

IAG COMPETITION SERIES AOS FOR 2017-20 WRX



Step 1/111

IAG-ENG-7282 Comp Series Air / Oil Separator (AOS) For 2017-20 WRX

Part# IAG-ENG-7282

Tools Required: Ratchet, extensions, needle nose pliers, hose cutter, snips/scissors, flat head screwdriver, hose clamping pliers

Sockets: 10mm, 12mm, 1/4" allen, 5mm allen

Wrenches: 7/8", 10mm, 12mm, 3mm allen, 5mm allen

Other: Electrical Tape

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 modification of the factory PCV system and 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.

Step 2/111

Numbered annotations (12)

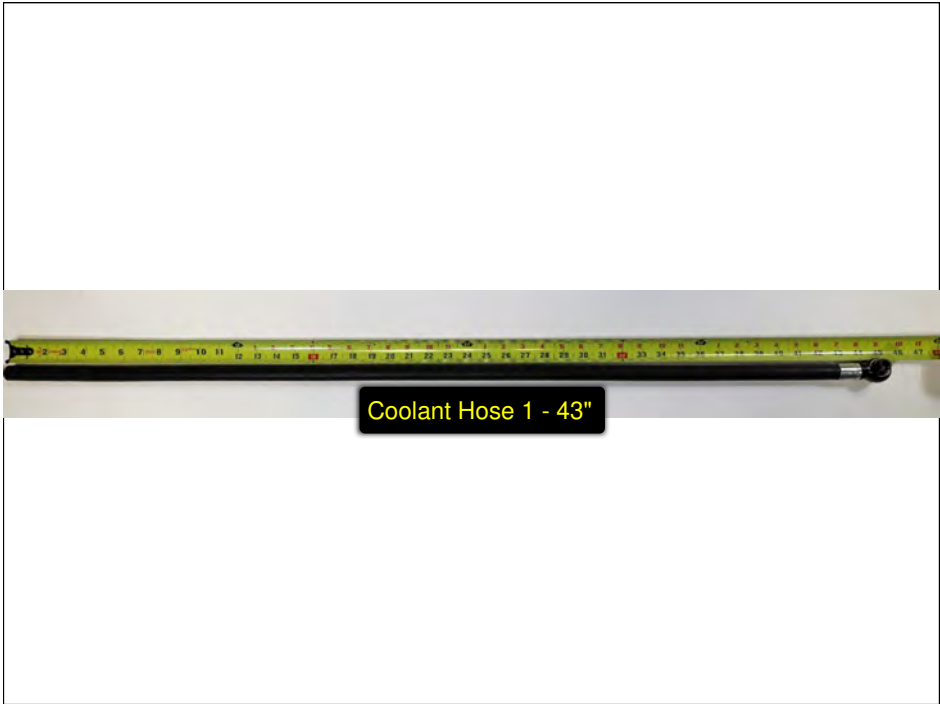
- 1** AOS Body Assembly
- 2** Coolant Hose 1 - 43" (Preinstalled to AOS)
- 3** AOS Drain and Lower Breather Hose Assembly
- 4** Wiring harness relocation bracket (2015-2016 Only)
- 5** Block Breather Hose 1/2" x 44" x 90 degree x 3" (For 2015-2016 Model Years ONLY)
- 6** Zip Ties
- 7** Vent Hose - 5/8" x 17" w/ 90 Degree Fitting (2017+ Model Years ONLY)
- 8** AOS Coolant Hose 2 - 15.5" with union fitting (Preinstalled to AOS)
- 9** AOS Breather Hose 1" x 59"
- 10** AOS Bracket
- 11** AOS Mounting Hardware
- 12**

Step 3/111

Numbered annotations (6)

- 1** 3/8" Nylon Insert Plug
- 2** Coolant Clamp
- 3** 1/2" Band Clamp x 13
- 4** 5/8" Band Clamp x 7
- 5** 5/8" Vacuum Cap x 2
- 6** 1/2" Vacuum Cap

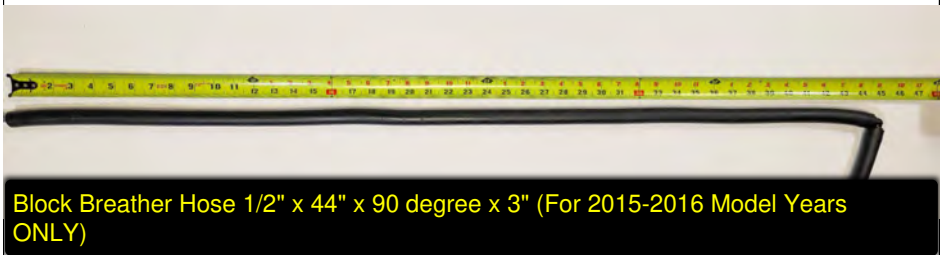
Step 4/111



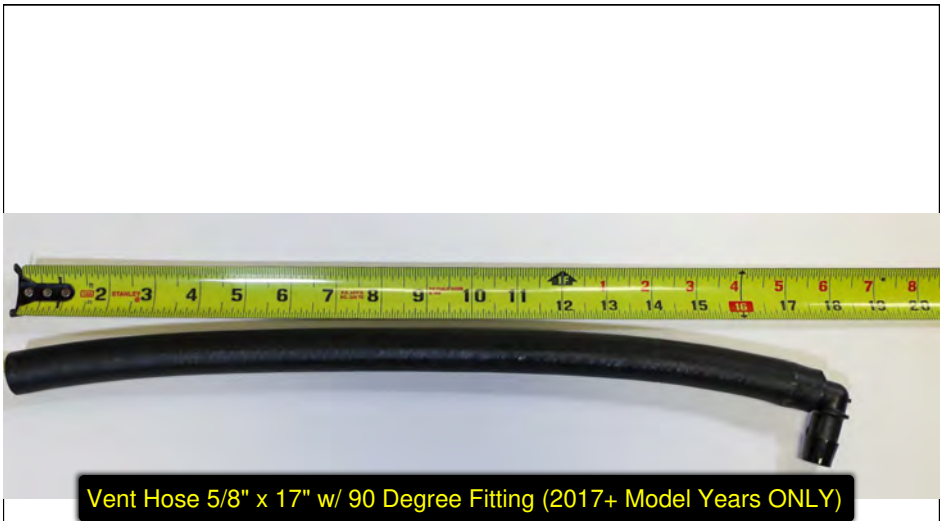
Step 5/111



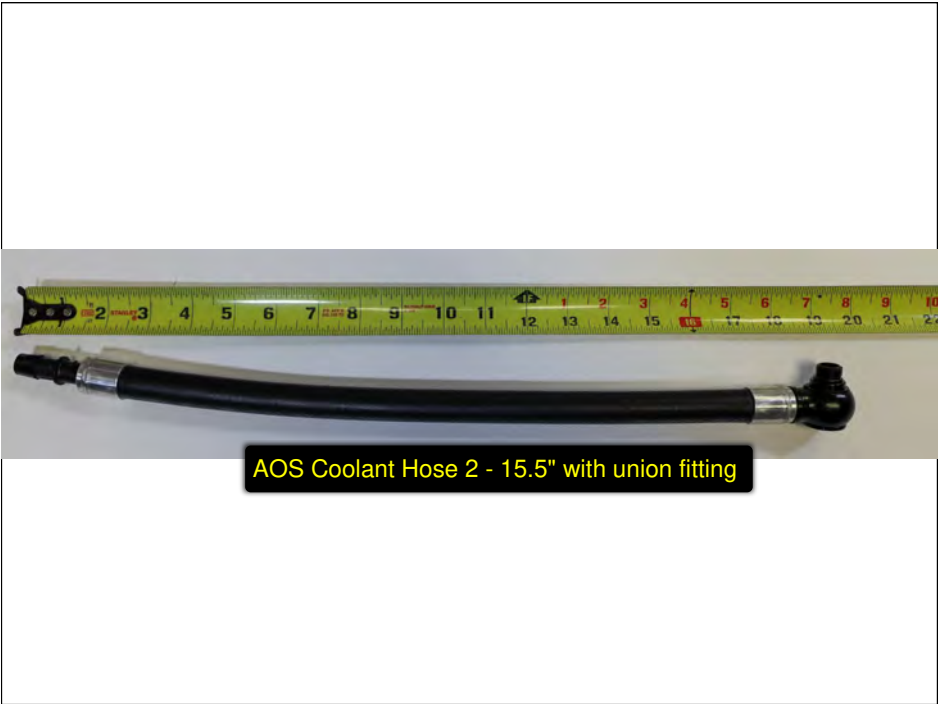
Step 6/111



Step 7/111

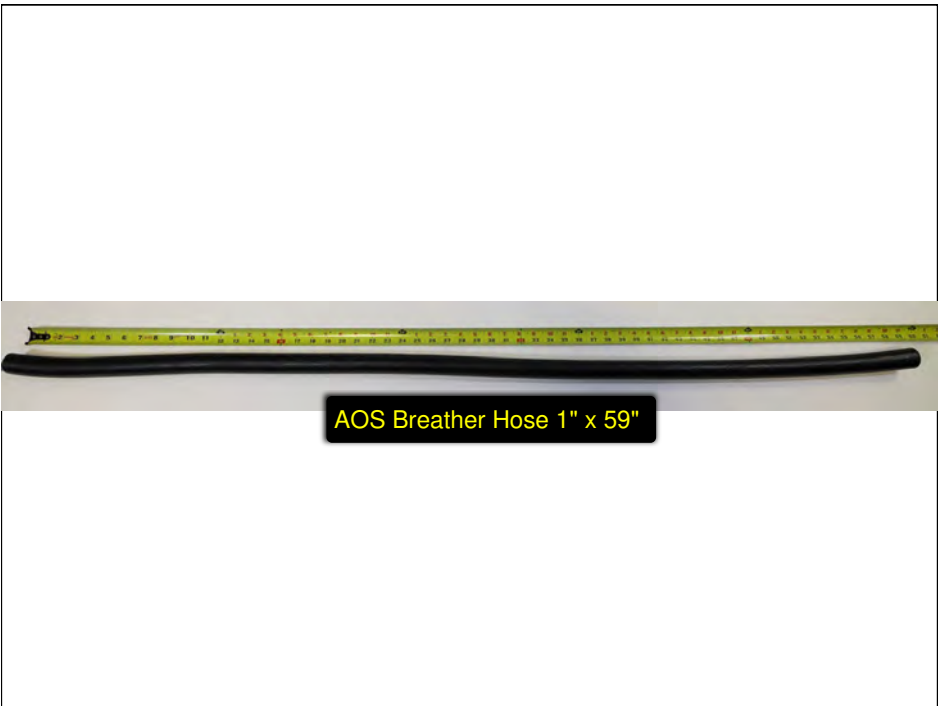


Step 8/111



AOS Coolant Hose 2 - 15.5" with union fitting

Step 9/111



AOS Breather Hose 1" x 59"



Step 10/111

Numbered annotations (7)

- 1 Connects to AOS Breather Hose
- 2 Connects to 1/2" x 44" PCV Vent Hose on 2015-2016 Vehicles. Capped with 1/2" vacuum cap on 2017+ Vehicles.
- 3 Connects to lower breather and drain hose assembly.
- 4 Connected to the Breather Hose 5/8" x 17" w/ 90 Degree Fitting. (Capped with 5/8" Vacuum Cap on 2015-2016 Vehicles)
- 5 AOS Drain. Connects to lower breather and drain hose assembly.
- 6 AOS Coolant Hose 1
- 7 AOS Coolant Hose 2



Step 11/111

Numbered annotations (1)

- 1 Disconnect the negative battery cable.



Step 12/111

Numbered annotations (1)

- 2 Remove the clips securing the engine cover.



