

IAG COMPETITION SERIES AOS FOR 08-14 WRX / 05-09 LGT



Step 1/111

IAG-ENG-7281 Competition Series Air / Oil Separator (AOS) For 2008-14 WRX & 2005- 09 Legacy GT

Part# IAG-ENG-7281

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.

IAG-ENG-7281 Competition Series Air / Oil Separator (AOS) For 2008-14 WRX & 2005-09 Legacy GT

WARNING

THE IAG COMPETITION SERIES AOS IS ONLY TO BE INSTALLED ON OFF-ROAD COMPETITION VEHICLES NOT SUBJECT TO VEHICLE EMISSIONS CONTROLS. PLEASE CONTACT IAG PERFORMANCE OR YOUR LOCAL IAG DEALER TO EXCHANGE THIS PRODUCT IF THE VEHICLE WILL BE USED ON PUBLIC ROADS.



Numbered annotations (13)

- 1 AOS Body Assembly
- 2 Heat Sleeve 1 - 16"
- 3 Heat Sleeve 2 - 16"
- 4 Heat Sleeve 3 - 12"
- 5 AOS Drain Hose - 1/2" x 26"
- 6 Block Breather Hose - 5/8" x 25"
- 7 Comp Breather Hose 1" x 59"
- 8 Valve Cover Breather Hose 1/2" x 74"
- 9 Coolant Hose 1 - 20" (Preinstalled to AOS)
- 10 Coolant Hose 2 - 20" (Preinstalled to AOS)
- 11 Block Breather Hose 3/4" x 2"
- 12 Wiring Harness Relocation Bracket

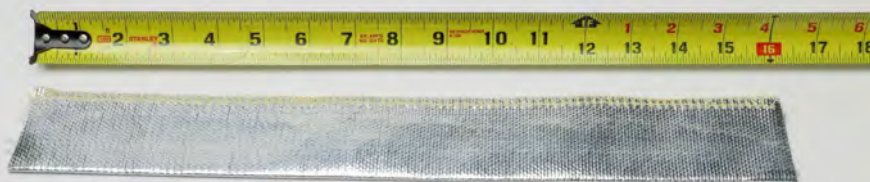
Step 4/111

Numbered annotations (11)

- 1 1/2" Vacuum Cap
- 2 5/8" Vacuum Cap x 2
- 3 5/8" Band Clamp x 4
- 4 1/2" Band Clamp x 8
- 5 3/4" Spring Clamp x 2
- 6 1/4" NPT Plug for Intake Manifold
- 7 AOS Mounting Hardware (M6x12mm x 2, M6x10mm x 3)
- 8 5/8" 90 Degree Elbow
- 9 Bock Breather Y Fitting
- 10 Zip ties
- 11 3/8" Clamp x 2



Step 5/111



Heat Sleeve 1 - 16"

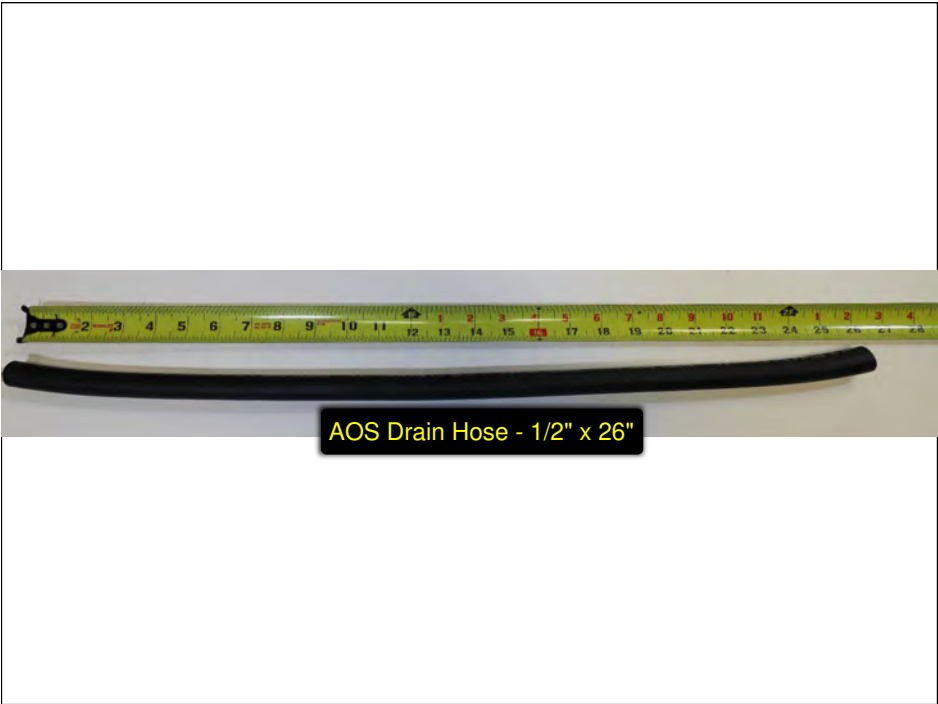
Step 6/111



Step 7/111



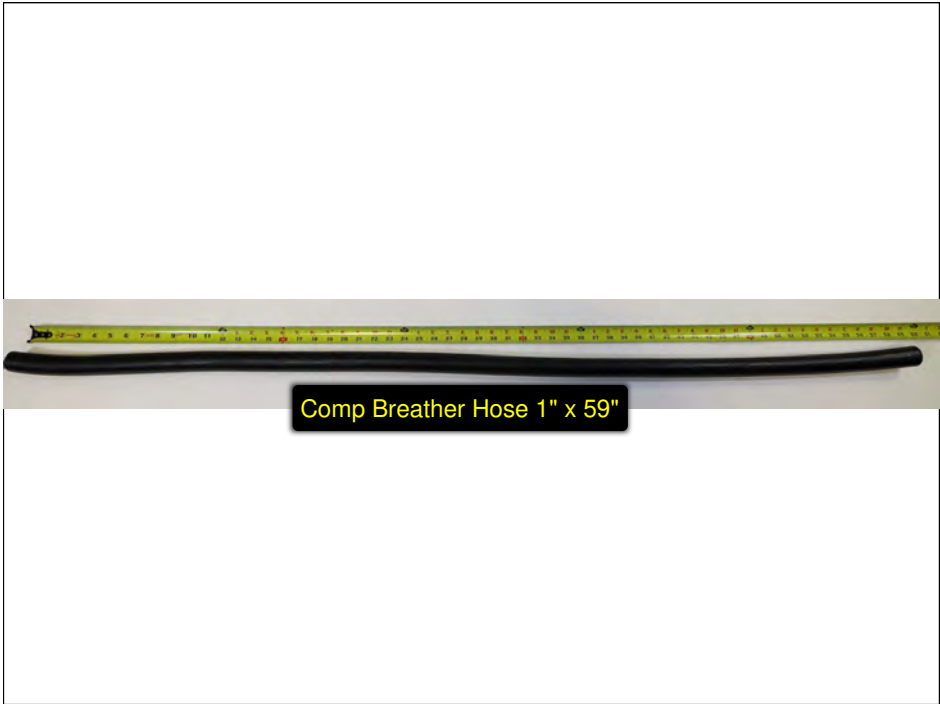
Step 8/111



Step 9/111



Step 10/111



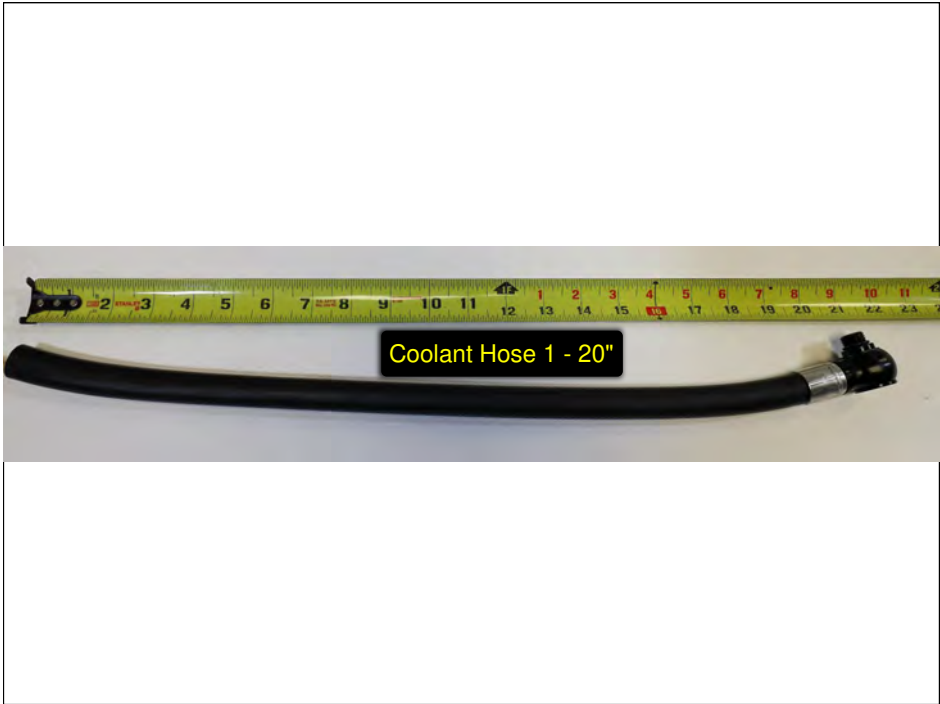
Comp Breather Hose 1" x 59"

Step 11/111



Valve Cover Breather Hose 1/2" x 74"

Step 12/111



Step 13/111



Step 14/111

Numbered annotations (7)

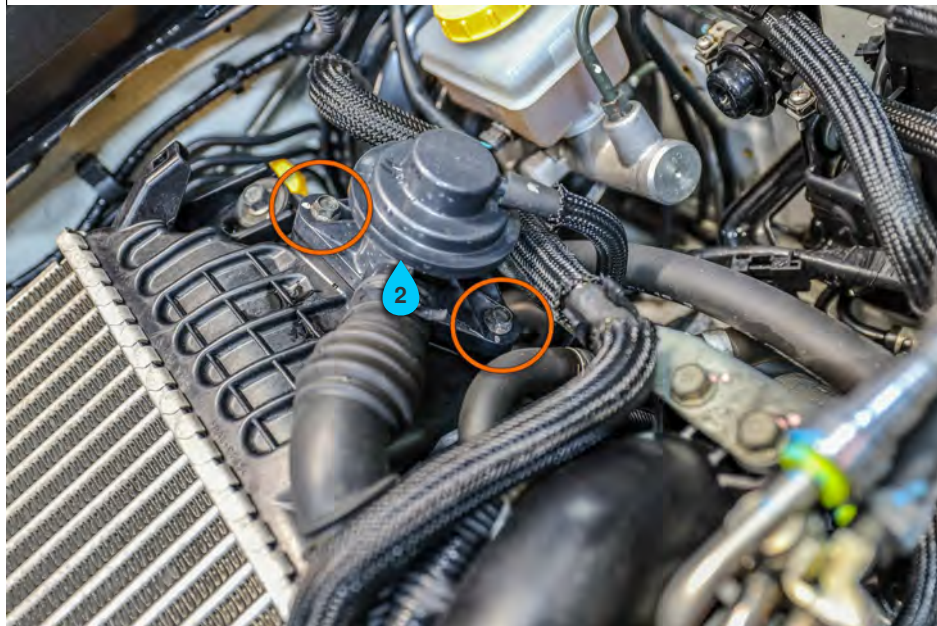
- 1 Atmospheric Vent Hose (Routed under vehicle)
- 2 1/2" Valve Cover Vent Hose - Driver side
- 3 1/2" Valve Cover Vent Hose - Passenger Side
- 4 5/8" Block Breather Vent- Top of Y fitting on Block Breather
- 5 1/2" Drain Hose
- 6 Coolant Hose 1
- 7 Coolant Hose 2

**Step 15/111**

Numbered annotations (1)

- 1 Disconnect the negative battery terminal using a 10mm wrench.

