

# EcoBoost Mustang Air Oil Separator



## 8M1600 - EcoBoost Mustang Air Oil Separator

2015-2023 Ecoboost Mustang

Congratulations on your purchase of the COBB Tuning Air Oil Separator for EcoBoost Mustang! 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

### ▼ AOS Can Assembly



### ▼ Engine Spacer Plate



### ▼ AOS Bracket for EBM



### ▼ (4) 5/8" Emissions Line

## 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

### Wrenches

- 10mm combination wrench
- 19mm combination wrench
- 27mm combination wrench



- ▼ (1) 1/2" Fuel Evap Hose



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



- ▼ -6 ORB barb fitting with o-ring



- ▼ (1) 5/8" Constant Tension Spring Clamp





- ▼ (4) 25/32 Constant Tension Spring Clamp



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



- ▼ (2) 1/2" to 3/8" barbed reducer



- ▼ M6 x 1.0 x 16mm Hex Bolt





▼ M6 x 1.0 x 30mm Hex Bolt



▼ 3/4" Aluminum Spacer



▼ M6 x 1.0 Nylon Locking Nut



▼ (3) M6 Stainless Washers







- ▼ (8) M6 x 1.0 x 40mm Hex Bolt



- ▼ Breather Plate Gasket



- ▼ (3) M4 x 1.0 x 8mm Button Head Screws



- ▼ O-Ring Lube





## Prep, Intake Manifold Removal

1. Park your car in a flat level area and allow it to fully cool down.



2. Remove the 4 bolts holding on the engine cover, there are two 10mm nuts, and two 8mm bolts.



3. Unplug the red quick release vacuum connector from the top of the intake manifold. To do so, gently pry outward on the ends of the red u-shaped connector and push it outward, it should pop out and allow you to lift the connector off easily.