Step 13/111

Numbered annotations (1)

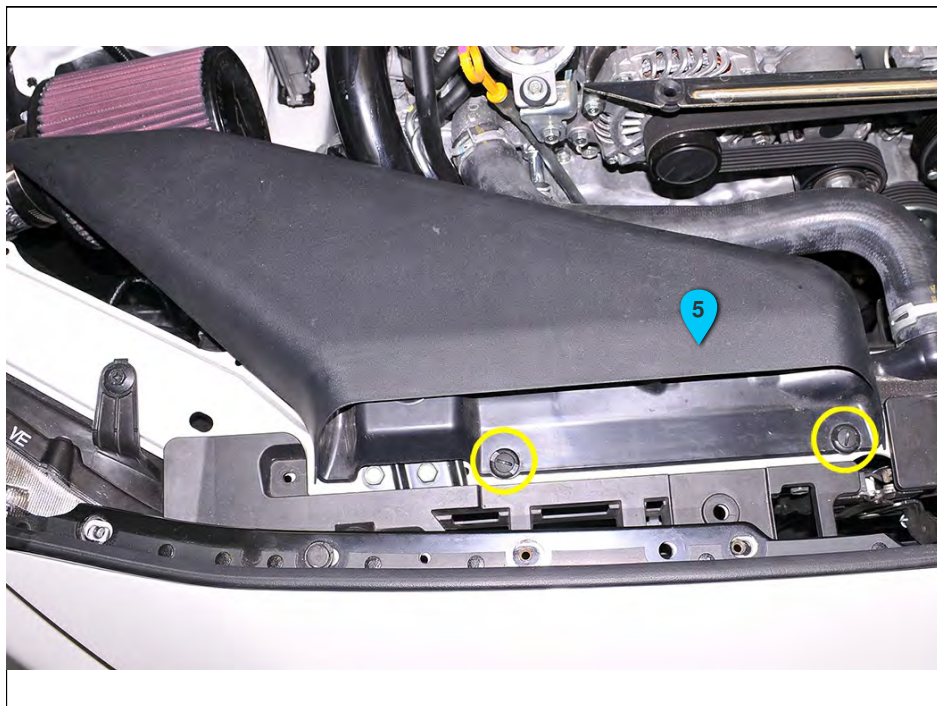
- 3 Pull up on the front of the cover to unclip it.



Step 14/111

Numbered annotations (1)

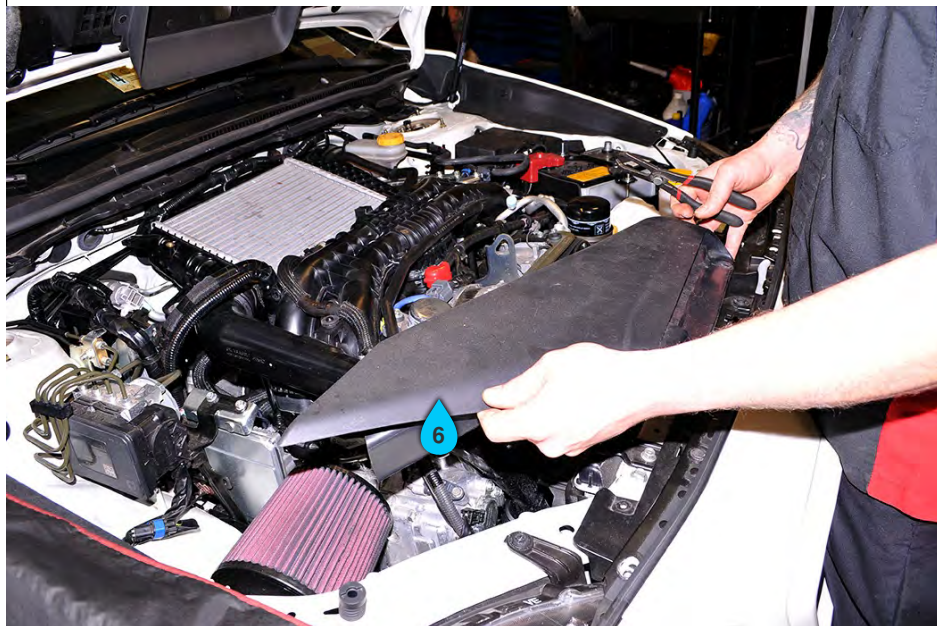
- 4 Remove engine cover.



Step 15/111

Numbered annotations (1)

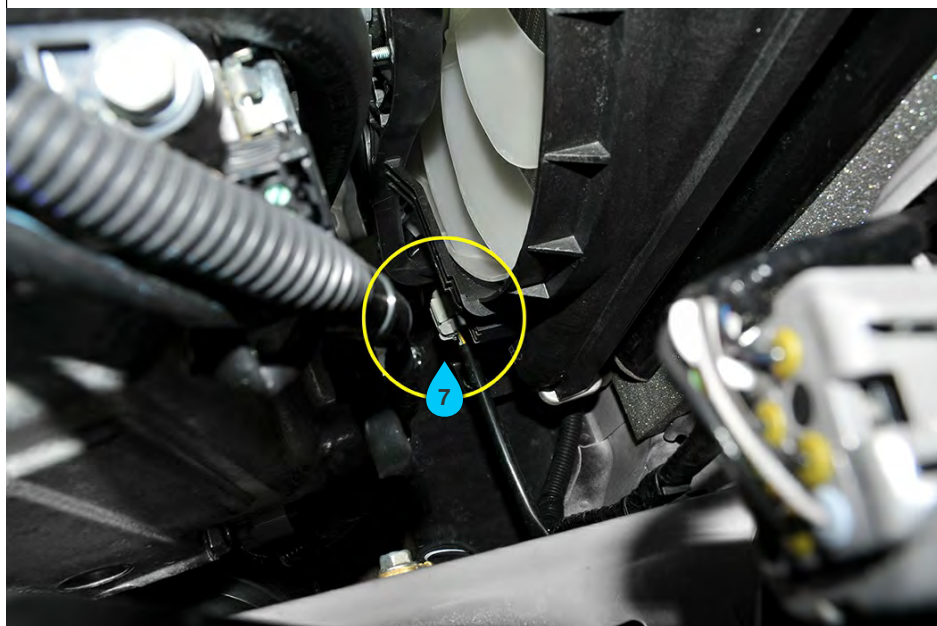
- 5 Remove hardware securing intake snorkel.



Step 16/111

Numbered annotations (1)

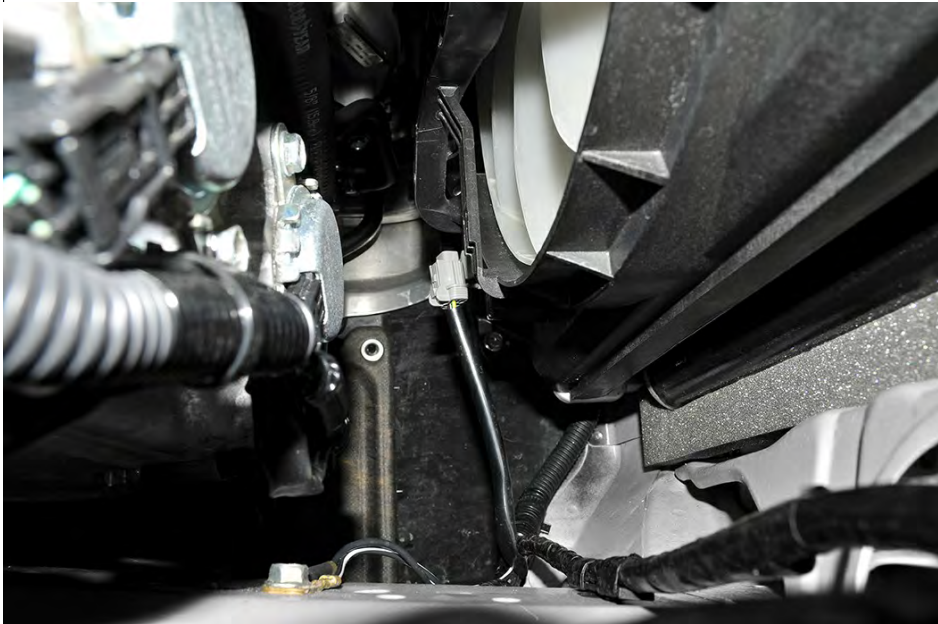
- 6 Remove intake snorkel.



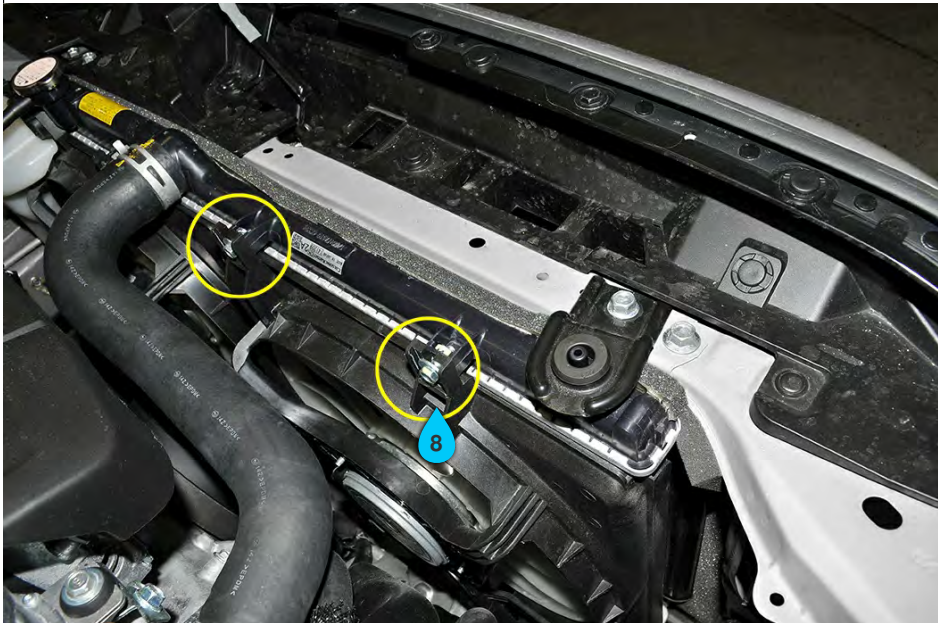
Step 17/111

Numbered annotations (1)

- 7 Disconnect passenger side radiator fan wiring harness.



Step 18/111



Step 19/111

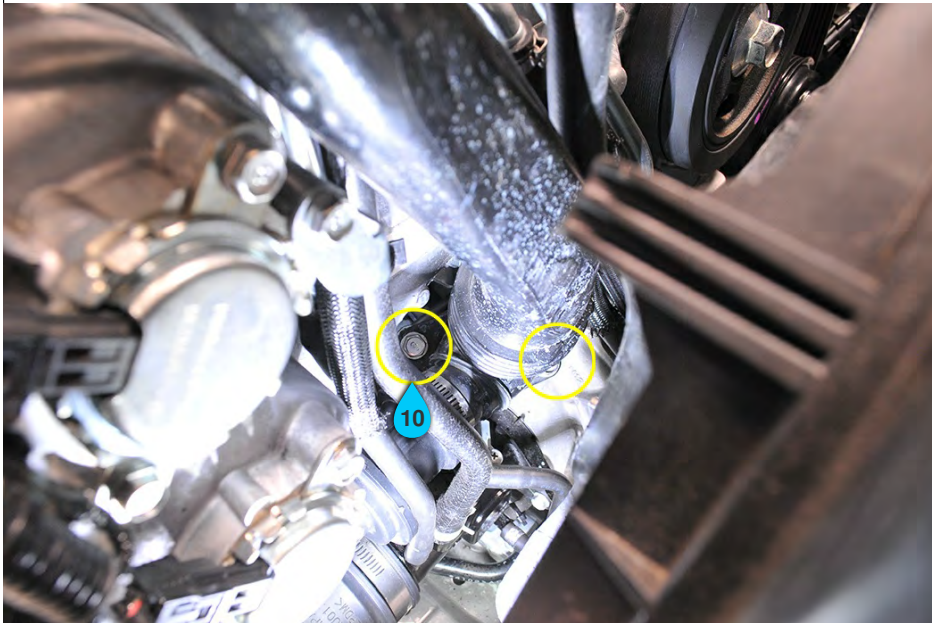
- Numbered annotations (1)
- 8 Remove hardware securing passenger side radiator fan.



Step 20/111

Numbered annotations (1)

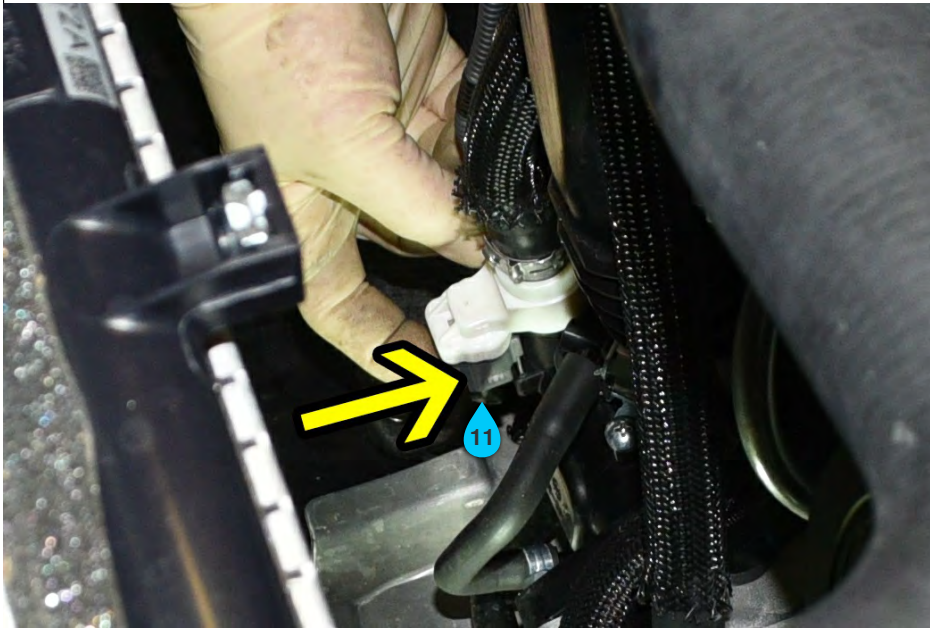
- 9 Remove passenger side radiator fan, being careful not to damage the radiator fins.



