

## ***IAG AIR / OIL SEPARATOR (AOS) FOR 15-16 WRX***



Step 1/115

### **IAG-ENG-7182 IAG Air / Oil Separator (AOS) For 2015-2016 WRX**

**Part#** IAG-ENG-7182

**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 2/115

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 AOS PCV Hose 3/8" x 24"
- 6 Zip Ties
- 7 Block Breather Hose 1/2" x 44" x 90 degree x 3" (For 2015-2016 Model Years ONLY)
- 8 Vent Hose - 5/8" x 17" w/ 90 Degree Fitting (2017+ Model Years ONLY)
- 9 AOS Coolant Hose 2 - 15.5" with union fitting (Preinstalled to AOS)
- 10 AOS Breather Hose Assembly 5/8" x Y Fitting to 1/2" x 1/2" Hoses
- 11 AOS Bracket

## Step 3/115

Numbered annotations (8)

- 1 Coolant Clamp
- 2 AOS Block Fitting - 3/8" NPT to 5/8" Barb
- 3 3/8" Band Clamp x 2
- 4 3/8" 90 degree elbow
- 5 1/2" Band Clamp x 15
- 6 5/8" Band Clamp x 8
- 7 1/2" Vacuum Cap
- 8 5/8" Vacuum Cap

## IMPORTANT UPDATE!

**AOS UNITS PURCHASED AFTER  
12/23/2020 HAVE AN UPDATED  
BREATHER ASSEMBLY AND PCV  
HOSE**

**PLEASE FOLLOW THE  
INSTRUCTIONS IN THE NEXT 3  
STEPS FOR PROPER  
INSTALLATION**

Step 4/115

Step 5/115

Numbered annotations (7)

- 1 Updated Street Breather Assembly
- 2 Connections to turbocharger inlet
- 3 Connection to PCV breather hose from intake manifold
- 4 9" Section of Hose
- 5 13" Section of Hose
- 6 Connects to Port 3 on Street Breather
- 7 Connects to Intake Manifold Nipple

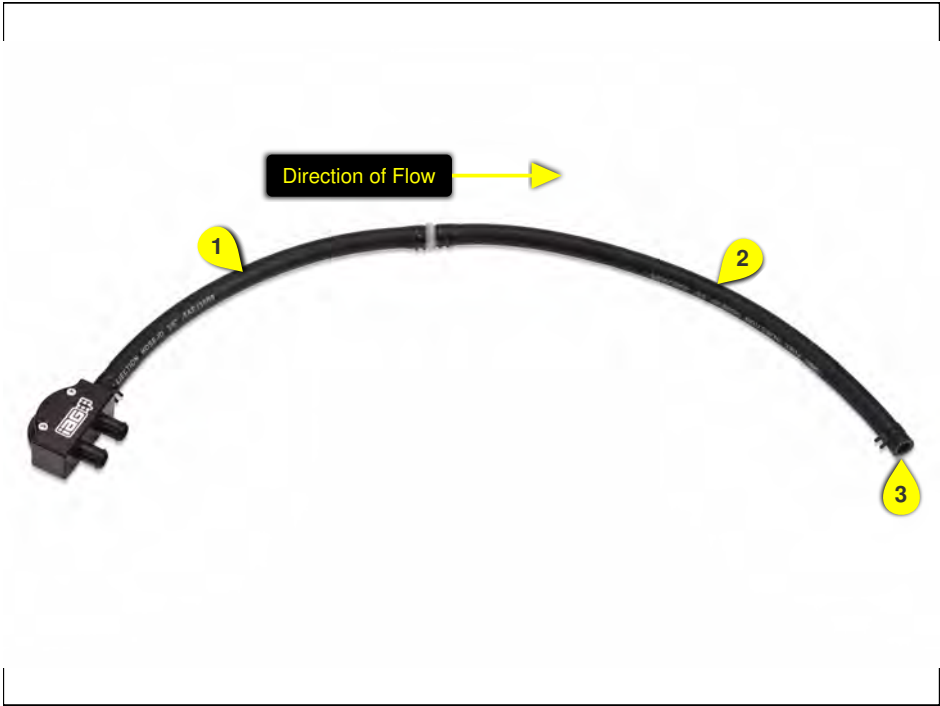




Step 6/115

Numbered annotations (1)

- 1 Ensure that this arrow on the one-way valve is pointed toward the intake manifold. The shorter piece of hose is on the AOS side of the check valve. The longer piece of hose is on the intake manifold side.

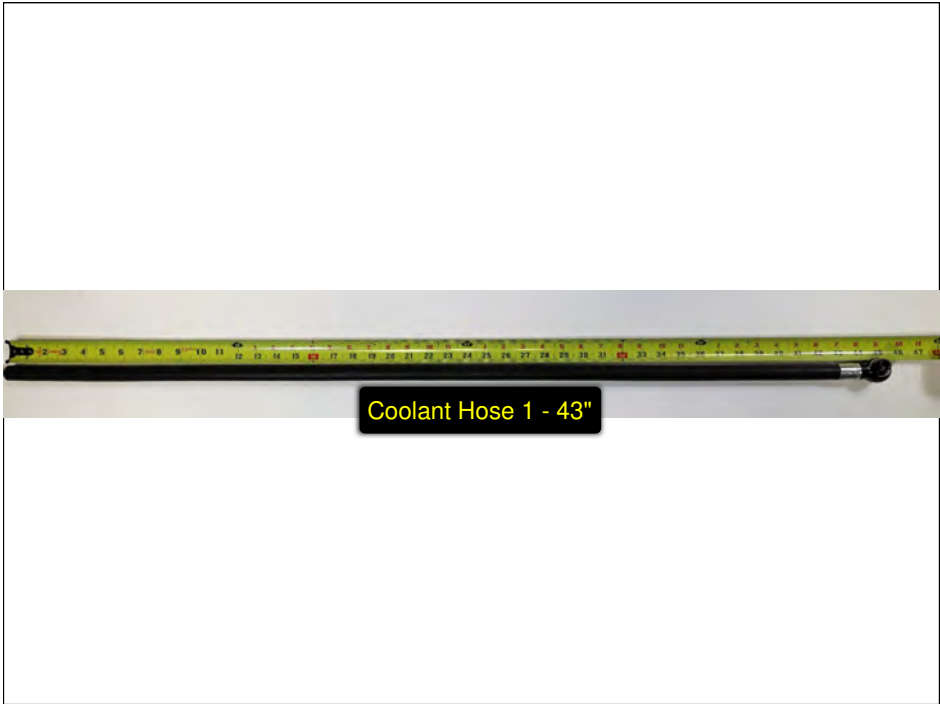


Step 7/115

Numbered annotations (3)

- 1 9" Section of Hose
- 2 13" Section of Hose
- 3 Connect to Intake Manifold Nipple

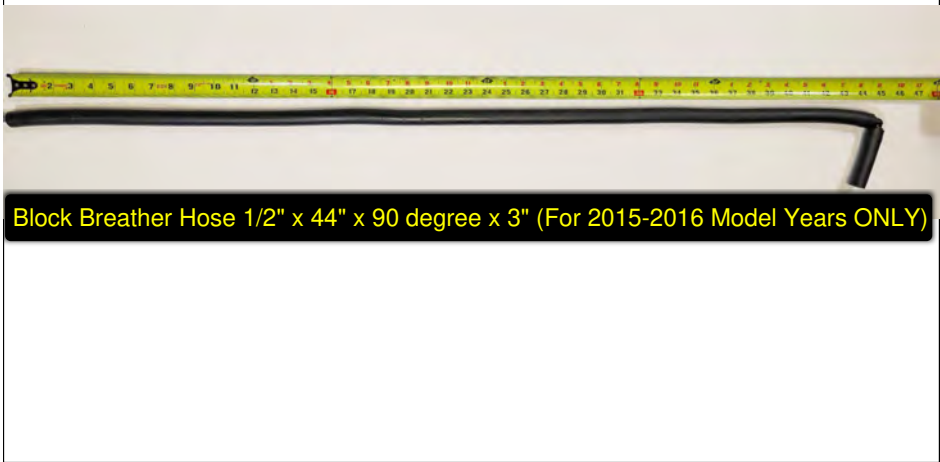
Step 8/115



Step 9/115



Step 10/115



Block Breather Hose 1/2" x 44" x 90 degree x 3" (For 2015-2016 Model Years ONLY)

Step 11/115



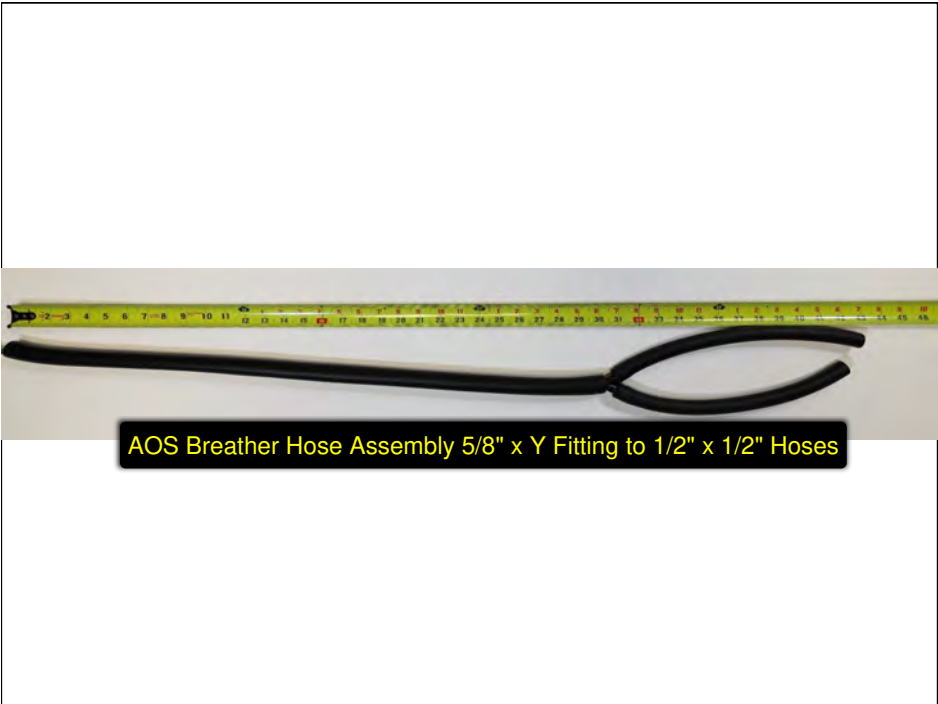
Vent Hose 5/8" x 17" w/ 90 Degree Fitting (2017+ Model Years ONLY)

Step 12/115



AOS Coolant Hose 2 - 15.5" with union fitting

Step 13/115



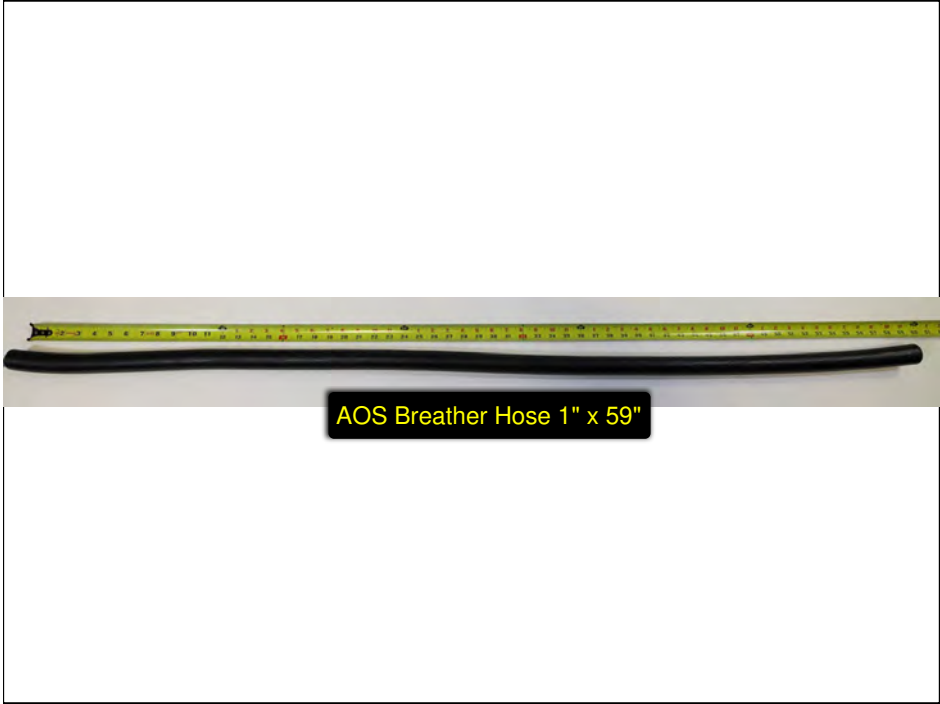
AOS Breather Hose Assembly 5/8" x Y Fitting to 1/2" x 1/2" Hoses



Step 14/115



Step 15/115





**Step 16/115**

Numbered annotations (8)



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

**Step 17/115**

Numbered annotations (1)



- 1 Disconnect the negative battery cable.



### Step 18/115

Numbered annotations (1)

- 2 Remove the clips securing the engine cover.



