

# ***LAG Air / Oil Separator (AOS)***



**INSTRUCTIONS FOR 2018-2021 SUBARU WRX STI**



# **IAG-ENG-7186 IAG Air / Oil Separator (AOS)**

## **Fitment:**

2018-2021 Subaru Impreza WRX STI EJ 2.5L TC

**Part #** IAG-ENG-7186BK, IAG-ENG-7186RD, IAG-ENG-7186NY, IAG-ENG-7186GT, IAG-ENG-7186WRB, IAG-ENG-7186HP

**Congratulations on the purchase of your Air/Oil Separator (AOS) and thank you for choosing IAG Performance. This installation manual is intended to guide you through the installation of the IAG AOS. If you already have an aftermarket catch can or AOS installed, please consult the specific instructions for your hardware to aid in its removal. PLEASE ENSURE THE VEHICLE IS COMPLETELY COOL BEFORE STARTING THE INSTALLATION.**



**Please read through the entire instruction manual before beginning work on your vehicle. You will not use all parts in this kit depending on the application. If you encounter any problems or have questions please stop and contact our support team at 410-840-3555 or email us at [support@iagperformance.com](mailto:support@iagperformance.com) for help.**



- 1** AOS Body Assembly
- 2** PCV Hose Assembly
- 3** 38" Valve Cover Vent Hose (Drivers Side)
- 4** 28" Valve Cover Vent Hose (Pass Side)
- 5** 26" Drain Hose
- 6** x2 19" Coolant Hoses
- 7** x2 18" Breather Hoses
- 8** Block Vent Hose
- 9** 12" Heat Sleeve



- 10** 16" Heat Sleeve
- 11** Inlet Fitting for PCV Sensor
- 12** Block Off Cap
- 13** 1/2" Nylon Union
- 14** PCV Vent Hose Extension
- 15** Y Fitting for Block Breather
- 16** Spring Clamps
- 17** Wiring Harness Relocation Bracket
- 18** AOS Mounting Bracket





**19** x2 12mm Bolts

**20** x3 10mm Bolts

**21** Hose Clamps

**22** Zip Ties

**Tools needed:** 10mm wrench, 12mm socket, 8mm nut driver, socket, razor, all purpose lube, needle nose pliers, pipe/hose cutters, pick tool, zip ties and hose clamps.



### Step 1

Using a 10mm wrench, remove the negative battery terminal.



### Step 2

Using a 12mm socket, remove the 2 bolts from the BPV.



### Step 3

Using a 12mm socket, remove the two bolts from the intercooler securing the crossover tube.



Passenger side



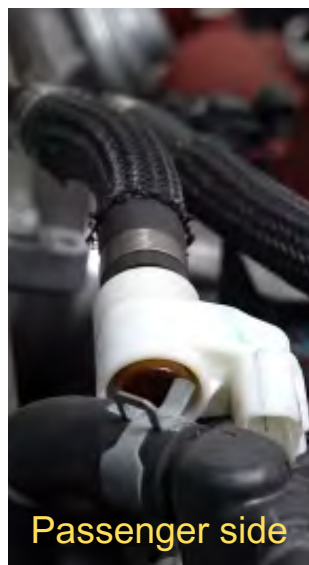
Driver side



Driver side

#### Step 4

Using a 12mm socket, remove the four bracket bolts from the intercooler.



Passenger side



Passenger side



Driver side

#### Step 5

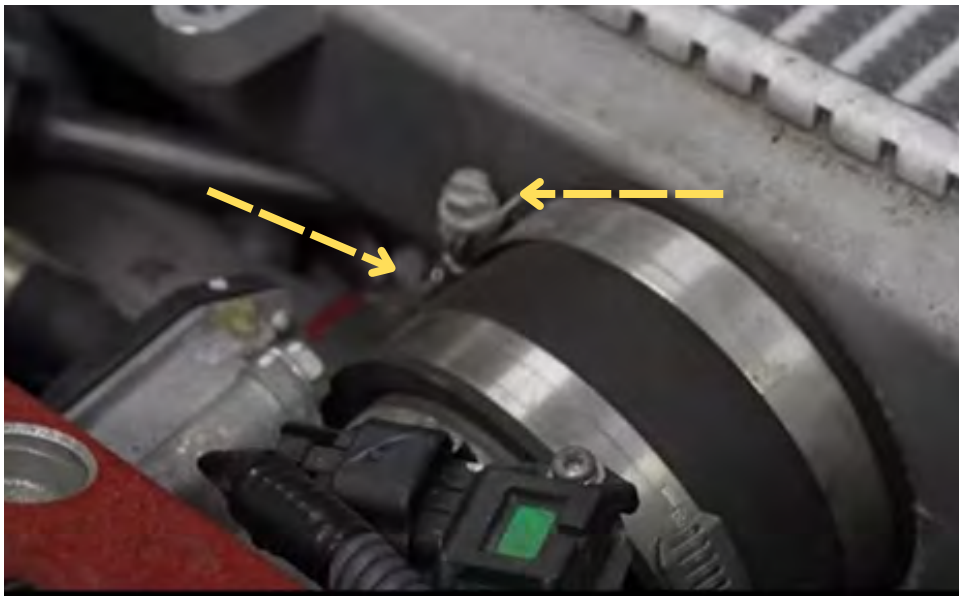
Unplug PCV connectors by pressing the tab to unplug the electrical connectors.



#### Step 6

With the sensors disconnected, remove the PCV crossover piping.





#### Step 7

Using an 8mm socket, loosen the worm clamps for the throttle body and Y pipe.



#### Step 8

Route the PCV electrical connector under harness on drivers side.



#### Step 9

Remove the PCV sensors from the crossover piping by pulling from the rubber hose.



Passenger side



Passenger side

#### Step 10

Reinstall the PCV sensors back on the car.



#### Step 11

Remove the throttle body coupler and four bolts attaching the throttle body using a 10mm socket.

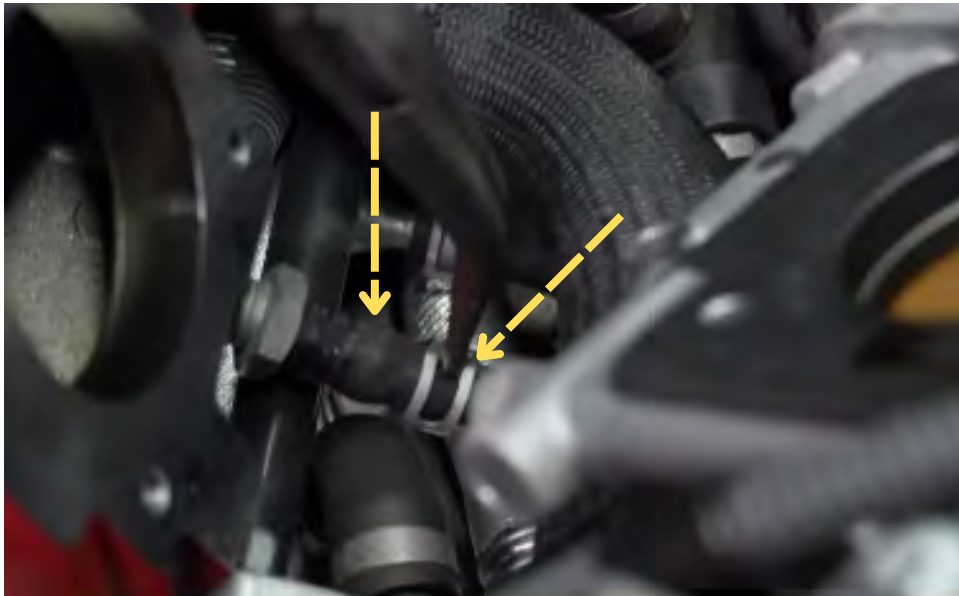


#### Step 12

Slide throttle body off of the manifold.