Step 21/111

Numbered annotations (1)

- 10 Remove hardware securing charge pipe.

**Step 22/111**

Numbered annotations (1)

- 11 Disconnect the electrical connector here

**Step 23/111**

Numbered annotations (1)

- 12 Using pliers, pry off the hose clamp that holds the white crankcase sensor to the turbo inlet pipe.



Step 24/111

Numbered annotations (1)

13 Loosen this clamp



Step 25/111



Step 26/111

Numbered annotations (1)

- 14 Locate the supplied 5/8" vacuum cap and clamp.



Step 27/111

Numbered annotations (1)

- 15 Remove the sensor from the hose.



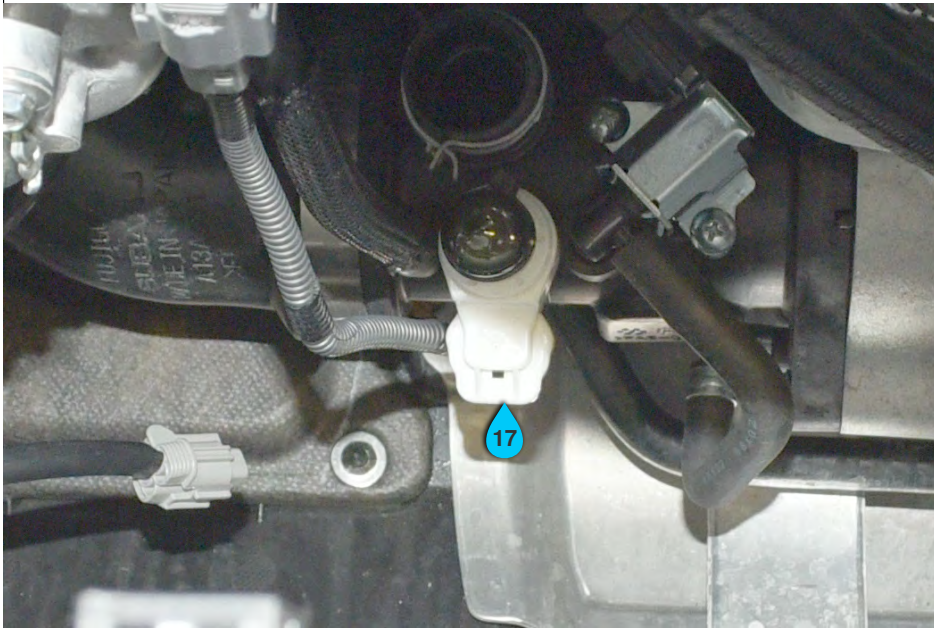
Step 28/111

Numbered annotations (1)

- 16 Install the 5/8 vacuum cap on the PCV sensor



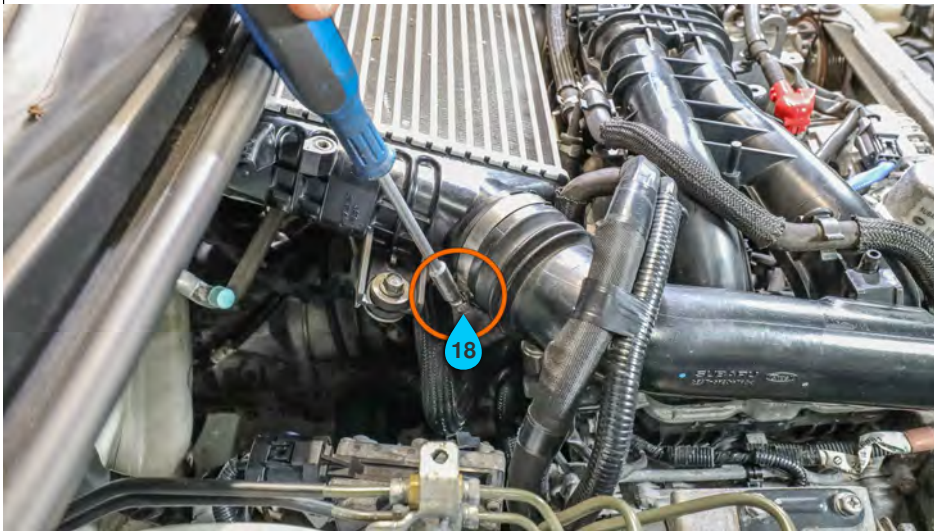
Step 29/111



Step 30/111

Numbered annotations (1)

- 17 Reinstall the white PCV sensor, ensuring that it is fully seated and clicks into the grey connector.



Step 31/111

Numbered annotations (1)

- 18 Loosen this clamp.

Step 32/111

Numbered annotations (1)

- 19 Remove the charge pipe.

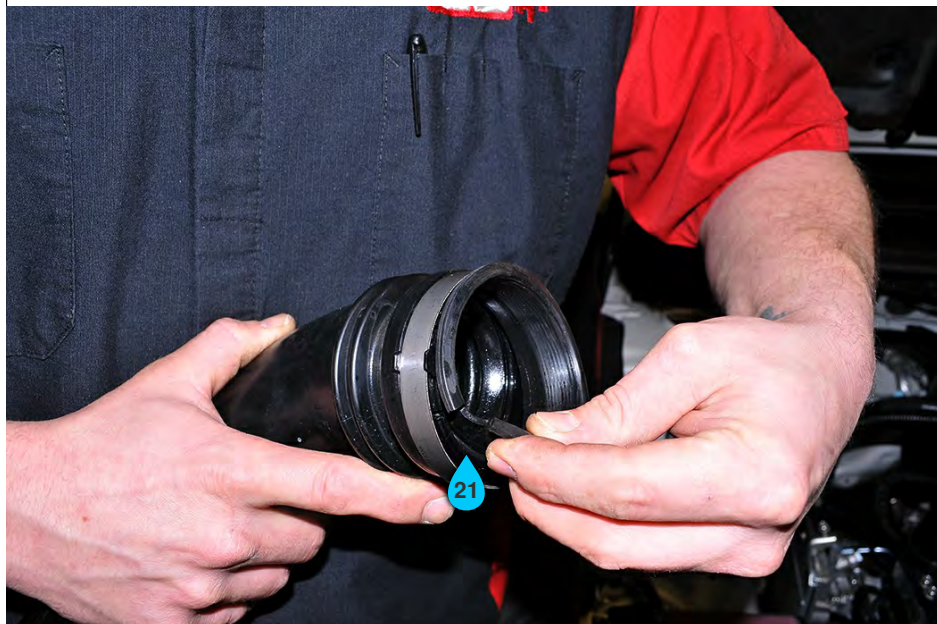


Step 33/111

Numbered annotations (1)

- 20 Ensure this part stays in the charge pipe.

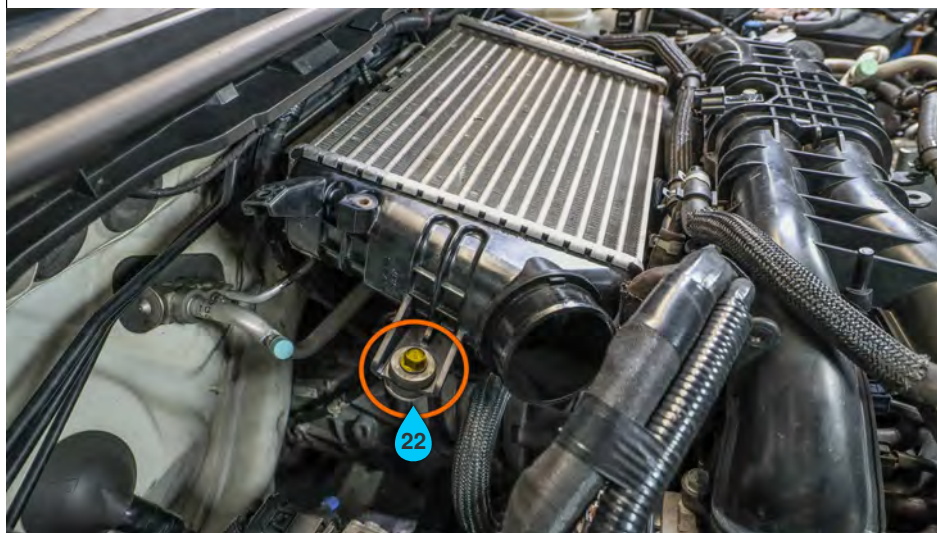




Step 34/111

Numbered annotations (1)

21 The spacer fits here.



Step 35/111

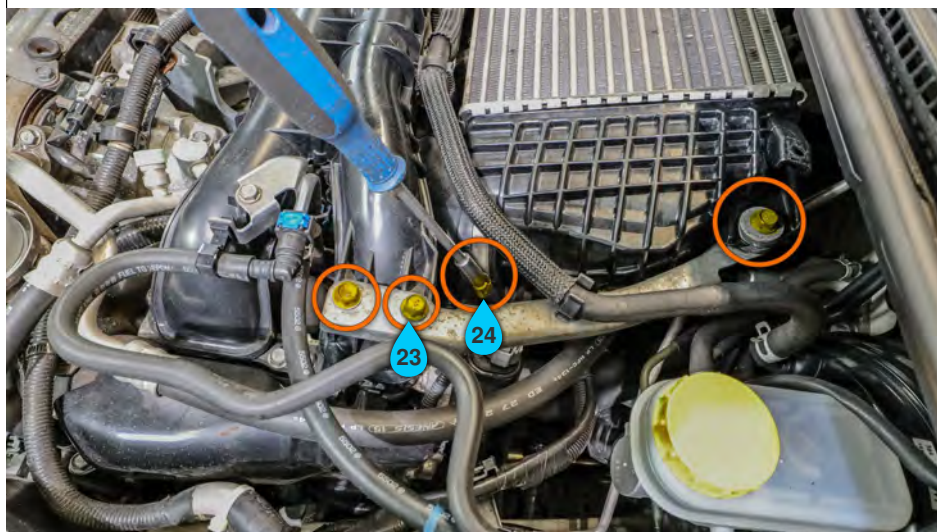
Numbered annotations (1)

22 Remove this bolt.

Step 36/111

Numbered annotations (2)

- 23 Remove the 3 bolts holding the intercooler and bracket.
- 24 Loosen this hose clamp.

**Step 37/111**

Numbered annotations (1)

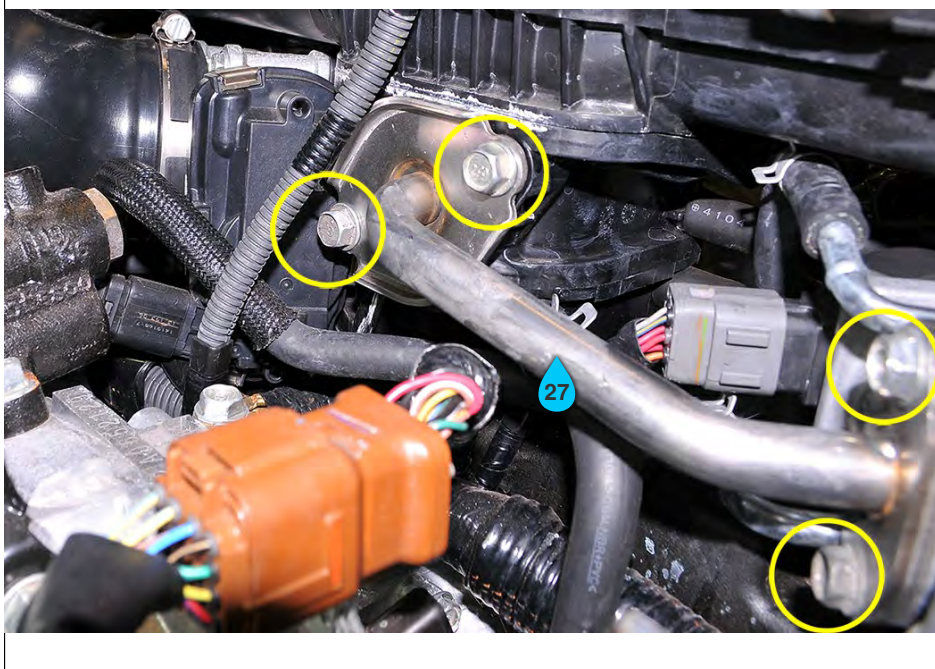
- 25 Remove the intercooler bracket.