### Step 19/115

Numbered annotations (1)

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

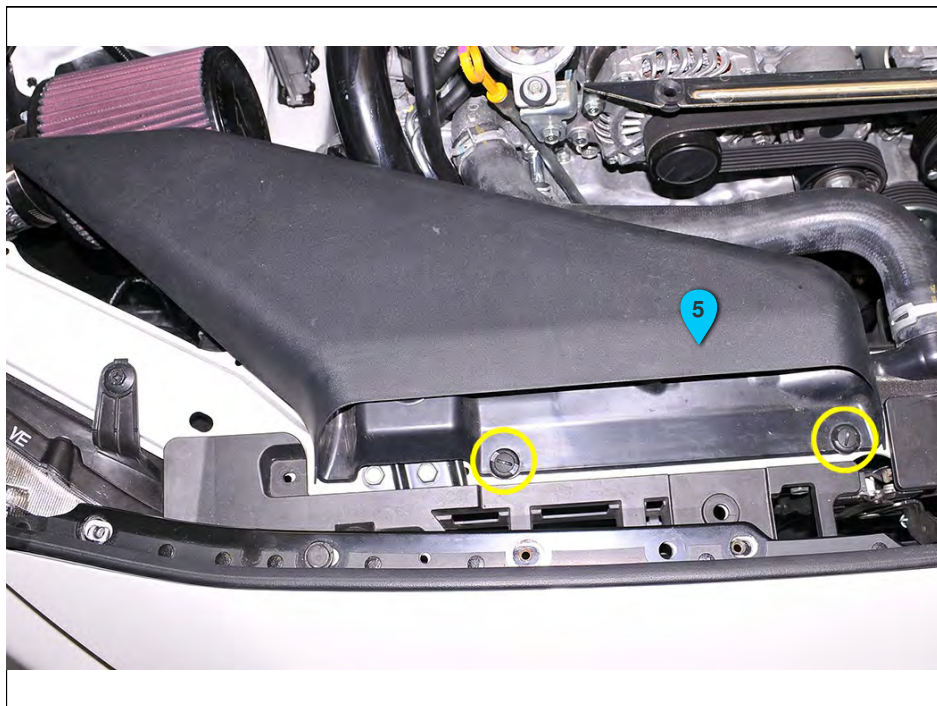




## Step 20/115

Numbered annotations (1)

- 4 Remove engine cover.



## Step 21/115

Numbered annotations (1)

- 5 Remove hardware securing intake snorkel.



## Step 22/115

Numbered annotations (1)

- 6 Remove intake snorkel.



## Step 23/115

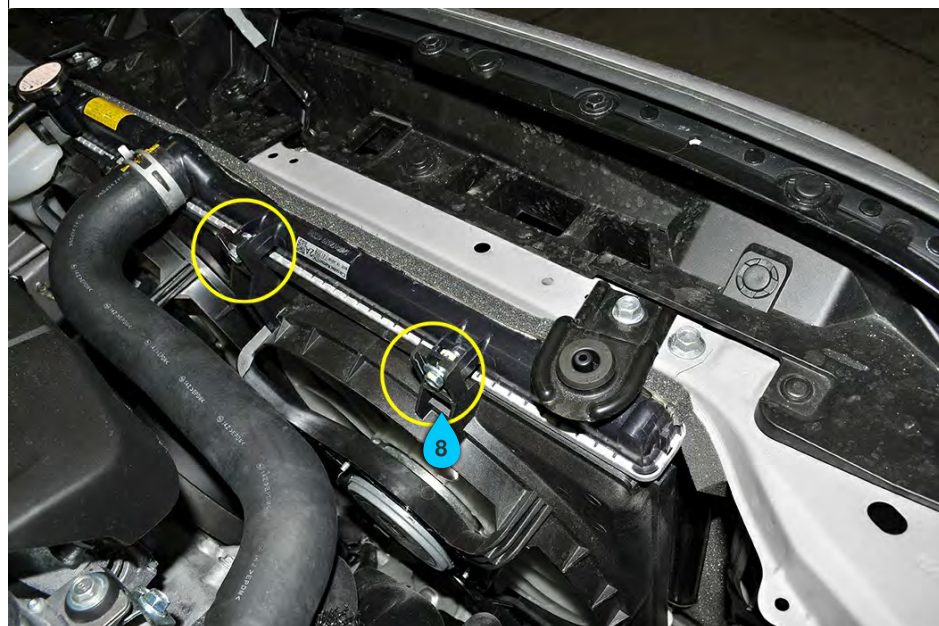
Numbered annotations (1)

- 7 Disconnect passenger side radiator fan wiring harness.





### Step 24/115



### Step 25/115

Numbered annotations (1)

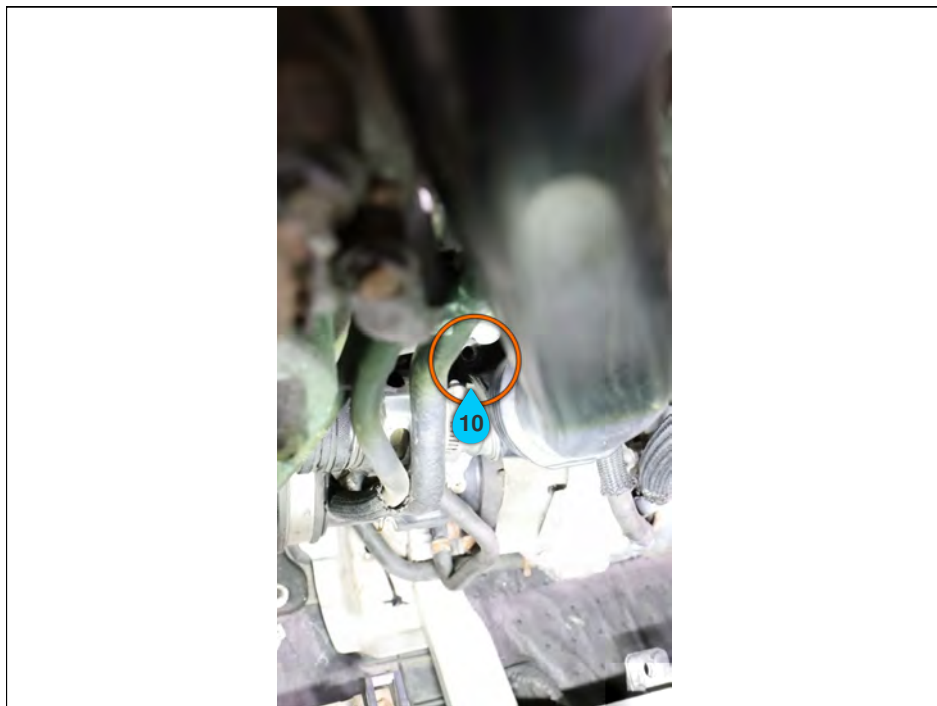
- 8 Remove hardware securing passenger side radiator fan.



## Step 26/115

Numbered annotations (1)

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



## Step 27/115

Numbered annotations (1)

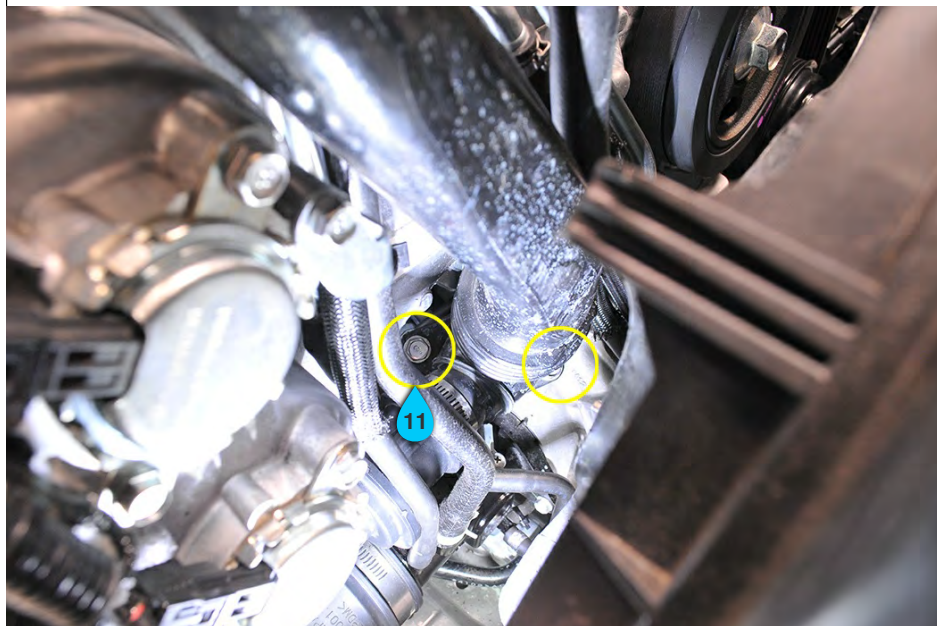
- 10 Loosen this clamp.



## Step 28/115

Numbered annotations (1)

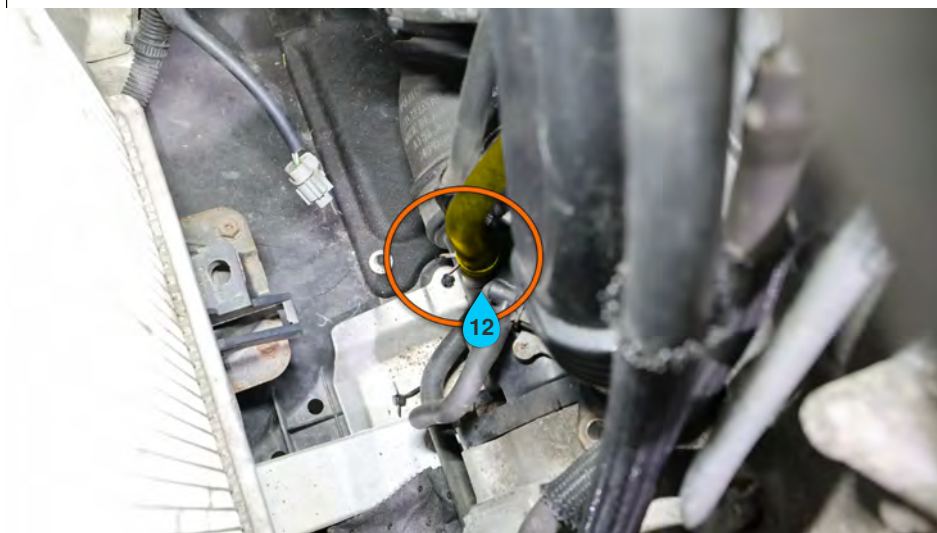
- 11 Remove hardware securing charge pipe.



## Step 29/115

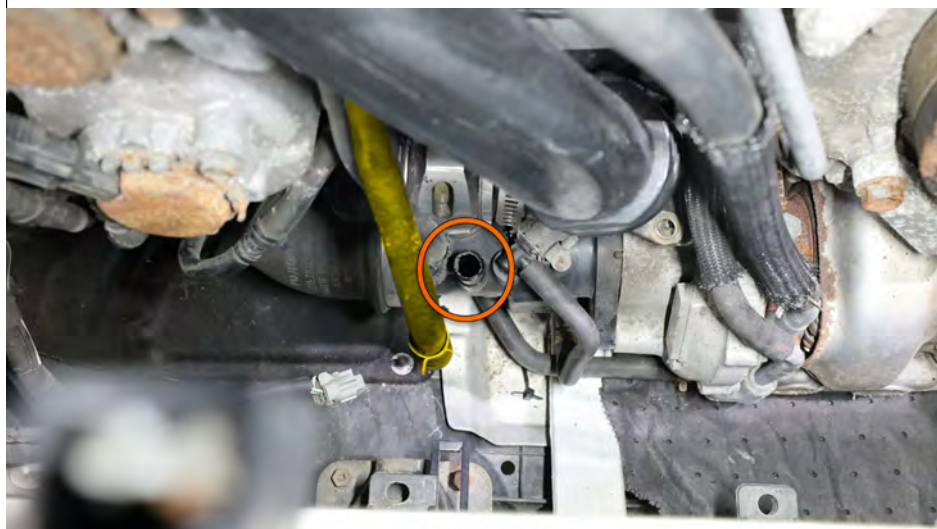
Numbered annotations (1)

- 12 Remove this hose.





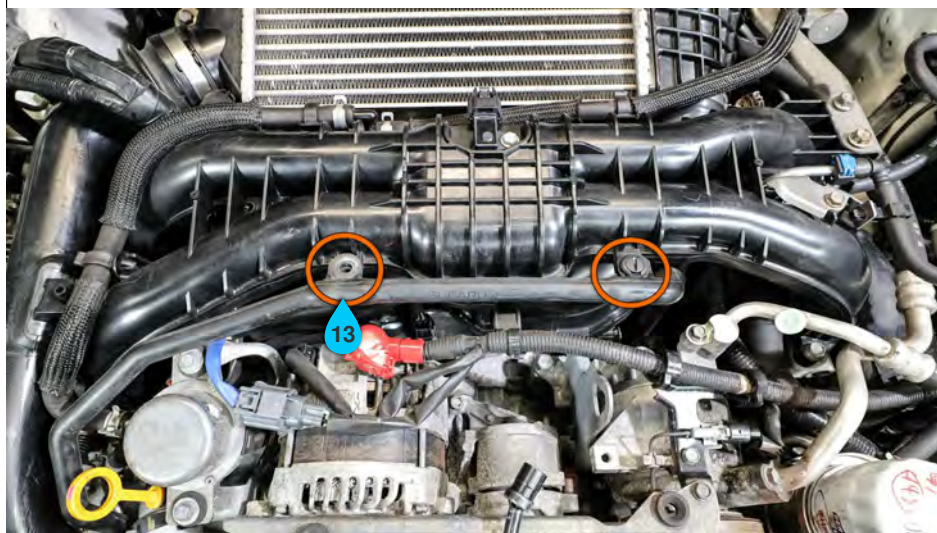
### Step 30/115



### Step 31/115

Numbered annotations (1)

- 13 Remove the two clips holding the PCV tube.