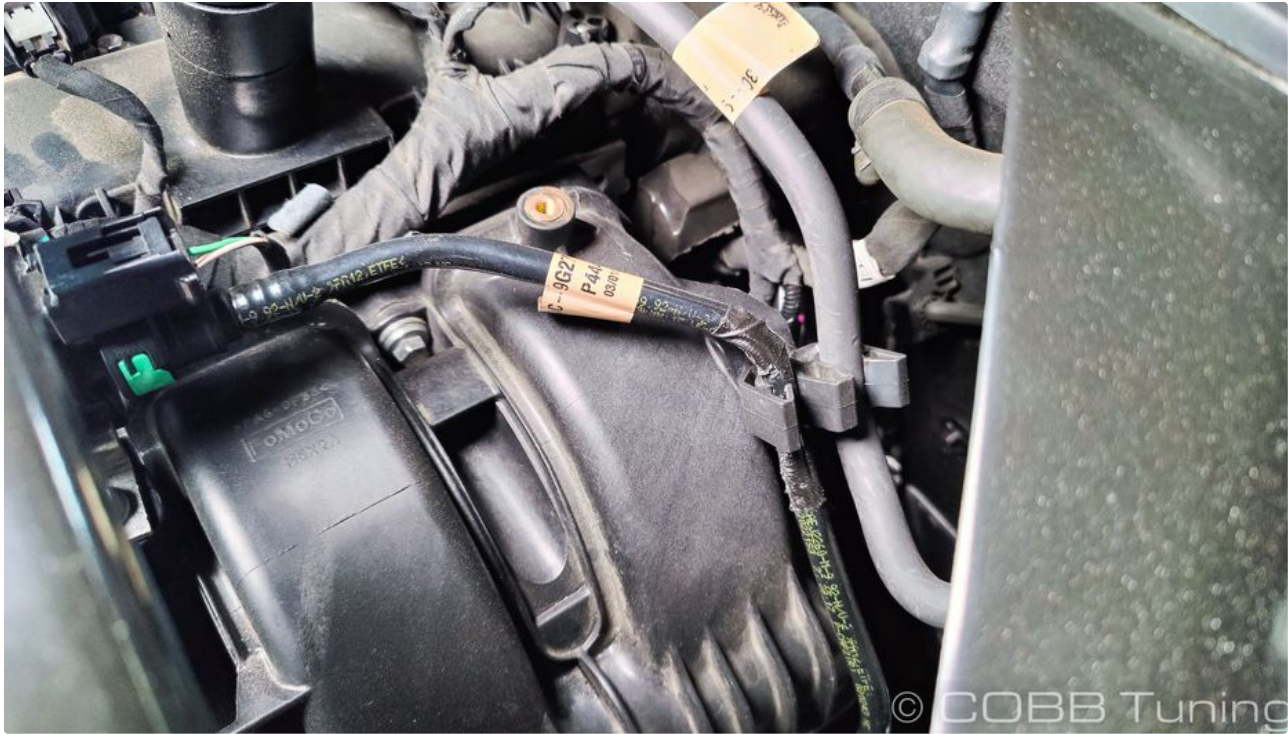


4. Unplug the pressure sensor on the outside of the intake manifold by first sliding the grey locking tab back towards the wires, then pushing down on it while pulling outwards on the connector to release it.

