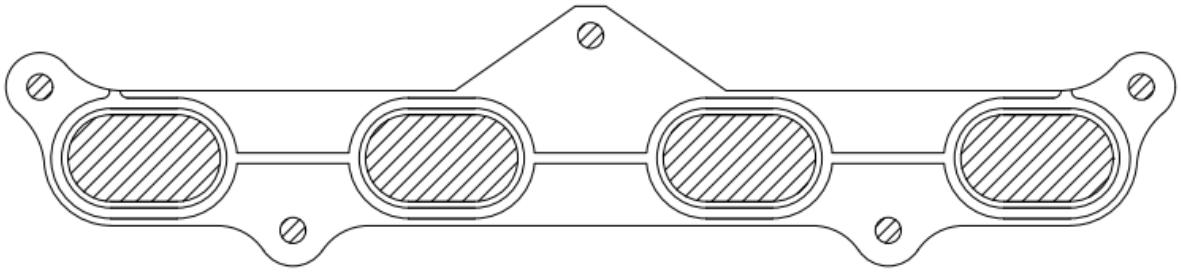
Anderson Engineering Solutions LLC

Installation Instructions

Please read instructions thoroughly before starting installation!

2TR-FE Intake Manifold Runner

(2005 to 2023 Toyota Tacoma)



Thank you for buying an AES Product!

Initial Note: Installation is required after engine has been turned off and cooled. Allow for the engine to cool to a safe temperature that can be touched by hand before beginning.

Patent 63/267,859 Pending

Warning: Caution must be taken while working with hand tools. Install cautiously and handle all tools with care.

Required Tools for Installation

- Flat head screwdriver
- Philips's head screwdriver
- Zip ties (provided)
- Cutters
- Vise grip pliers
- Scissors
- Ratcheting Wrench (3/8 in. drive)
- 4 inches to 10 inches - 3/8" drive extensions
- Metric Socket (compatible 3/8" drive
    - 5mm
    - 10mm
    - 12mm
    - 13mm

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Intake Manifold Runner kits contains the following:

- Item 1: One (1) Intake Manifold Runner
- Item 2: One (1) Intake Manifold Gasket
- Item 3: Five (5) 8m x 1.25 Bolts (90mm long)
- Item 4: Ten (7) Locking Washers
- Item 5: Four (2) 8m Jam nuts
- Item 6: Two (2) 8m Hex nuts
- Item 7: Two (2) Z –Brackets (with two 3/8” bolts)
- Item 8: Three (3) T6061 Aluminum extensions
- Item 9: Three (3) 6m x 1.00 bolts
- Item 10: Two (2) 8m x 1.25 Bolts
- Item 11: One (1) 3/8” Hose extension
- Item 12: One (1) 3/4” Hose extension
- Item 13: Two (2) Flat washers



Hardware (Gasket) Installation:

Begin by remove contents from the package and press the provided gasket into the groove indicated on the Manifold runner. Verify the gasket is fully depressed into the manifold groove along the entire length. Example photos referenced in Figure 1 to 3 below:

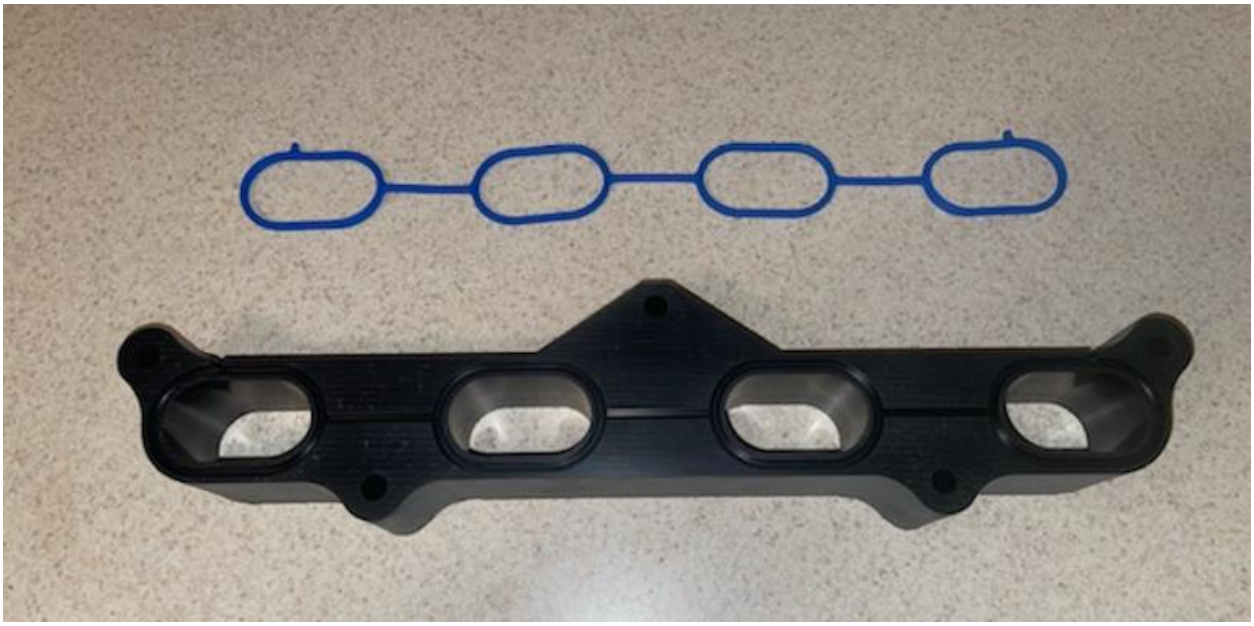


Figure 1



Figure 2

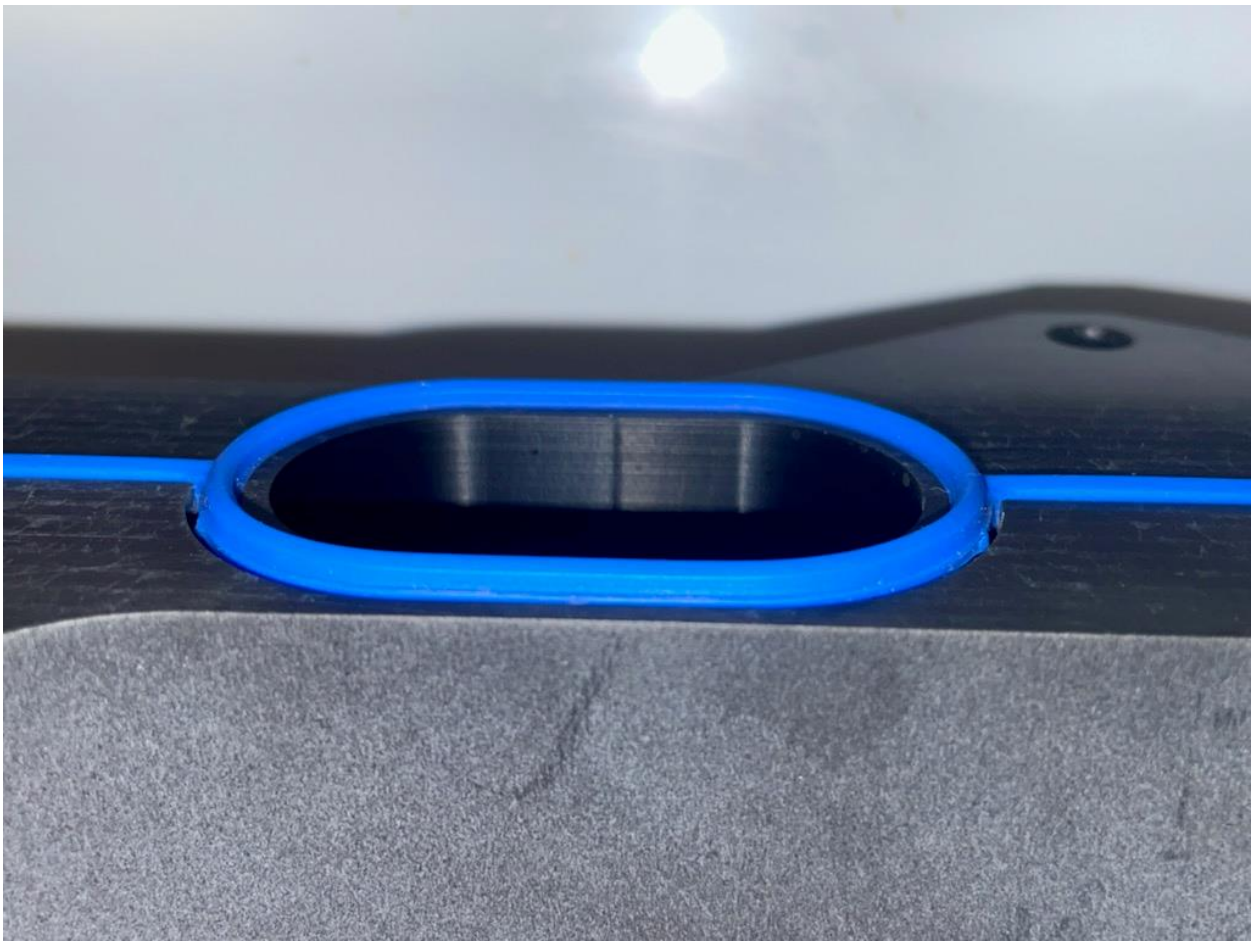


Figure 3

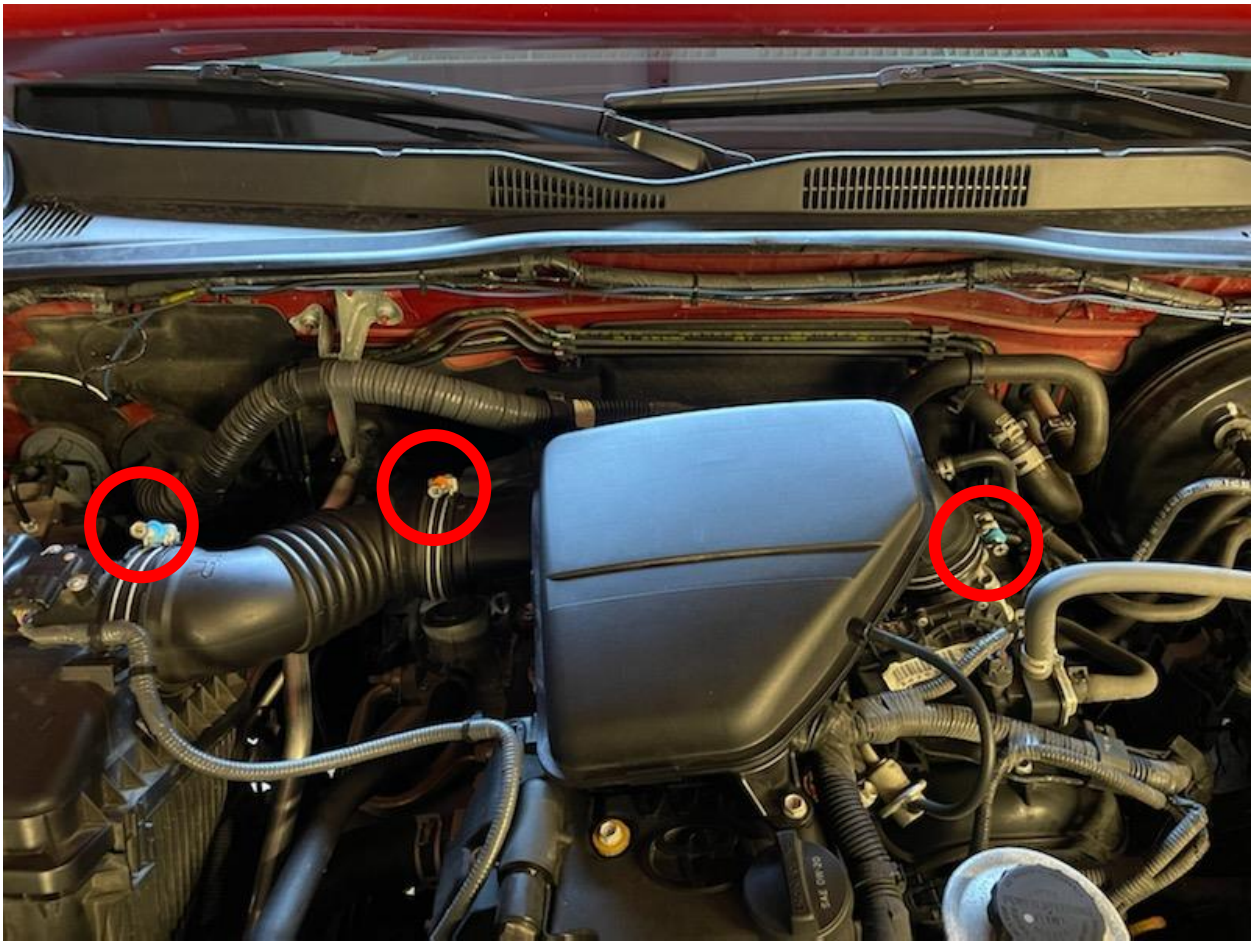
Disconnecting Intake Plenum

1. Please start by removing the positive terminal on the