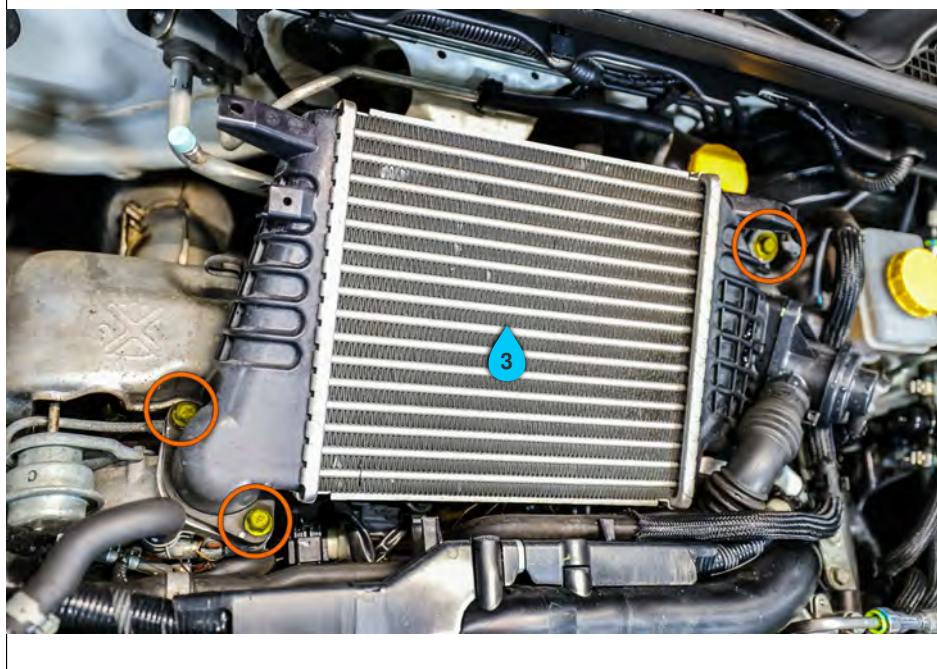




Step 16/111

Numbered annotations (1)

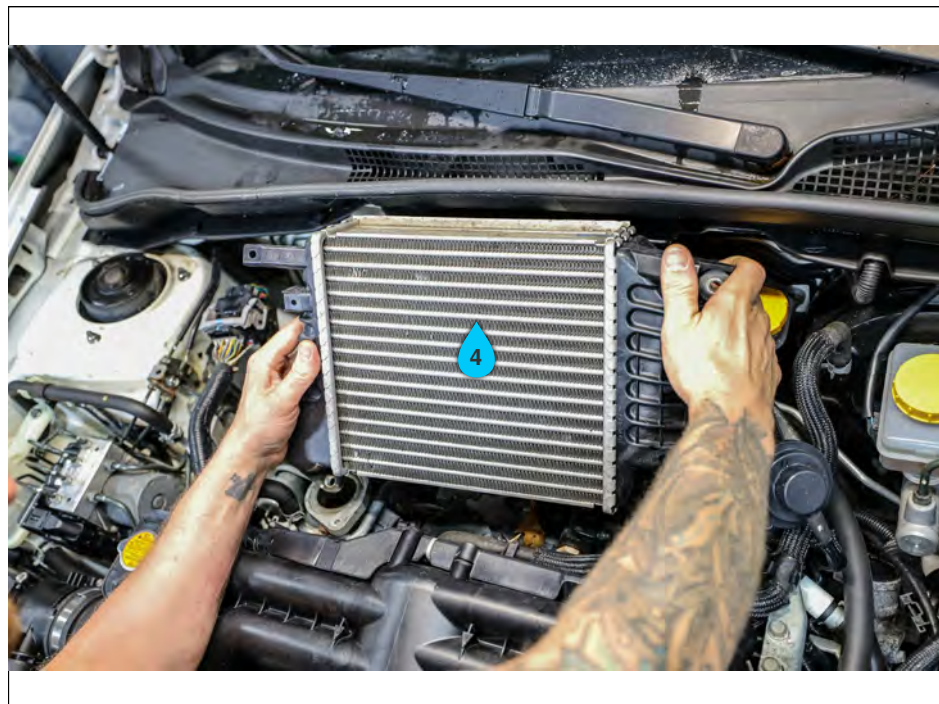
- 2 Remove the bolts from the bypass valve.



Step 17/111

Numbered annotations (1)

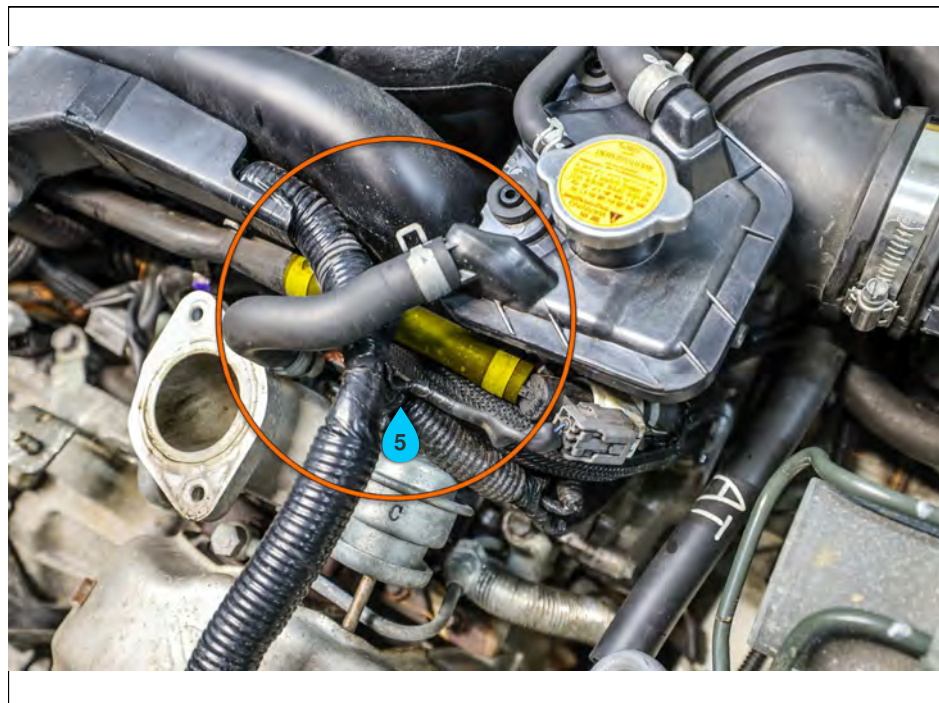
- 3 Remove the 12mm bolts that secure the intercooler.



Step 18/111

Numbered annotations (1)

- 4 Loosen the clamp from the throttle body coupler and remove the intercooler assembly from the vehicle



Step 19/111

Numbered annotations (1)

- 5 Locate the PCV breather hose near the turbocharger



Step 20/111

Numbered annotations (1)

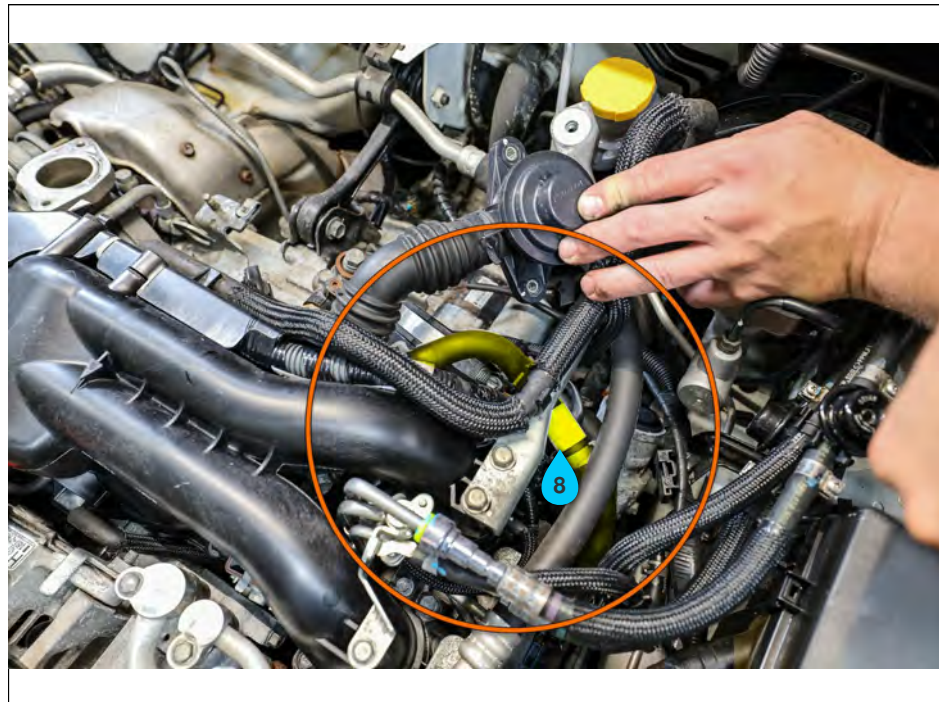
- 6 Remove the clamps holding this breather hose in place



Step 21/111

Numbered annotations (1)

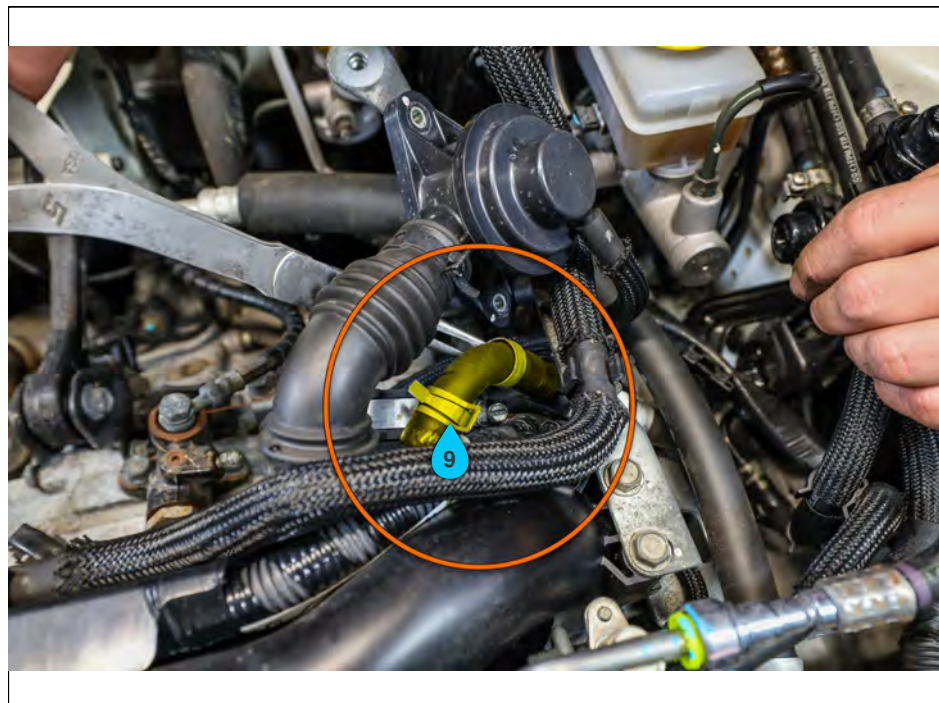
- 7 Remove the hose from the vehicle.



Step 22/111

Numbered annotations (1)

- 8 Locate the passenger side valve cover breather hose.



Step 23/111

Numbered annotations (1)

- 9 Remove the clamps and remove this hose.



Step 24/111

Numbered annotations (1)

- 10 Remove this hose from the vehicle.



Step 25/111

Numbered annotations (1)

- 11 Locate the PVC breather hose near the turbocharger

Step 26/111

Numbered annotations (1)

- 12 Use a pick tool to remove the spring clamp.



Step 27/111

Numbered annotations (1)

- 13 Pull the PCV sensor out of the hose.

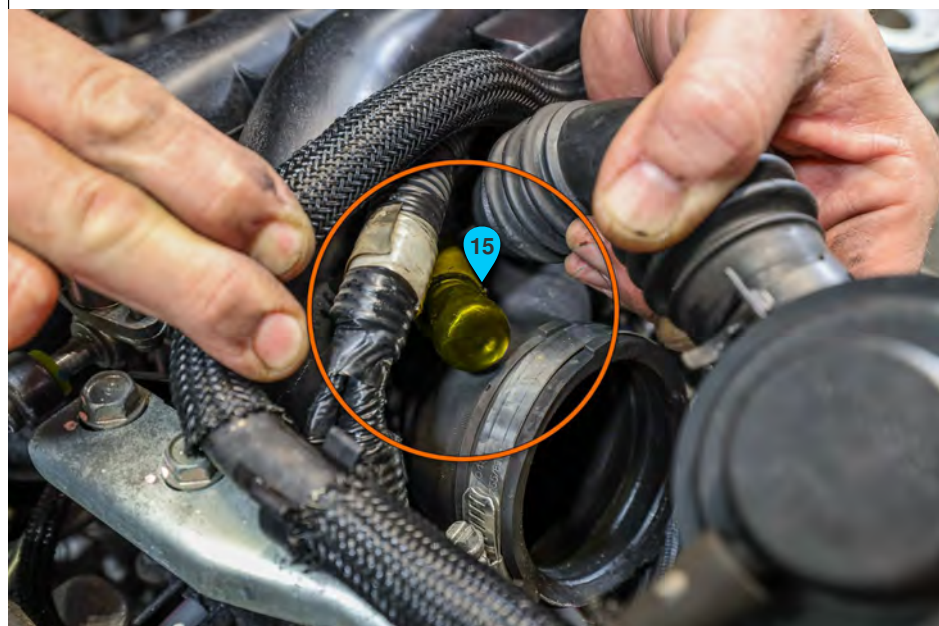




Step 28/111

Numbered annotations (1)

- 14 On the driver's side, above the throttle body, locate the PCV hard pipe that you removed the hose from earlier.