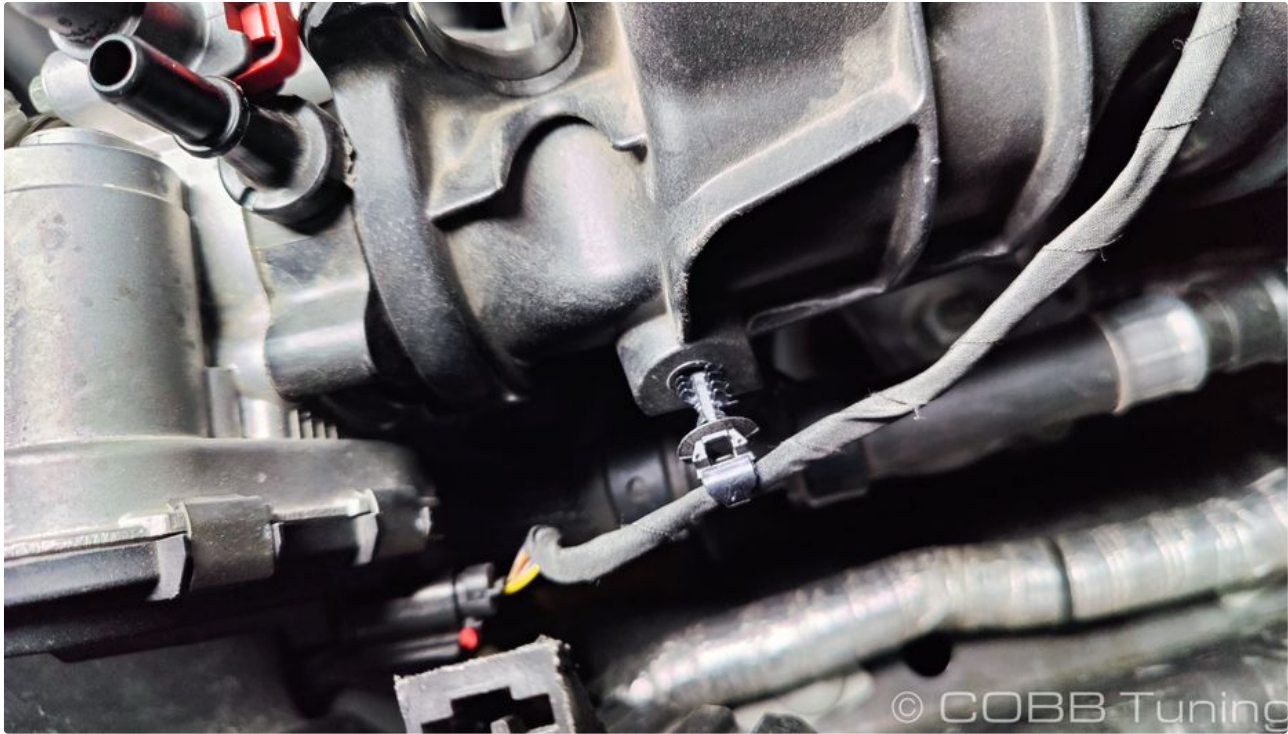




5. Pop the vacuum and fuel line out of the keeper on the end of the manifold.



6. Using your trim tool, gently pry outward to remove the clips from the intake manifold holding down the wiring.







7. To disconnect the throttle body connection, gently move the red tab rearward (toward the wiring) to release it, and then push down on it to release the tab from the throttle body itself, and pull the wiring free.





8. Unbolt the sensor on the top of the manifold using a 10mm socket.



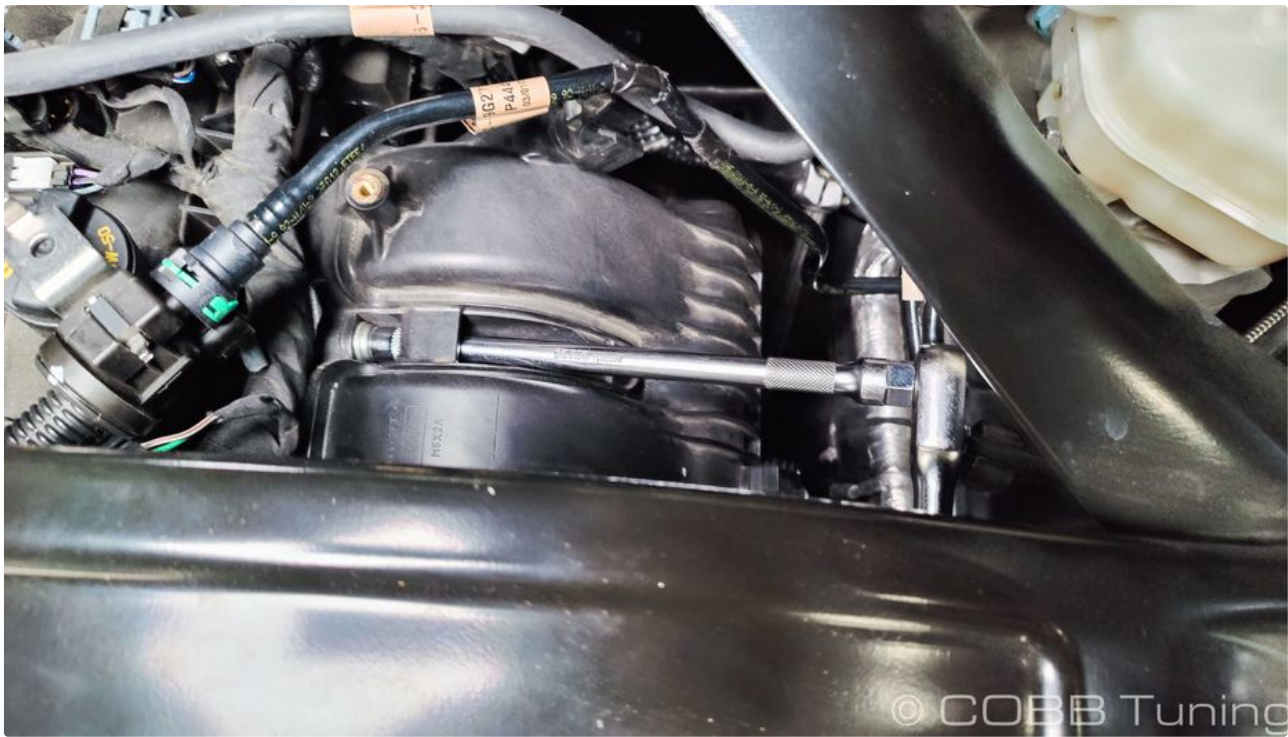
9. Take the small 13mm nut off toward the rear and bottom of the intake manifold.