battery and safely positioning to ensure arcing does not occur.

(Warning: Pre-caution must be taken while working with the battery as a shock hazard is present. Hand tools rated for electrical resists is highly recommended during Step 1)

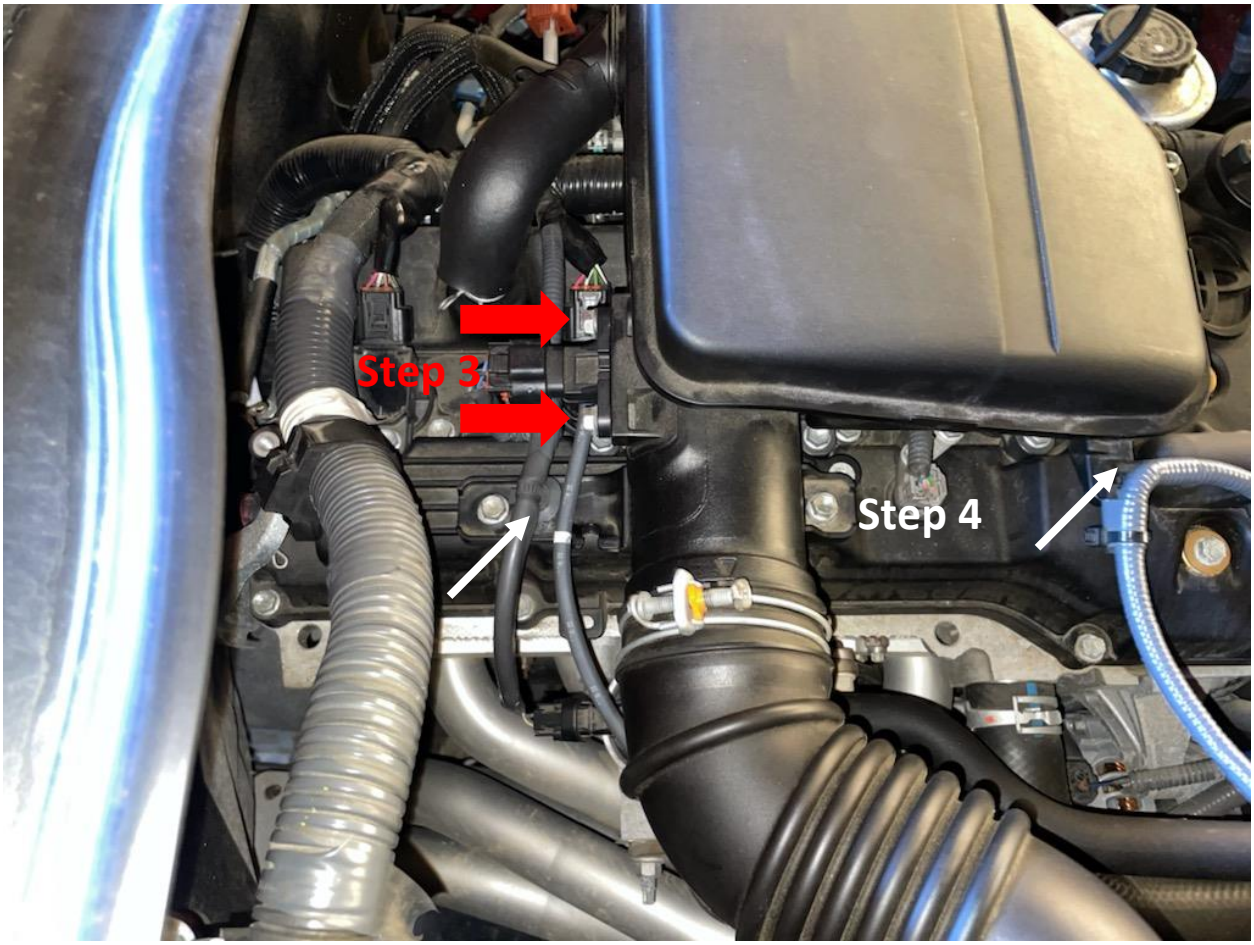
2. Removing the flexible intake hose on the passenger side for the engine bay by loosening the 2 hose clamps with a Philip's head screwdriver. Also remove the hose clamp hold the plenum to the throttle body inlet.

