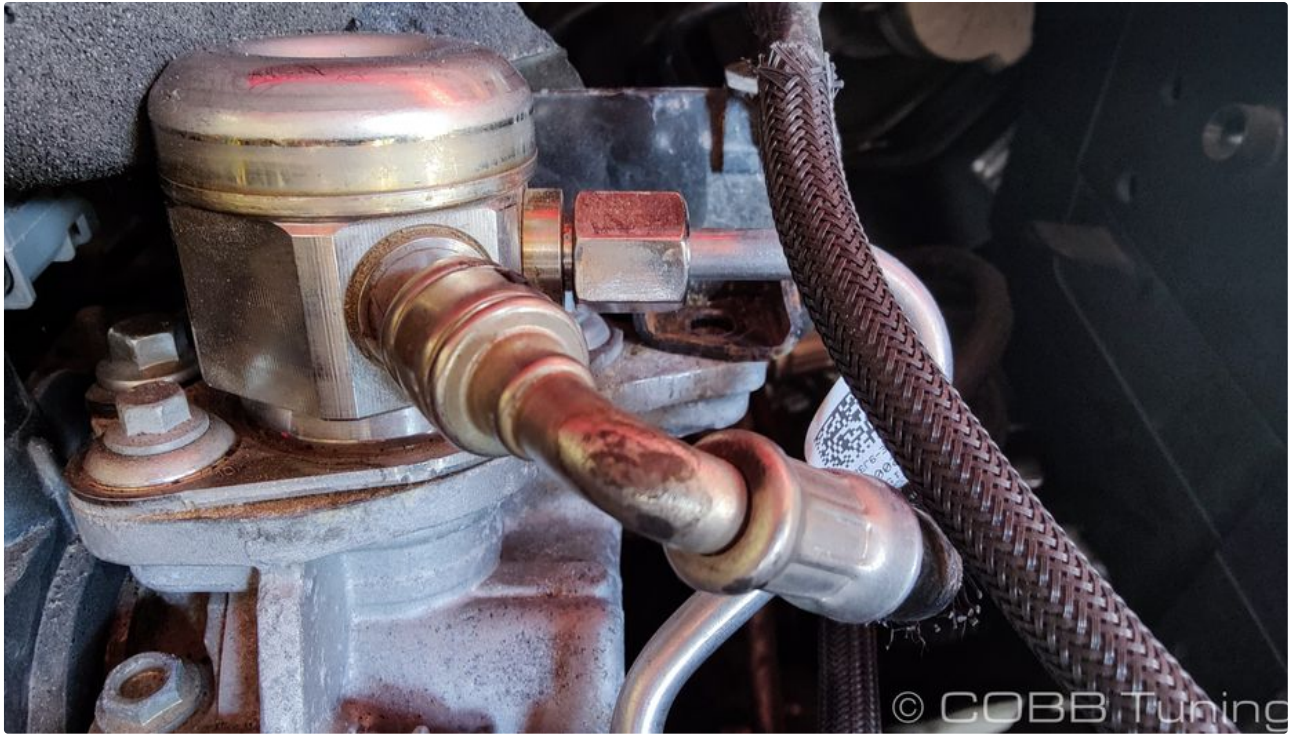
5. Take the line you made without a fitting and install it to the green pcv valve on the breather plate, routing it along the same path as the drain line.