Take care not to damage throttle body gasket. This will be reused.





### Step 13

Remove the clamp and disconnect the PCV vacuum line from the bottom of the intake manifold.



### Step 14

Unplug the PCV connector by pressing on the tab.

Pull up to remove the PCV assembly from engine bay.



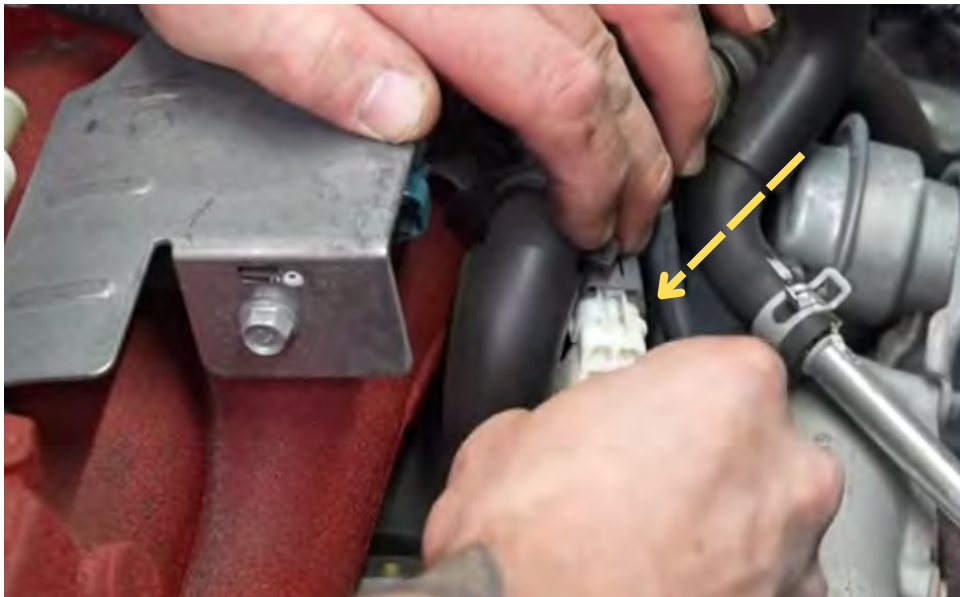
### Step 14 pt.2

**IF** the breather hose does not come off with PCV assembly use a pick to remove the lower clamp.

Then use a pair of needle nose pliers to pull up and off.



## Step 15



## Step 16

Remove the white connector from the PCV assembly and reinstall it.



## Step 17

Apply a small amount of all purpose lube to hose.

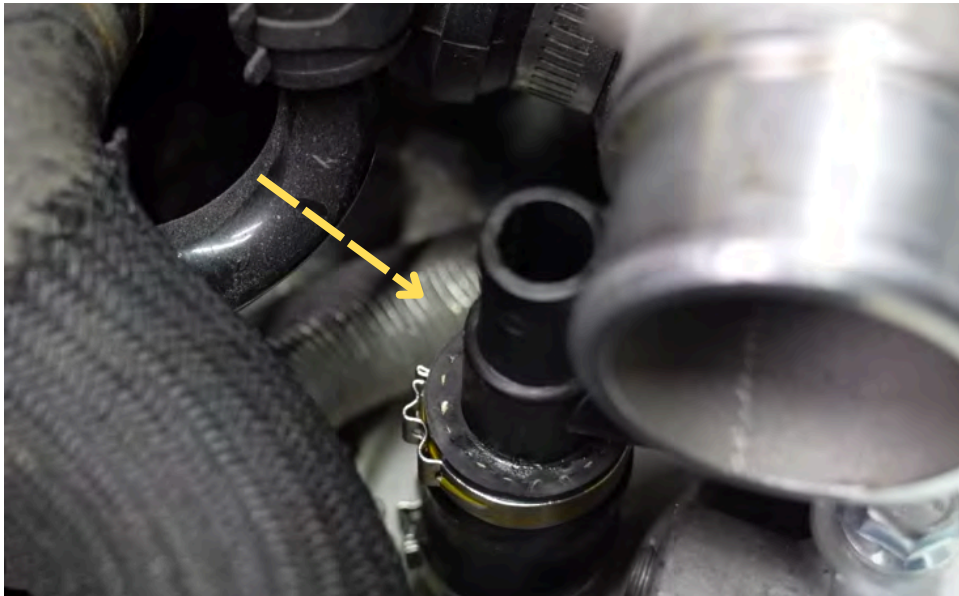
Install two clamps onto hose.

Tighten the top clamp and leave the bottom loose.



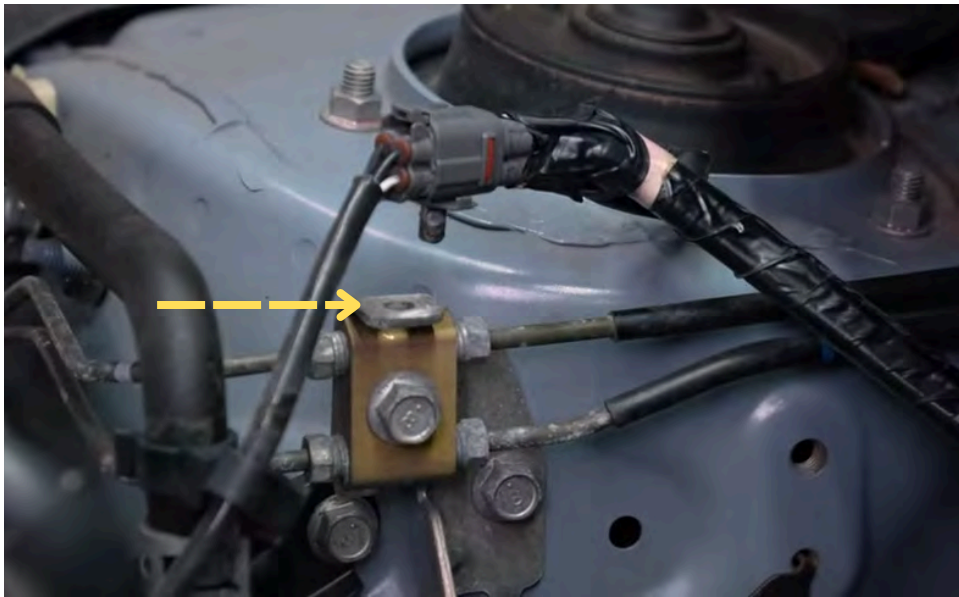
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#### Step 18

Push the hose onto the breather port.