NOTE: Unwrapping the electrical tape on the wiring harness may be needed later for manifold runner installation! DO NOT CUT or use sharp cutting devices to remove the electrical tape. Take the time to unwrap by hand!



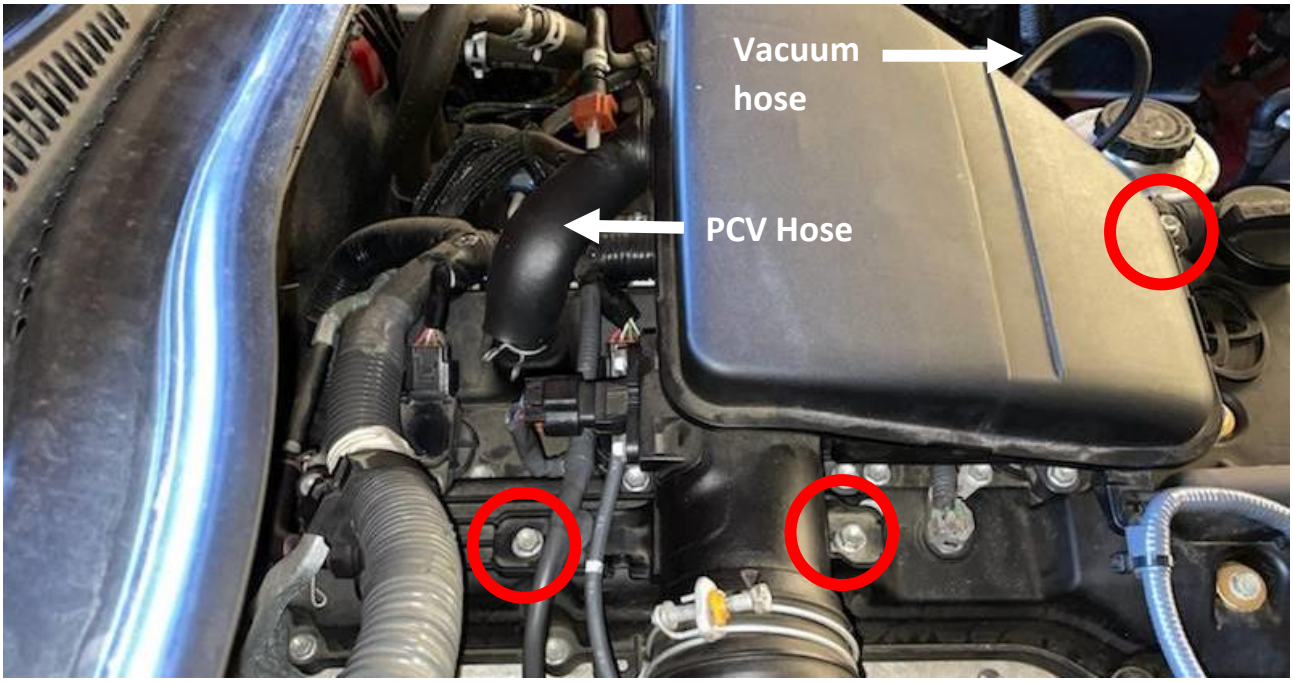
3. Remove the indicated air pressure sensor on the back on the intake plenum by loosing the two (2) 10mm bolts. Disconnecting the plug from the sensor is not required.