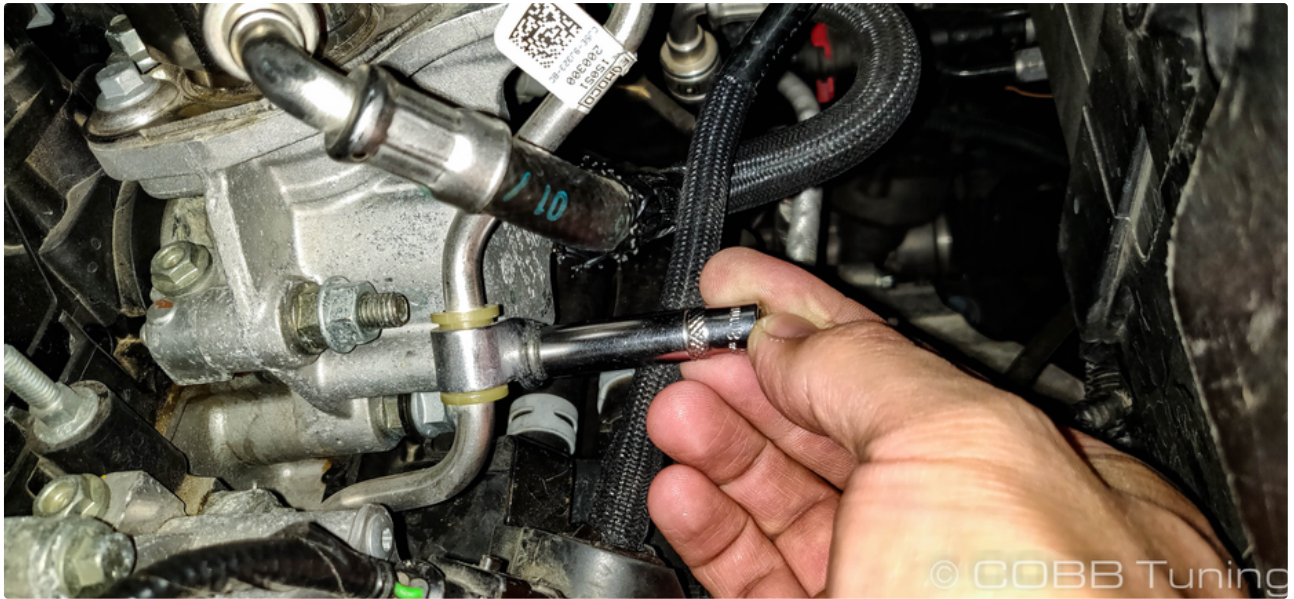
AOS Can Bracket Installation

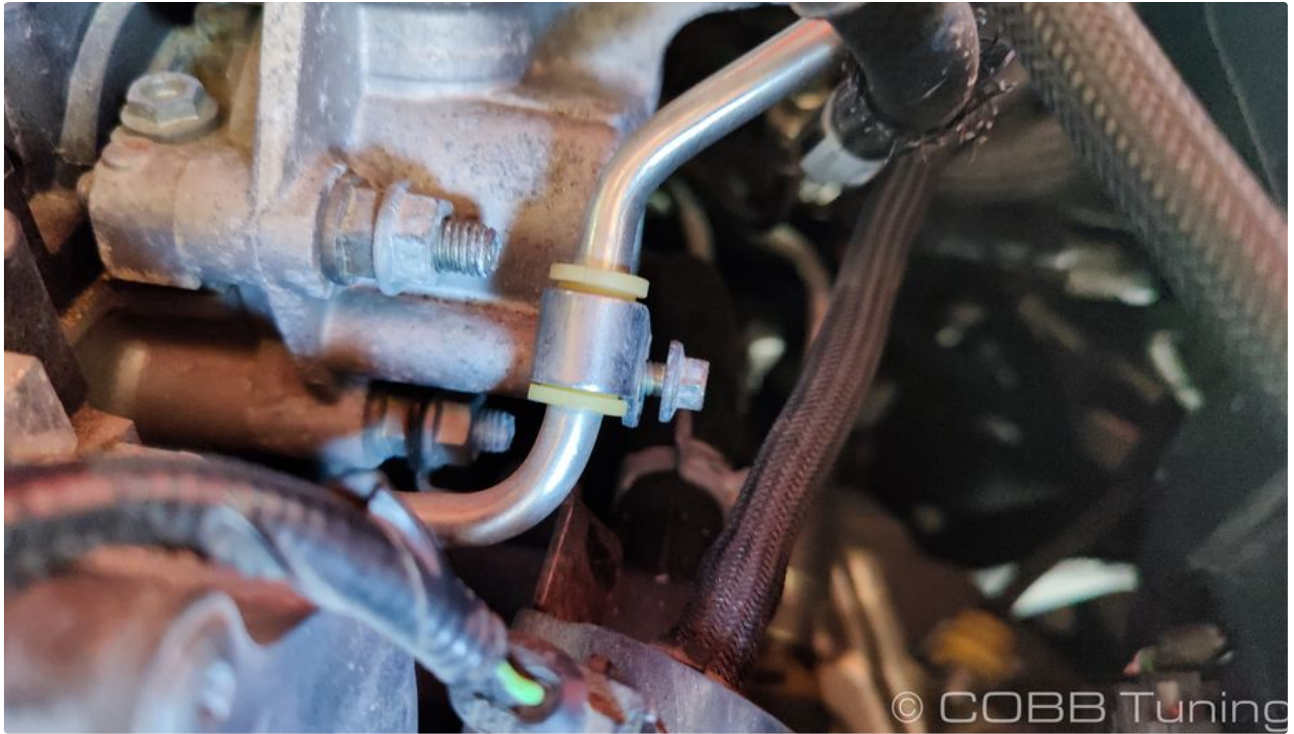
1. Near the high pressure fuel pump in the engine bay. Remove the 13mm bolt closest to the battery sticking.