**Step 32/115**

Numbered annotations (1)

- 14 Loosen the clamp and disconnect the PCV hard tube.

**Step 33/115**

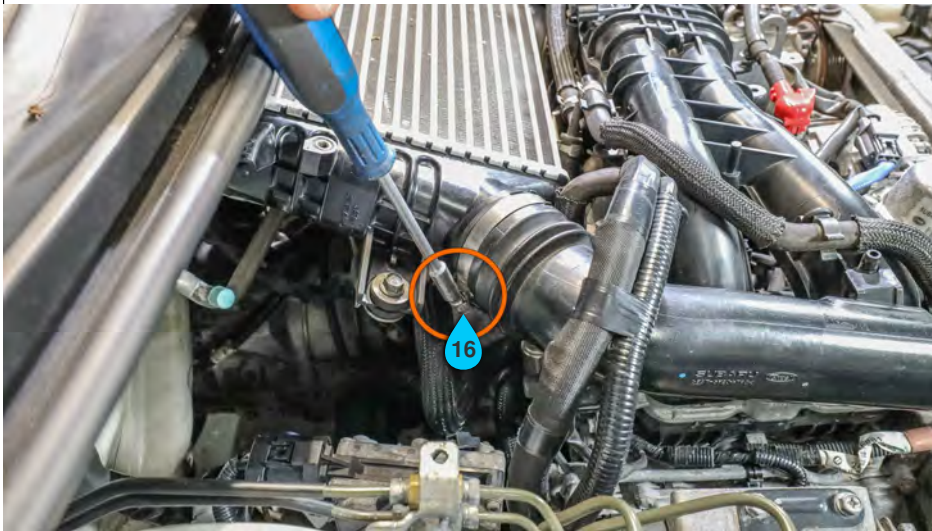




### Step 34/115

Numbered annotations (1)

- 15 Remove the PCV hard tube.



### Step 35/115

Numbered annotations (1)

- 16 Loosen this clamp.

### Step 36/115

Numbered annotations (1)

- 17 Remove the charge pipe.



### Step 37/115

Numbered annotations (1)


- 18 Ensure this part stays in the charge pipe.

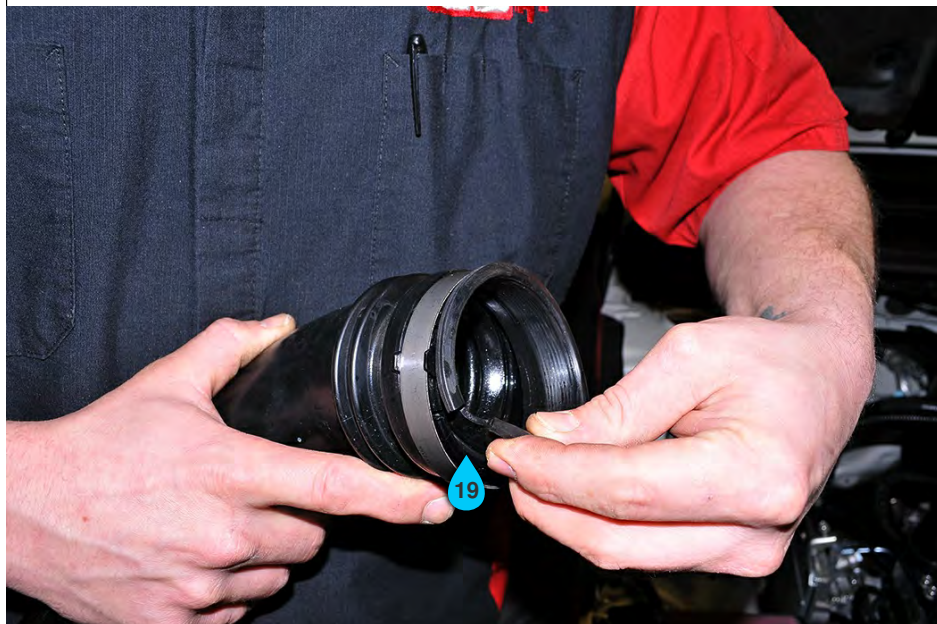




### Step 38/115


Numbered annotations (1)

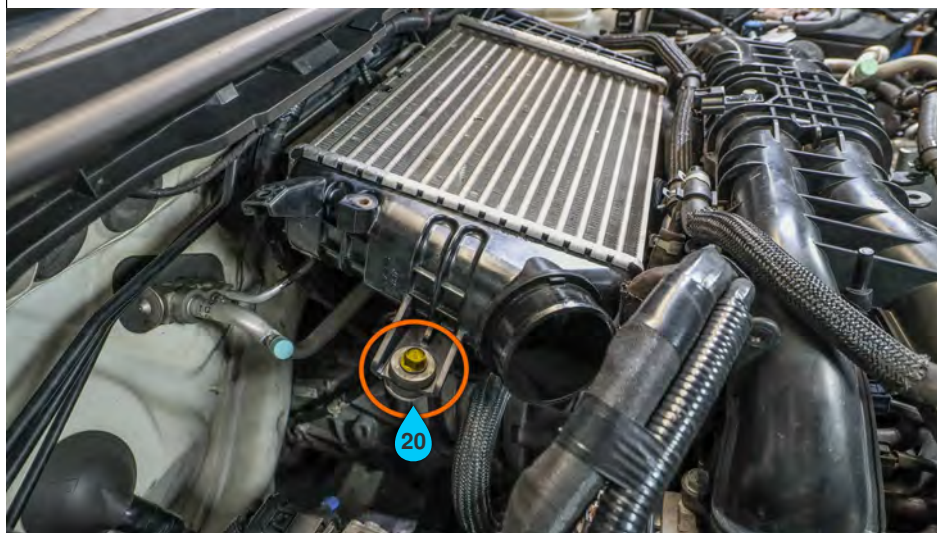
 19 The spacer fits here.



### Step 39/115

Numbered annotations (1)

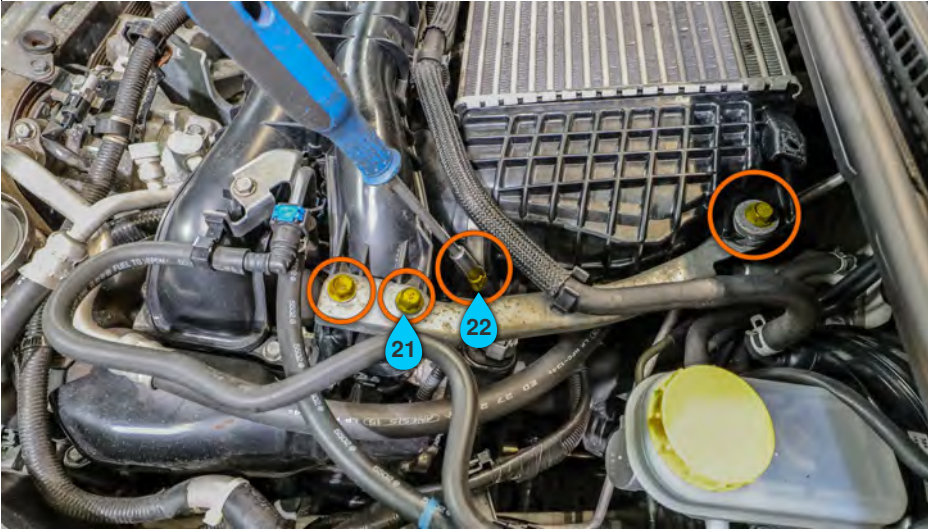
 20 Remove this bolt.



**Step 40/115**

Numbered annotations (2)

- 21 Remove the 3 bolts holding the intercooler and bracket.
- 22 Loosen this hose clamp.

**Step 41/115**

Numbered annotations (1)

- 23 Remove the intercooler bracket.



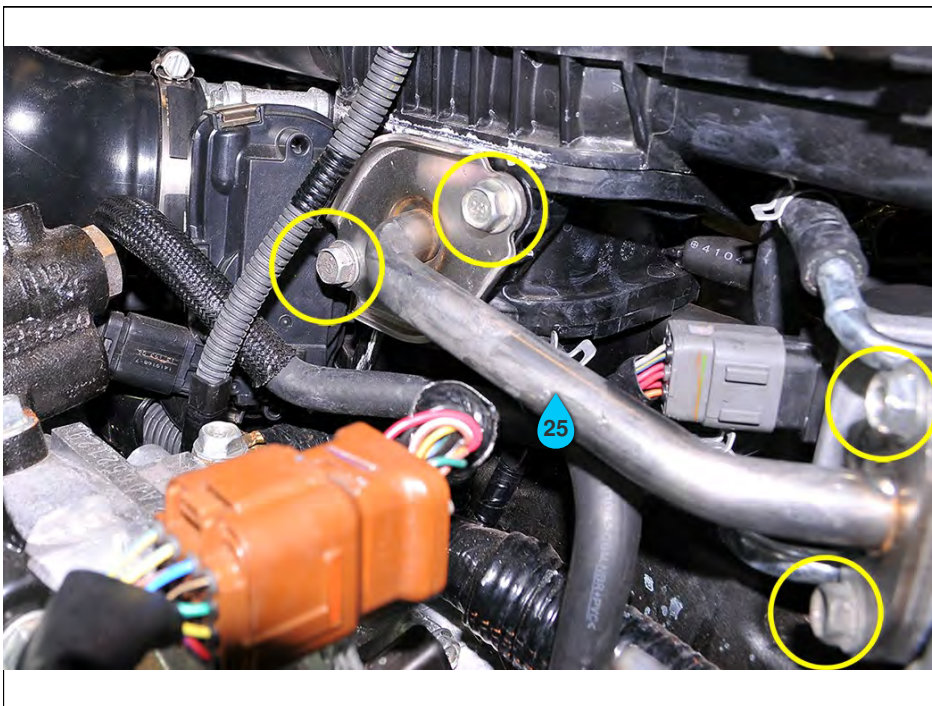




## Step 42/115

Numbered annotations (1)

- 24 Remove the intercooler.



## Step 43/115

Numbered annotations (1)

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



### Step 44/115

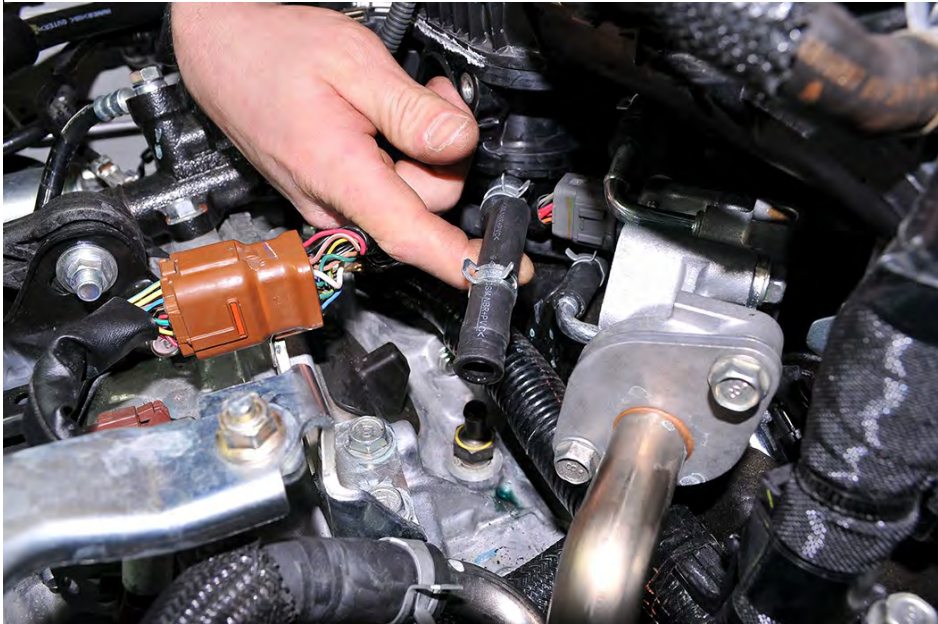


### Step 45/115

Numbered annotations (1)

- 26 Loosen this clamp and disconnect this hose.





Step 46/115



Step 47/115

Numbered annotations (1)

- 27 Remove this fitting.