10. Using a screwdriver or 8mm socket, undo the hose clamp holding the intake to the throttlebody.



11. Using a 10mm socket, remove the intake manifold bolts where they mount to the cylinder head. You should be able to fit your socket and extension through the access holes in the manifold.



12. With the bolts removed, there will be another vacuum line to remove from behind the intake manifold. Reach your hand back and pop the retaining clips loose similar to the way you did with the red connector earlier.



13. There are two wiring connectors attached to the backside of the intake manifold as well, using your hand or a trim tool, gently pry them off of the manifold.

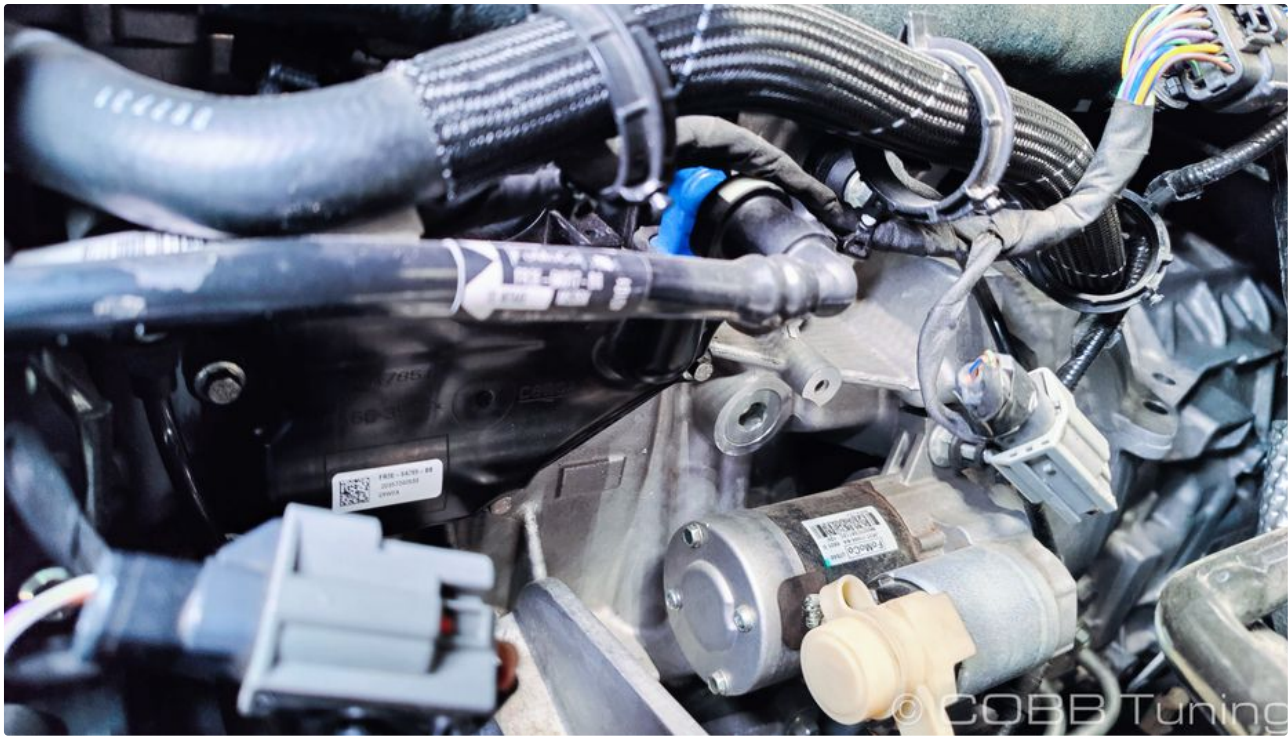




14. Remove the intake manifold from the engine bay.



15. Squeezing the white end of the clip, remove the short hose from the PCV breather plate. Once it's removed, use a heat gun to heat the ends of the factory pipes slightly and pull the fittings free. Go in slow bursts with the heat gun to avoid ruining the fitting or the line in case you want to go back to stock at some point. Alternatively if you don't care you can use a razor blade to carefully remove the fittings from the hoses without hurting you, yourself, your neighbor, your friend, etc.