4. Disconnect all plastic clips as indicated in the photo below. This includes clips holding the MAF/IAT sensor wiring harness and air pressure sensor wires.



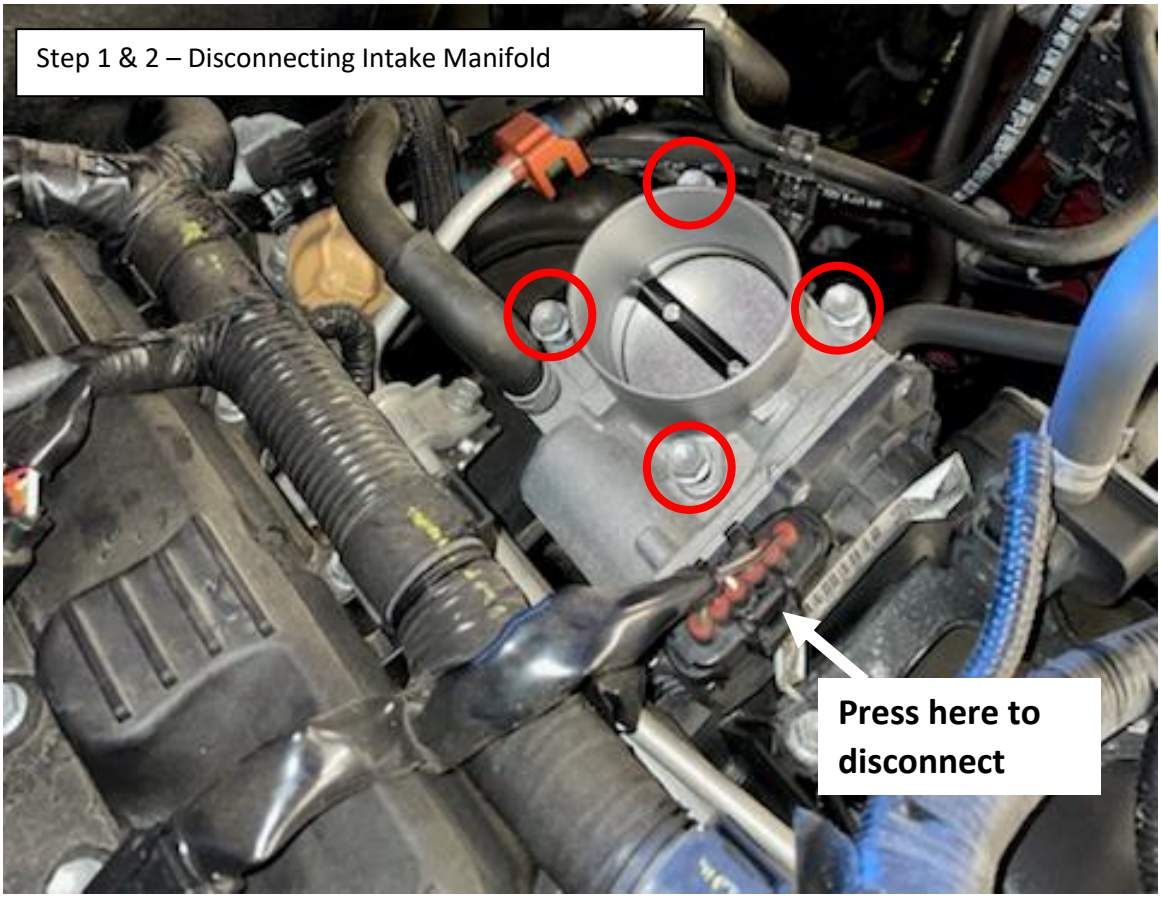
5. Disconnect the Vacuum hose located at the front he the air plenum and the PCV hose located at the rear of the air plenum (closest to the firewall).

6. Remove the Three (3) 10mm bolts attaching the air plenum to the top of the engine and remove complete to provide more workspace. This air plenum and the removed 10mm bolts will be used later.