**Step 38/111**

Numbered annotations (1)

- 26 Remove the intercooler.

**Step 39/111**

Numbered annotations (1)

- 27 Remove the hardware securing this pipe behind the intake manifold.

Step 40/111



Step 41/111

Numbered annotations (1)

- 28 Loosen this clamp and disconnect this hose.





Step 42/111



Step 43/111

Numbered annotations (1)

29 Locate the supplied vacuum cap.



Step 44/111

Numbered annotations (1)

- 30 Install the supplied vacuum cap in this hose, secured with the OEM clamp.



Step 45/111



Step 46/111

Numbered annotations (1)

- 31 Remove this fitting.

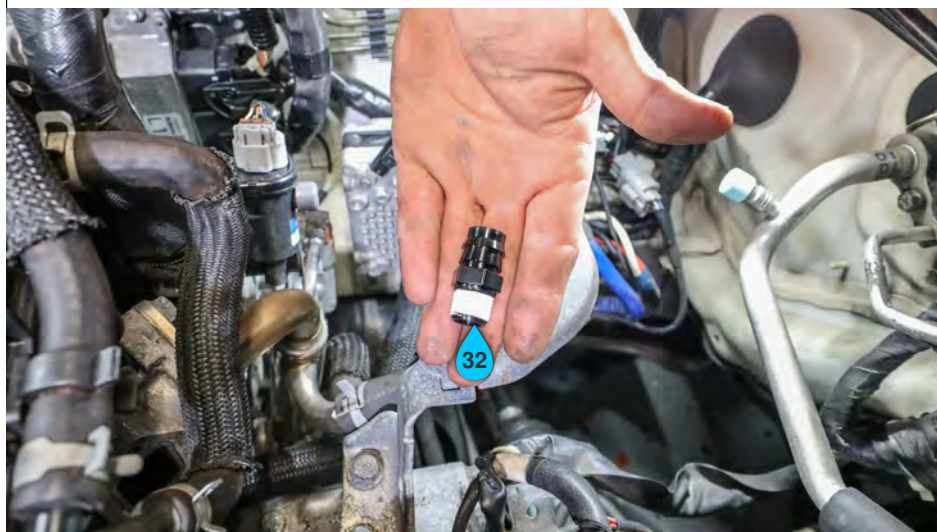


Step 47/111

Step 48/111

Numbered annotations (1)

- 32 Locate the supplied block breather fitting.

**Step 49/111**

Numbered annotations (1)

- 33 Thread the block fitting into the block.

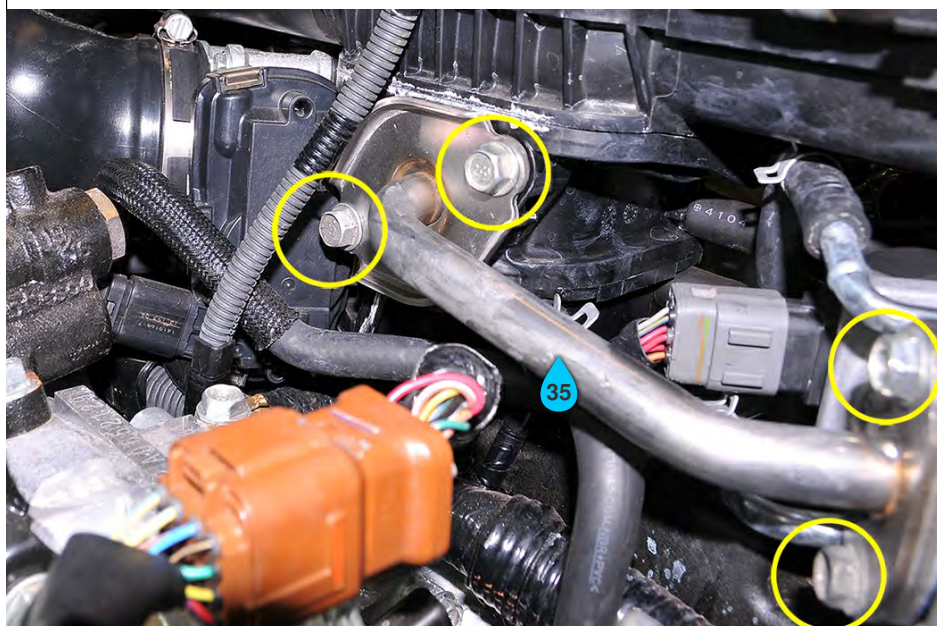




Step 50/111

Numbered annotations (1)

- 34 Torque the fitting to 15 ft/lbs.



Step 51/111

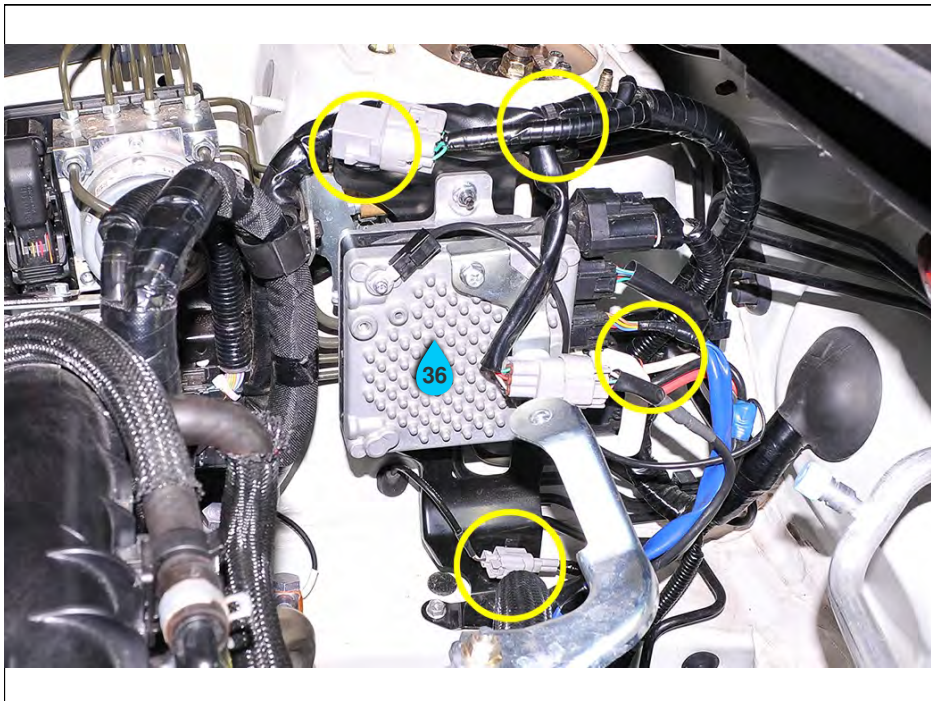
Numbered annotations (1)

- 35 Reinstall the EGR pipe, reusing the OEM gaskets and hardware.

STOP

**IF YOUR WRX WAS BUILT AFTER 4/30/17,
PLEASE SKIP TO STEP 73**

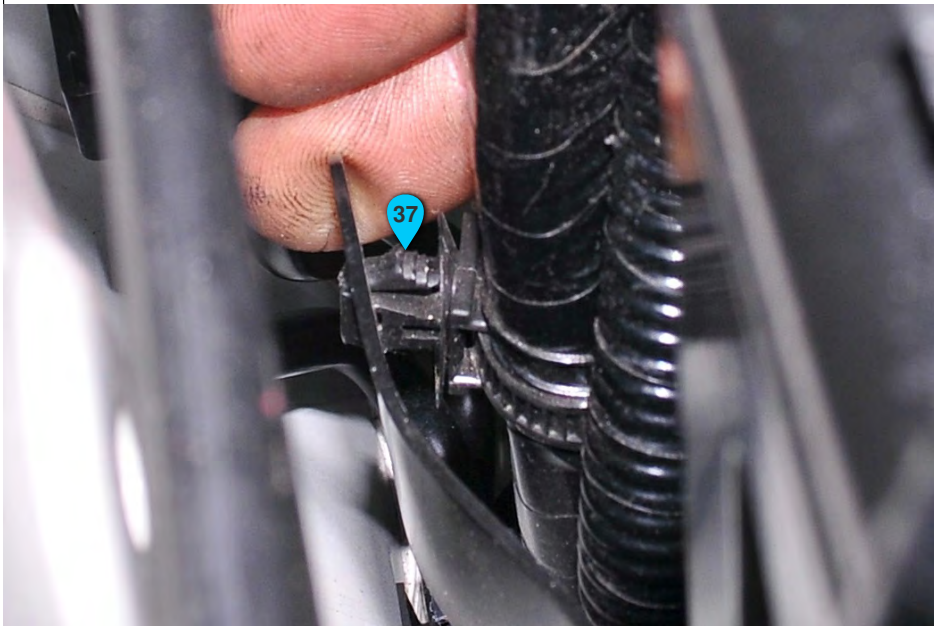
Step 52/111



Step 53/111

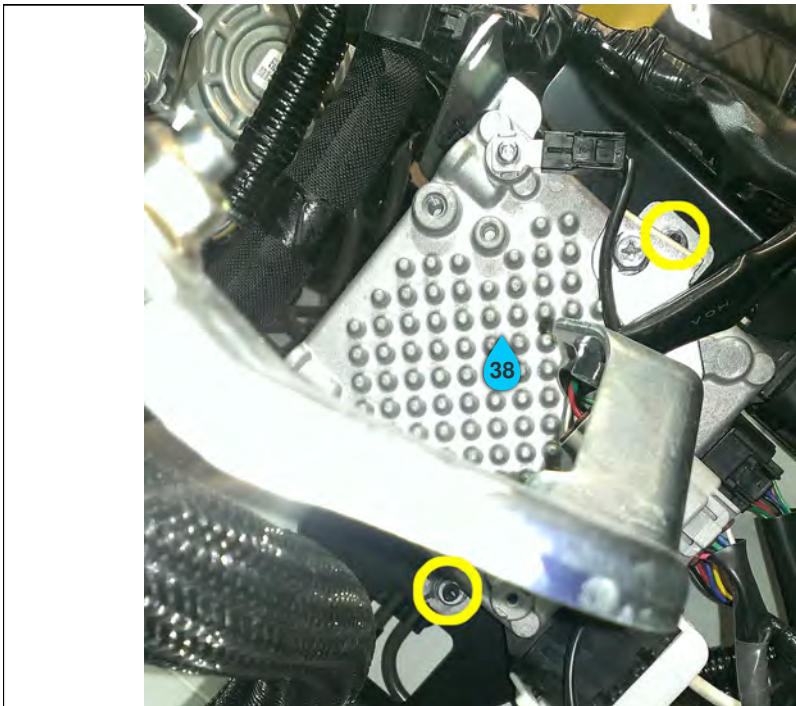
Numbered annotations (1)

- 36 Remove the 4 wiring harness retaining clips from the ECU mounting bracket.

**Step 54/111**

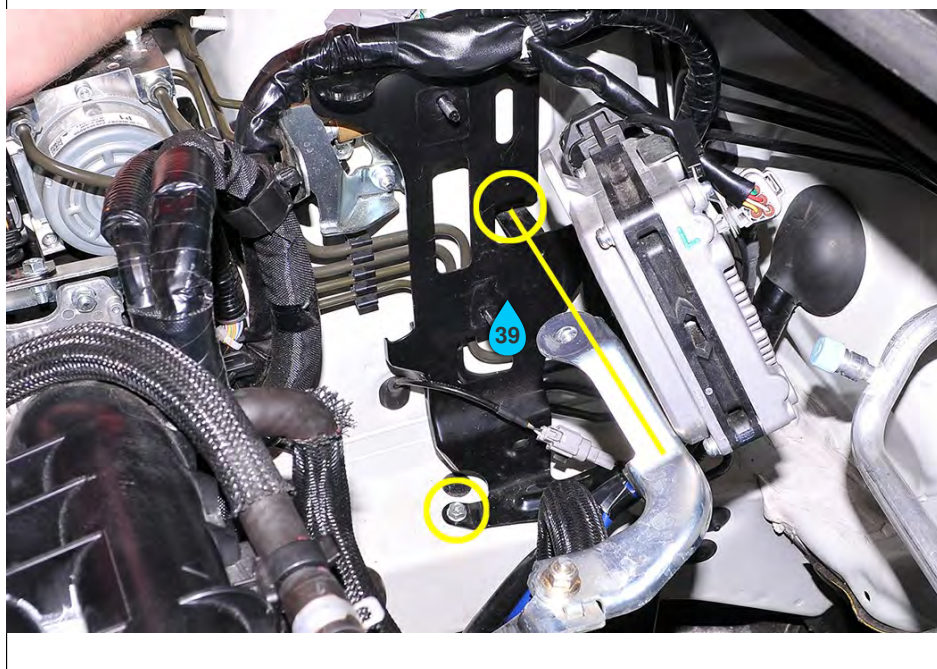
Numbered annotations (1)

- 37 Use pliers to squeeze these zip ties then push them through the hole to remove.