16. You may need to gently push some of the wiring out of the way to get to the plate

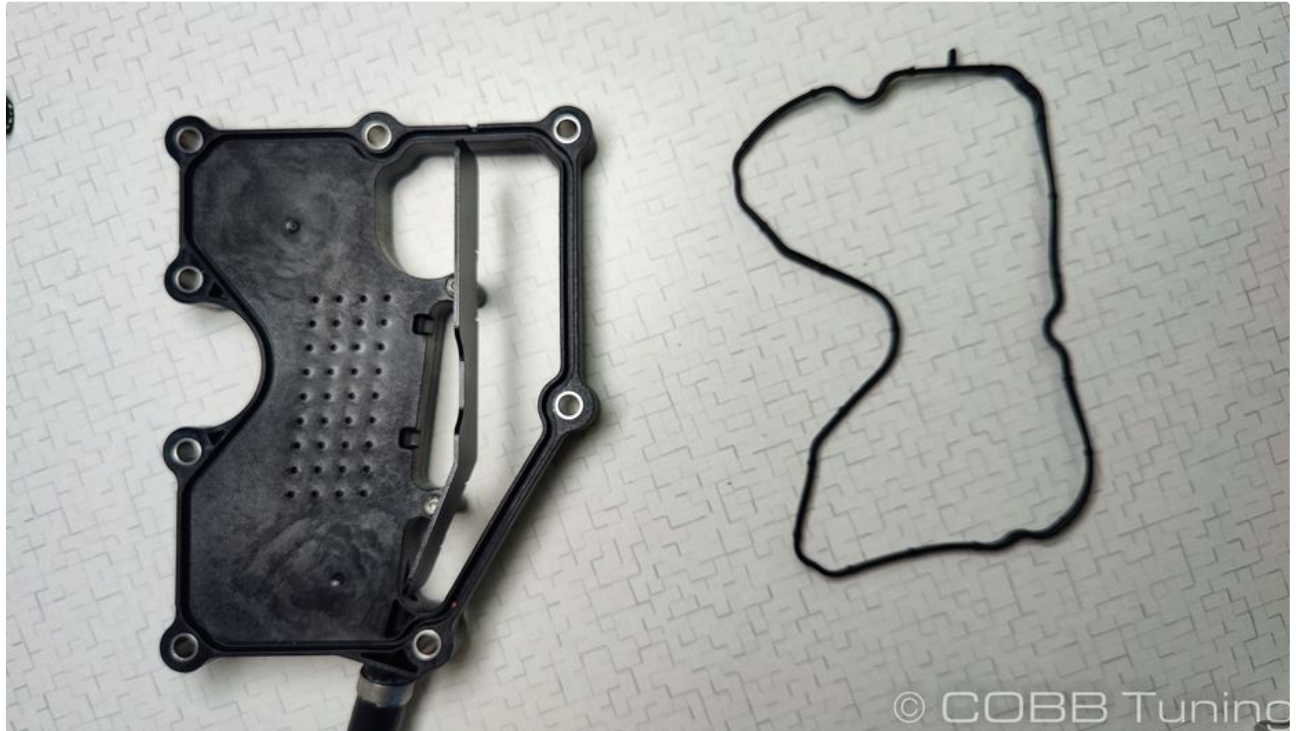
17. Using an 8mm socket remove the factory breather plate from the car. You may want to put a towel underneath it as there will probably be a small amount of oil that drips out once the plate is removed. You will probably need to use an 8mm wrench for the bottom one closest to the cabin of the car, as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





## 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





3. Install the AOS bracket to the CAN using a 4mm allen key and the 3 button head allen bolts.



4. Install the barbed fittings onto the can, the small one should go on the very bottom. You'll want them set in this orientation (though even after they're tight you'll be able to move them around some). The larger fittings will get tightened with a 27mm and the smaller one with a 19mm. These just need to be tightened until they come to a stop.