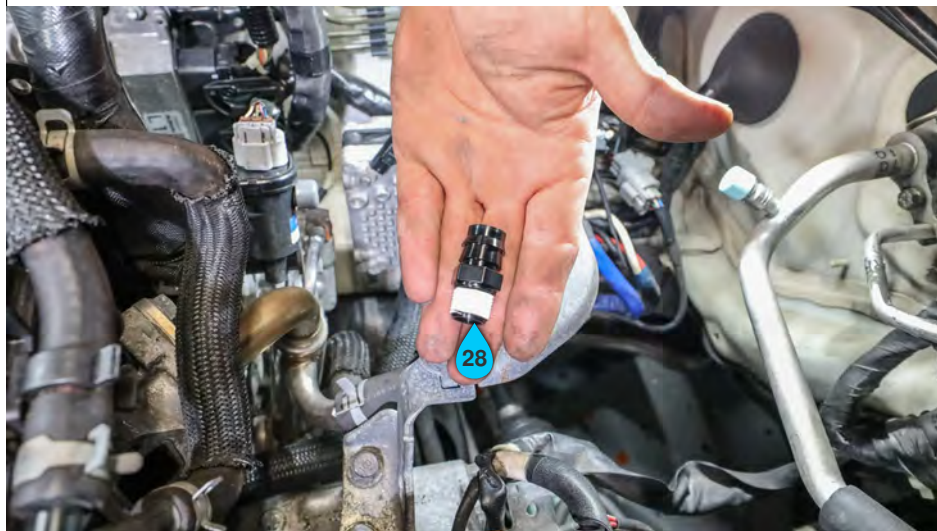
### Step 48/115



### Step 49/115

Numbered annotations (1)

-  28 Locate the supplied block breather fitting.



**Step 50/115**

Numbered annotations (1)

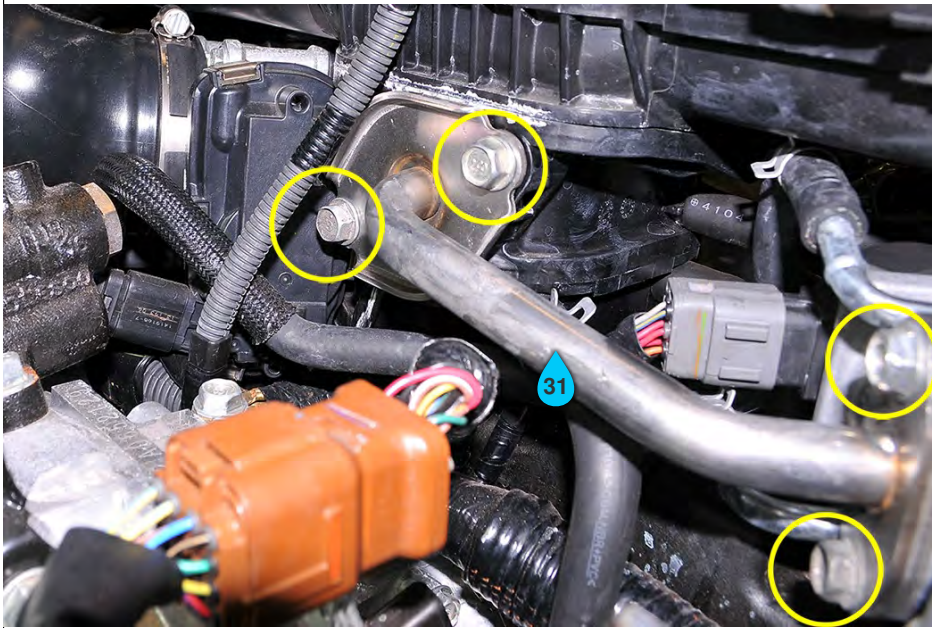
- 29 Thread the block fitting into the block.

**Step 51/115**

Numbered annotations (1)

- 30 Torque the fitting to 15 ft/lbs.

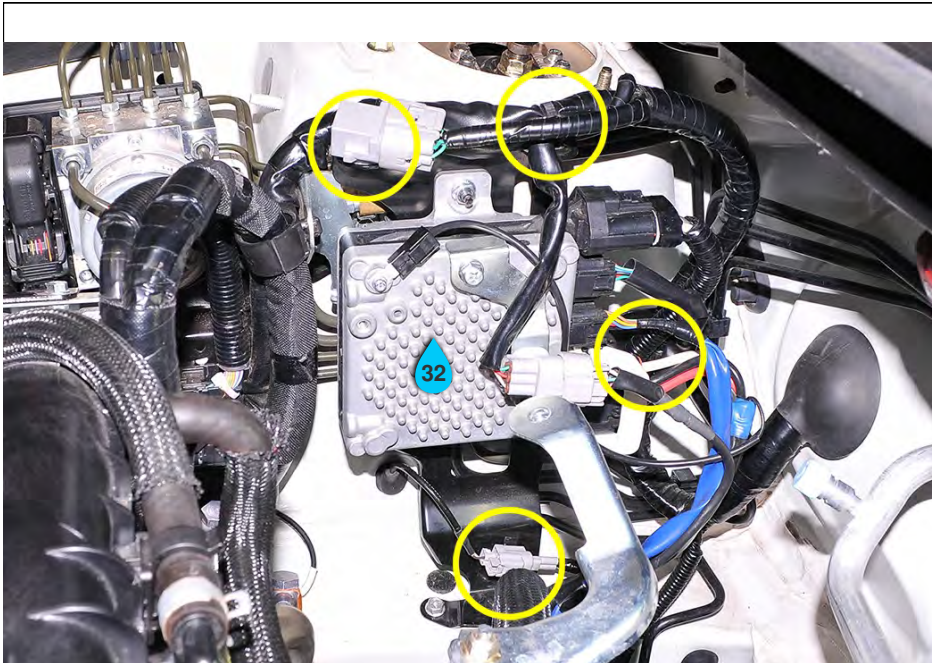




## Step 52/115

Numbered annotations (1)

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



## Step 53/115

Numbered annotations (1)

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

**Step 54/115**

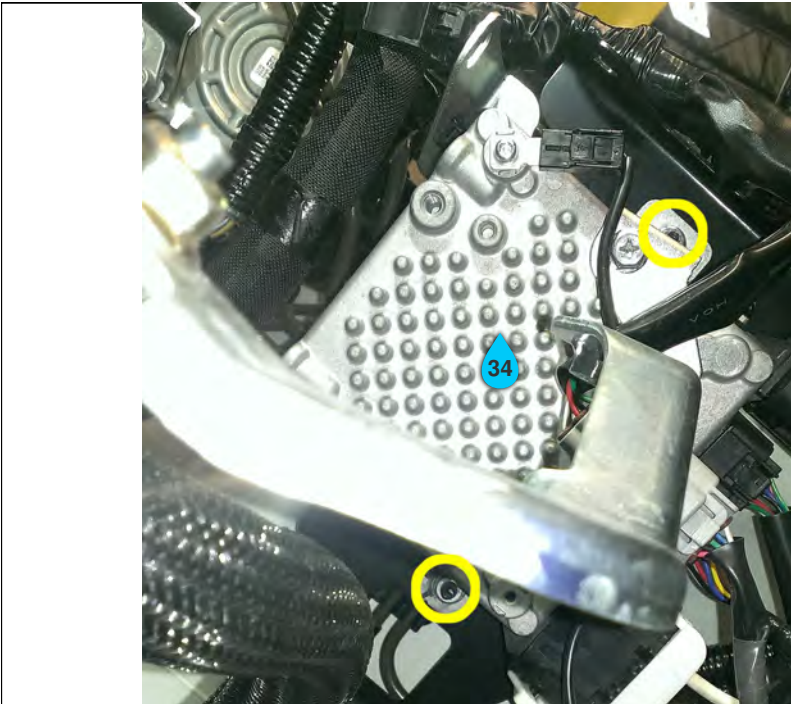
Numbered annotations (1)

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

**Step 55/115**

Numbered annotations (1)

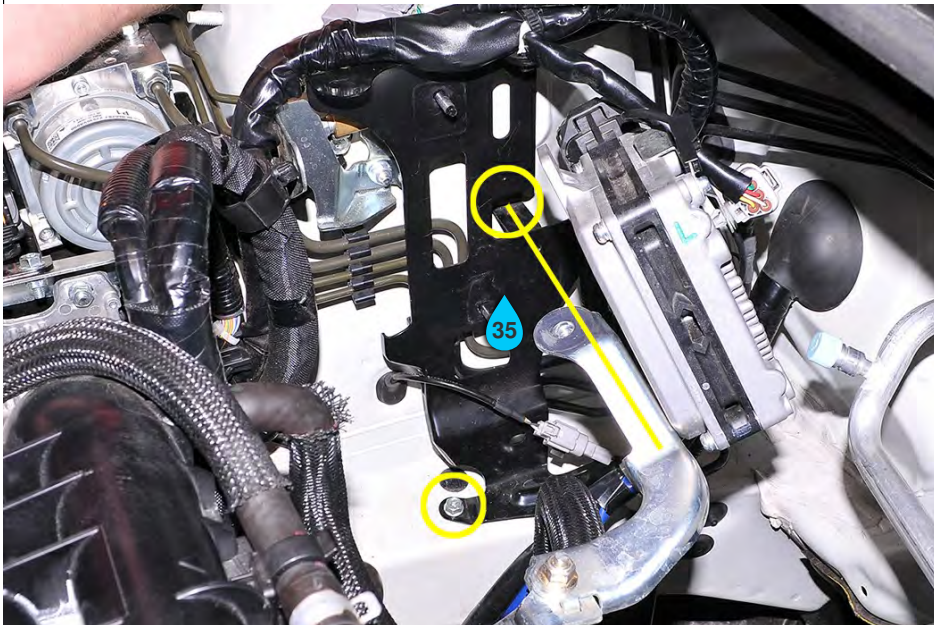
- 34** Remove the two 10mm nuts which hold the ECU to the bracket. Pull the ecu free from the bracket and place it aside in the engine bay.







### Step 56/115

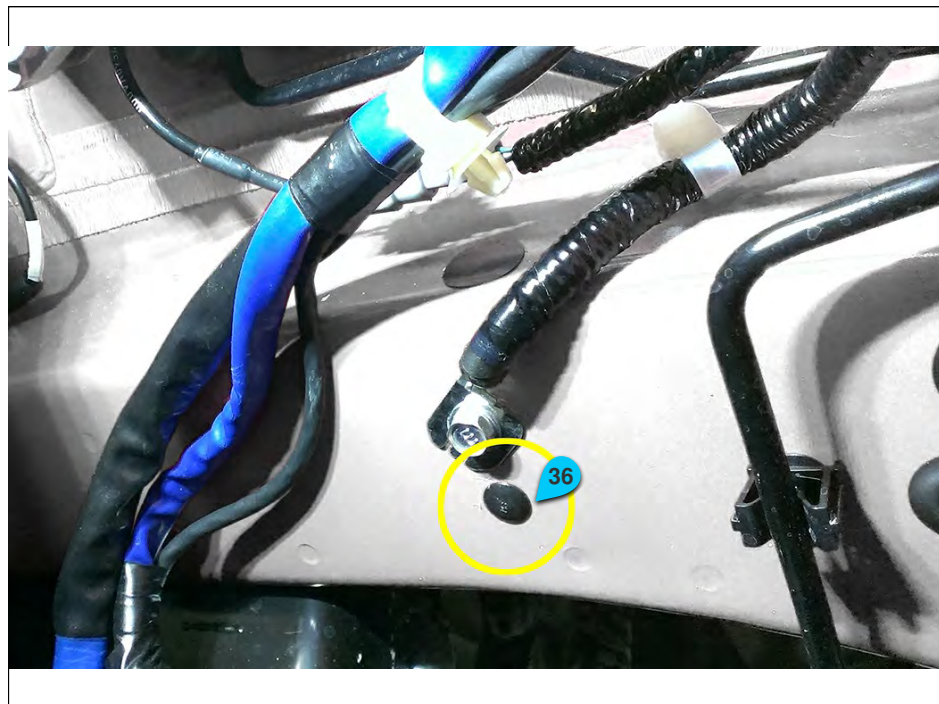


### Step 57/115

Numbered annotations (1)

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

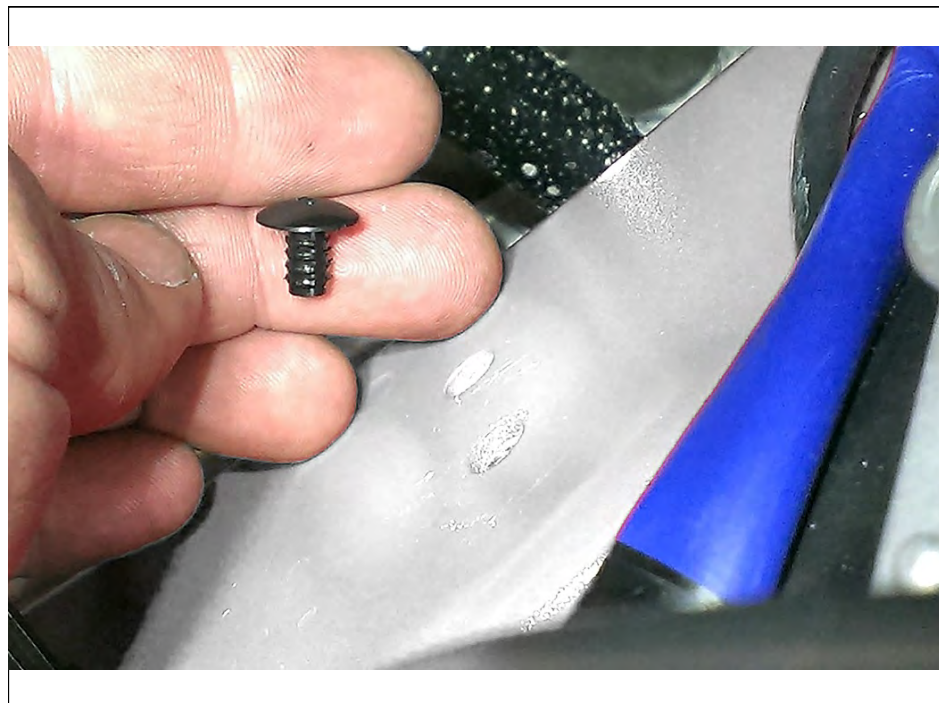




### Step 58/115

Numbered annotations (1)

- 36 Remove this plug.