#### Step 19

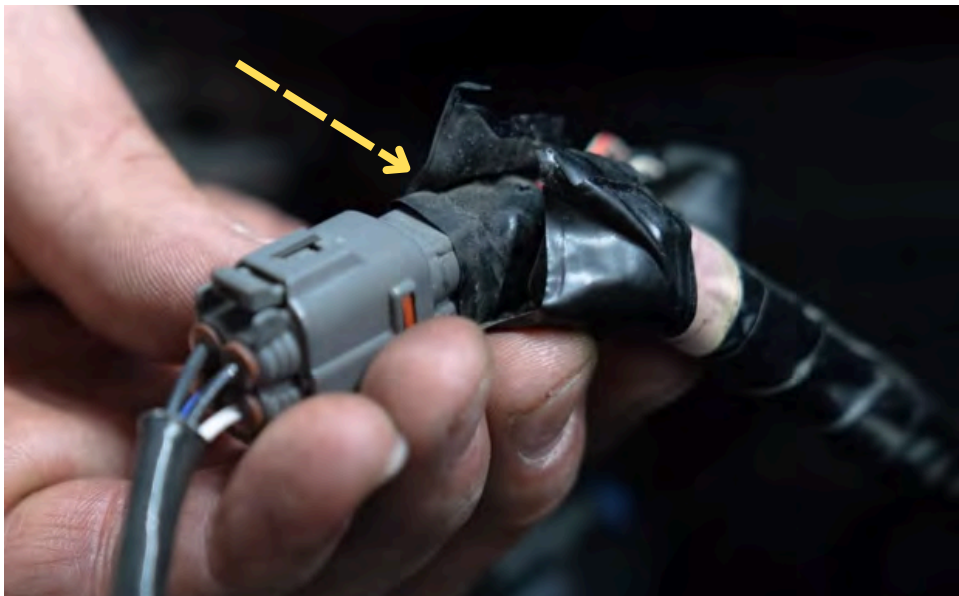
Use a pair of needle nose pliers to release the clip holding the wiring connector on the passenger side strut tower.



#### Step 20

Press on retaining clip to release the wiring harness and remove harness from bracket.





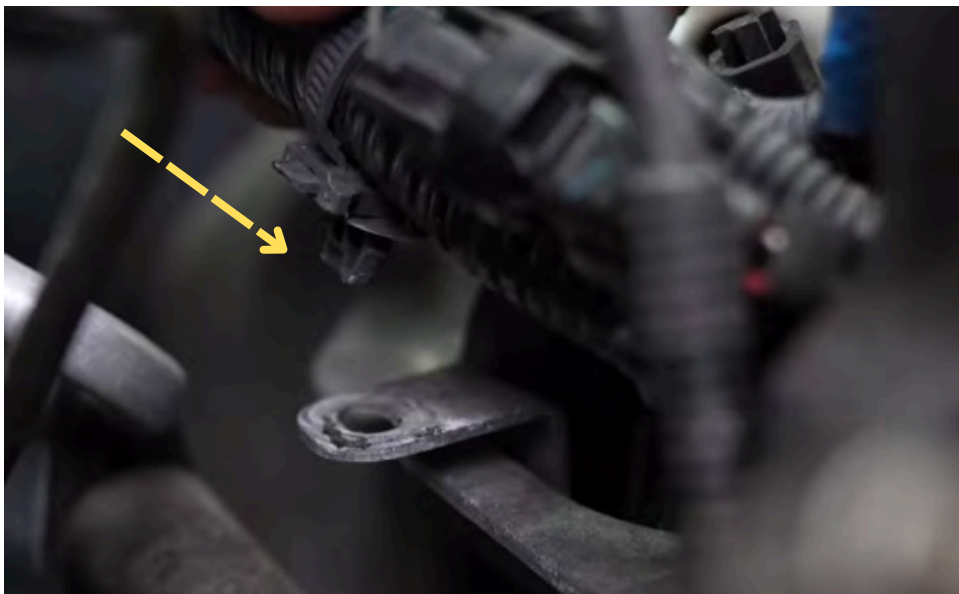
#### Step 21

Use a razer blade (or a machete, we won't judge) to cut the tape holding the harness together.



#### Step 22

Remove the bracket and bolts from the strut tower with a 10mm socket.



#### Step 23

Use needle nose pliers to release the clip that is attached to the wiring harness.



#### Step 24

Use a razor blade to carefully trim electrical tape to release the branch of the harness.



#### Step 25

Apply a small amount of lube to all three fittings on bottom of the AOS.



#### Step 26

Connect the two 19" coolant hoses to the AOS.



Note: These fittings are preinstalled and torqued. The fitting is designed to swivel around the bolt. Do not remove or tighten further.



### Step 27

Attach the 26" drain hose to the AOS.

**5**



Note: These fittings are preinstalled and torqued. The fitting is designed to swivel around the bolt. Do not remove or tighten further.

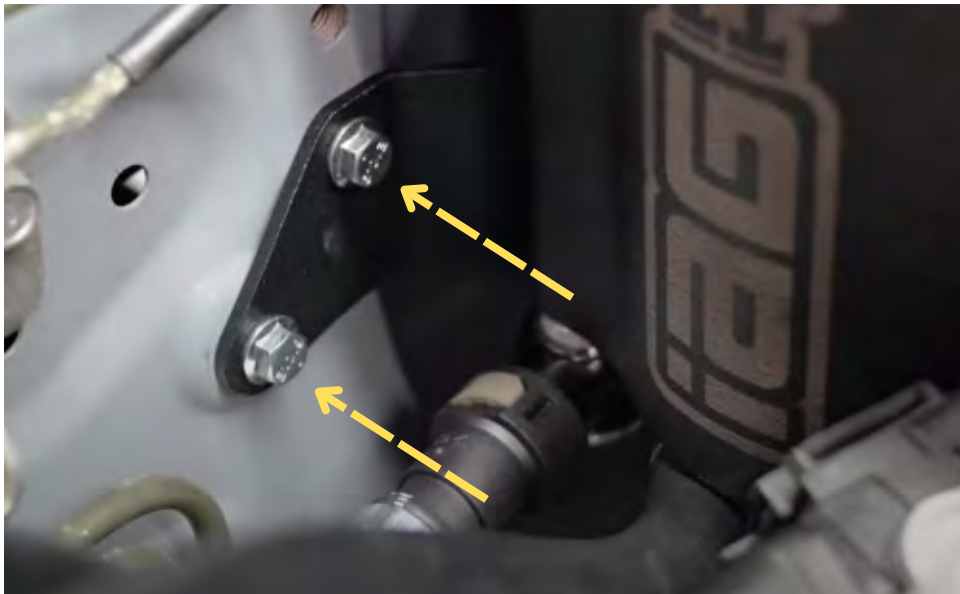


### Step 28

Install the AOS bracket leaving one hole showing at the bottom.