Step 29/111

Numbered annotations (1)

- 15 Install the supplied 5/8" vacuum cap on the hard pipe.

Step 30/111

Numbered annotations (1)

- 16 Clamp the cap in place with the supplied clamp.



Step 31/111





Step 32/111

Numbered annotations (1)

- 17 Locate this hose assembly from your AOS parts



Step 33/111

Numbered annotations (1)

- 18 Install this hose assembly to the PCV hardline near the turbo, clamping it in place with the supplied clamp.

Step 34/111



Step 35/111

Numbered annotations (1)

- 19 Locate the PCV vacuum line on the back of the intake manifold.

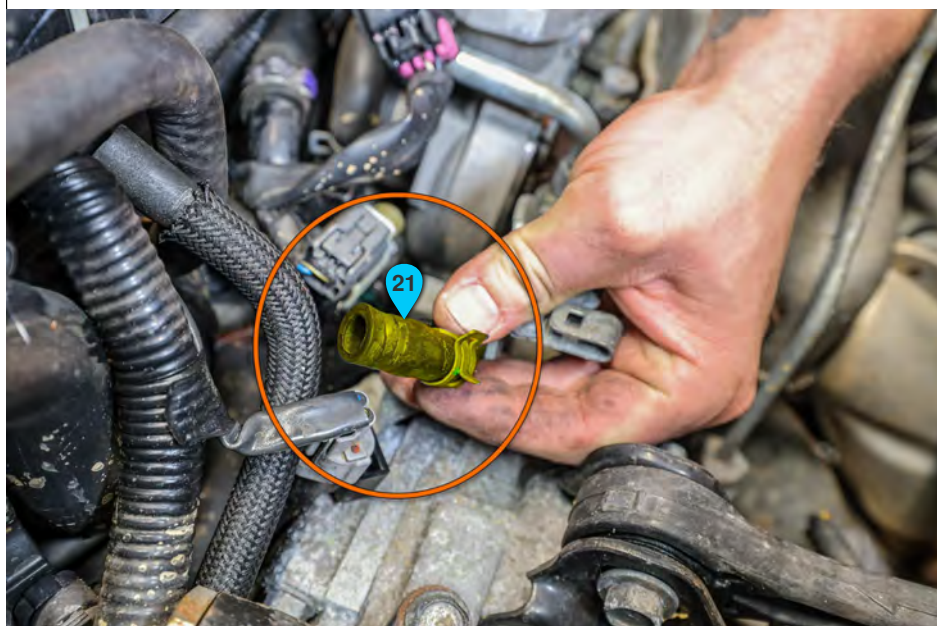




Step 36/111

Numbered annotations (1)

- 20 Loosen the OEM clamp from the PCV vacuum line



Step 37/111

Numbered annotations (1)

- 21 Remove the PCV vacuum line from the back of the intake manifold.



Step 38/111

Numbered annotations (1)

- 22 Locate the OEM PCV hose assembly near the turbocharger.



Step 39/111

Numbered annotations (1)

- 23 Use a pick tool to loosen the spring clamp and remove the hose assembly.



Step 40/111

Numbered annotations (1)

- 24 PCV assembly. Some model years make look different.



Step 41/111

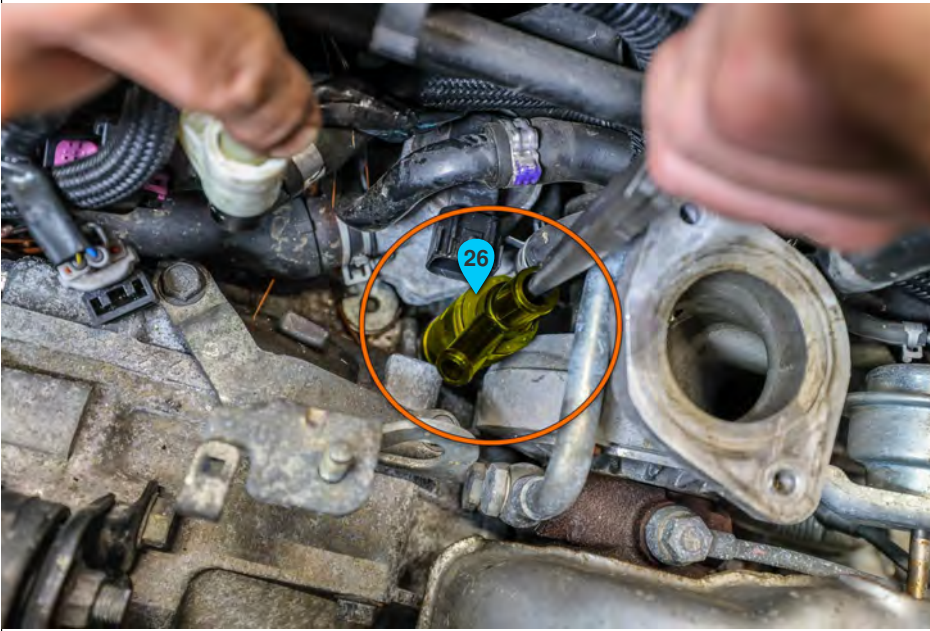
Numbered annotations (1)

- 25 From your AOS parts, install the PCV Y connector into the supplied hose and secure with the spring clamp. Install and tighten the lower spring clamp as well.

Step 42/111

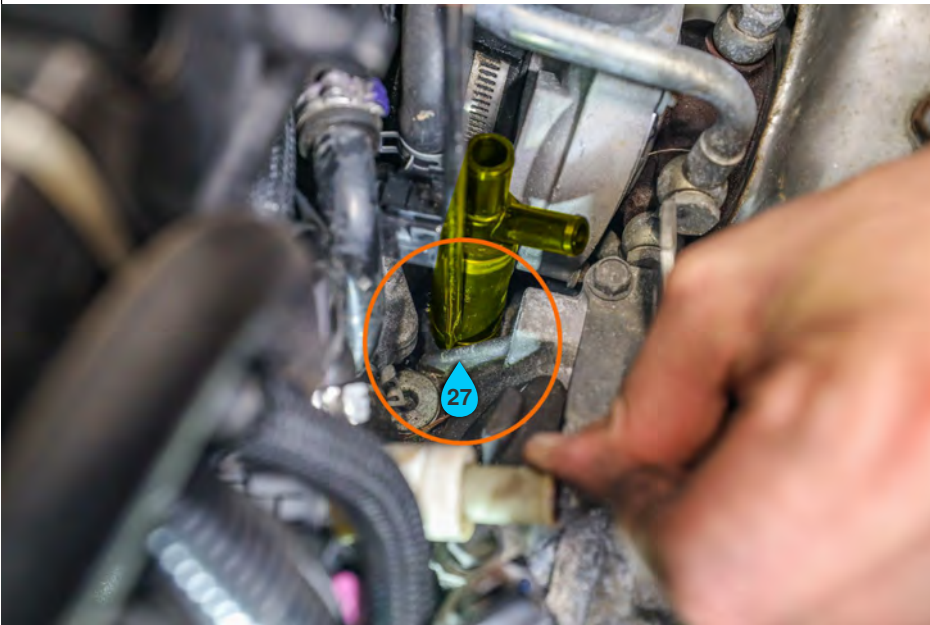
Numbered annotations (1)

- 26** Apply silicone lubricant or petroleum jelly inside the lower portion of the 3/4" x 2" hose. Install the hose assembly onto the block breather port. You may need to use pliers to help push the hose over the barb on the block breather.

**Step 43/111**

Numbered annotations (1)

- 27** Use a tool to help push the hose over the barb, if necessary.






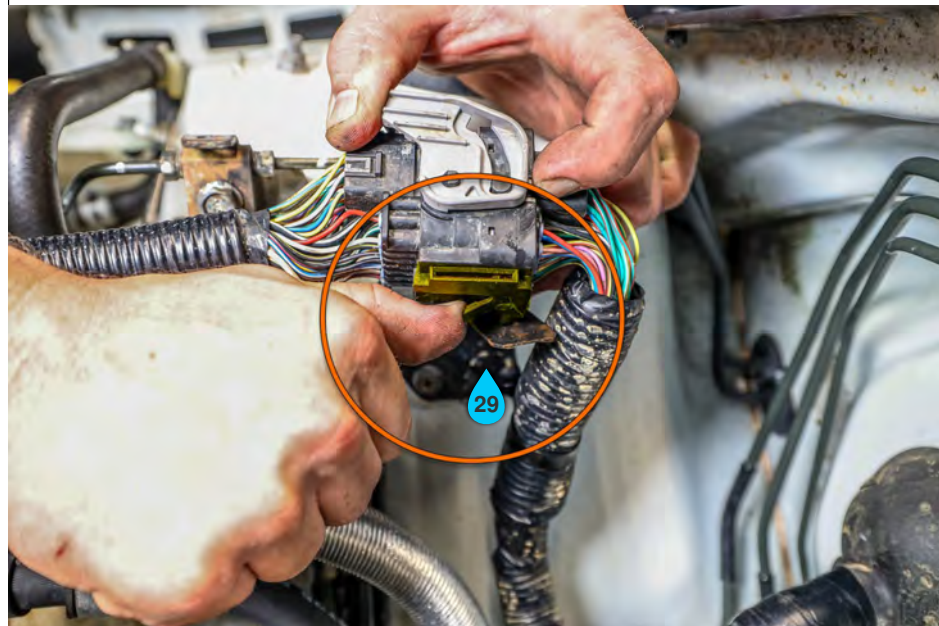
Step 44/111



Step 45/111

Numbered annotations (1)

-  28 Locate the main wiring harness connector on the passenger side.



Step 46/111

Numbered annotations (1)

- 29 Slide the connector off the clip securing the connector to the bracket.



Step 47/111

Numbered annotations (1)

- 30 Use pliers to squeeze the end of this zip tie and push it through the hole.

Step 48/111

Numbered annotations (1)

- 31 Remove the wiring harness bracket.



Step 49/111

Numbered annotations (1)

- 32 Attach the drain hose using the supplied clamp.





Step 50/111

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 51/111

Numbered annotations (1)

- 33 Locate the bracket and supplied hardware and install the bracket as shown. Tighten to 7 Ft lbs.

Step 52/111



Step 53/111

Numbered annotations (1)

- 34 The bracket will be installed here, where the OEM wiring harness bracket was previously installed. If the bolts don't thread in smoothly there may be rust in the holes. Clean the threads with a thread chaser.