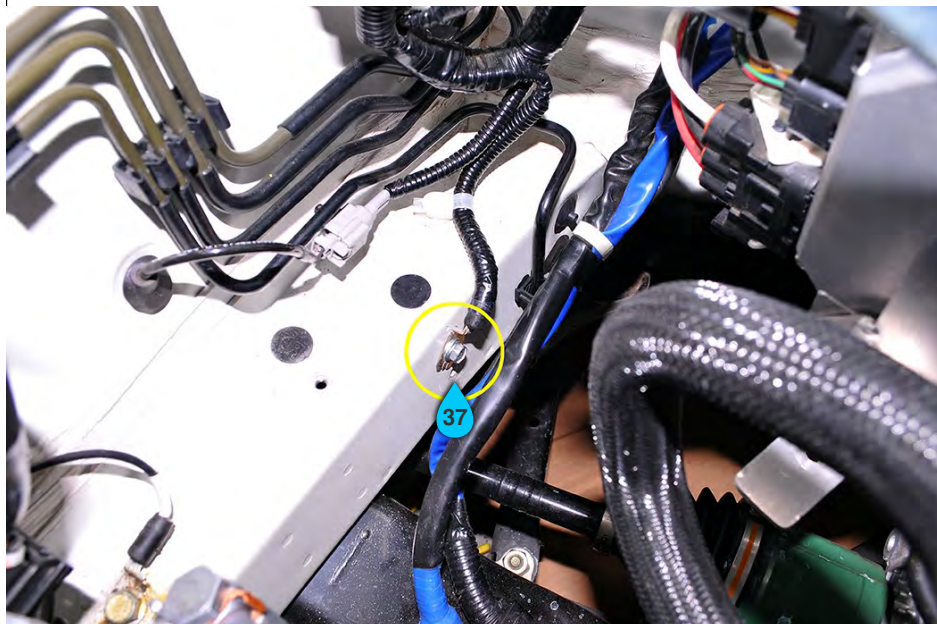


### Step 59/115

**Step 60/115**

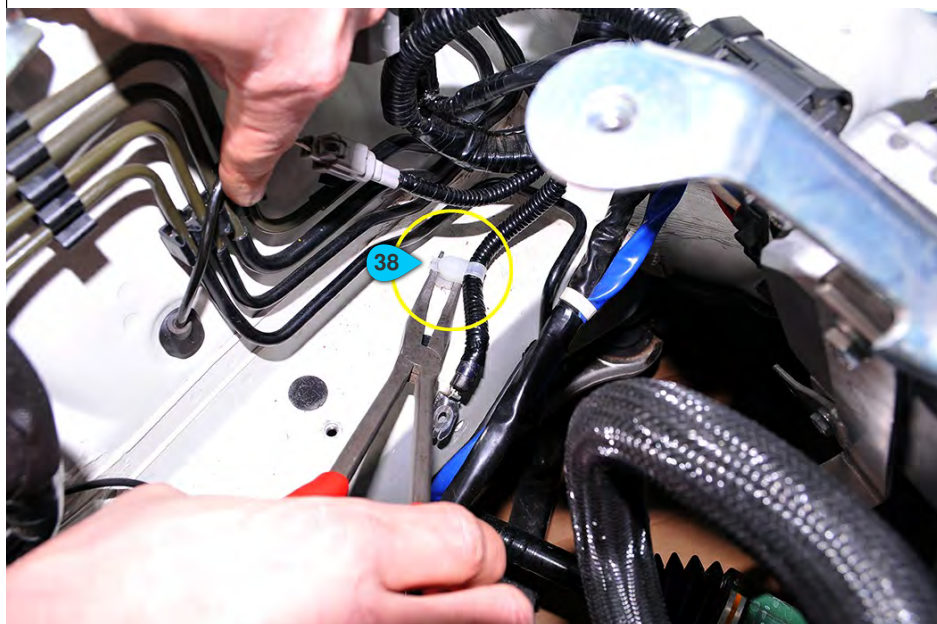
Numbered annotations (1)

- 37 Remove this 10mm bolt.

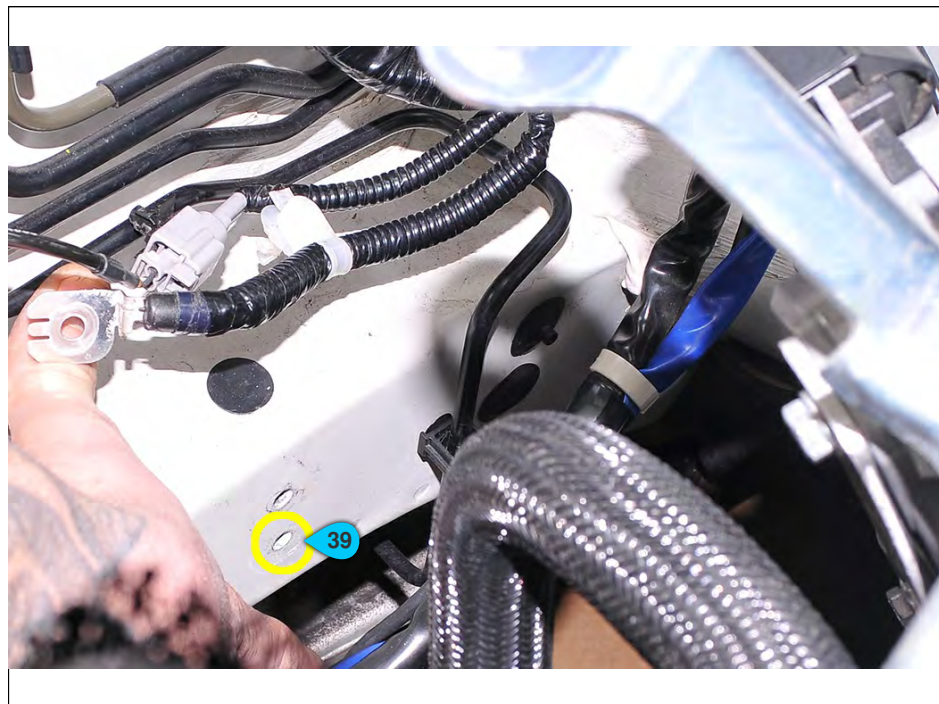
**Step 61/115**

Numbered annotations (1)

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



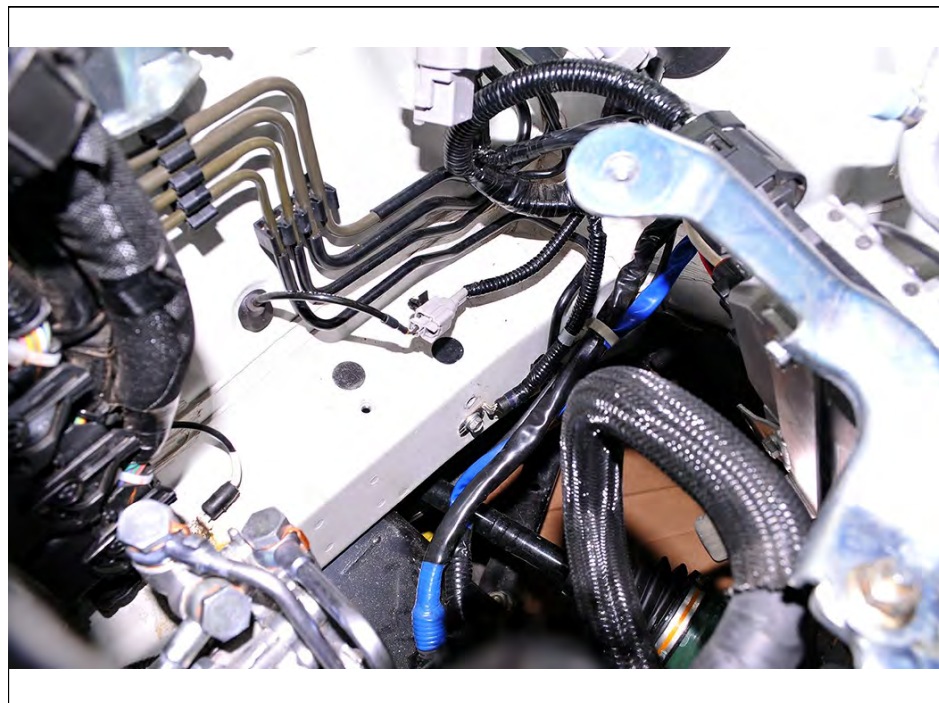




### Step 62/115

Numbered annotations (1)

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



### Step 63/115

**Step 64/115**

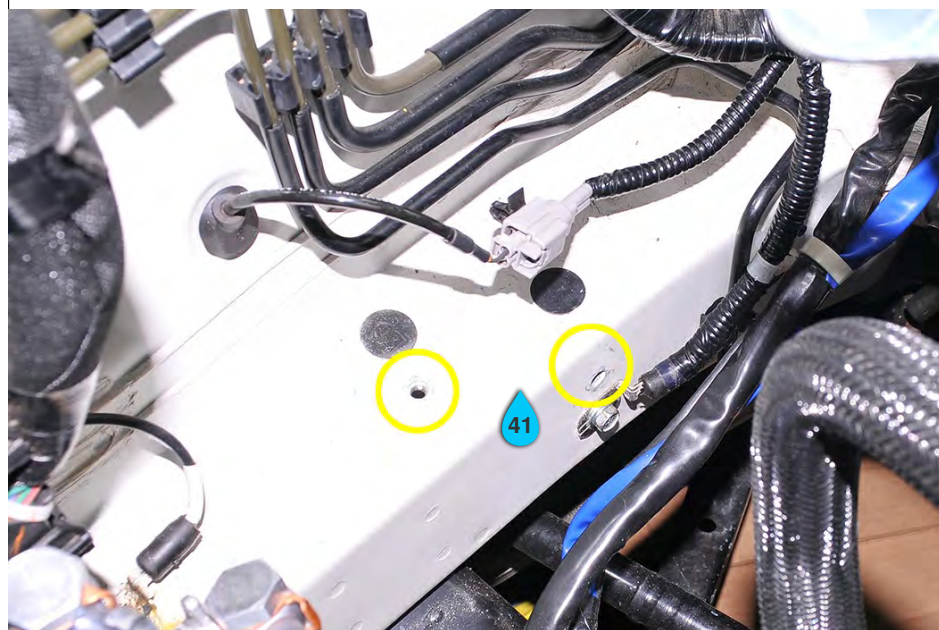
Numbered annotations (1)

- 40 Locate the ECU relocation bracket.

**Step 65/115**

Numbered annotations (1)

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





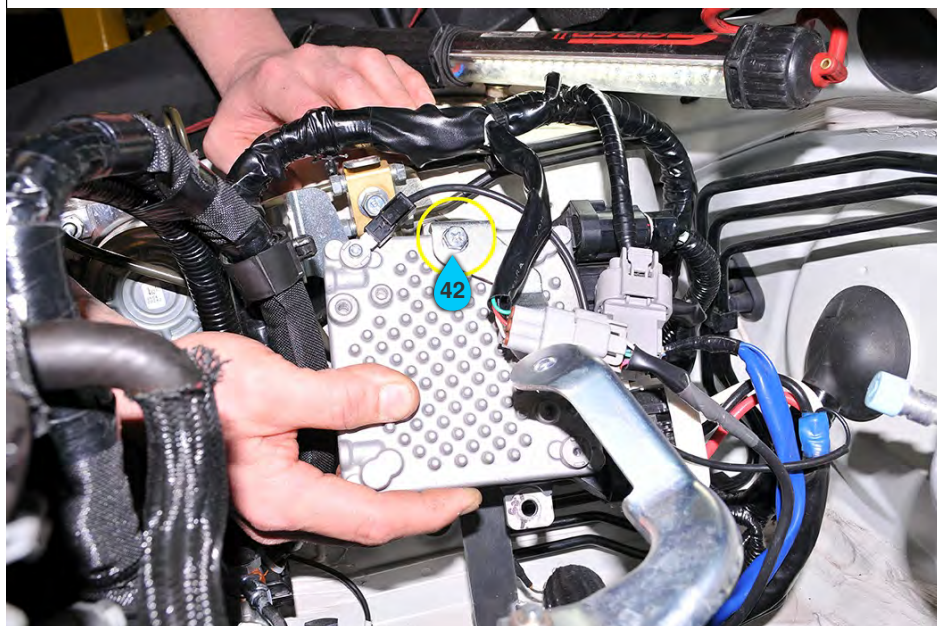
## Step 66/115



## Step 67/115

Numbered annotations (1)