**Step 55/111**

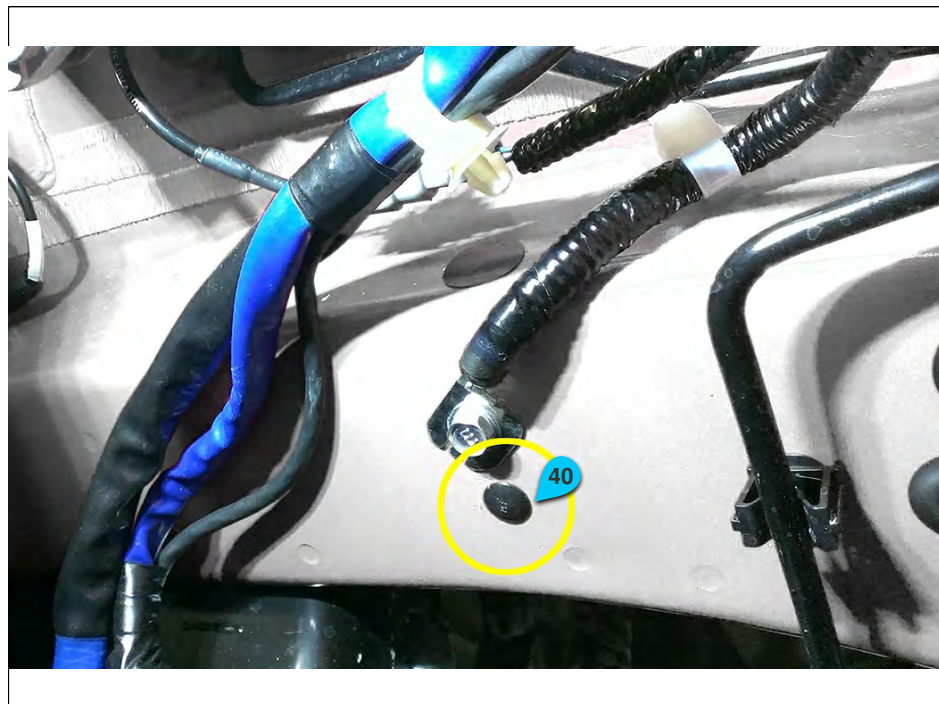
Numbered annotations (1)

- 38 Remove the two 10mm nuts which hold the ECU to the bracket. Pull the ecu free from the bracket and place it aside in the engine bay.

**Step 56/111****Step 57/111**

Numbered annotations (1)

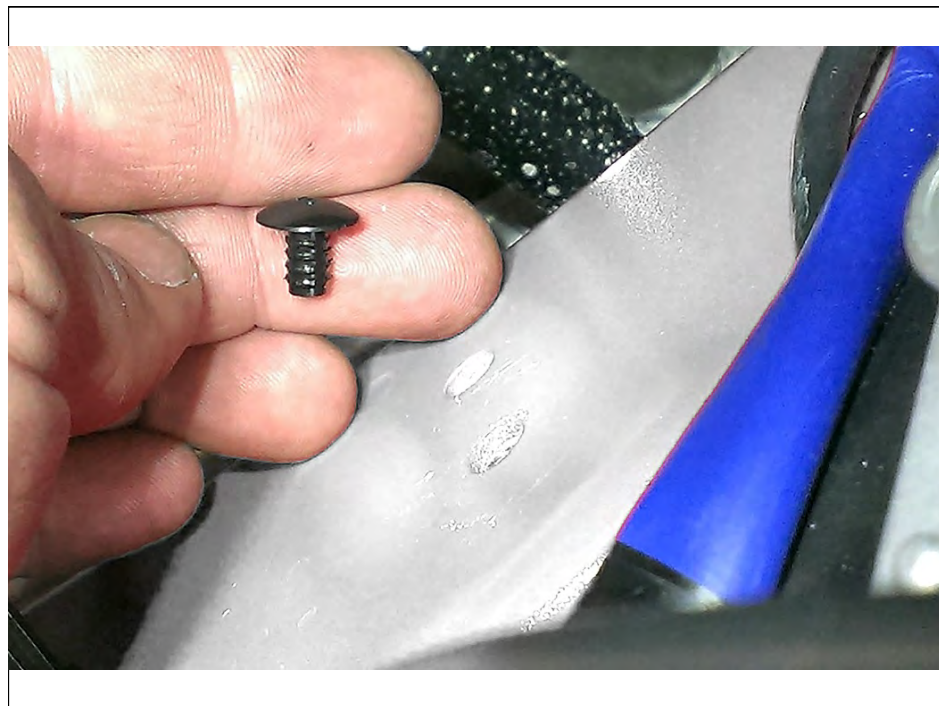
- 39** Remove the two 10mm bolts which secure the ECU bracket to the strut tower. Remove the bracket.



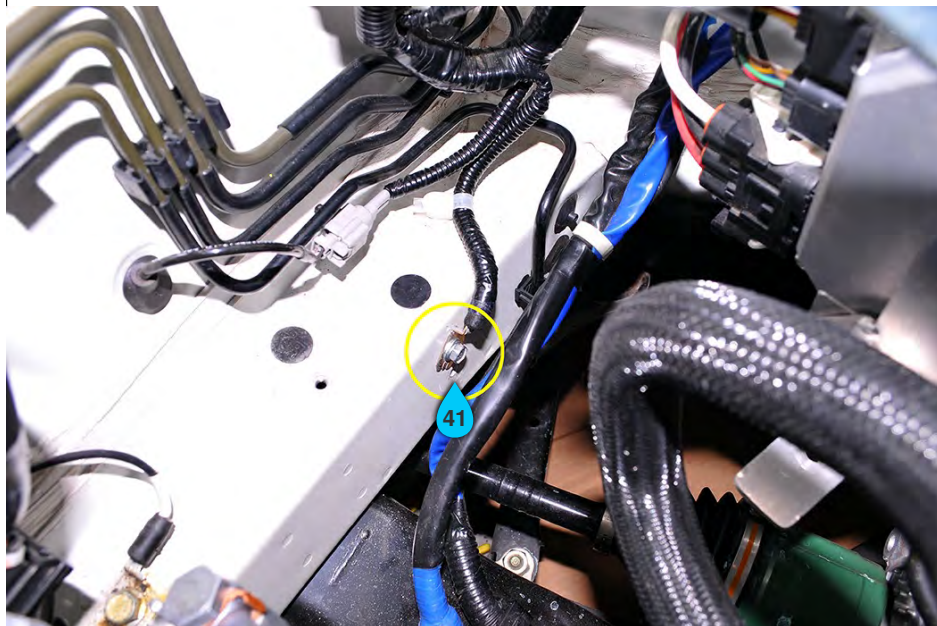
Step 58/111

Numbered annotations (1)

- 40 Remove this plug.

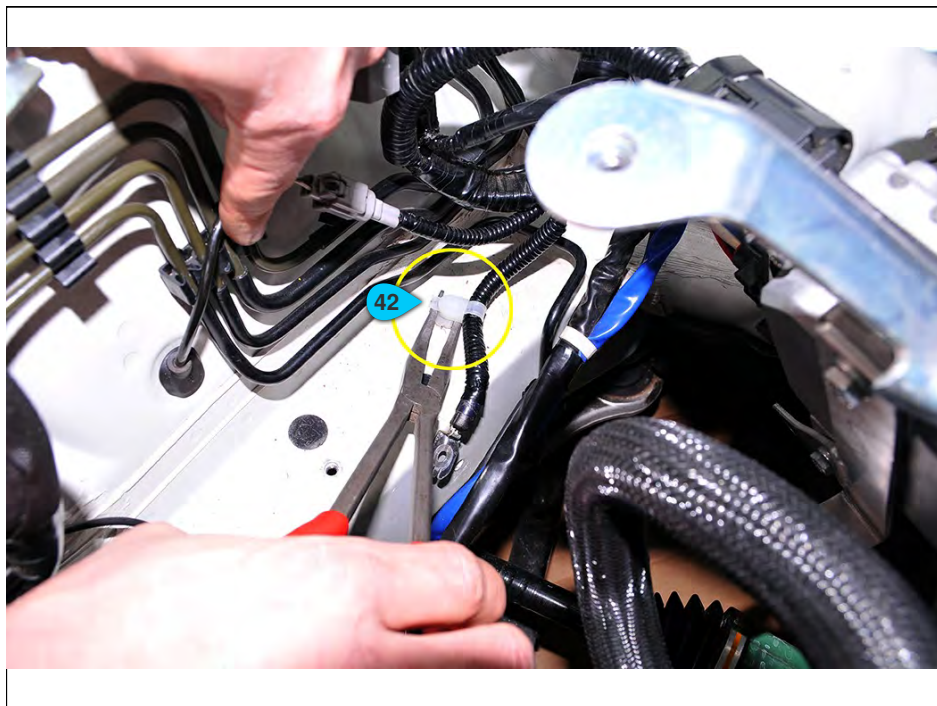


Step 59/111

**Step 60/111**

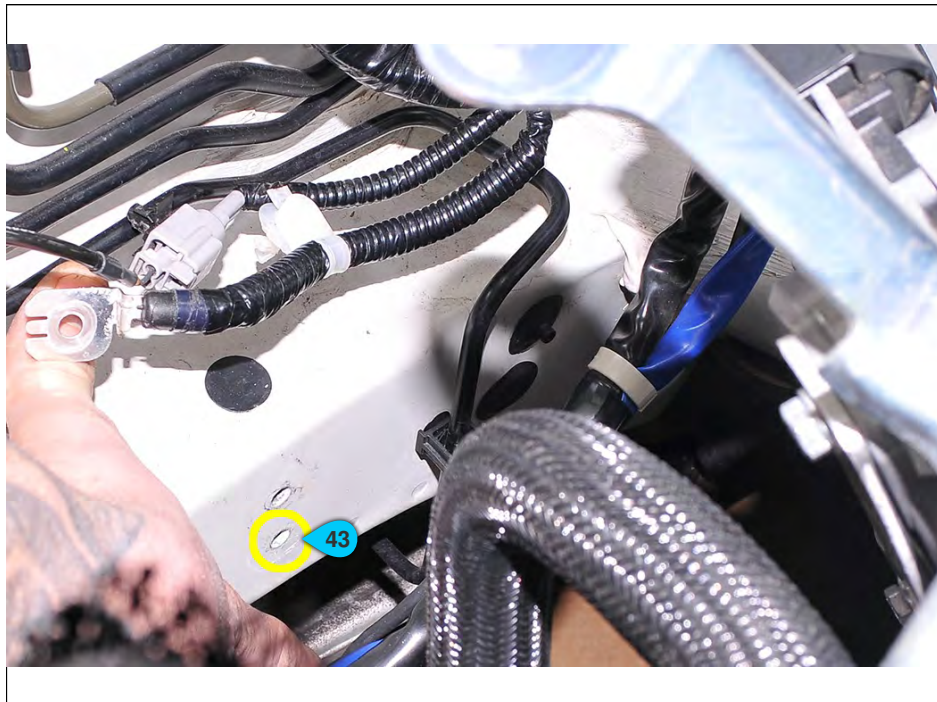
Numbered annotations (1)

- 41 Remove this 10mm bolt.