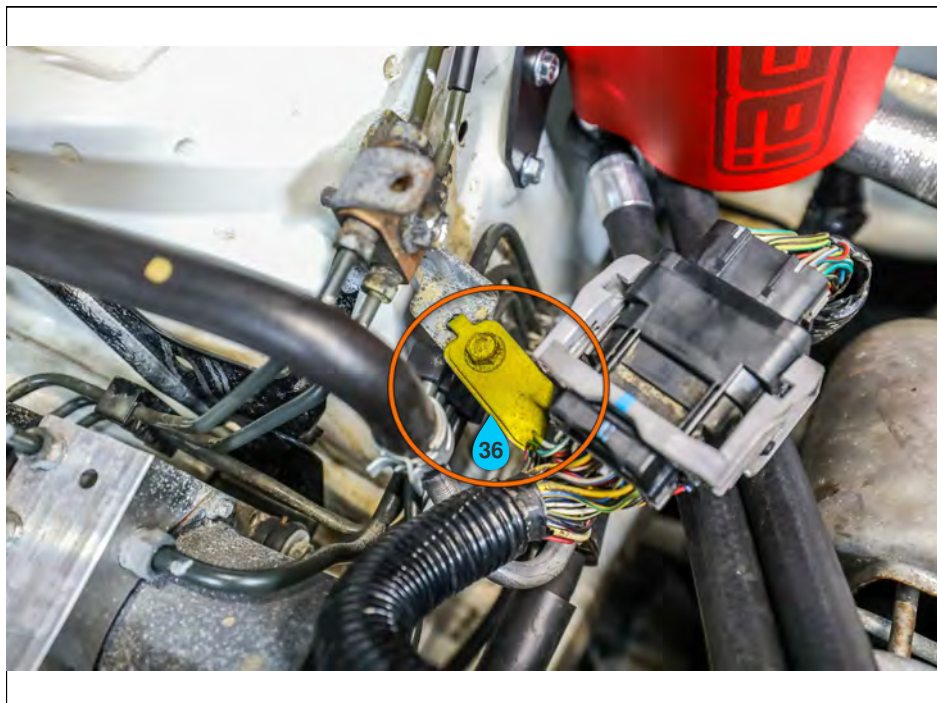




Step 54/111

Numbered annotations (1)

- 35 Install the bracket using the supplied M6x12mm bolts.



Step 55/111

Numbered annotations (1)

- 36 Locate the OEM harness bracket

Step 56/111

Numbered annotations (1)

- 37 Remove the OEM harness bracket and Install the supplied harness relocation bracket.



Step 57/111

Numbered annotations (1)

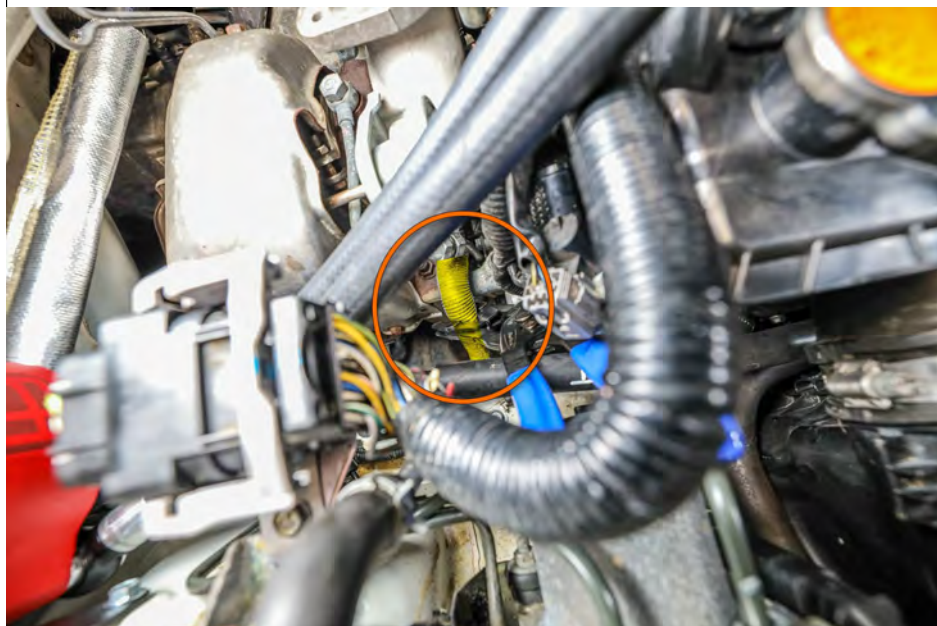
- 38 Reinstall the harness using the new bracket.



Step 58/111

Numbered annotations (1)

- 39** Locate the lower turbo coolant hose and pinch it off using hose clamping pliers. This helps to prevent coolant loss during removal of the hoses.

**Step 59/111**



Step 60/111

Numbered annotations (1)

- 40 Remove the clamp securing the OEM upper turbo coolant hose.



Step 61/111

Numbered annotations (1)

- 41 Remove the second clamp securing the upper OEM turbo coolant hose and remove the hose assembly.

Step 62/111



Step 63/111

Numbered annotations (1)

- 42 Route one of the AOS coolant hoses to this port and measure the length, leaving enough room to secure the hose with the supplied clamp.

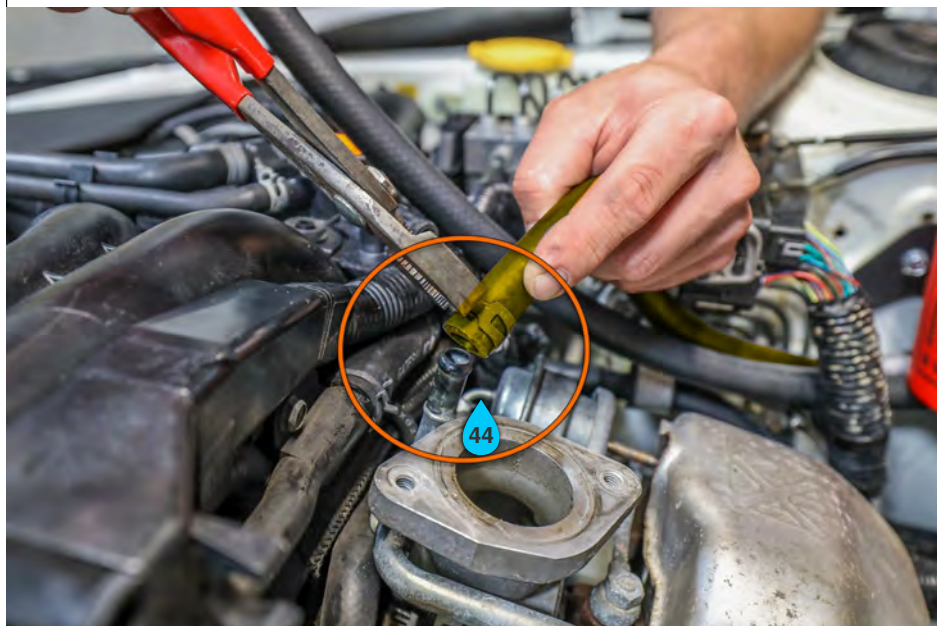




Step 64/111

Numbered annotations (1)

- 43 Cut the AOS coolant hose to length.

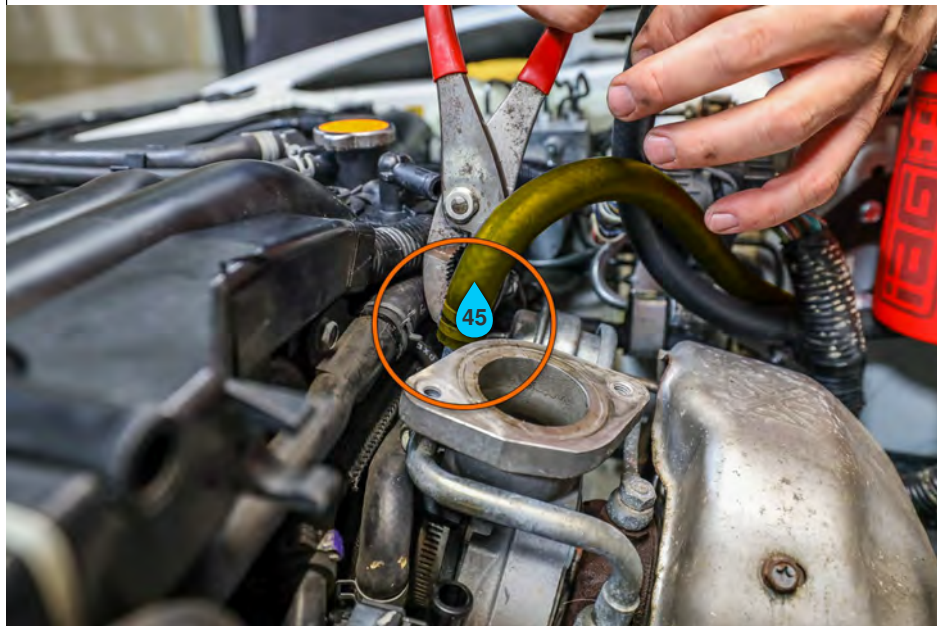


Step 65/111

Numbered annotations (1)

- 44 Install the AOS coolant hose to this pipe using the supplied clamp.

Step 66/111



Step 67/111

Numbered annotations (1)

- 46 Locate the other AOS coolant hose, measure, and cut to length.

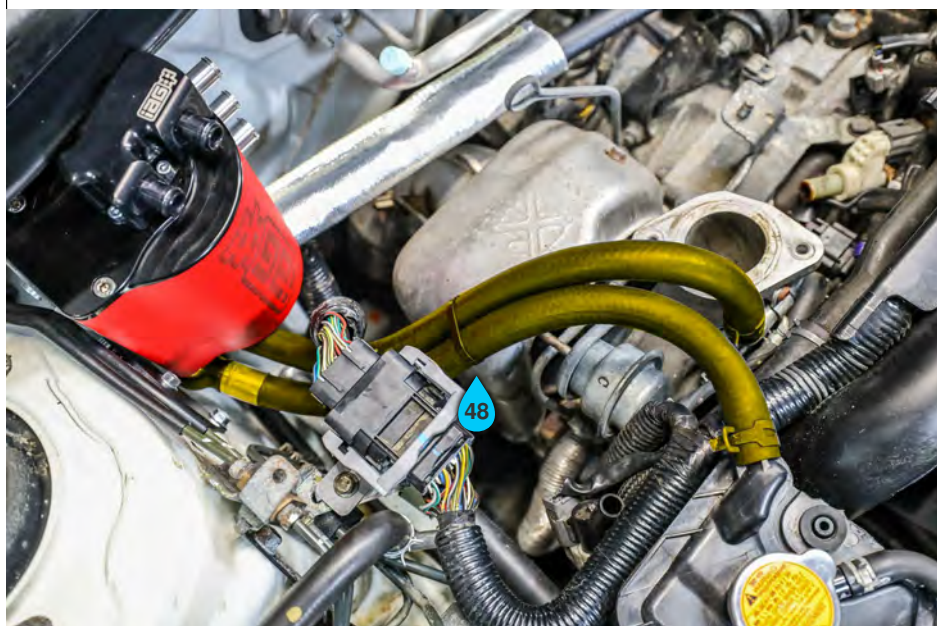




Step 68/111

Numbered annotations (1)

- 47 Attach the AOS coolant hose to the coolant tank using the supplied clamp.



Step 69/111

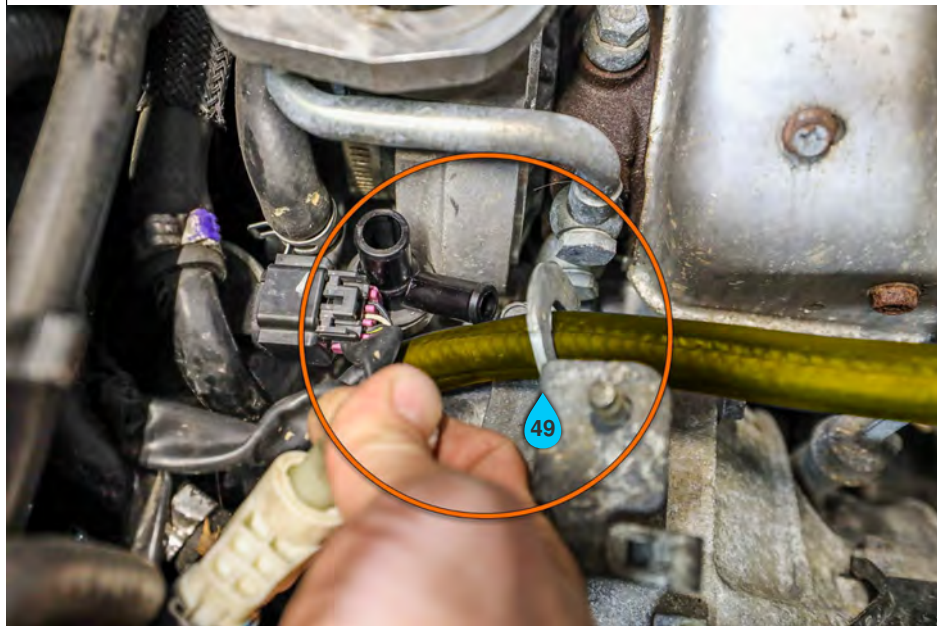
Numbered annotations (1)

- 48 Route the hoses as shown and secure with a zip tie. Ensure that the hoses are not rubbing on anything. Remove the hose clamping pliers.