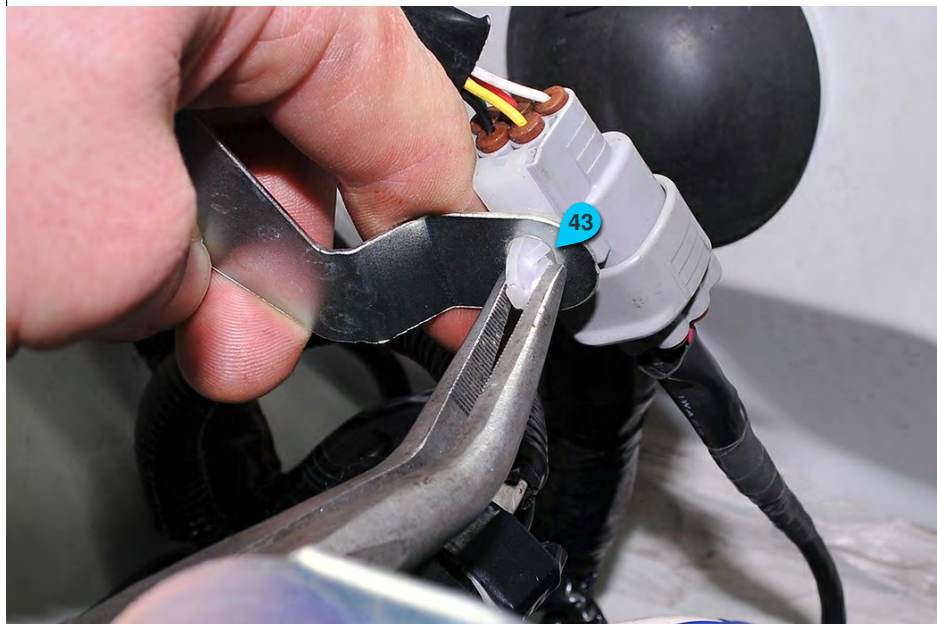
- 42 Remove the 10mm bolt securing the wiring harness to the ecu,



## Step 68/115

Numbered annotations (1)

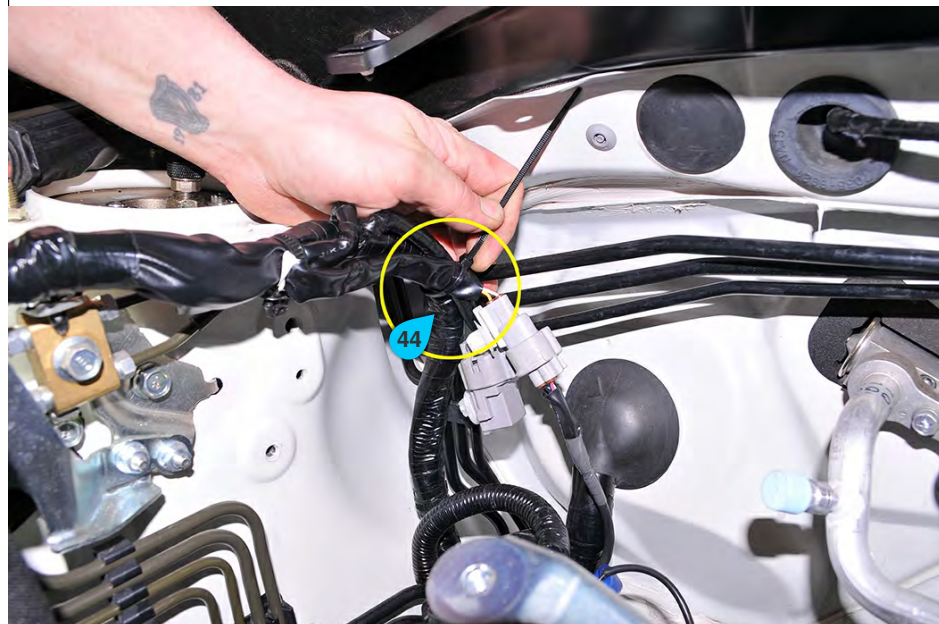
- 43 Using pliers, remove the harness retaining clip from the bracket.



## Step 69/115







## Step 70/115

Numbered annotations (1)

- 44 Zip tie the harness here.



## Step 71/115

Numbered annotations (1)

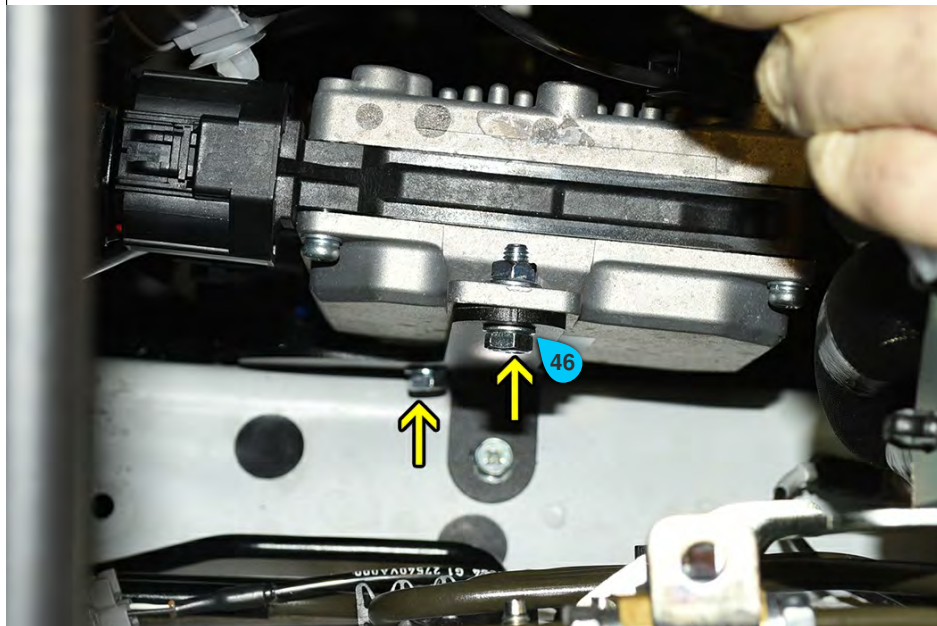
- 45 Locate the supplied 6mmx15mm bolts, 6mm flat washers, and OEM ecu bracket nuts.



**Step 72/115**

Numbered annotations (1)

- 46 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 73/115**

Numbered annotations (1)

- 47 Locate the supplied bracket and hardware. Install the bracket as shown. Tighten to 7 Ft/lbs.





### Step 74/115

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 75/115

Numbered annotations (1)

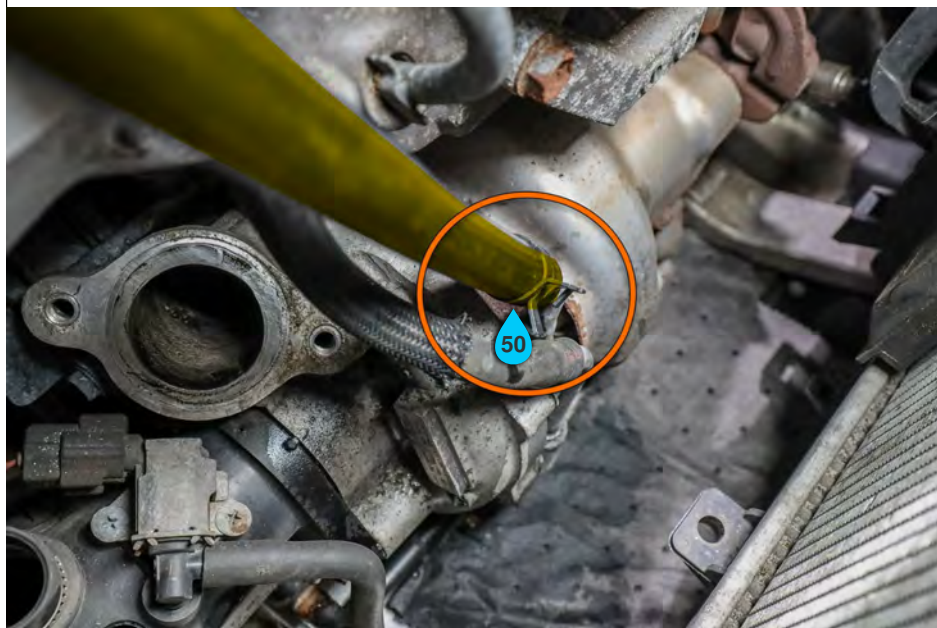
- 48 Install the supplied 5/8" vacuum cap on this port and secure with the supplied clamp.



**Step 76/115**

Numbered annotations (1)

- 49 Mount the AOS here using the supplied bolts.

**Step 77/115**

Numbered annotations (1)

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

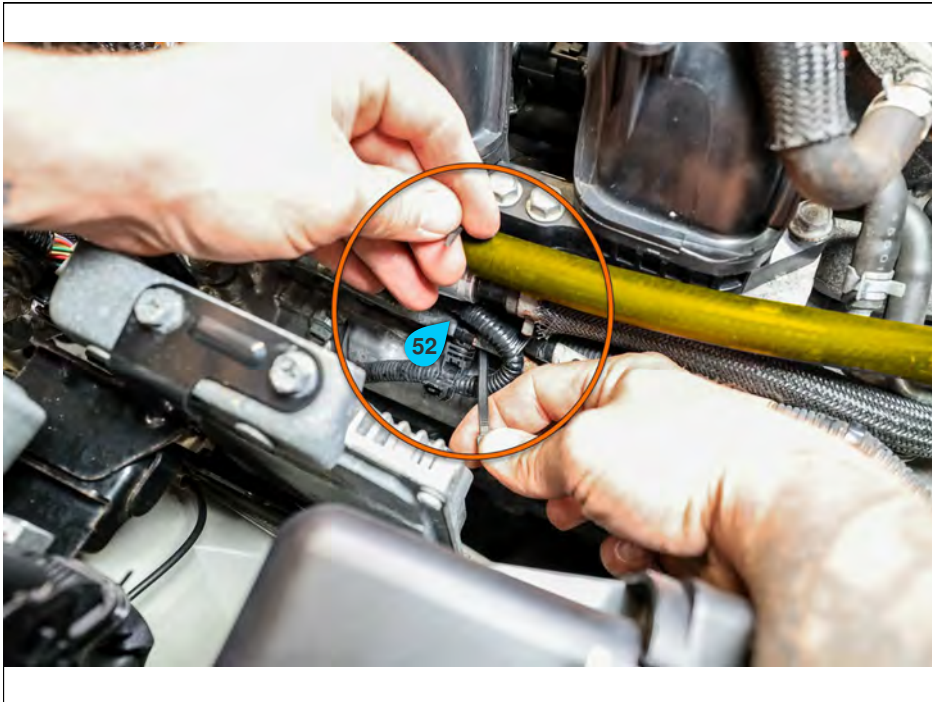




### Step 78/115

Numbered annotations (1)

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



### Step 79/115

Numbered annotations (1)

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



## Step 80/115

Numbered annotations (1)

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

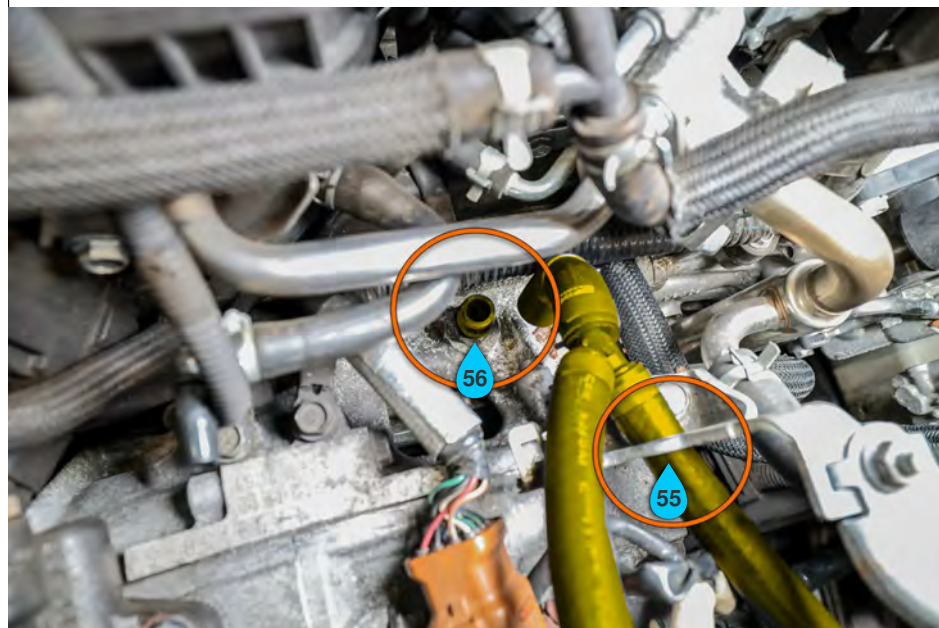


## Step 81/115

Numbered annotations (1)

- 54 Locate the Y shaped breather hose assembly.