Torque bolts to 7ft/lbs.

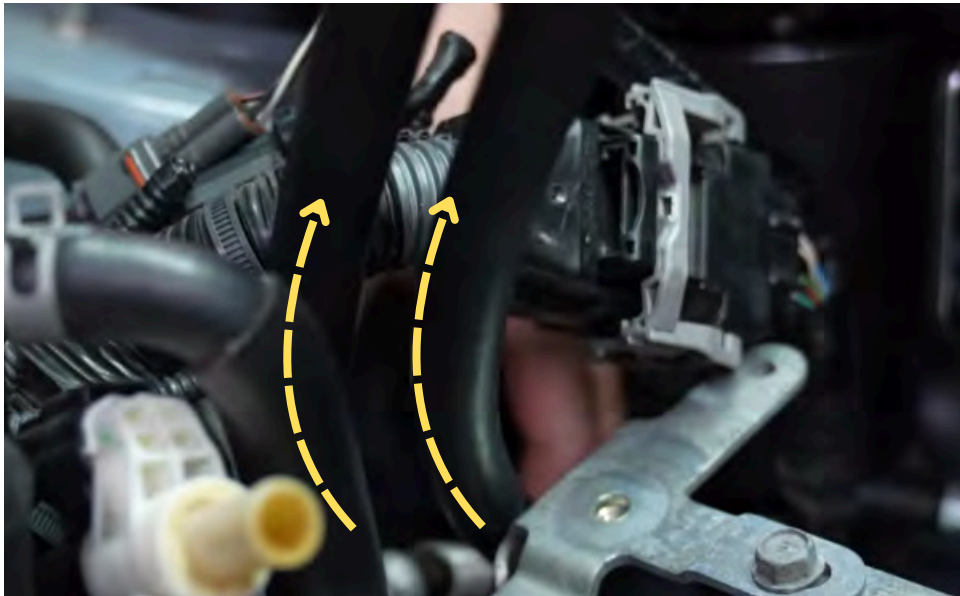
**18**



### Step 29

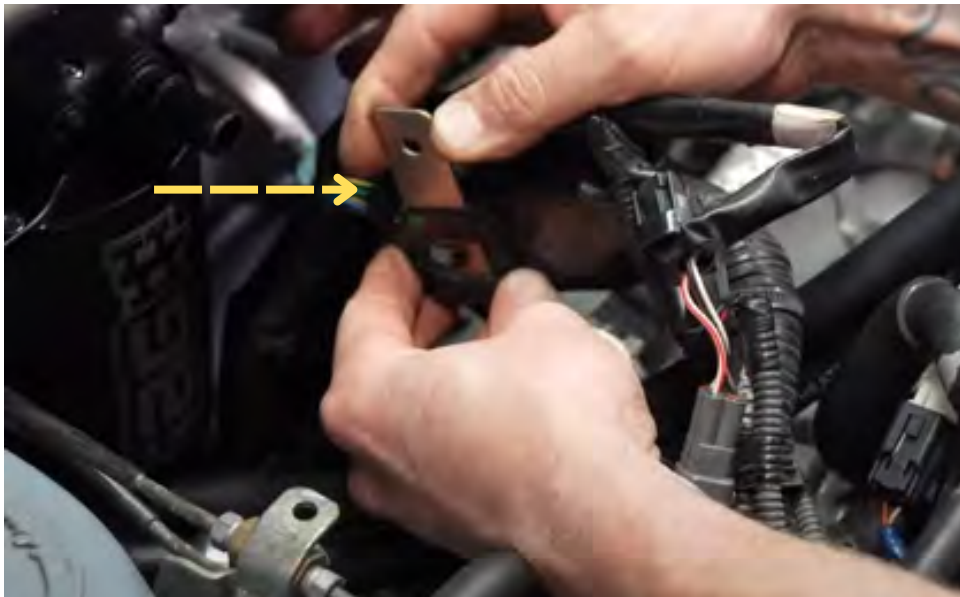
Using supplied hardware, install the bracket and AOS to strut tower.





#### Step 30

Route the two coolant lines under the main wiring harness.



#### Step 31

Install the new relocation harness bracket to the wiring harness.

17



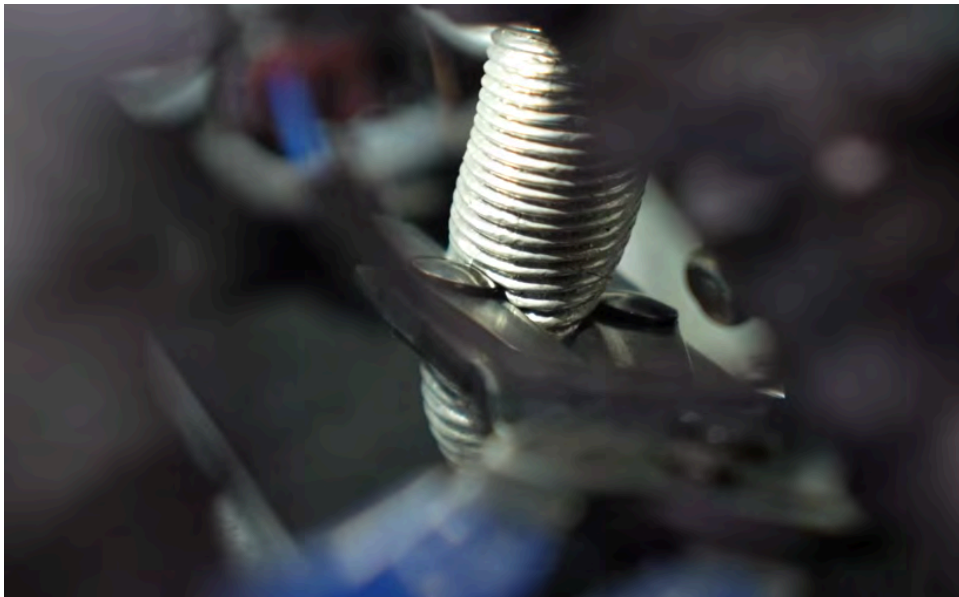
#### Step 32

Tighten harness bracket down.



#### Step 33

Route the electrical plug from the wiring harness under the bracket and back up to plug into the wiring connector.



#### Step 34

Using hose clamp pliers, clamp the turbo coolant line.



#### Step 35

Use a marker to mark where to cut excess coolant line from AOS can.

Use upper expansion tank port as reference.