Step 70/111

Numbered annotations (1)

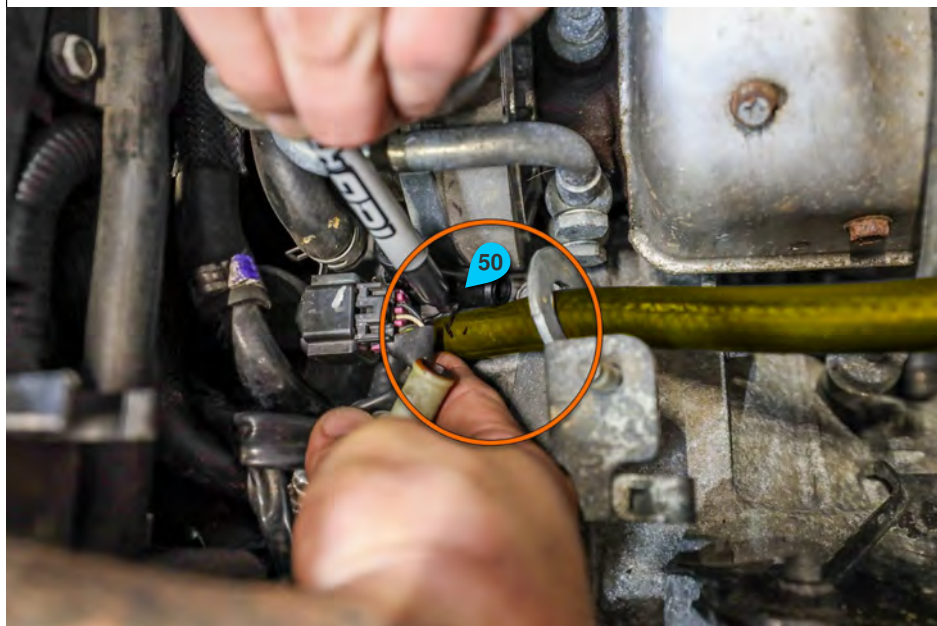
- 49 Slide a 16" piece of heat sleeve over the AOS drain hose. Temporarily route the AOS drain hose as shown



Step 71/111

Numbered annotations (1)

- 50 Mark the hose for length to attach to the Y fitting.

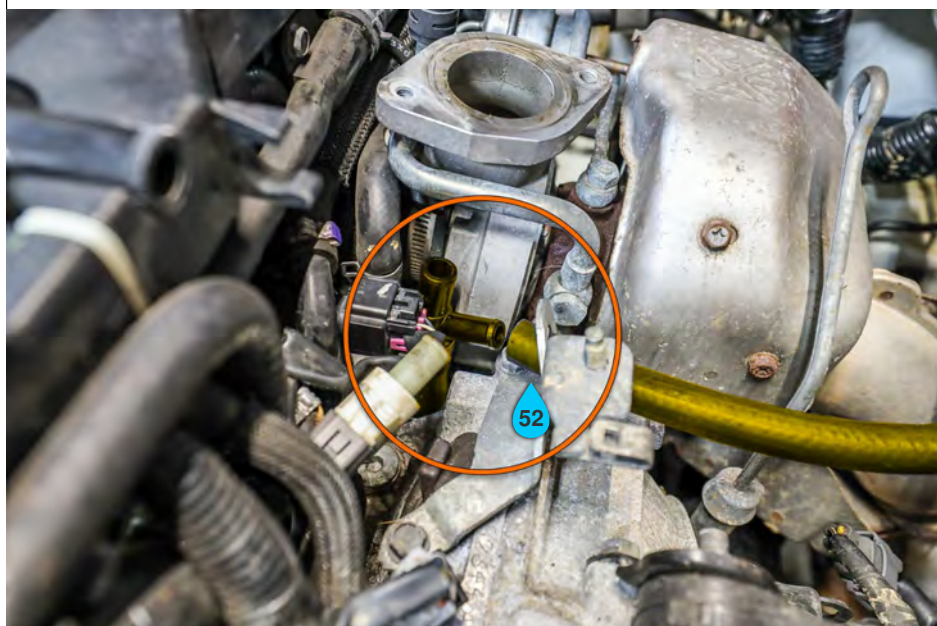




Step 72/111

Numbered annotations (1)

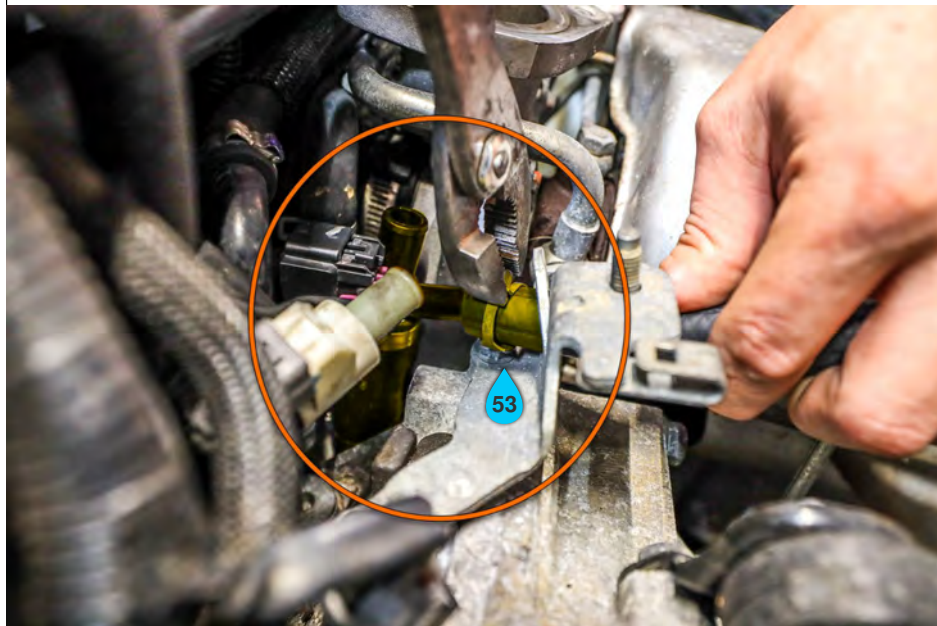
- 51 Trim the excess drain hose.



Step 73/111

Numbered annotations (1)

- 52 Push the drain hose through the hole in the bracket.



Step 74/111

Numbered annotations (1)

- 53 Install the supplied clamp and attach the hose to the Y fitting.



Step 75/111



Step 76/111

Numbered annotations (1)

- 54 Secure the drain hose to the A/C line with a zip tie. Ensure that the drain hose is routed downhill the whole length for proper drainage.



Step 77/111

Numbered annotations (1)

- 55 Locate the supplied 5/8 breather hose, measure 2" and cut the hose.

Step 78/111

Numbered annotations (1)

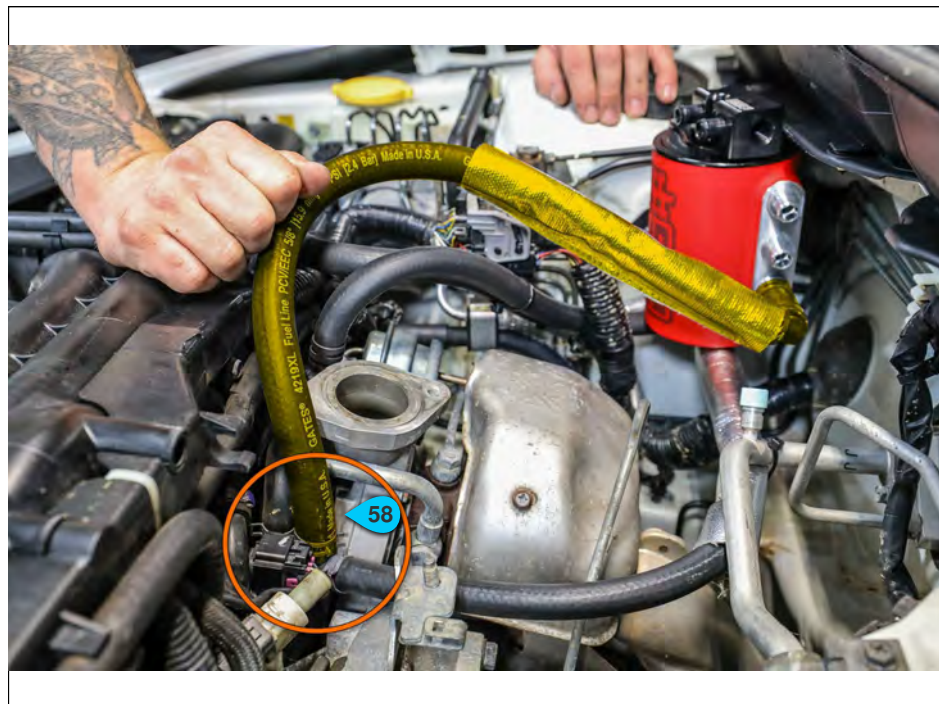
- 56 Assemble the vent hose as shown using the supplied 5/8" 90 degree elbow between the two hose pieces. Secure with the supplied clamps. Slide the other 16" piece of heat sleeve over the hose.

**Step 79/111**

Numbered annotations (1)

- 57 Attach the hose assembly to the bottom port of the AOS body.

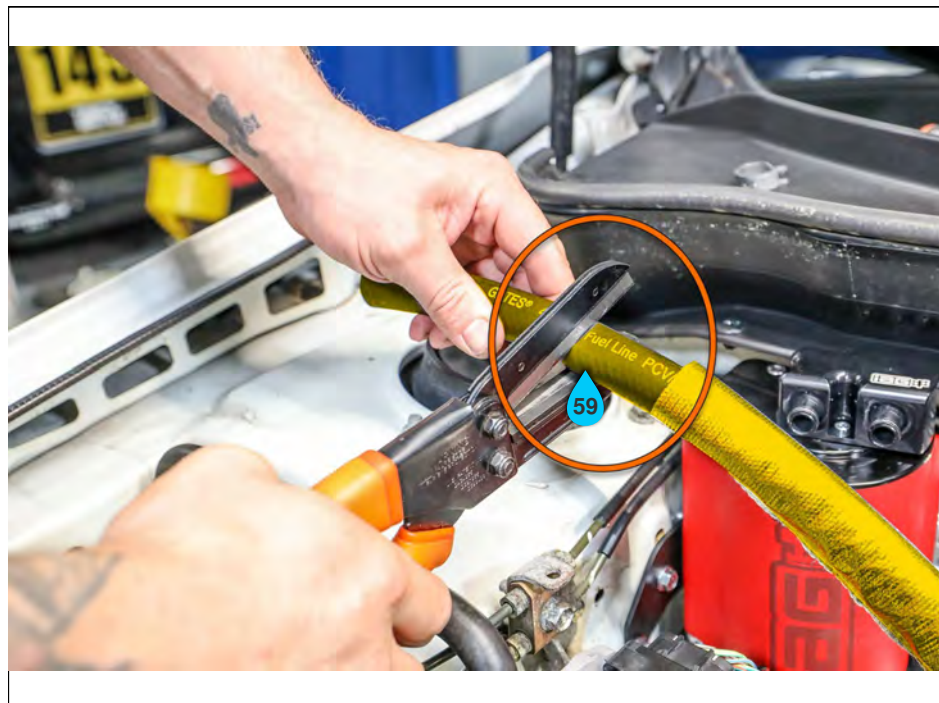




Step 80/111

Numbered annotations (1)

- 58 Measure the hose for length to attach here.



Step 81/111

Numbered annotations (1)

- 59 Trim excess hose and reinstall to the top of the Y fitting using the supplied clamp.