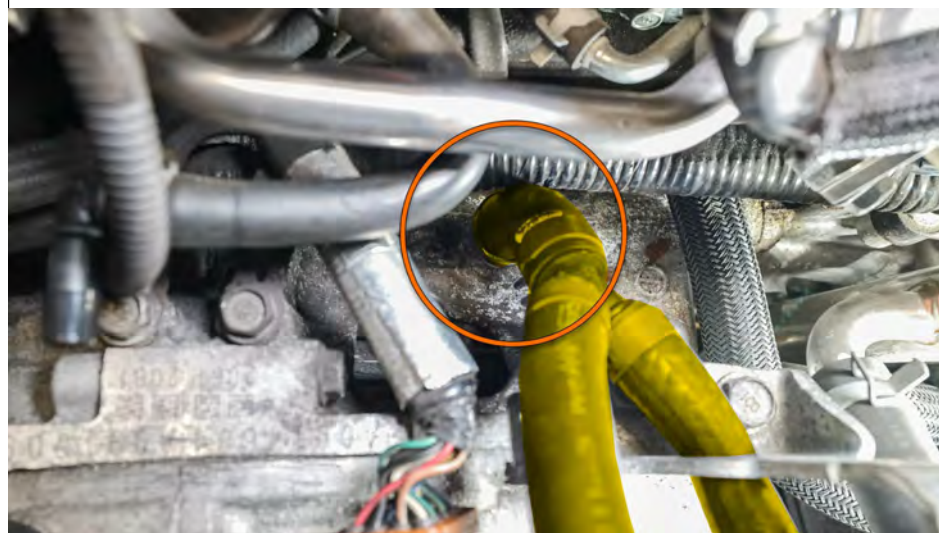




## Step 82/115

Numbered annotations (2)

- 55 Pass one hose through the bracket.
- 56 Attach 90 degree hose here using the supplied clamp.



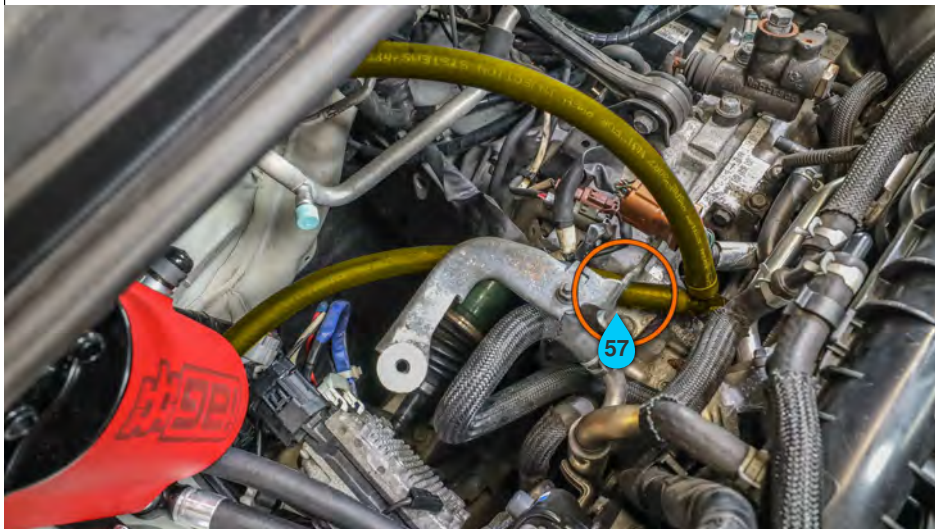
## Step 83/115



**Step 84/115**

Numbered annotations (1)

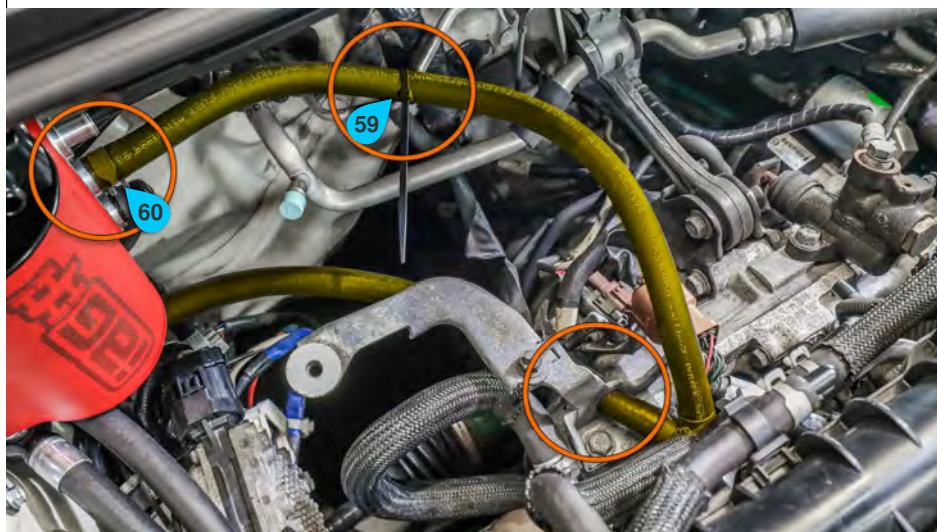
- 57 Ensure the drain hose is routed through this bracket. Measure and trim to length to attach the drain hose to the bottom of the AOS

**Step 85/115**

Numbered annotations (1)

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





### Step 86/115

Numbered annotations (2)

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



### Step 87/115

Numbered annotations (1)

- 61 Locate the 3/8" AOS PCV hose assembly. (This hose has a white PCV valve in the middle.) Screw the NPT fitting into the AOS, being careful not to over tighten the tapered fitting.



**Step 88/115**

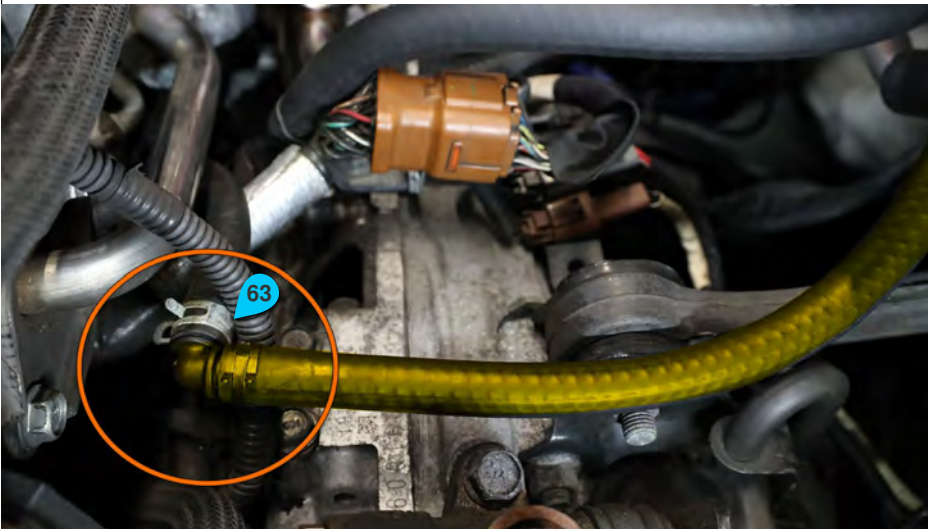
Numbered annotations (1)

- 62 Route the AOS PCV hose as shown.

**Step 89/115**

Numbered annotations (1)

- 63 Attach this hose to to the hose coming from the intake manifold using the supplied 3/8" 90 degree fitting, the supplied clamp on one side and the OEM clamp on the other side.





**Step 90/115**

Numbered annotations (1)

- 64 Locate the 1/2" breather hose with the 90 degree fitting.

**Step 91/115**

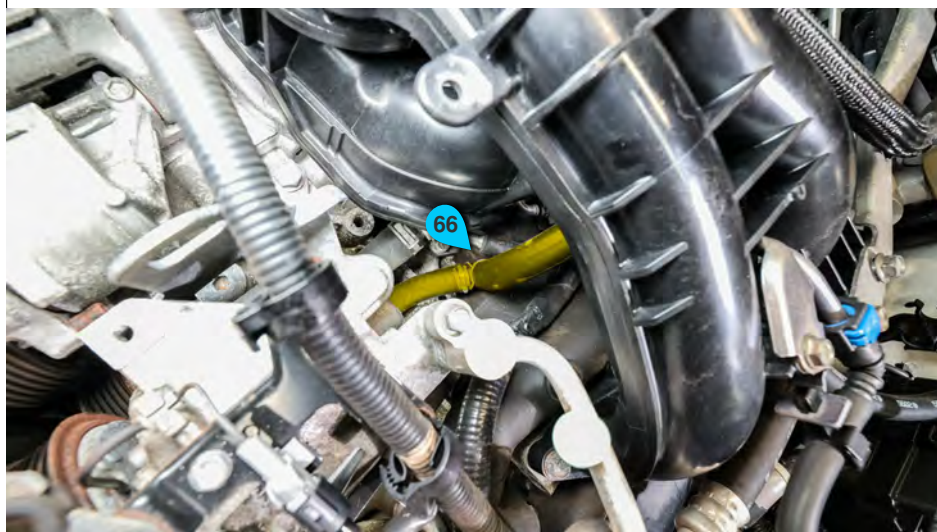
Numbered annotations (1)

- 65 Attach the breather hose assembly here using the supplied clamp.

**Step 92/115**

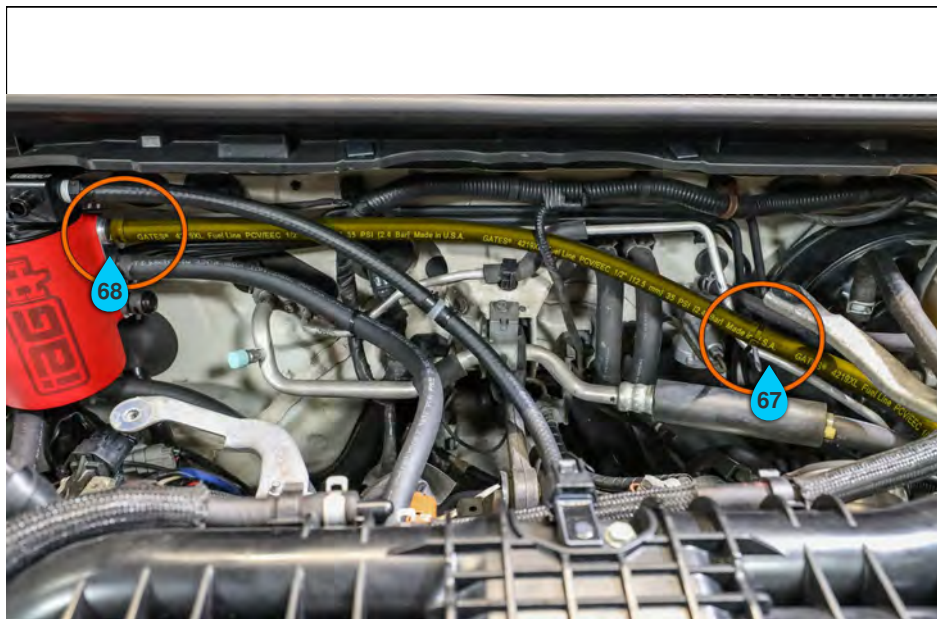
## Numbered annotations (1)

- 66 Route the longer end of the 1/2" vent hose under the intake manifold.

**Step 93/115**

## Numbered annotations (2)

- 67 Secure the vent hose to the A/C hard line with a zip tie.
- 68 Attach the breather hose to the top port on the side of the AOS.

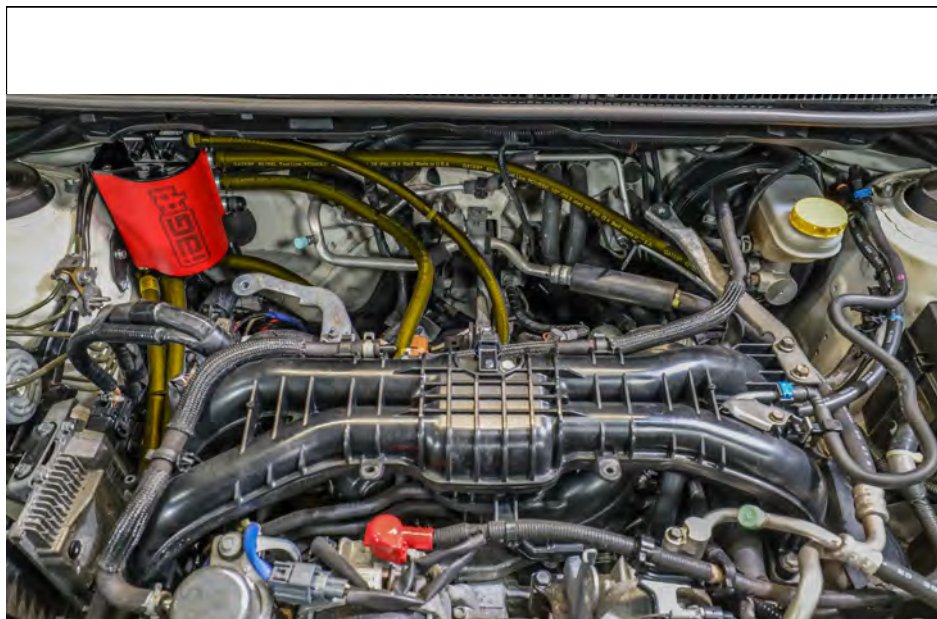




**Step 94/115**



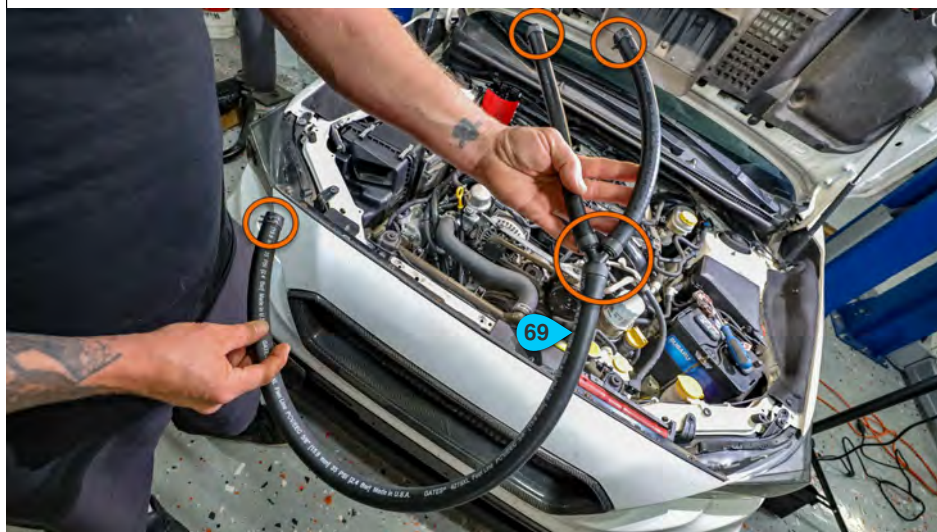
**Step 95/115**



**Step 96/115**

Numbered annotations (1)

- 69** Locate the Y shaped AOS vent hose. Install the supplied clamps at all of the indicated positions.