5. Using the fittings you took from the stock pcv plate, Install them into a short length (around 3") cut from the smaller 1/2" 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. Repeat this with both fittings.



6. Cut the 5/8" hose into a 20" section and a 17" section. (you can cut these to different sizes if you want to route them a different way.) Using the adapter sections you just made, add the hose onto the larger end of the plastic adapter using the 5/8" clamp, then pre-install a clamp on the other end of the hose to get your two breather lines.





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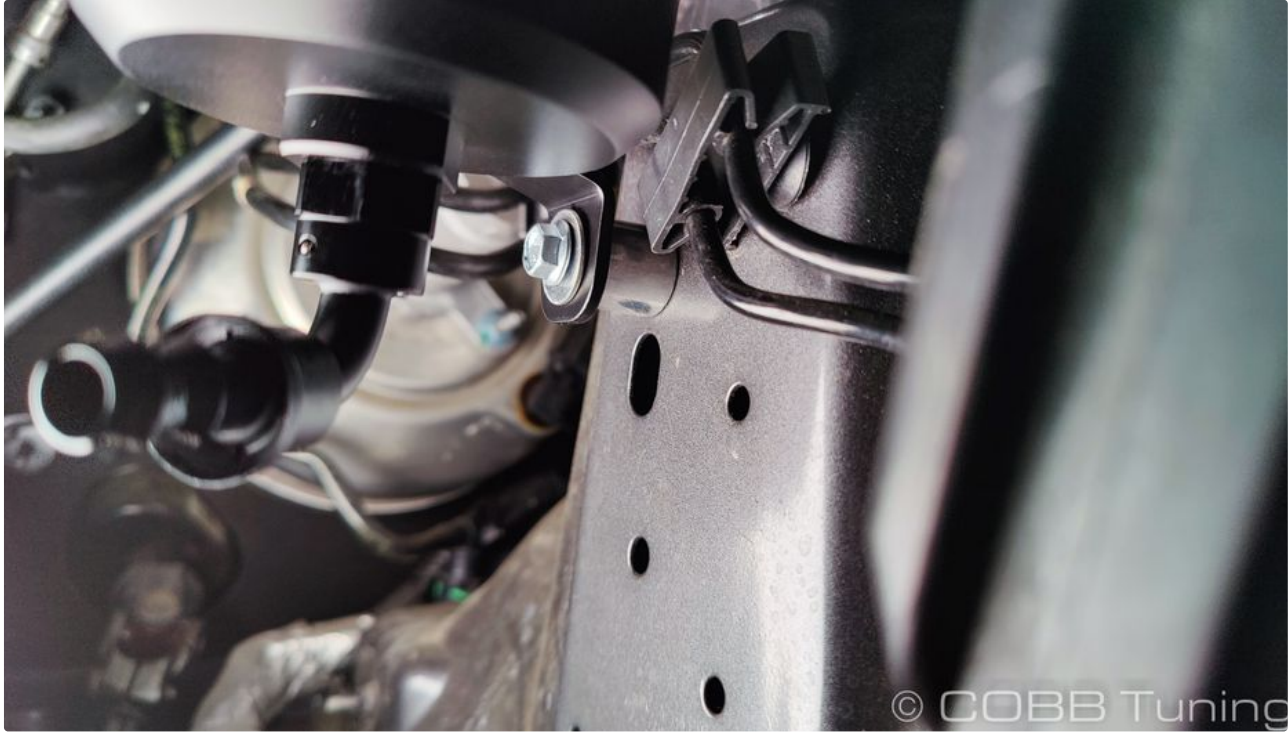
## AOS Can Installation

While this can be done with the manifold back on and sometimes makes things a little easier. I like to do this early because I drop bolts every single time I do this, and being able to get to them is important to me.

1. On the bottom tab of the can, install the m6 x 1.0 x 30mm hex bolt with a washer on one side of the bracket. If you don't have the active engine mount package (HP pack only) you'll want to install the provided aluminum spacer.