**Step 61/111**

Numbered annotations (1)

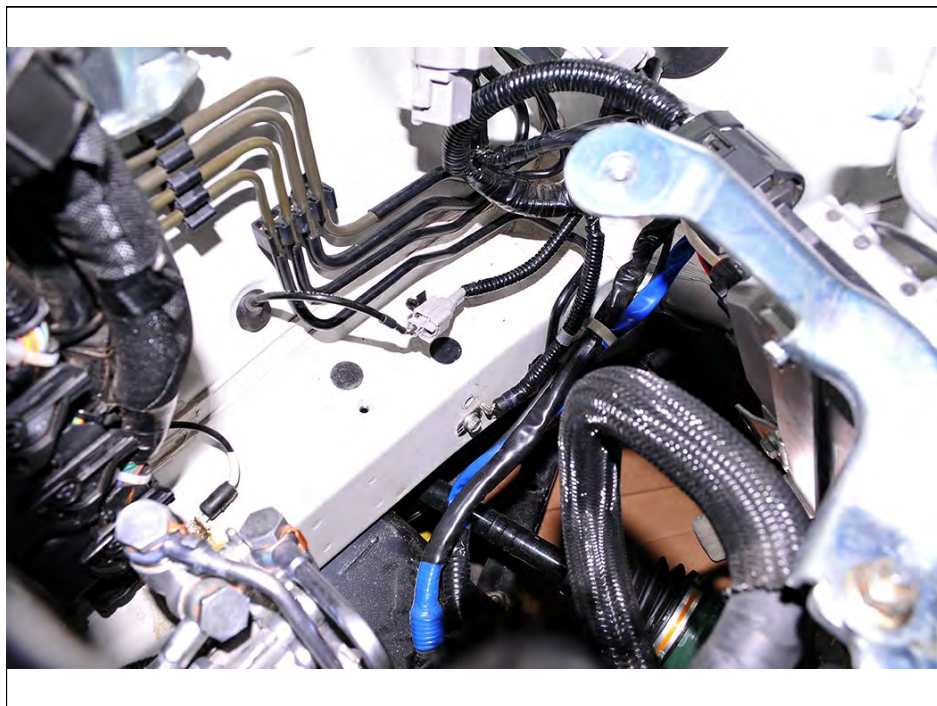
- 42 Use pliers to remove this mounting tie from the frame rail.



Step 62/111

Numbered annotations (1)

- 43 Reinstall the ground to this hole using the OEM 10mm bolt.



Step 63/111

Step 64/111

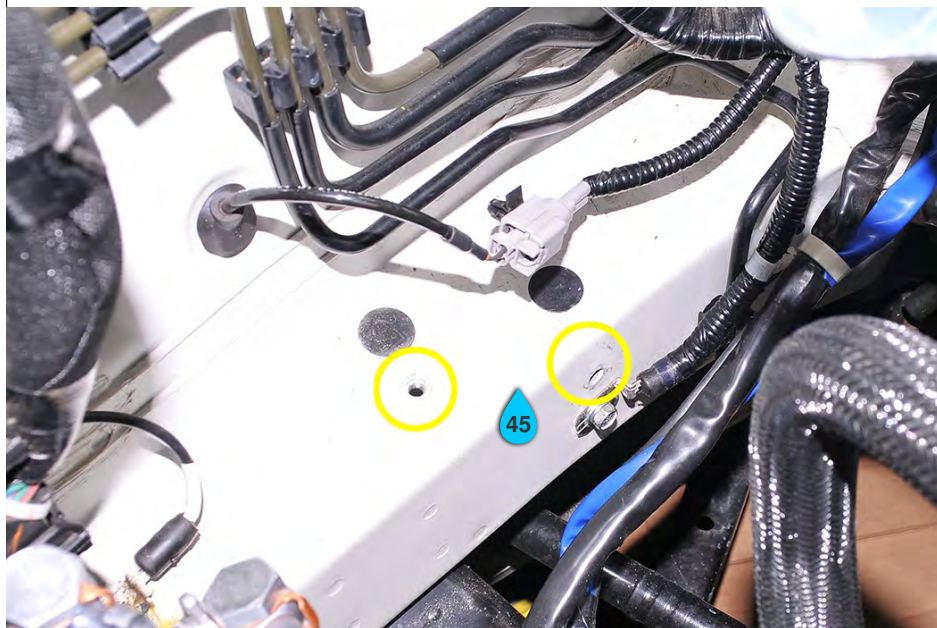
Numbered annotations (1)

44 Locate the ECU relocation bracket.

**Step 65/111**

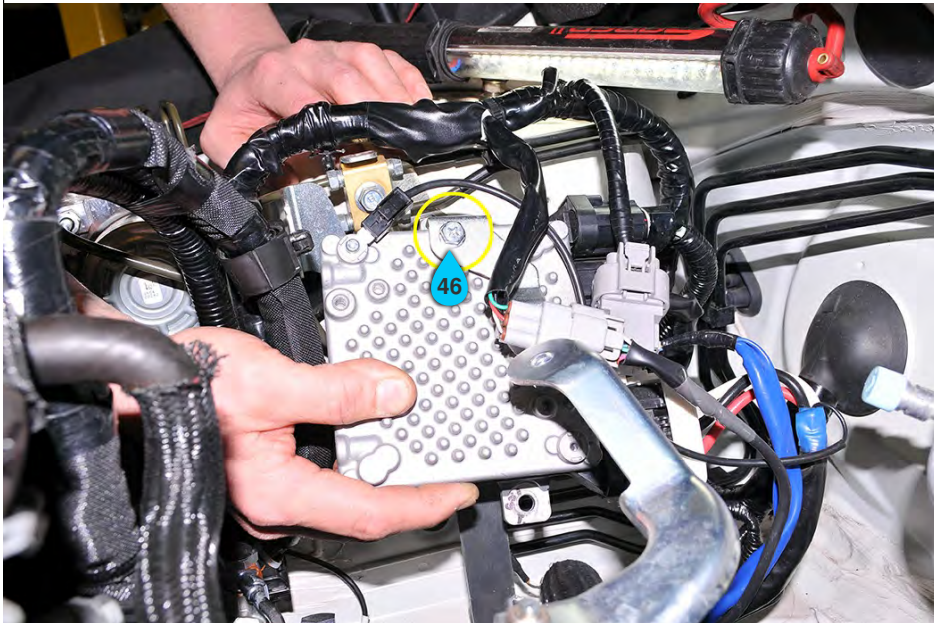
Numbered annotations (1)

45 Attach the ECU relocation bracket here using the OEM ecu bracket 10mm hardware.





Step 66/111



Step 67/111

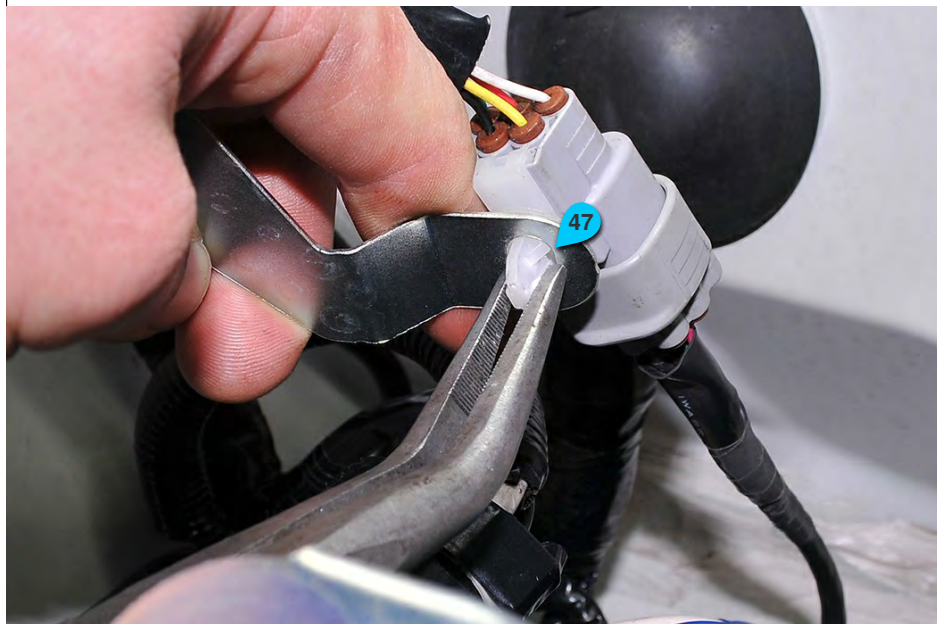
Numbered annotations (1)

- 46 Remove the 10mm bolt securing the wiring harness to the ecu,

Step 68/111

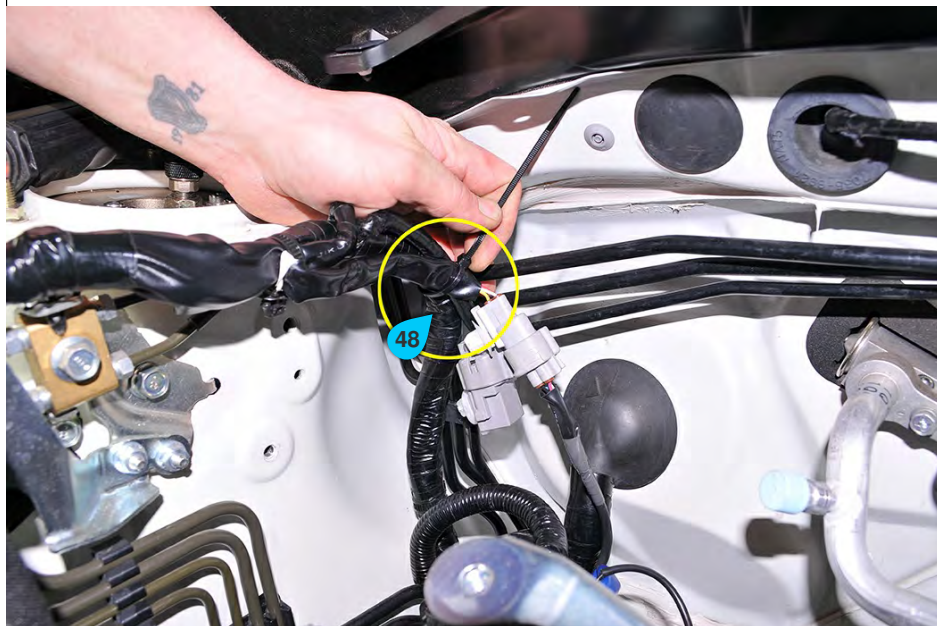
Numbered annotations (1)

- 47 Using pliers, remove the harness retaining clip from the bracket.



Step 69/111





Step 70/111

Numbered annotations (1)

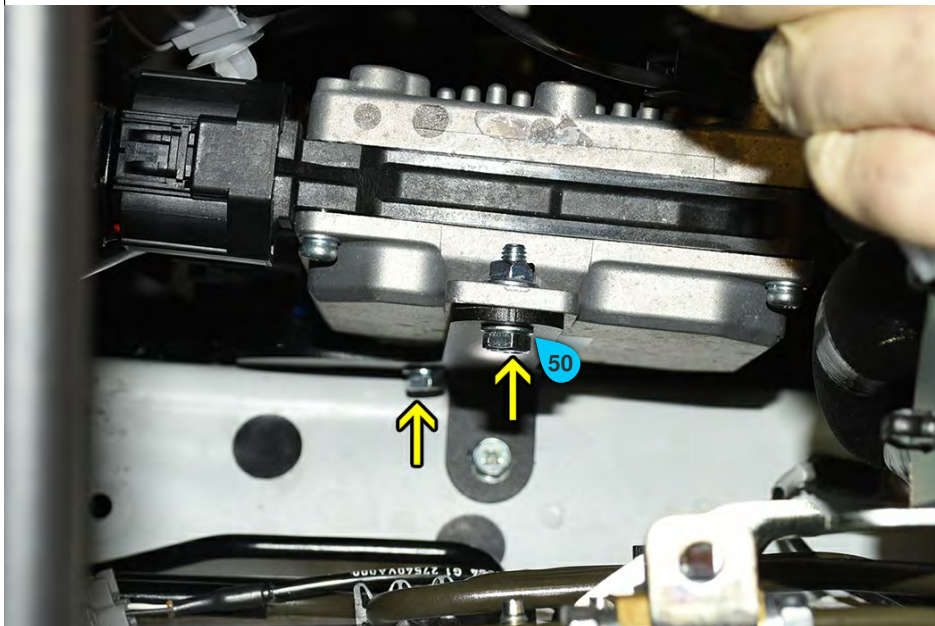
- 48 Zip tie the harness here.



Step 71/111

Numbered annotations (1)

- 49 Locate the supplied 6mmx15mm bolts, 6mm flat washers, and OEM ecu bracket nuts.



Step 72/111

Numbered annotations (1)

- 50 Attach the ECU to the bracket using the supplied 6mmx15mm bolts, 6mm flat washers, and the OEM nuts the secured the ecu to the OEM ECU bracket. (Make sure the bolt heads are on the bracket side.)



Step 73/111

Numbered annotations (1)

- 51 Attach the drain hose using the supplied clamp.