Step 82/111

Numbered annotations (1)

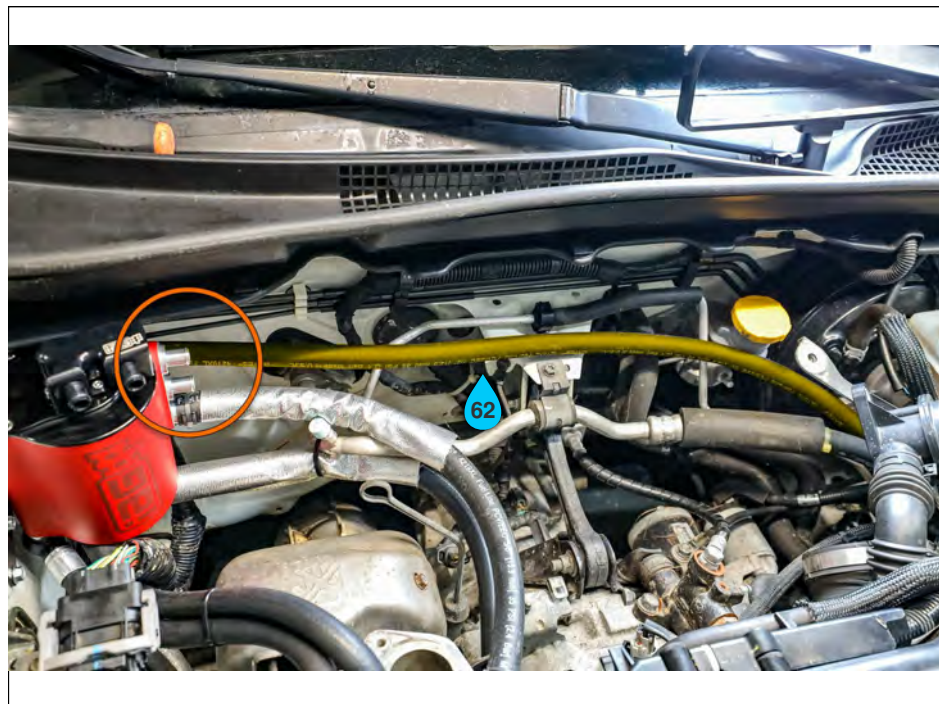
- 60 Route the supplied 74" long 1/2" valve cover breather hose as shown.



Step 83/111

Numbered annotations (1)

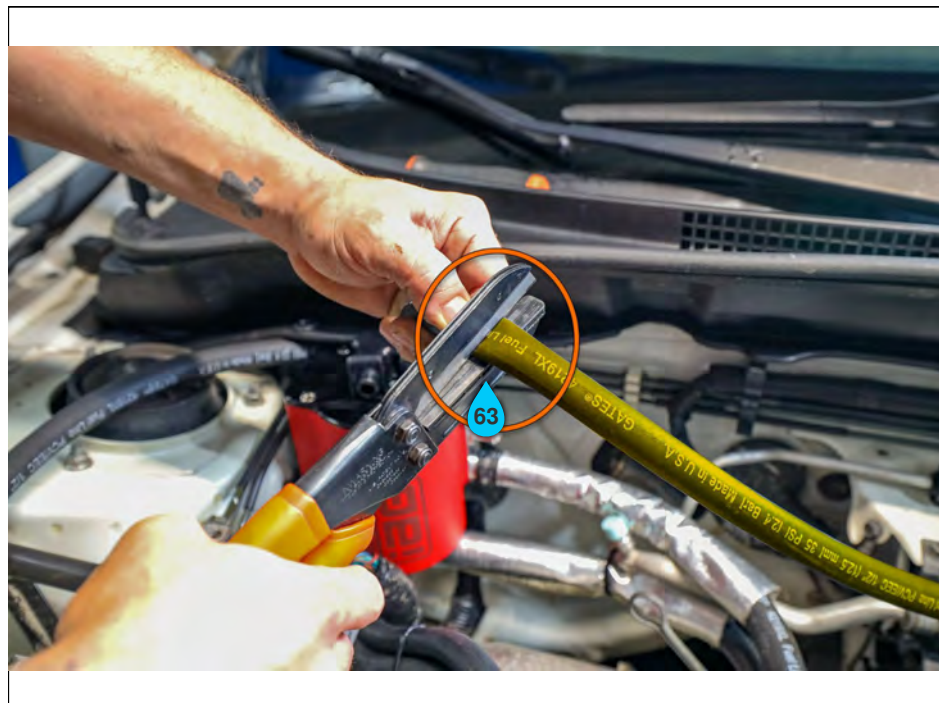
- 61 Attach the driver side breather hose to the OEM PCV sensor as shown, using the supplied clamp. If your vehicle does not have this sensor, connect this hose to the front port of the driver side valve cover.



Step 84/111

Numbered annotations (1)

- 62 Route the line as shown and measure for length.



Step 85/111

Numbered annotations (1)

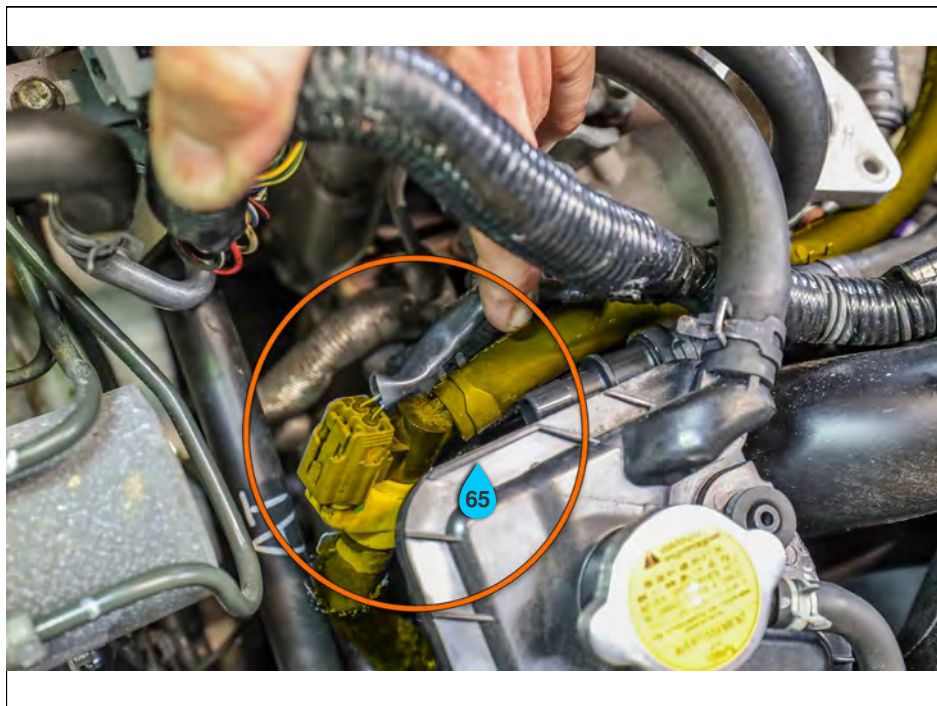
- 63 Trim the hose to length. Reserve the excess hose.



Step 86/111

Numbered annotations (1)

- 64 Attach the driver side 1/2" valve cover vent hose here using the supplied clamp.



Step 87/111

Numbered annotations (1)

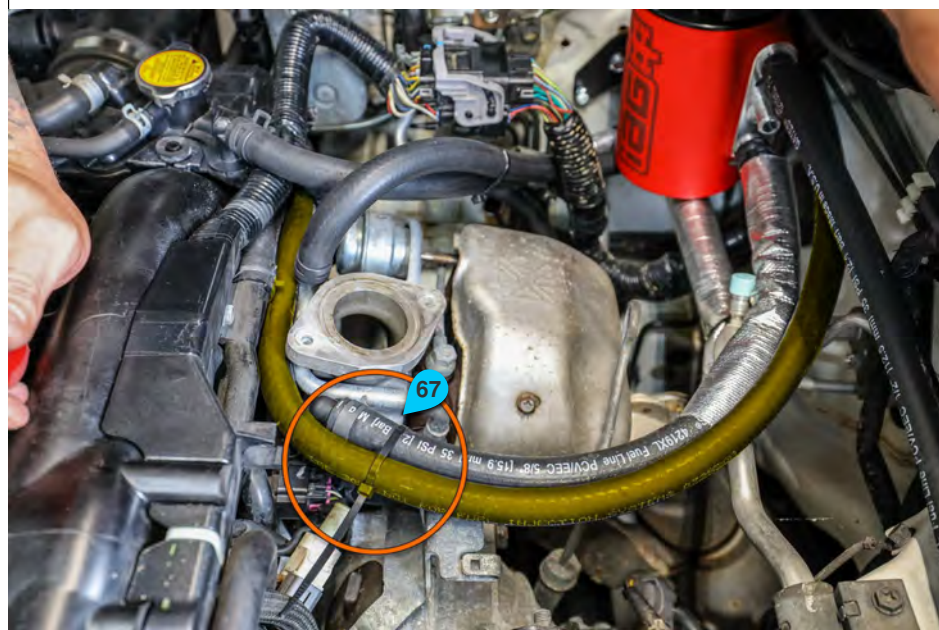
- 65 Install the reserved piece of the 1/2" breather hose to the OEM PCV connector. on the passenger side. If your vehicle does not have this connector, the hose will be attached directly to the front passenger valve cover port.



Step 88/111

Numbered annotations (1)

- 66 Route the passenger side 1/2" valve cover breather hose as shown. The 12" piece of heat sleeve can be optionally installed on this hose.



Step 89/111

Numbered annotations (1)

- 67 Secure the hose to the block breather hose with a zip tie.

Step 90/111

Numbered annotations (1)

- 68 Measure and trim the hose to length.



Step 91/111

Numbered annotations (1)

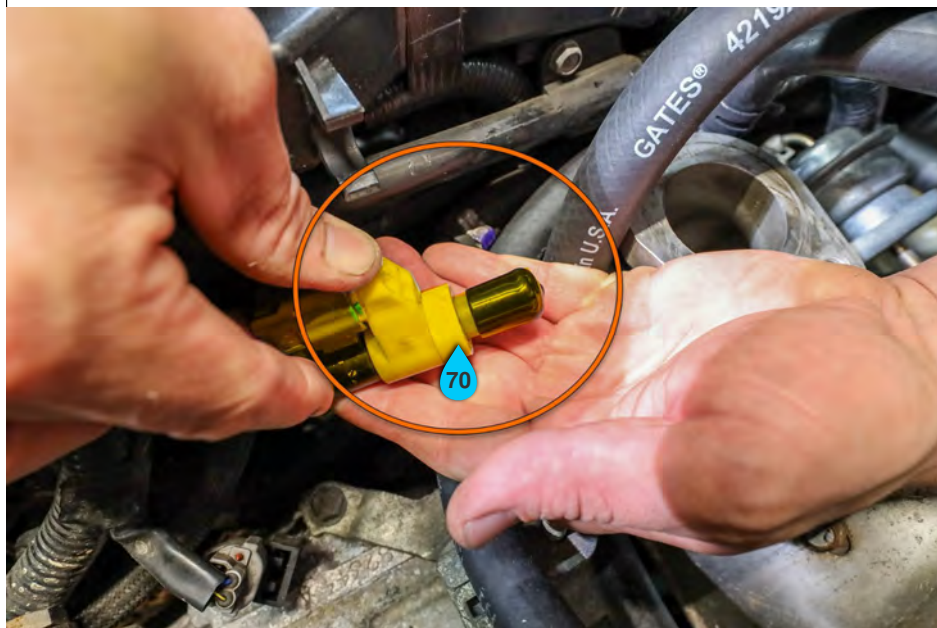
- 69 Attach the passenger side 1/2" valve cover breather hose here using the supplied clamp.