2. It will now get installed to this threaded bolt hole on the strut tower. If you have the fancy motor mount there will be another plate here that you'll bolt through without the spacer.

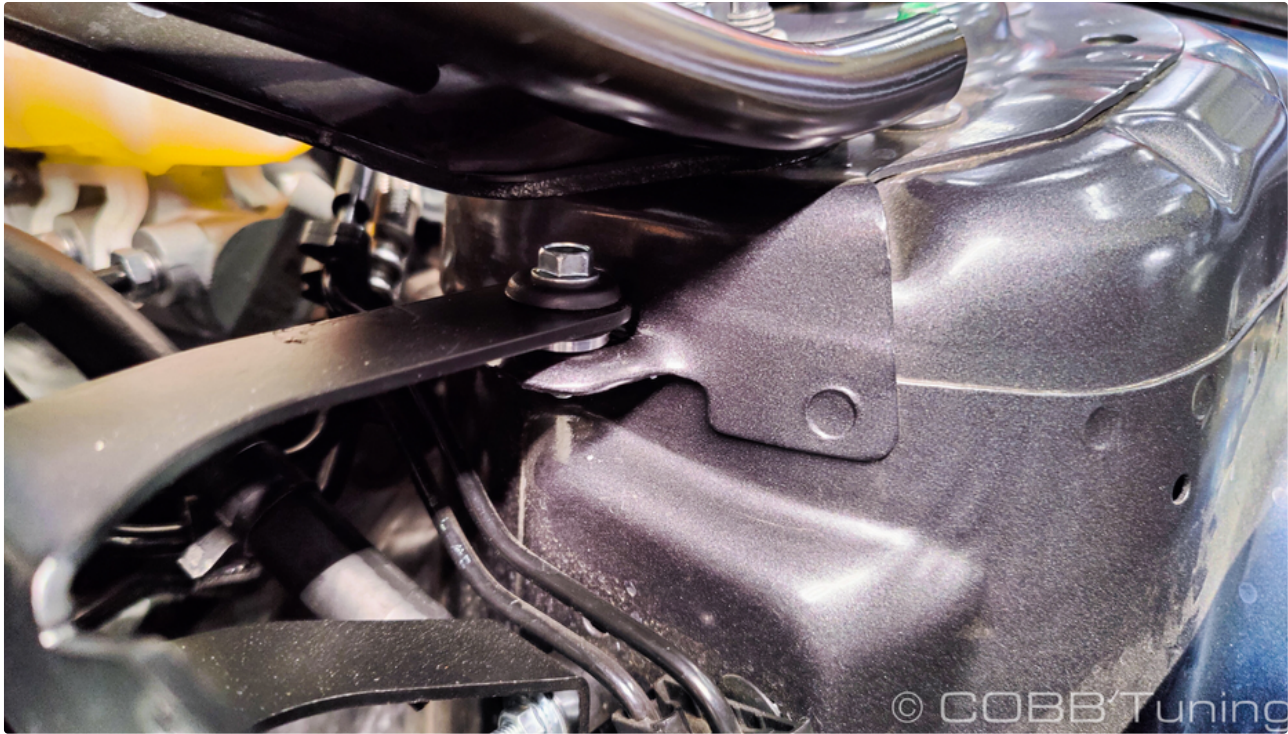






3. With that loosely bolted in place, use the smaller M6 x 1.0 x 16mm bolt with a washer from the top of the upper bracket, through the bracket sticking out from the strut tower top. Then secure it with a washer and the provided m6 lock nut on the bottom side.