Step 74/111

Numbered annotations (1)

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

**Step 75/111**

Numbered annotations (1)

- 52 Locate the AOS bracket and supplied hardware and install the bracket as shown. Torque the bolts to 7 ft/lbs.



Step 76/111**Step 77/111**




Numbered annotations (1)

- 53 Install the supplied 5/8" vacuum cap on this port and secure with the supplied clamp.




Step 78/111

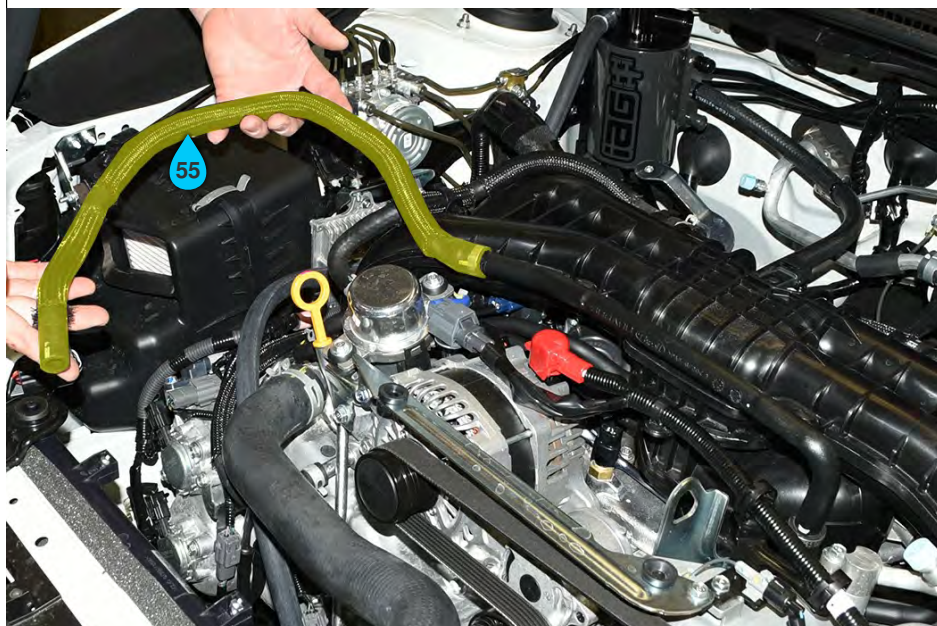
Numbered annotations (3)

-  54 Mount the AOS here using the supplied bolts.
-  1 Cap installed on this port for 2017+ vehicles
-  2 Cap installed on this port for 2015-2016 vehicles.

**Step 79/111**

Numbered annotations (1)

-  55 Locate the hose that went to the turbo inlet PCV connector.





Step 80/111

Numbered annotations (1)

56 Route the hose as shown.



Step 81/111

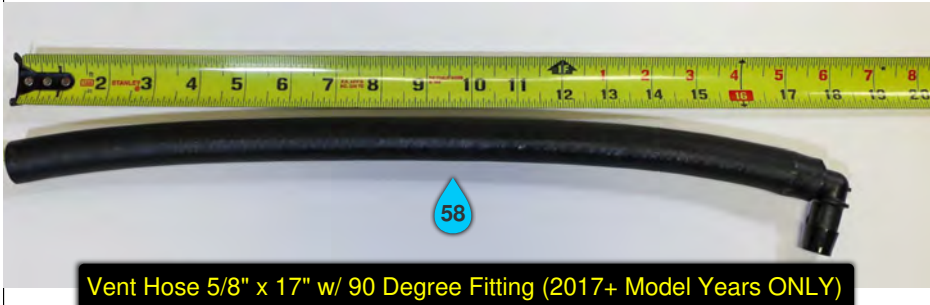
Numbered annotations (1)

57 Route vent hose through here.

Step 82/111

Numbered annotations (1)

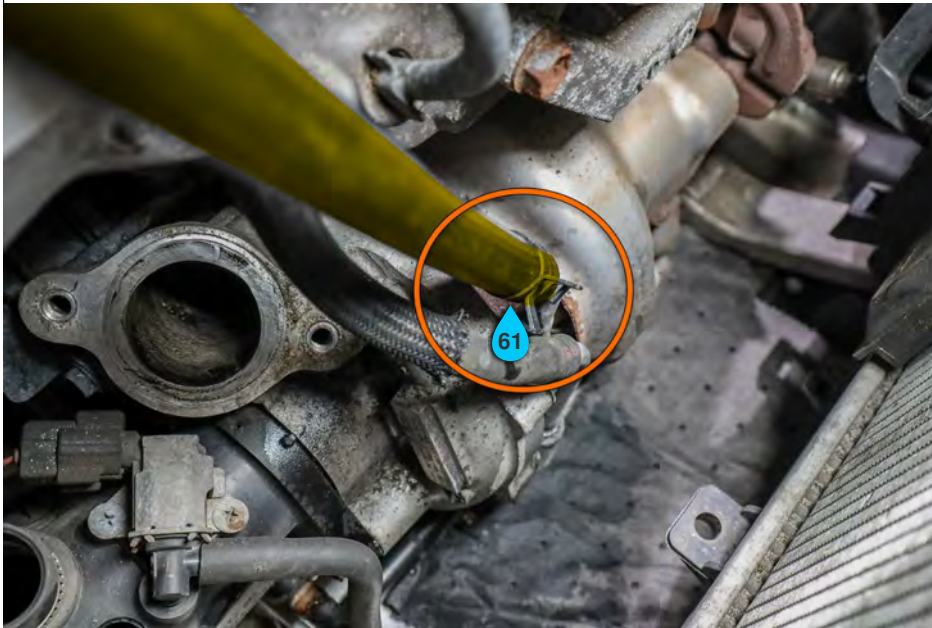
- 58** Locate this hose.

**Step 83/111**

Numbered annotations (2)

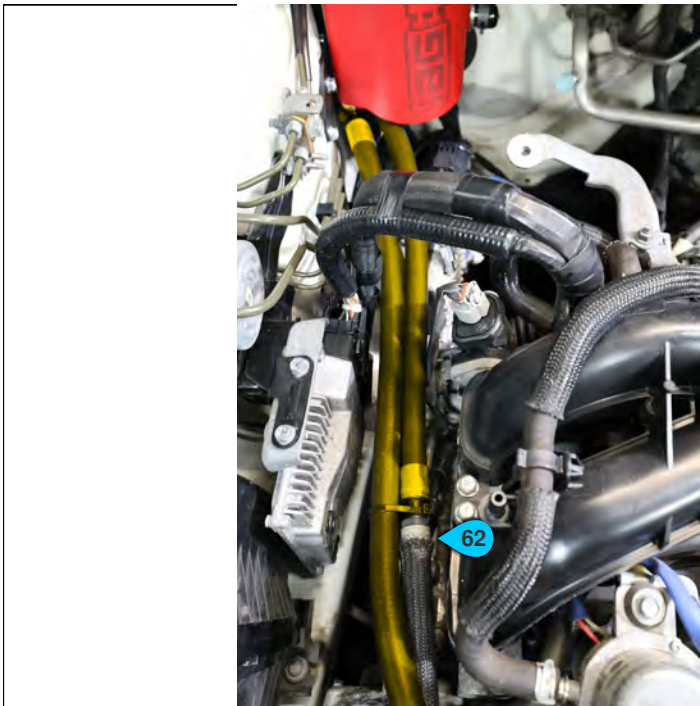
- 59** Insert the 90 degree fitting into the hose in step 84, securing with the supplied clamps. Connect the open end of the hose to the 5/8" port here.
- 60** Ensure the 1/2" vacuum cap is installed here and secured with the supplied clamp on the 2017+ vehicles.



**Step 84/111**

Numbered annotations (1)

- 61 Attach the longer coolant hose here using the supplied clamp.

**Step 85/111**

Numbered annotations (1)

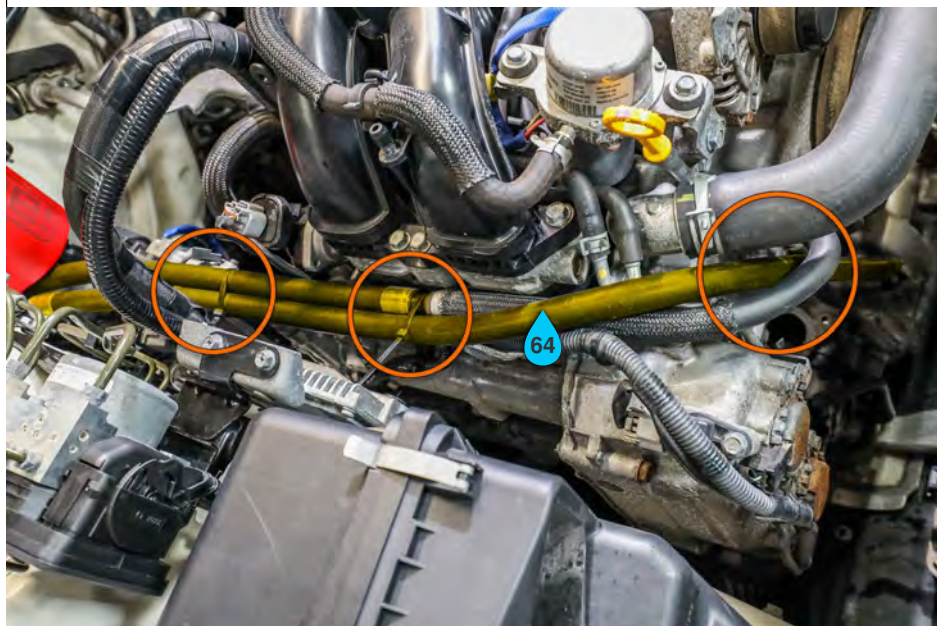
- 62 Attach the shorter coolant line with the union fitting here. Secure with the OEM clamp.



Step 86/111

Numbered annotations (1)

- 63 Secure the coolant lines together with a zip tie.



Step 87/111

Numbered annotations (1)

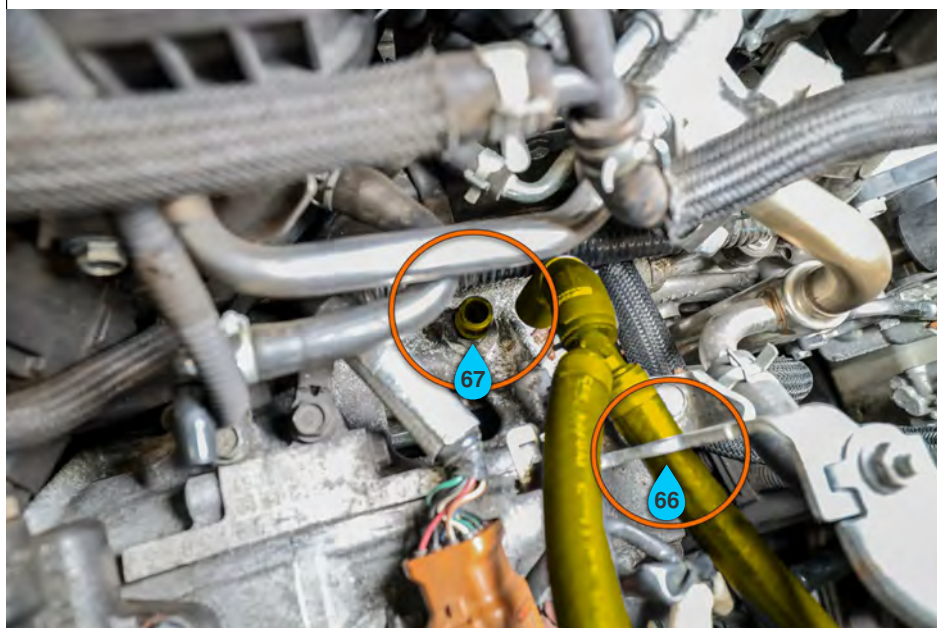
- 64 Use additional zip ties to keep the coolant hoses routed and secure.



Step 88/111

Numbered annotations (1)

- 65 Locate the Y shaped breather hose assembly.