#### Step 36

Cut excess line.



#### Step 37

Use pliers to remove the clamp and OEM coolant line.

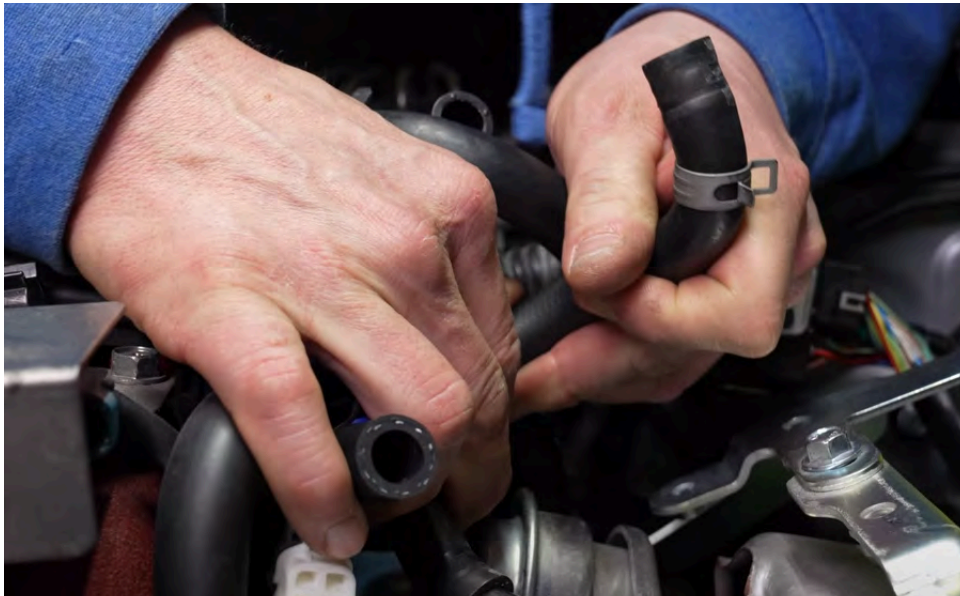
Note: A small amount of coolant may come out of line.



#### Step 38

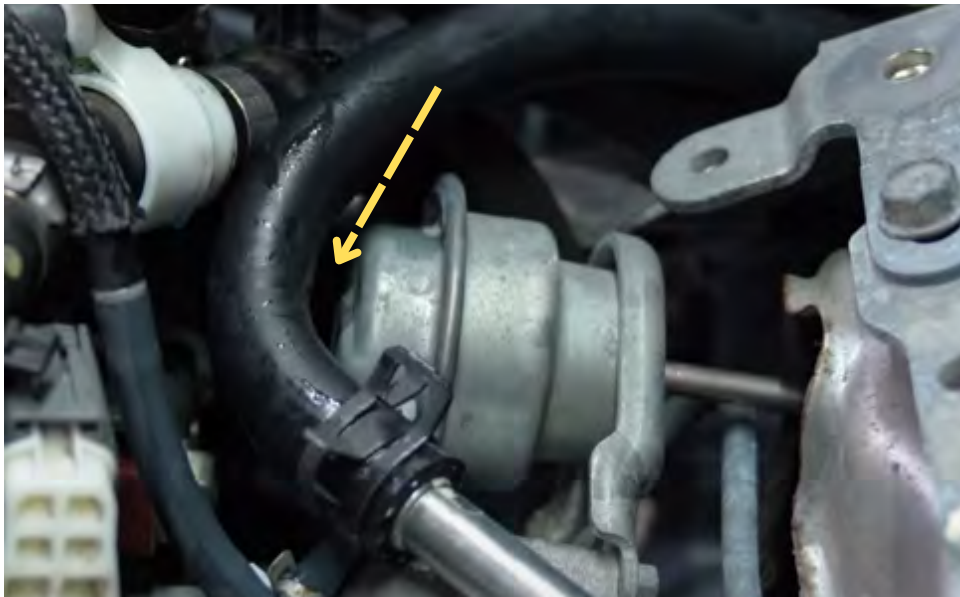
Use the supplied clamp on new coolant line and install line to OEM port.





#### Step 39

Loosen clamp and remove OEM coolant line from turbo hard line.



#### Step 40

Install the new AOS coolant line with new clamp.



#### Step 41

Unclamp the turbo coolant hose from step 34.



#### Step 42

Carefully cut the valve cover breather hose retaining clip.



#### Step 43

Secure both coolant lines to the bracket with a zip tie.

Cut off excess zip tie.



#### Step 44

Apply a small amount of lube to all five fittings on AOS can.