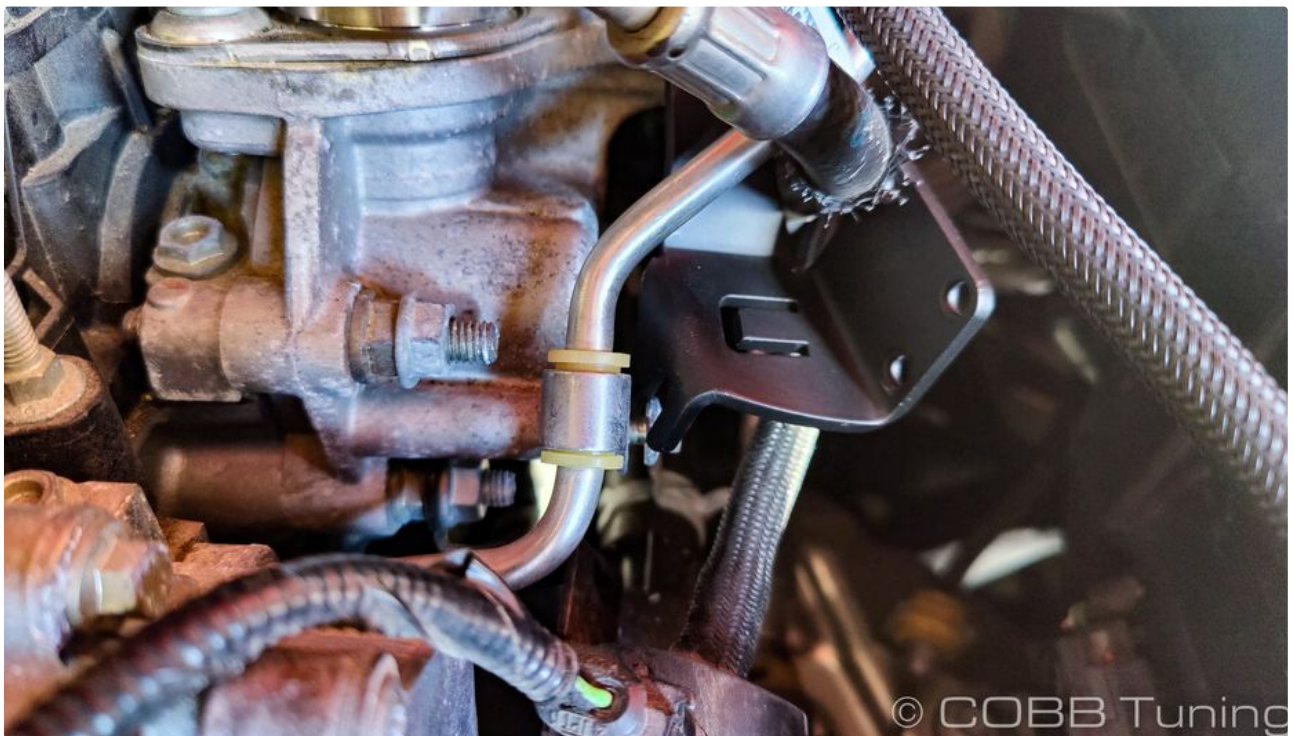


2. Loosen the 8mm hard line support bolt part of the way.





3. Through some twisting and turning, sneak the supplied AOS can bracket into place with the flat end (with complete hole) on the top where the 13mm bolt was, and the cutout bolt hole over the loosened hardline support. Tighten down the 8mm bolt and use the stock 13mm bolt up top to hold the bracket in place. The fuel line should nest nicely next to the bracket.





Hose Installation and Reassembly

1. Now that you can see where the can will sit, and where the hoses route, check your hose lengths and routing to make sure that the drain line stays tilted down towards the pcv plate to make sure it drains properly, and