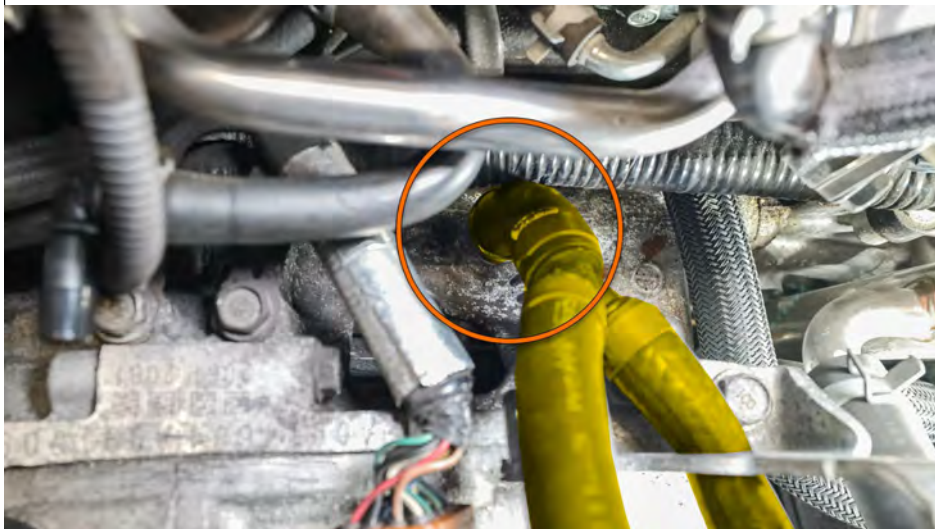


Step 89/111

Numbered annotations (2)

- 66 Pass one hose through the bracket.
- 67 Attach 90 degree hose here using the supplied clamp.

Step 90/111



Step 91/111

Numbered annotations (1)

- 68 Ensure the drain hose is routed through this bracket. Measure and trim to length to attach the drain hose to the bottom of the AOS

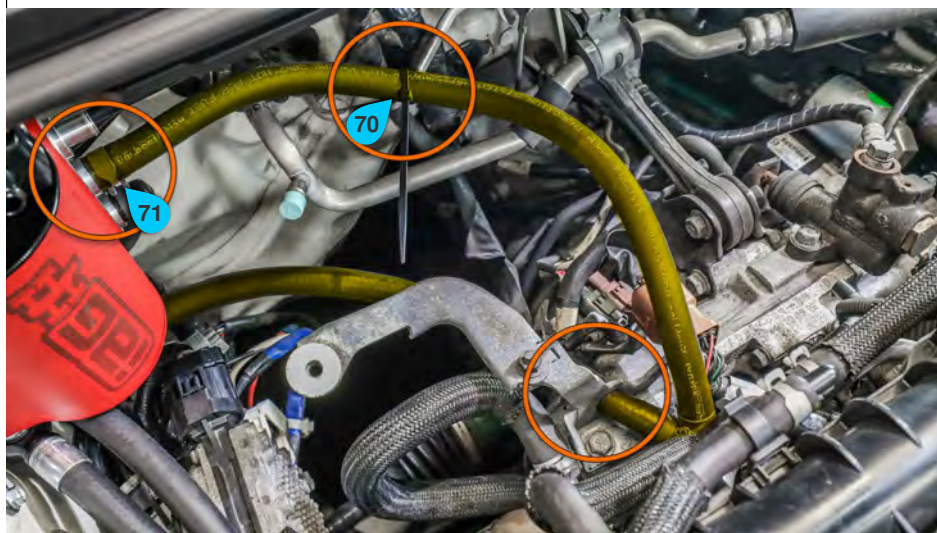




Step 92/111

Numbered annotations (1)

- 69 Attach the drain hose here using the supplied clamp.



Step 93/111

Numbered annotations (2)

- 70 Secure the vent hose assembly here with a zip tie.
- 71 Attach the vent hose to the middle port on the side of the AOS using the supplied clamp.



Step 94/111

Numbered annotations (1)

- 72 Route the 1" breather hose as shown and secure to the AOS with two zip ties.



Step 95/111

Numbered annotations (1)

- 73 Route the breather hose under the vehicle, along the transmission tunnel. Thread a zip tie through here.

Step 96/111

Numbered annotations (1)

- 74 Pass the end of the breather hose through the zip tie and secure to the bottom of the vehicle.

**Step 97/111**

Numbered annotations (1)

- 75 Reinstall the intercooler and bracket.





Step 98/111

Numbered annotations (1)

76 Reinstall this bolt.



Step 99/111

Numbered annotations (1)

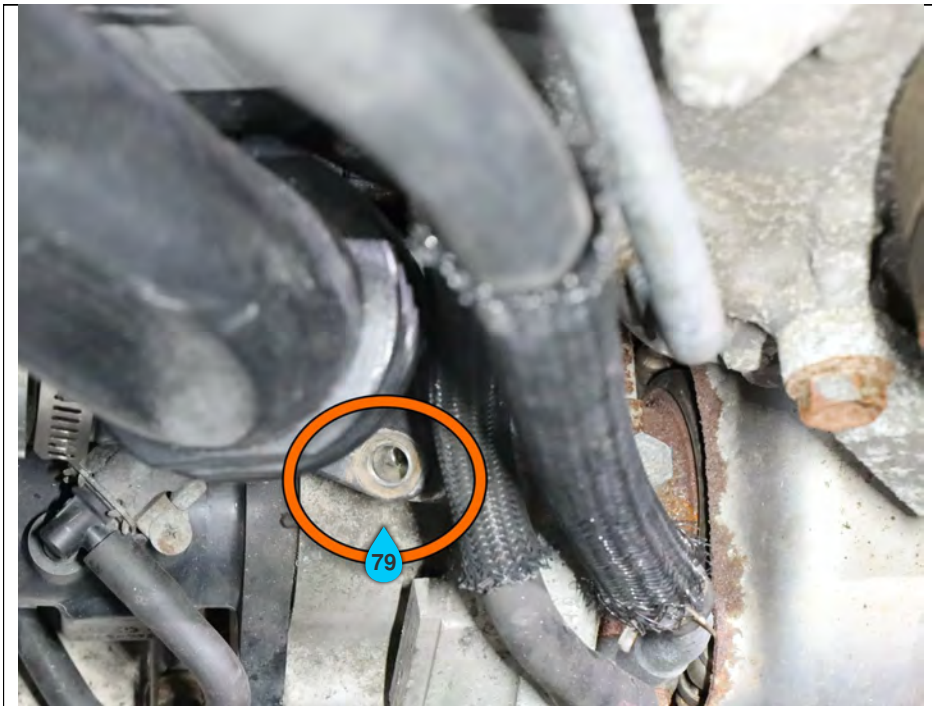
77 Reinstall the intercooler charge pipe.



Step 100/111

Numbered annotations (1)

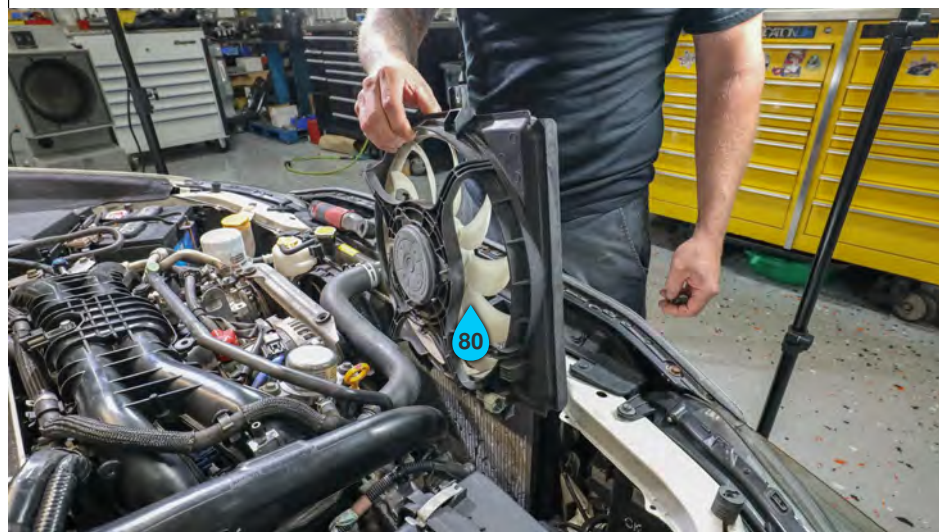
- 78 Attach the charge pipe to the intercooler and tighten this clamp.



Step 101/111

Numbered annotations (1)

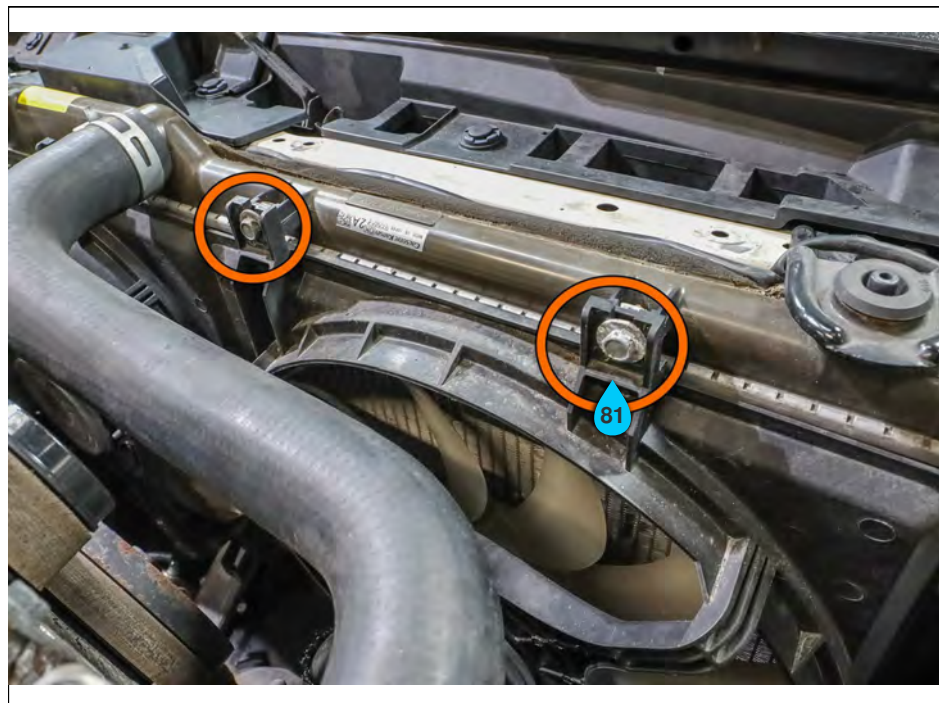
- 79 Reinstall both bolts for the charge pipe to the turbocharger.



Step 102/111

Numbered annotations (1)

- 80 Reinstal the passenger side radiator fan.



Step 103/111

Numbered annotations (1)

- 81 Secure the fan with the OEM bolts.

Step 104/111

Numbered annotations (1)

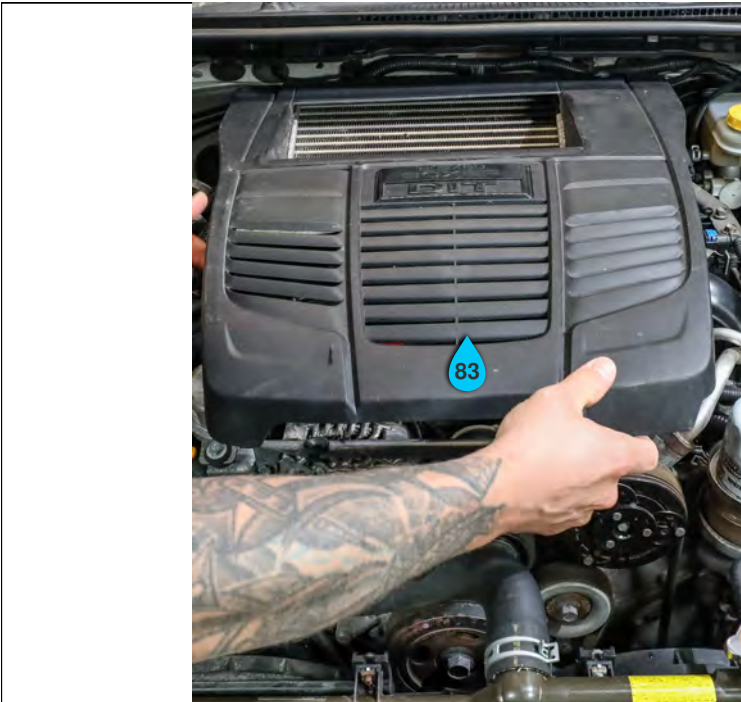
- 82 Plug the passenger fan electrical connector back in.



Step 105/111

Numbered annotations (1)

- 83 Reinstall the engine cover.





Step 106/111

Numbered annotations (1)

- 84 Reinstall the intake snorkel.



Step 107/111

Numbered annotations (1)

- 85 Secure the snorkel with the OEM hardware.

Step 108/111**Step 109/111**

Numbered annotations (1)

- 86 Reconnect the negative battery cable.



**Step 110/111****Step 111/111**

Numbered annotations (1)

- 87 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.