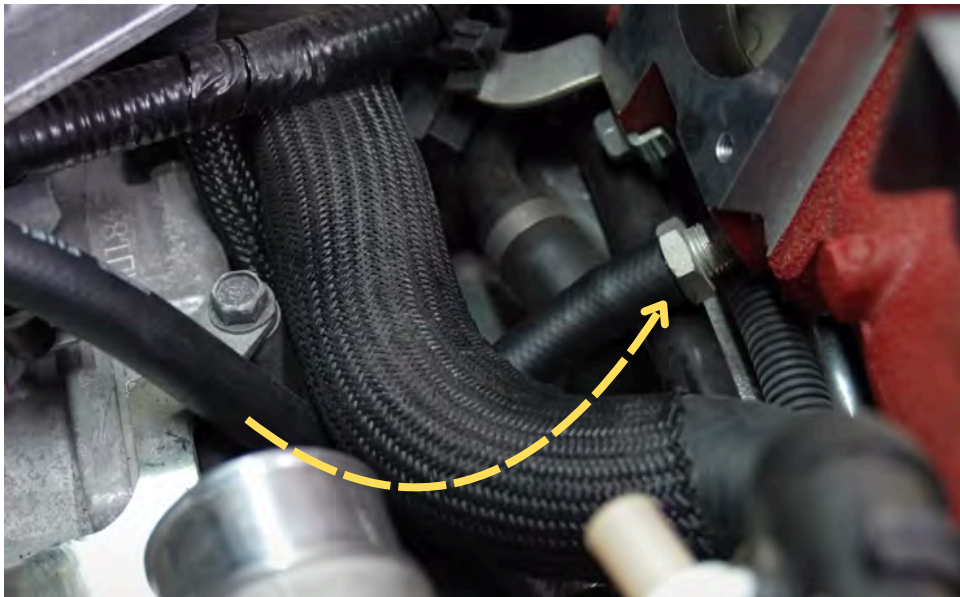




#### Step 45

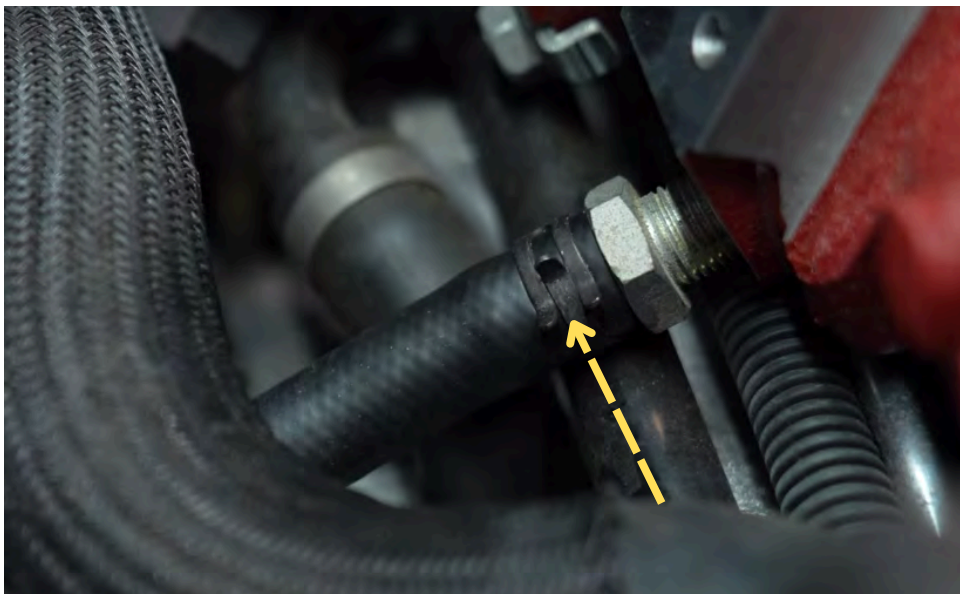
Install PCV line with metal clip in middle to top AOS port.

2



#### Step 46

Route top PCV line from AOS to nipple on the intake manifold.



#### Step 47

Install supplied clamp to PCV line.





#### Step 48

Reinstall the throttle body with four 10mm bolts.

With a torque wrench tighten bolts to OEM specs.



#### Step 49

Install the 12 inch heat sleeve to the AOS drain hose.



#### Step 50

Measure, mark and cut off the excess length from hose.

Apply some all purpose grease to hose end.



#### Step 51

Route the drain hose under the AC hardline and through the bracket as shown.

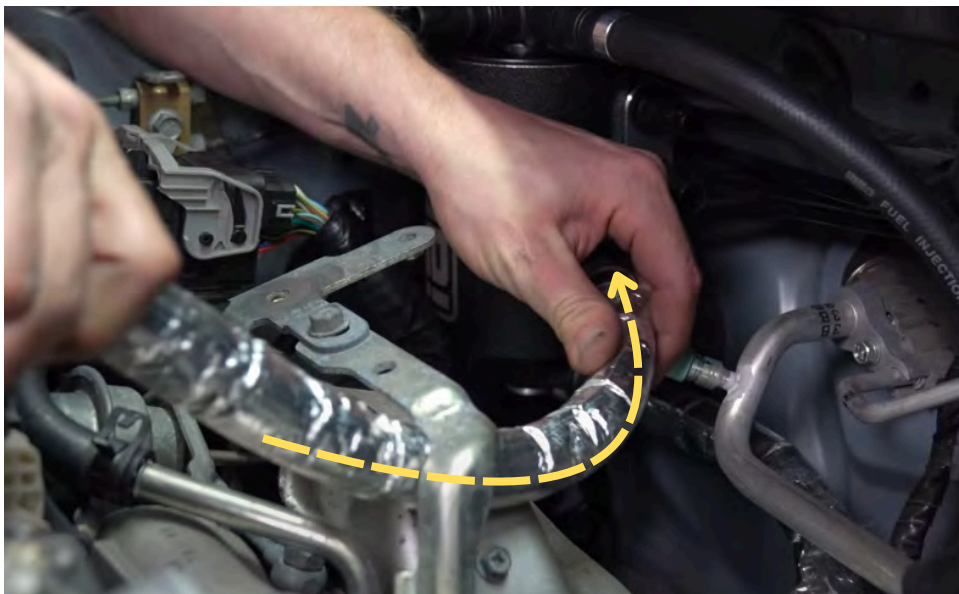
Install supplied clamp to end of hose.

Note: Make sure drain hose is at a downward slope for proper drainage.



#### Step 52

Install supplied clamp to 90 degree elbow on hose.



#### Step 53

Route the hose under heat shield bracket.

Attach the fitting to the bottom port of AOS.

Make sure 90 degree fitting is not routed towards the AOS.





#### Step 54

Zip tie the drain hose to the AC hardline and cut excess.



#### Step 55

Install 90 degree vent hose fitting to top of breather hose.

Use supplied clamp to secure.



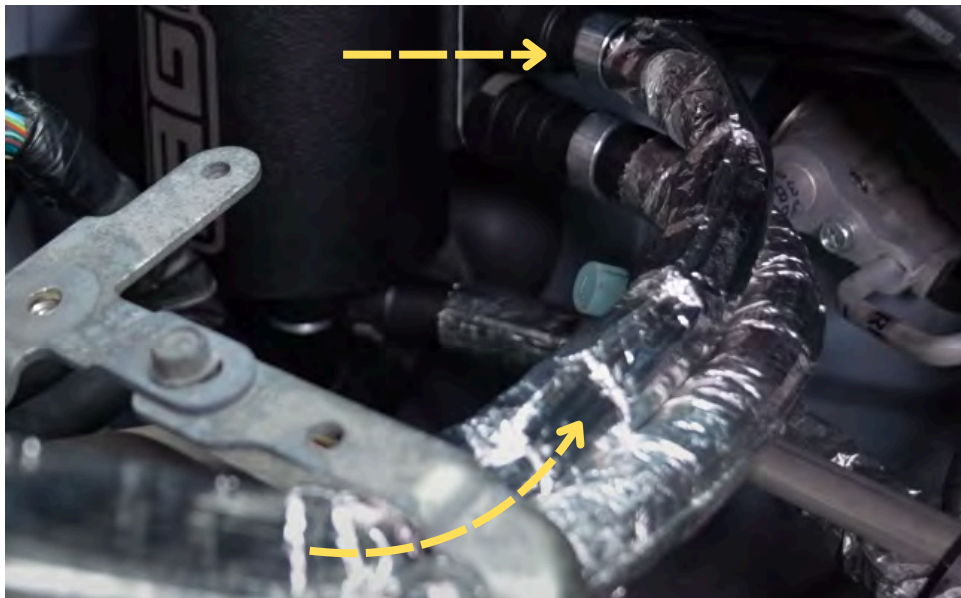
#### Step 56

Cut 12 inches off of the 28 inch valve cover vent hose.

Install the 16" heat sleeve and supplied clamp to hose.