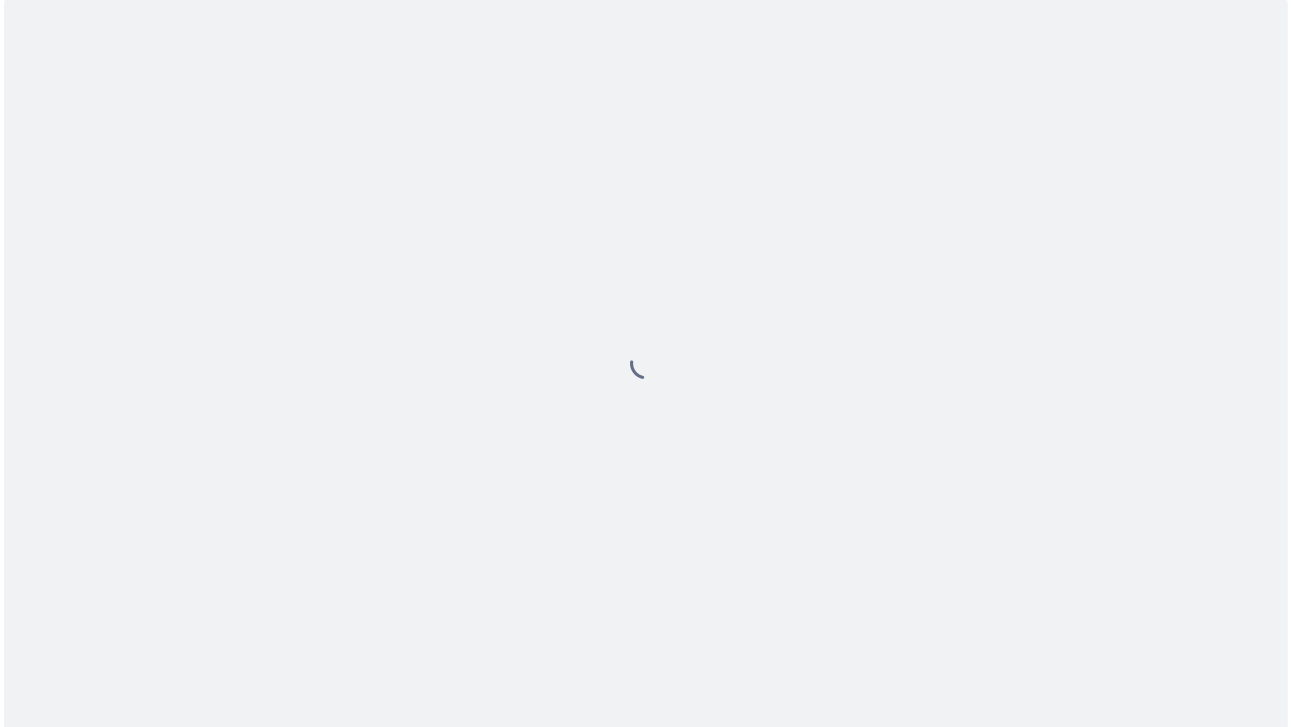


4. Tighten down the upper and lower bolts with a 10mm socket or wrench.



## 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 if you do them later due to where the motor mount sits. 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 steering rack and any 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.



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4. Go ahead and loosely install the remaining bolts for the breather plate assembly. Most can get tightened with a 10mm socket, but the bottom one nearest the motor mount may require a wrench to tighten depending on the clearance you have. These should get tightened to factory specs. (89 in/lbs)



## Hose Installation and Reassembly

1. Take the hose with the 17" section of 5/8" hose and connect it to the PCV valve coming off of the breather plate. Pre-install a 5/8" spring clamp on the bare end and slide it ~4" down the hose. Route it underneath the metal hose section and up to the fitting on the side of the can. Slide the hose all the way up until it's pushing on the hose stop then slide the hose clamp up on to the barbed portion of the fitting to secure the hose to the fitting.



2. Connect the longer hose to the fitting on the intake manifold.



3. Re-install the intake manifold, making sure to route the newly added hose forward in a way that it doesn't hit or rub on anything else. Make sure to get the lower bracket and stud into the manifold before you tighten the manifold down!



4. 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 under the intake tube for the throttle body and up to the top tube on the can, securing it by sliding the hose clamp up.



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

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## 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.

## Links

### MAP Notes

Helps to figure out which map you should be on given the parts installed to your car

### Links for related parts