**Step 97/115**



**Step 98/115**

Numbered annotations (1)

- 70 Route the AOS Vent hoses as shown.

**Step 99/115**

Numbered annotations (1)

- 71 Attach the vent hoses using the supplied clamps.





### Step 100/115

Numbered annotations (1)

- 72 Attach the AOS vent hose to the open port on the turbo inlet pipe.



### Step 101/115

Numbered annotations (1)

- 73 Secure the vent hose to the coolant hose with a zip tie.



## Step 102/115

Numbered annotations (1)

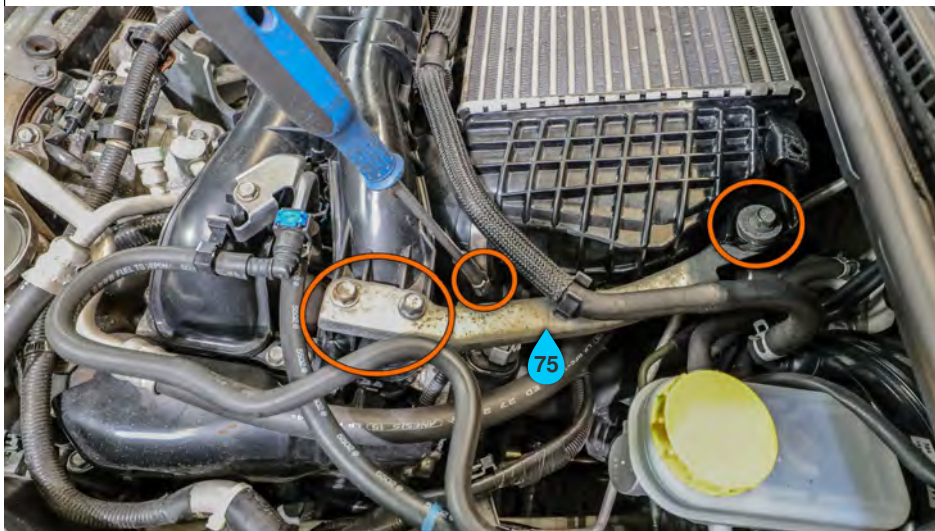
- 74 Secure the AOS vent hose with another zip tie here.



## Step 103/115

Numbered annotations (1)

- 75 Reinstall the intercooler and bracket.





## Step 104/115

Numbered annotations (1)

76 Reinstall this bolt.



## Step 105/115

Numbered annotations (1)

77 Reinstall the intercooler charge pipe.

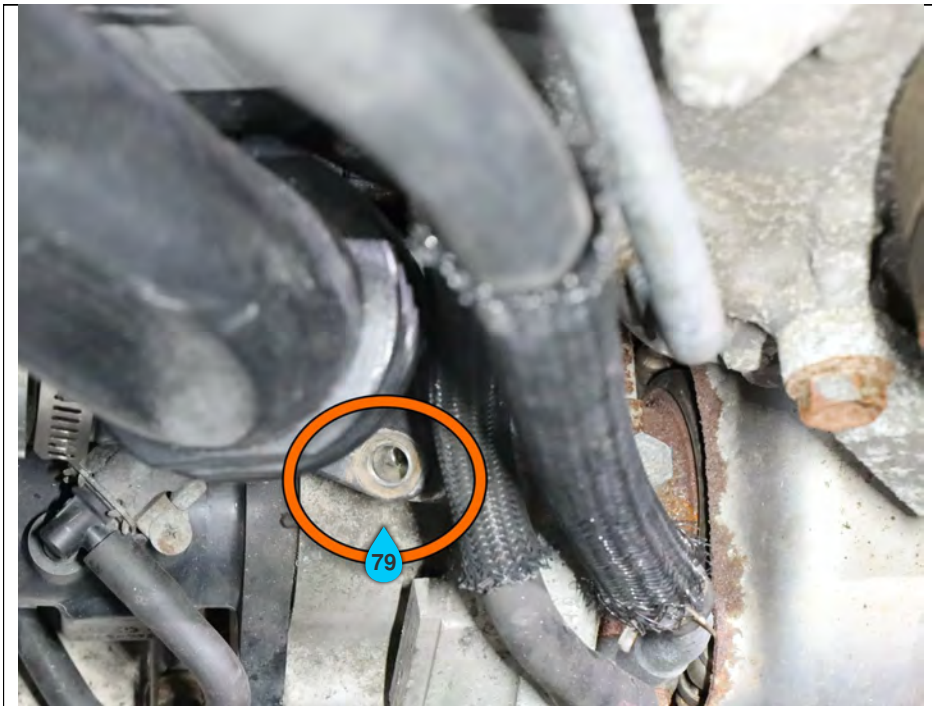




### Step 106/115

Numbered annotations (1)

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



### Step 107/115

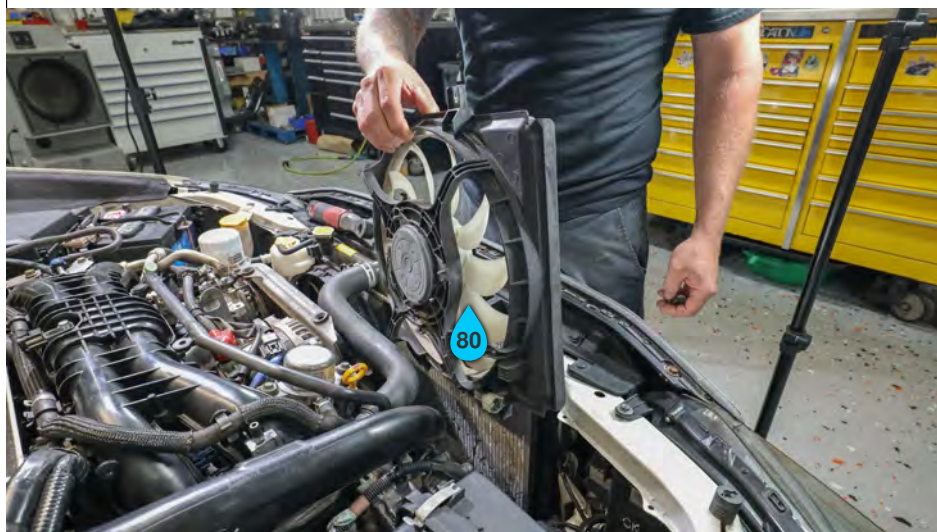
Numbered annotations (1)

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

**Step 108/115**

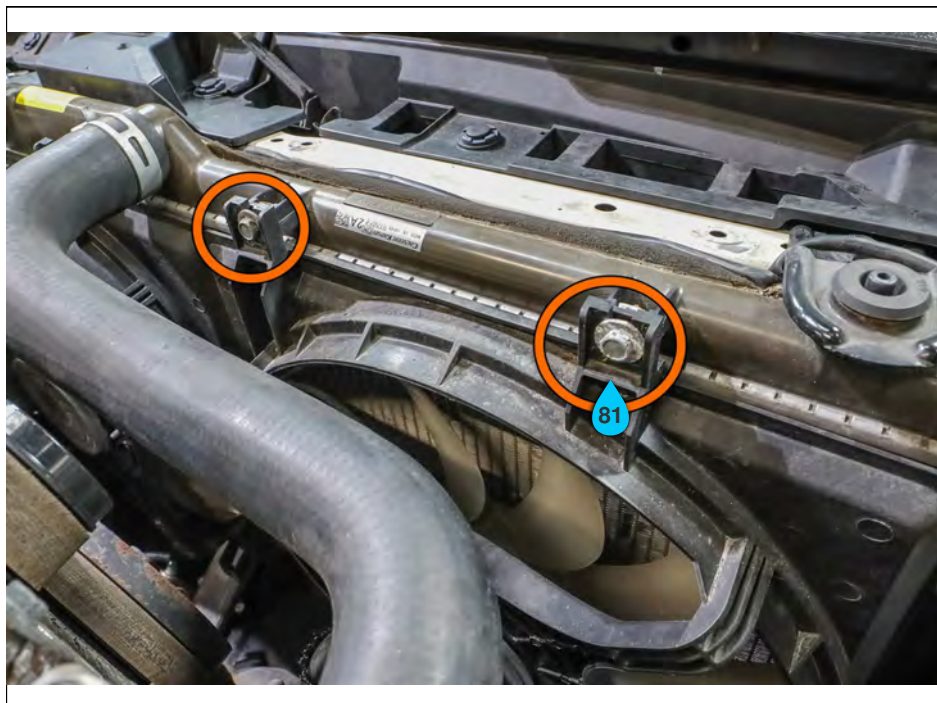
Numbered annotations (1)

- 80 Reinstal the passenger side radiator fan.

**Step 109/115**

Numbered annotations (1)

- 81 Secure the fan with the OEM bolts.

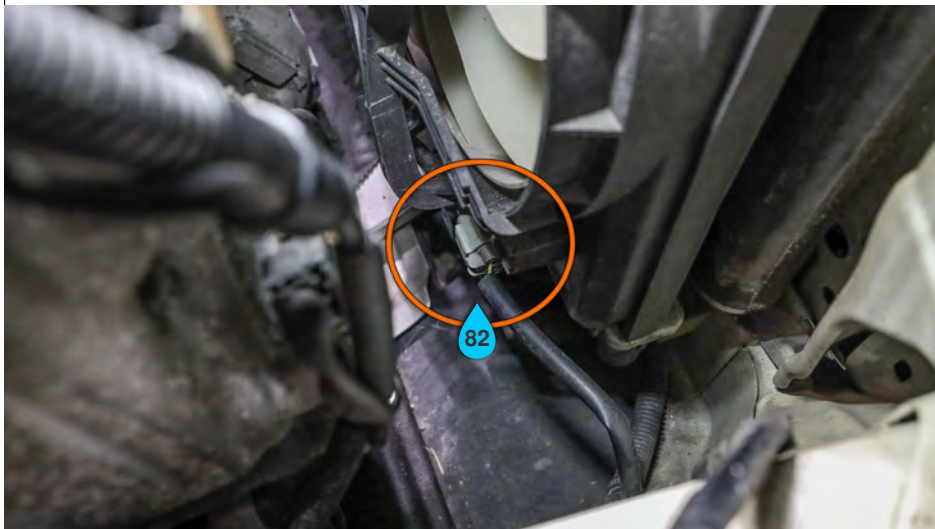




**Step 110/115**

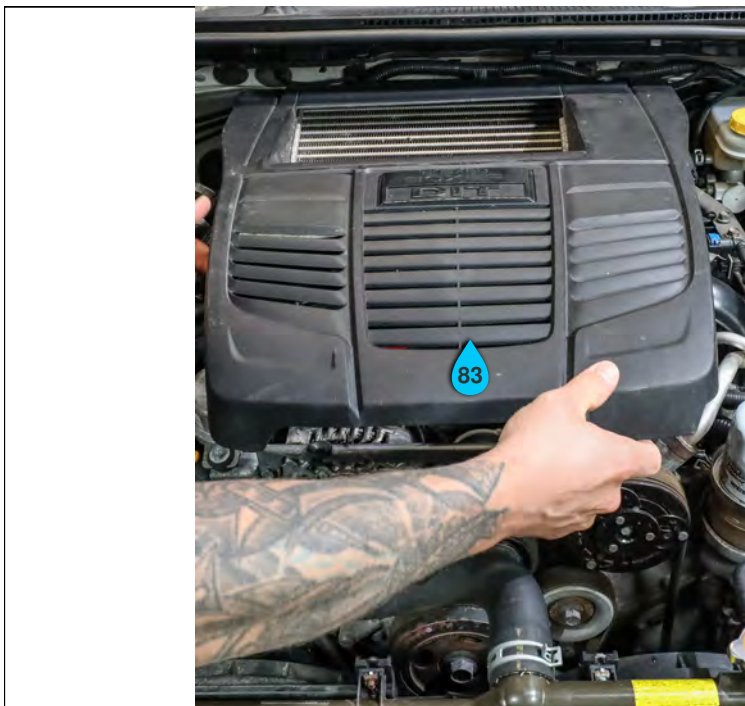
Numbered annotations (1)

- 82 Plug the passenger fan electrical connector back in.

**Step 111/115**

Numbered annotations (1)

- 83 Reinstall the engine cover.



## Step 112/115

Numbered annotations (1)

- 84 Reinstall the intake snorkel.



## Step 113/115

Numbered annotations (1)

- 85 Secure the snorkel with the OEM hardware.





**Step 114/115****Step 115/115**

## Numbered annotations (1)

- 86 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.