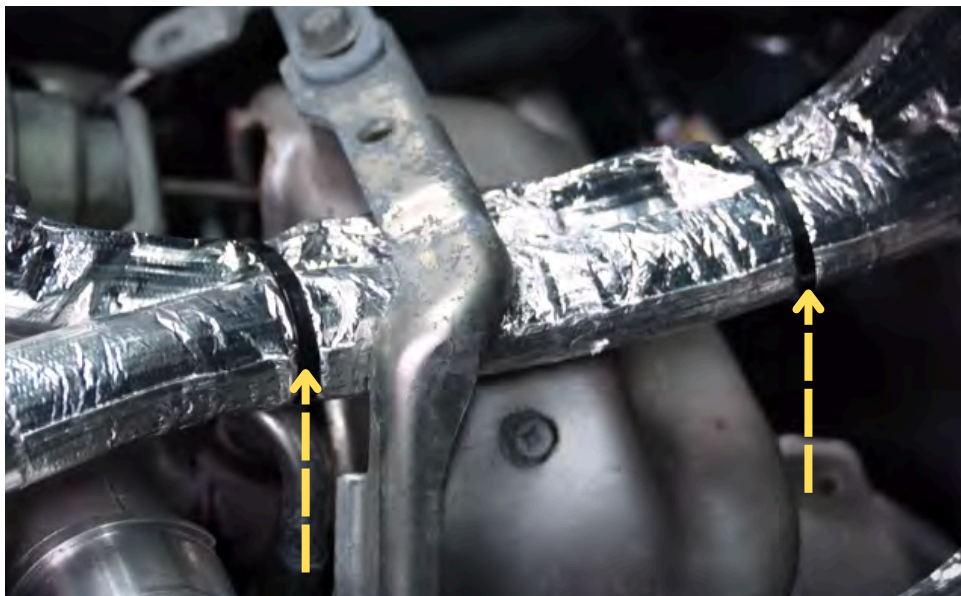
#### Step 57

Route hose under heat shield bracket and install to middle AOS port.



#### Step 58

On passenger side attach the valve cover vent hose to connector.



#### Step 59

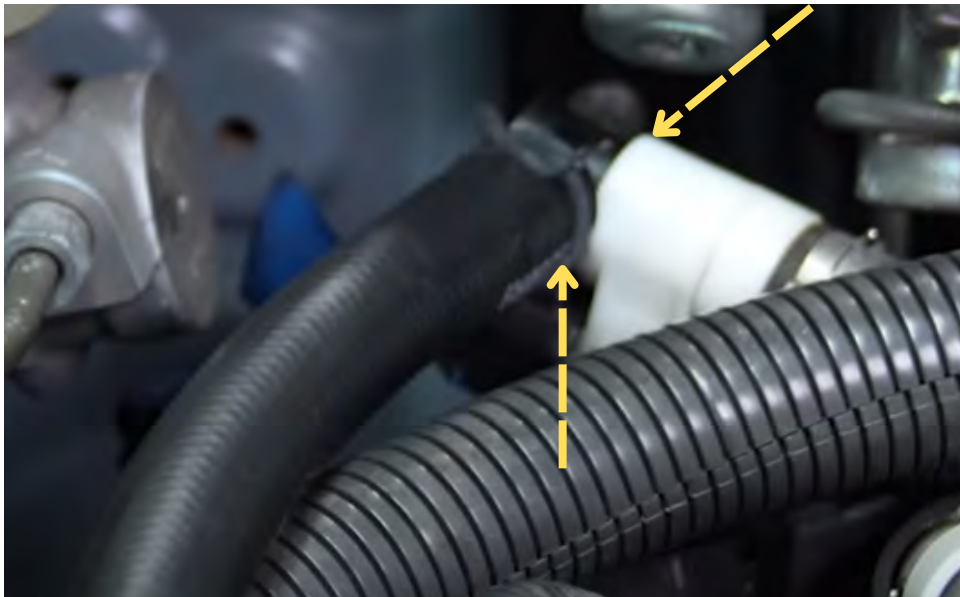
Secure both lines with zip ties and cut excess.



#### Step 60

Cut 12 inches off of the 38 inch valve cover vent hose.

3



#### Step 61

Install supplied clamp onto drivers side valve cover vent hose and install.



#### Step 62

Route hose under wiring harness and connect to top port on AOS.





#### Step 63

Secure valve cover vent hose to brake line with a zip tie

Cut excess zip tie.



#### Step 64

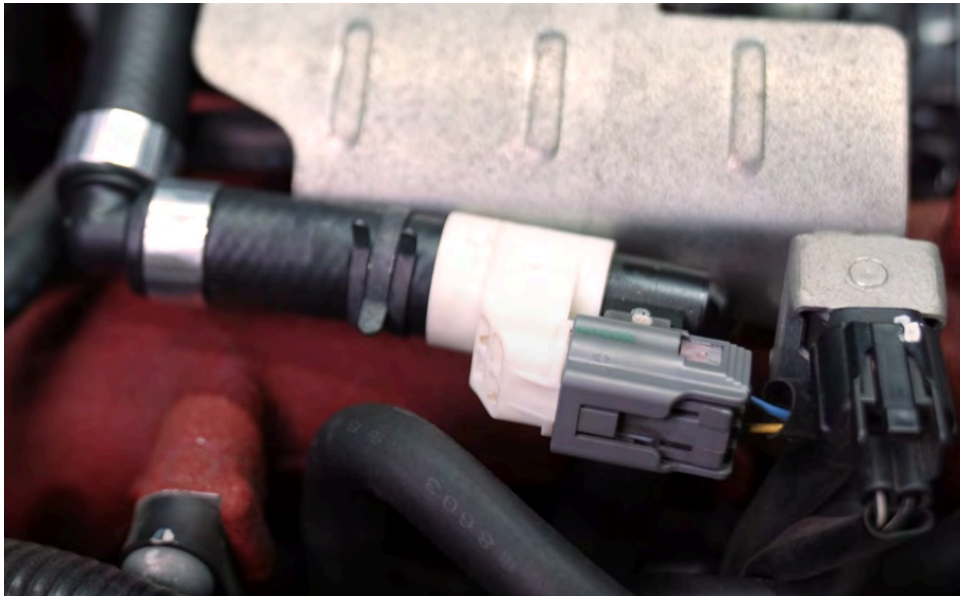
Apply a small amount of lube to one of the 18 inch breather hose fittings.



#### Step 65

Route breather hose under coolant line and attach to top left port on AOS.





#### Step 66

Install a clamp onto 90 degree fitting.

Install fitting to PCV connector and slide metal clamp to secure.