that everything will be out of the way of the shifter/intake etc. If you're happy, go ahead and install the drain line to the bottom (if you haven't done so already), and the hose from the PCV valve to the fitting on the side of the can facing downwards.



2. Using the blue loctite on the threads, install the three small button head allen bolts through the bracket and into the can. I start with the one in the "top corner" as it's going to be the easiest to line up, keep them all loose until you get all three in, then tighten them down.

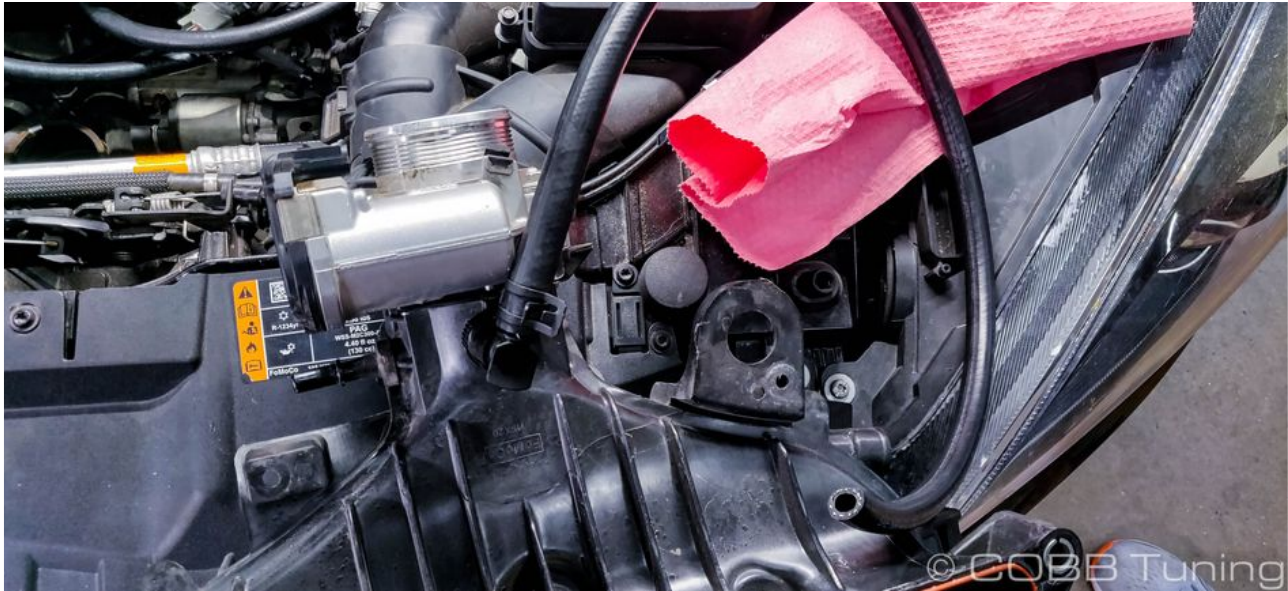


3. With the can installed, check the routing one last time, make sure it isn't rubbing on anything and zip tie it out of the way as needed.