Step 92/111

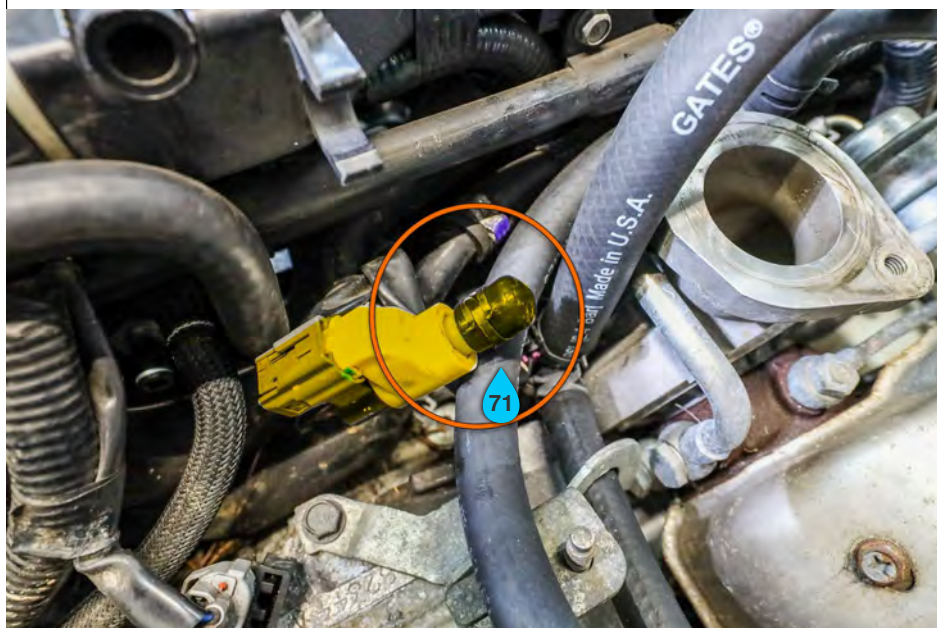
Numbered annotations (1)

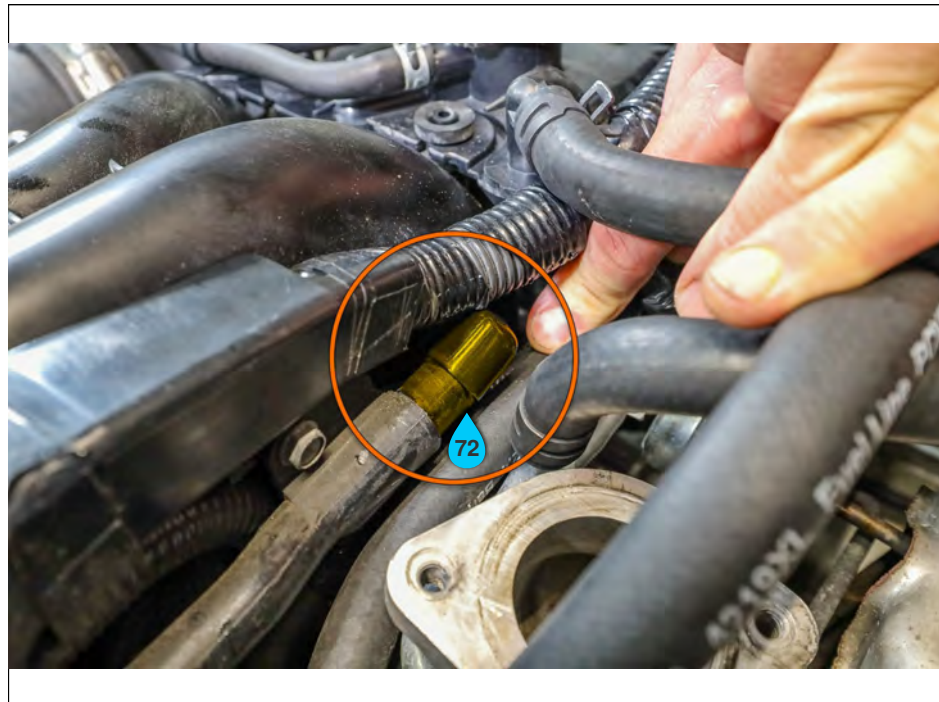
- 70 Locate the OEM PCV connector near the turbo inlet. Install the supplied vacuum cap. If your vehicle does not have this sensor use the cap to cover the nipple on the turbo inlet.

**Step 93/111**

Numbered annotations (1)

- 71 Secure the supplied vacuum cap with the supplied clamp.

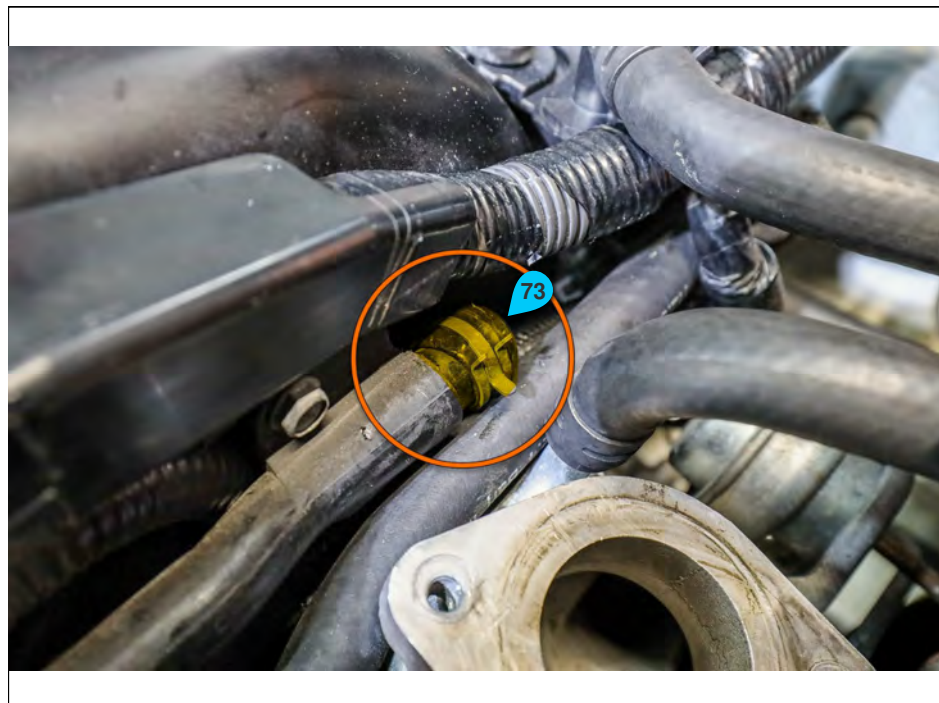




Step 94/111

Numbered annotations (1)

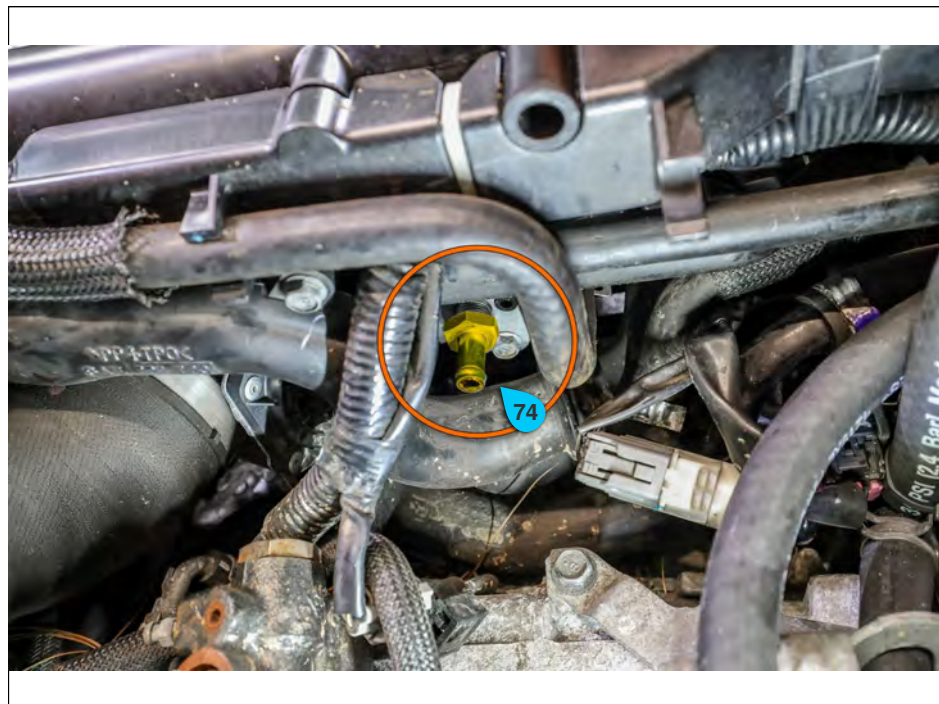
- 72 Locate the PCV hard line port and install the supplied vacuum cap.



Step 95/111

Numbered annotations (1)

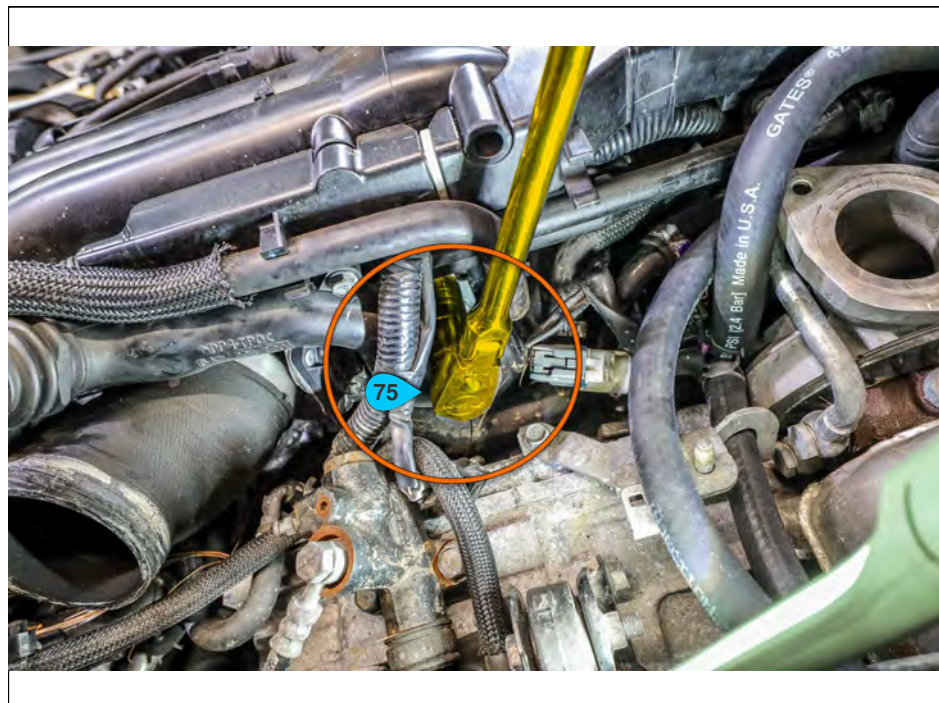
- 73 Secure the supplied vacuum cap with the supplied clamp.



Step 96/111

Numbered annotations (1)

- 74 Locate the vacuum port on the back of the intake manifold.



Step 97/111

Numbered annotations (1)

- 75 Remove the OEM vacuum nipple.



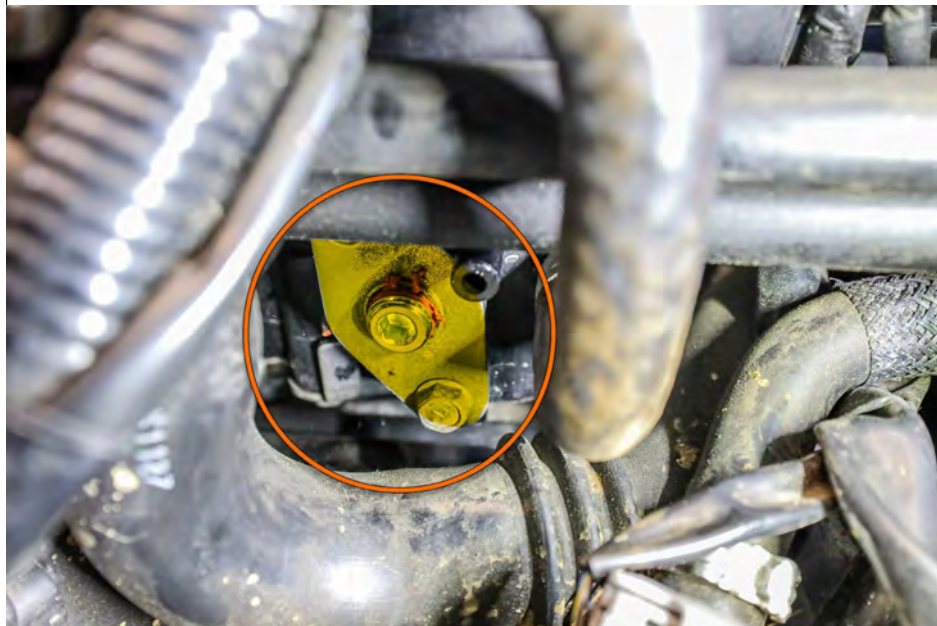
Step 98/111



Step 99/111

Numbered annotations (1)

- 76 Install the supplied 1/4" NPT plug and torque to 15 ft lbs.