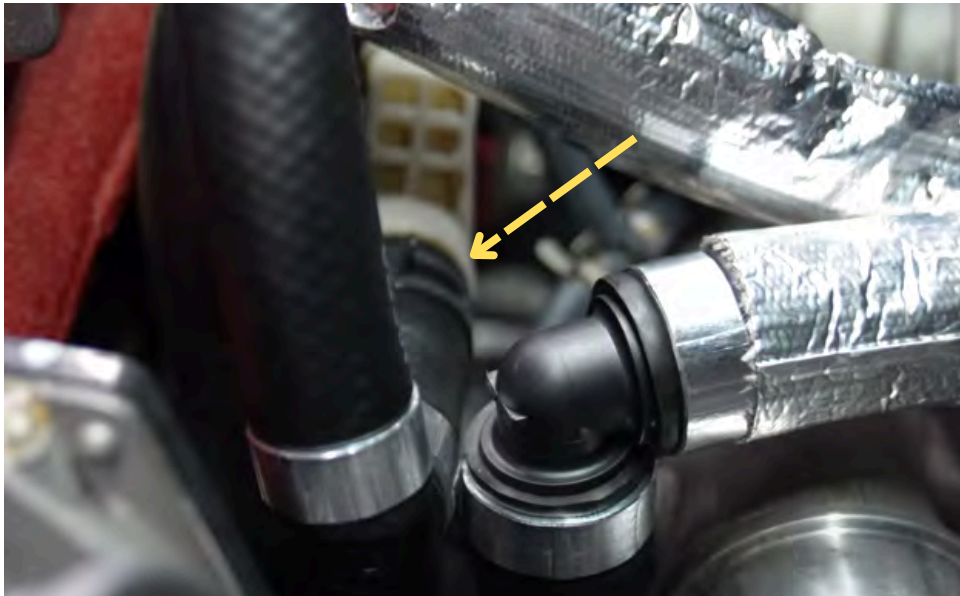
#### Step 67

Apply a small amount of lube to the other 18 inch breather hose fitting.



#### Step 68

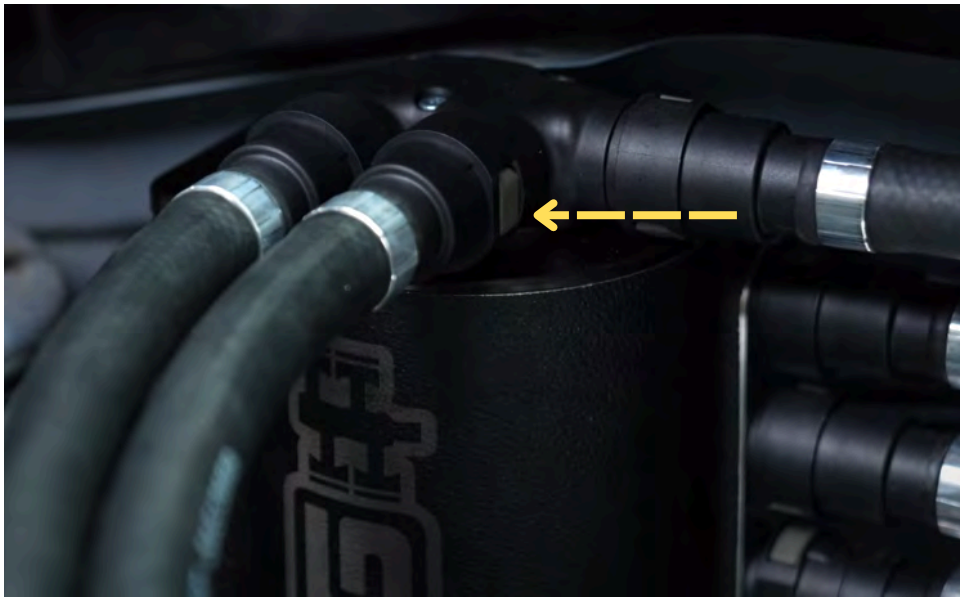
Route hose under coolant line.



#### Step 69

Install a clamp onto the 90 degree fitting.

Install fitting to turbo inlet connector and secure clamp.



#### Step 70

Install breather hose to the port on the AOS.

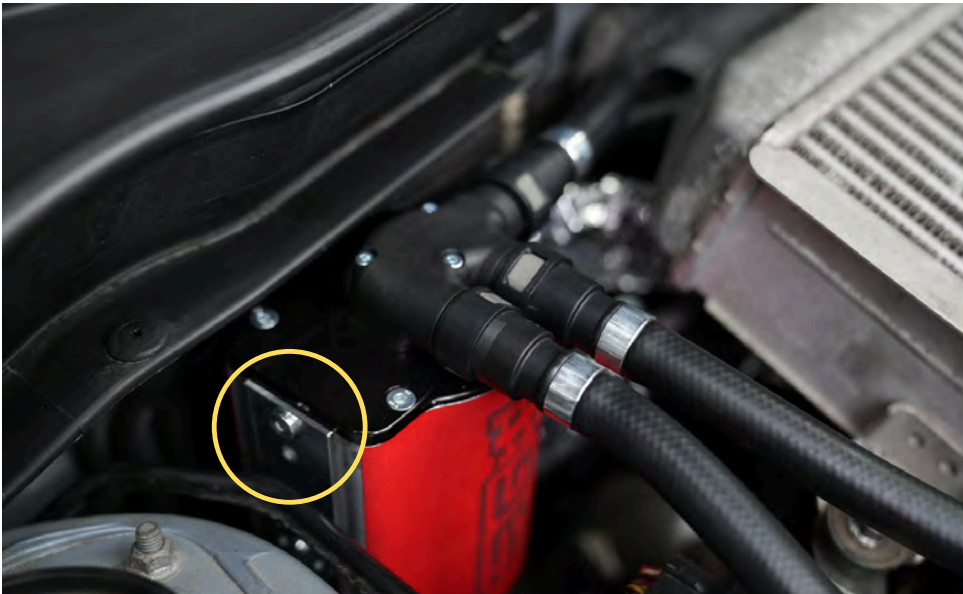


#### Step 71

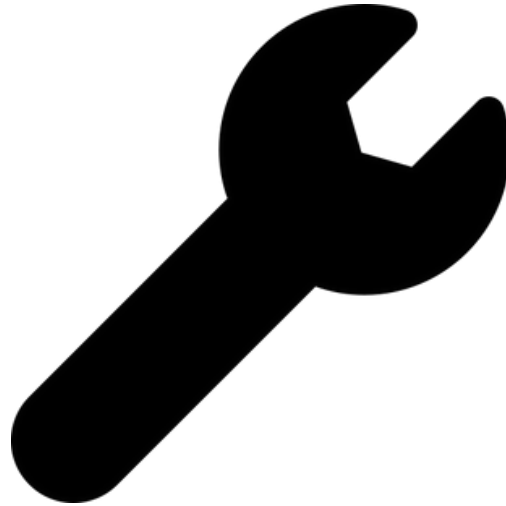
Reinstall the top mount intercooler, BPV and intercooler brackets.



## Step 72



Loosen the AOS coolant breather fitting. Top off any coolant lost during installation. Start the vehicle and let it come to operating temperature. Some coolant will begin to weep from this hole. Once the air has been released tighten the bleeder fitting.



The included PCV valve should be replaced following the factory service and maintenance schedule. Please refer to the factory Subaru service guide for more information.



If you have any questions about the product or install please reach out to [support@iagperformance.com](mailto:support@iagperformance.com) or call 410-840-3555