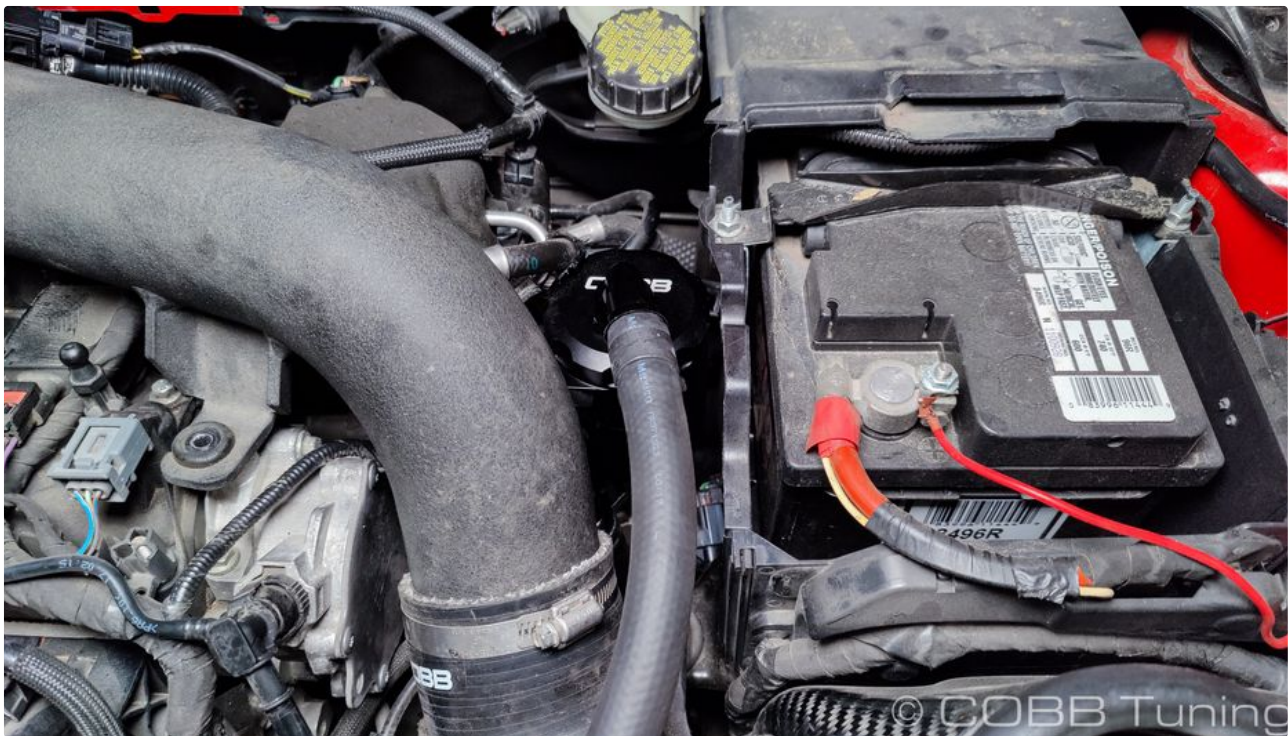


It should not be hitting the plastic bracket like that

4. Re-install the intake manifold, making sure to route the newly added hose toward the strut tower in a way that it doesn't hit or rub on anything else.



5. With the manifold tightened and the harnesses on the back-side reattached to it, you can go ahead and add the final 5/8" hose clamp to the hose to the manifold then route that either under or over the intake tube and up to the top tube on the can, securing it by sliding the hose clamp up.





6. Once that's done you can reassemble the rest of the engine bay back to gether and you're all done!

CARB Sticker Application

(Where Applicable)

1. Apply the supplied CARB sticker in a clear, easy to find location. Typically underhood, or on the radiator core support.

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