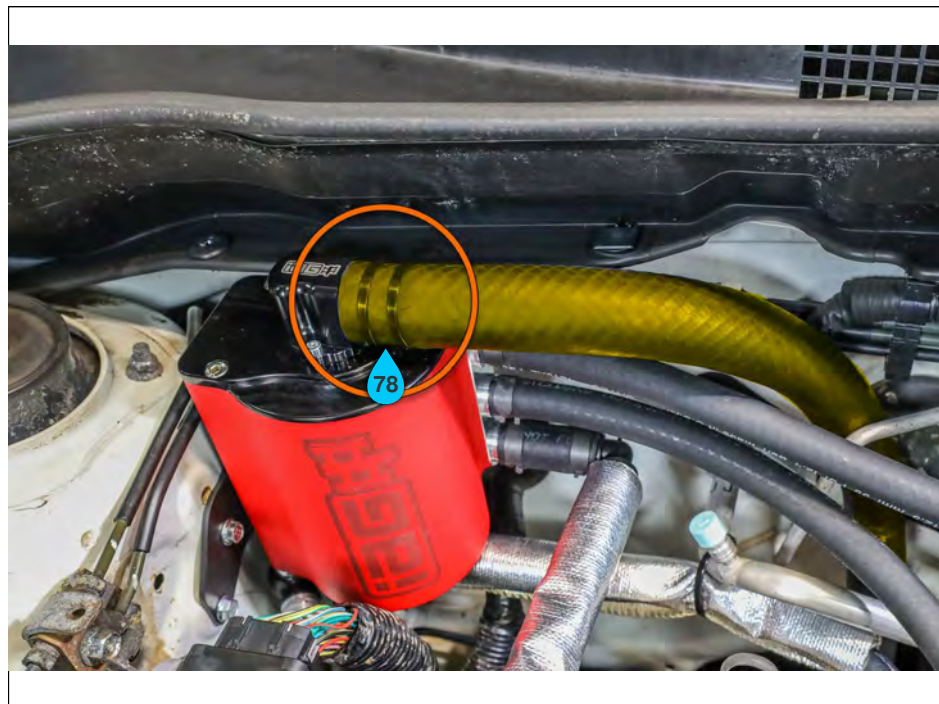
Step 100/111



Step 101/111

Numbered annotations (1)

- 77 Install the 1" Breather hose and route as shown.



Step 102/111

Numbered annotations (1)

- 78 Secure the breather hose with two zip ties.



Step 103/111

Numbered annotations (1)

- 79 Route the breather hose here

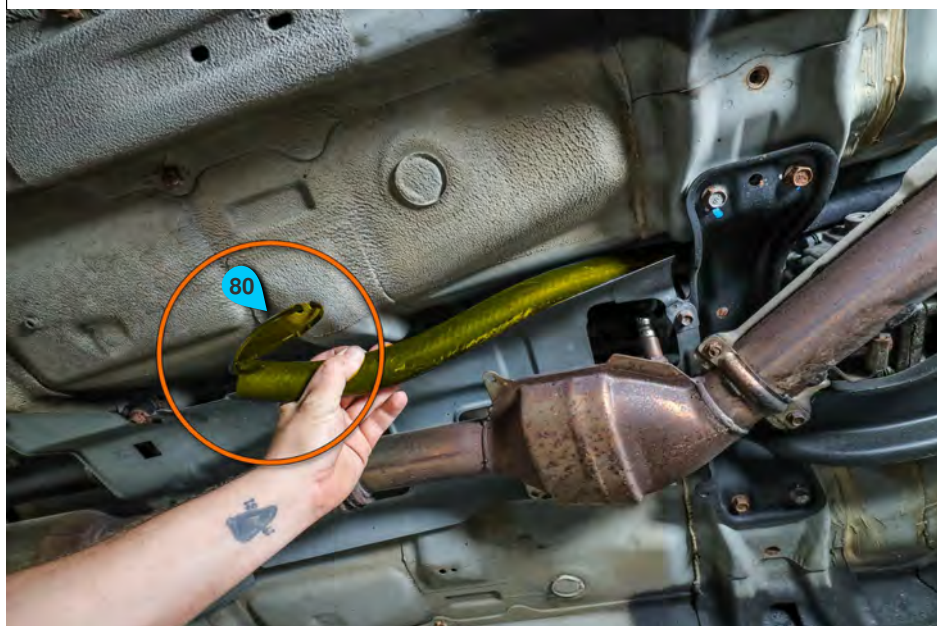
Step 104/111



Step 105/111

Numbered annotations (1)

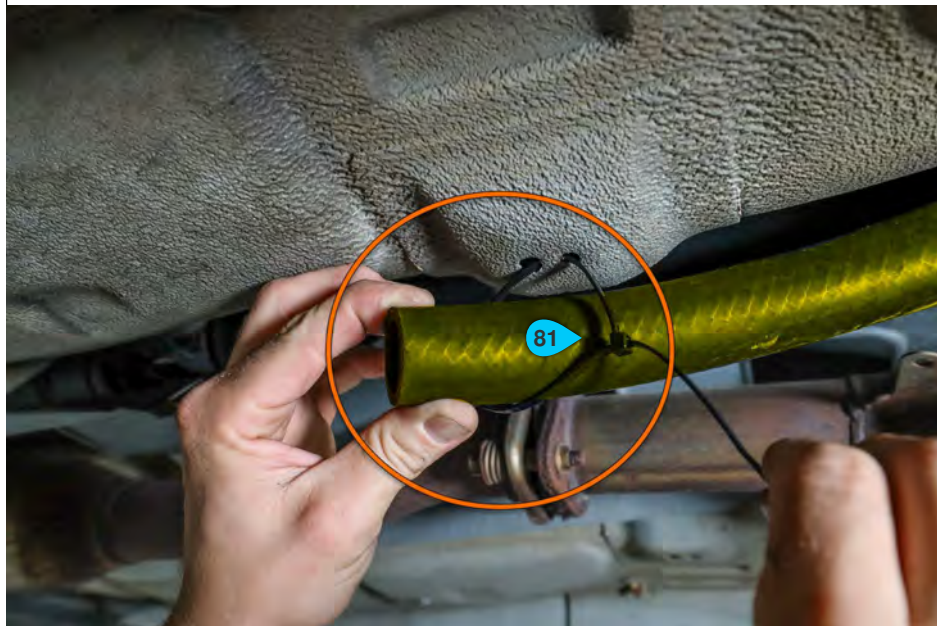
80 Make a loop with a zip tie here



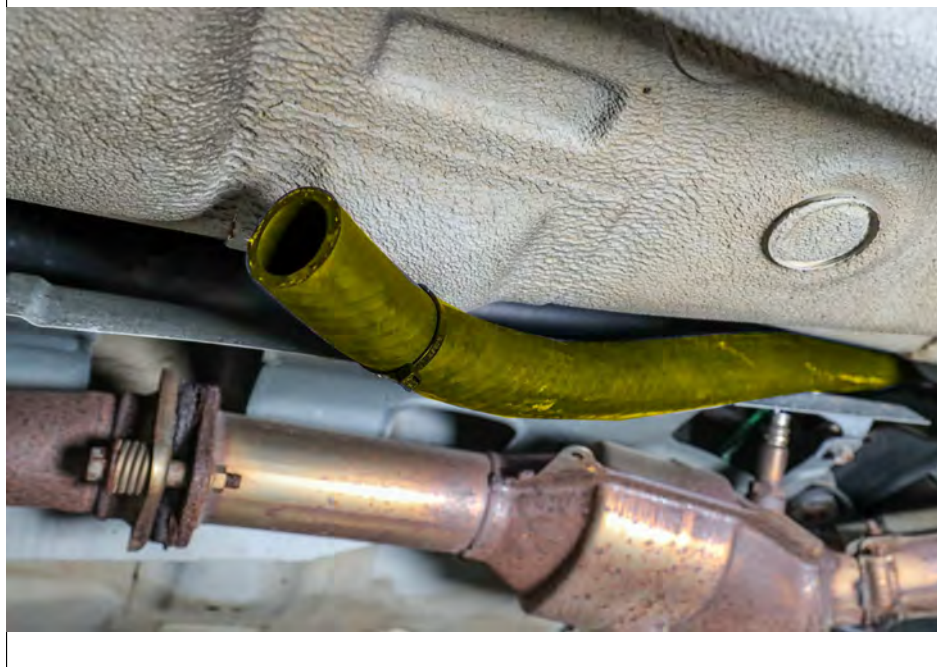
Step 106/111

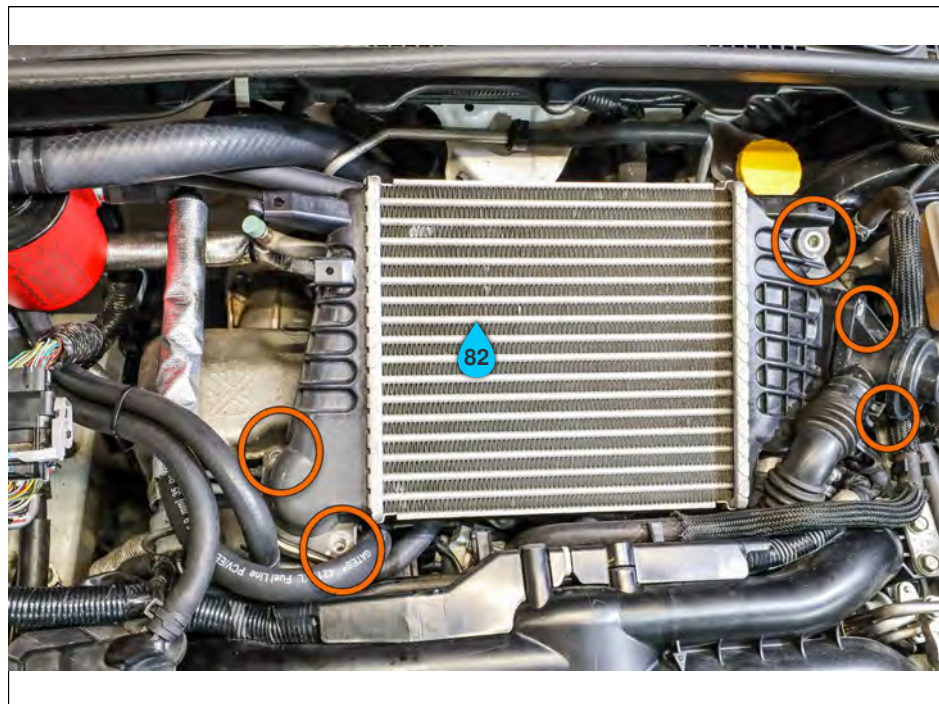
Numbered annotations (1)

- 81 Run the hose through the zip tie to secure it to the bottom of the vehicle.



Step 107/111

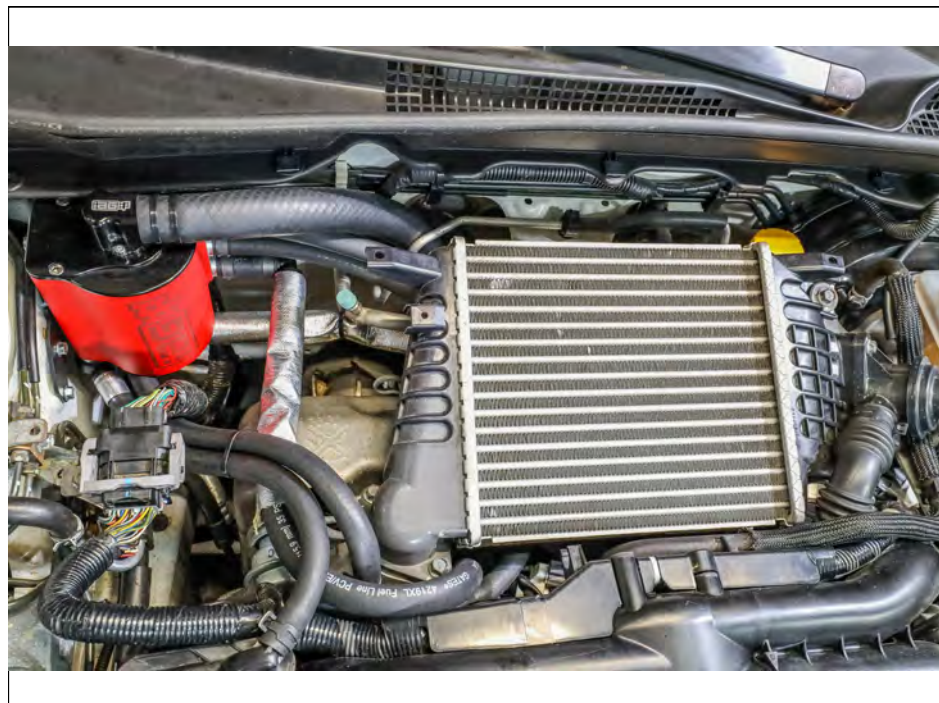




Step 108/111

Numbered annotations (1)

- 82 Reinstall the intercooler and BPV. Make sure to secure the clamp for the throttle body hose.



Step 109/111



Step 110/111



Step 111/111

Numbered annotations (1)

- 83 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.