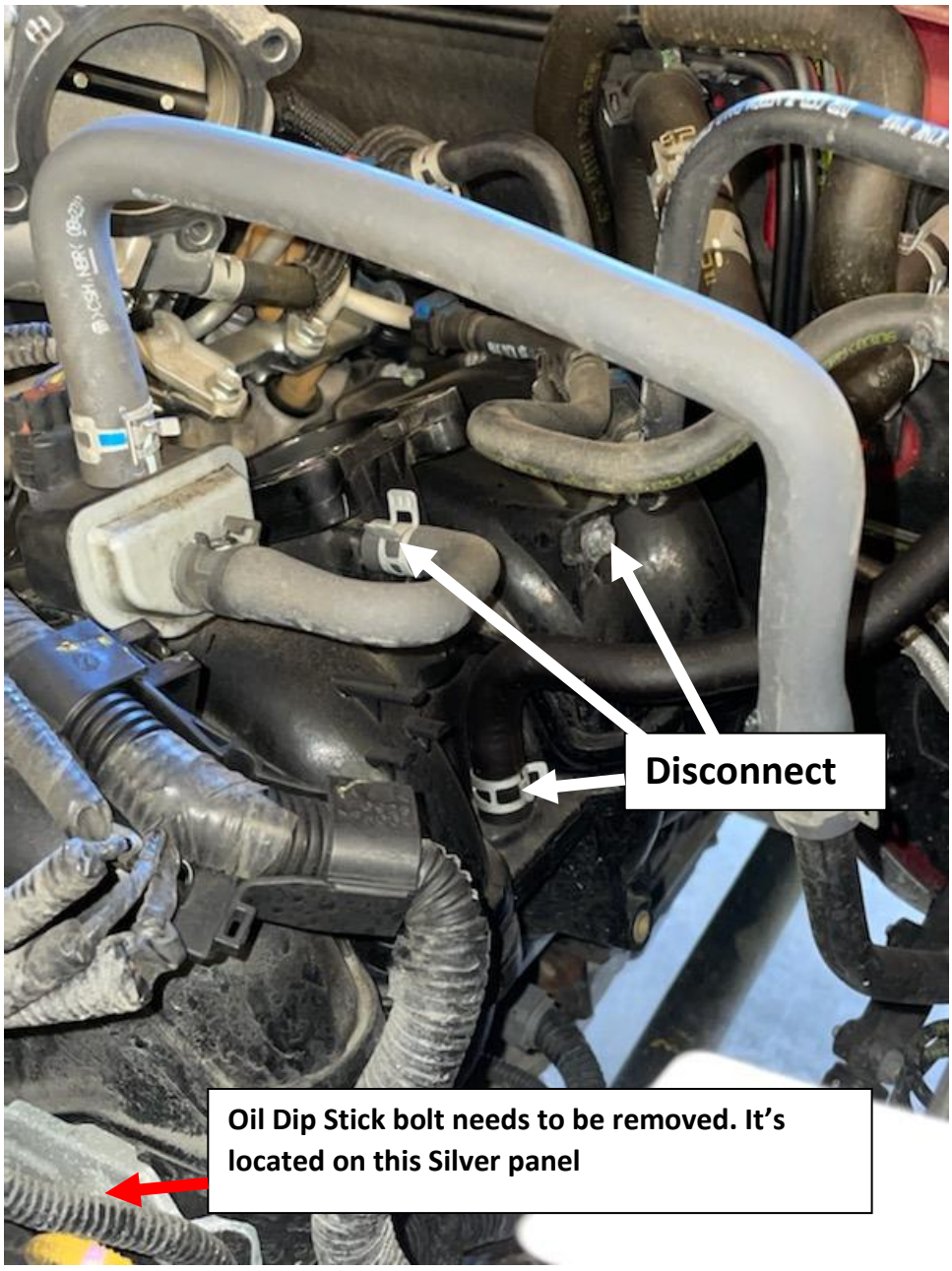


Disconnecting Intake Manifold

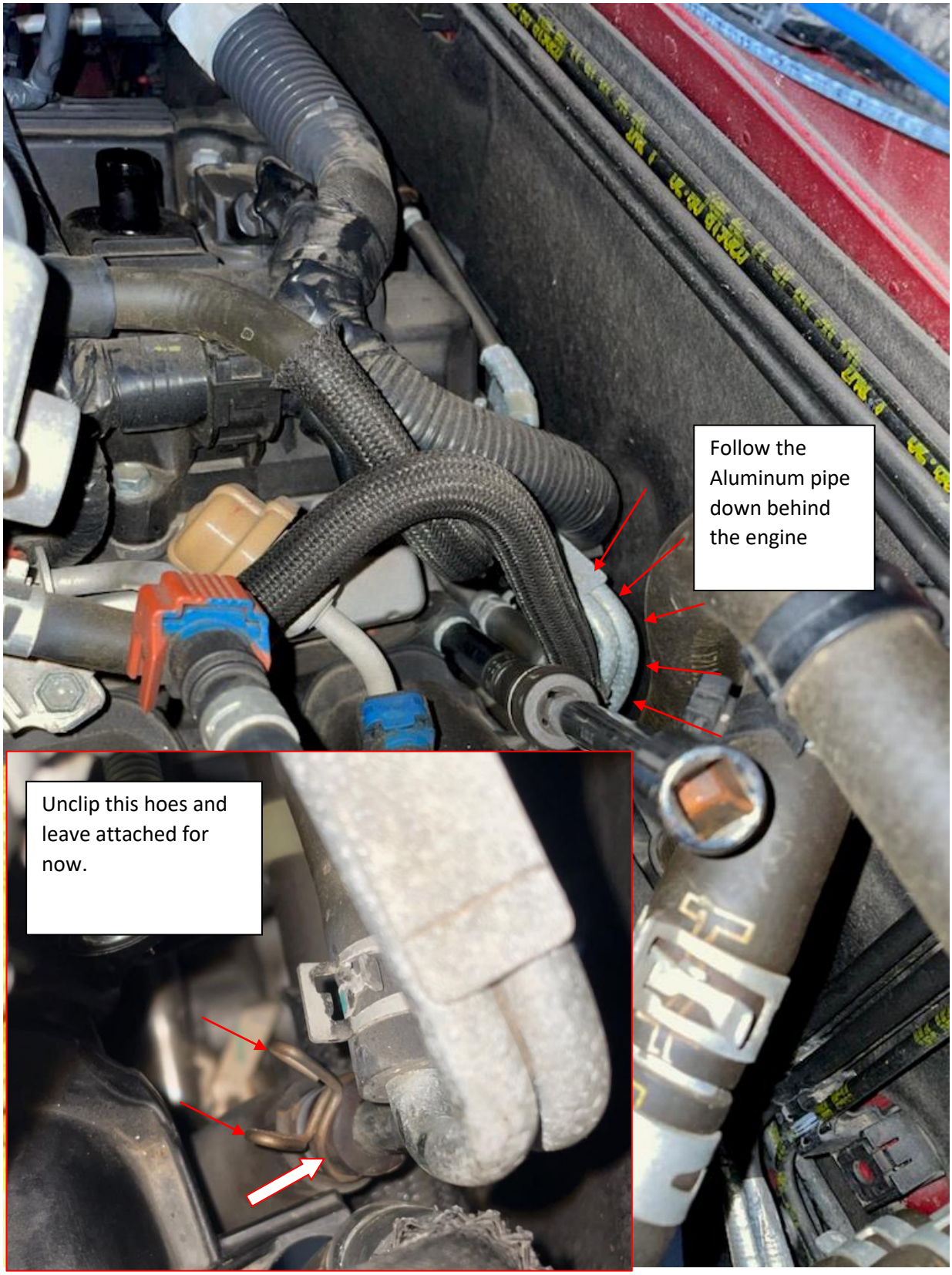
1. Disconnect the Throttle body electrical connector by depressing the tab. Tip: It is easier to remove if the connector is pressed into the plug first and then releasing tab is pressed down. Don't force the clip to unplug as the plastic locking device can crack or break off.
2. Remove the 4 bolts on the throttle body and disconnect. The Coolant by-pass hoses can remain attached at the throttle body only needs moved to the side.
   Caution! There is an O-ring seal under the throttle body. Inspect for damage and replace if needed.



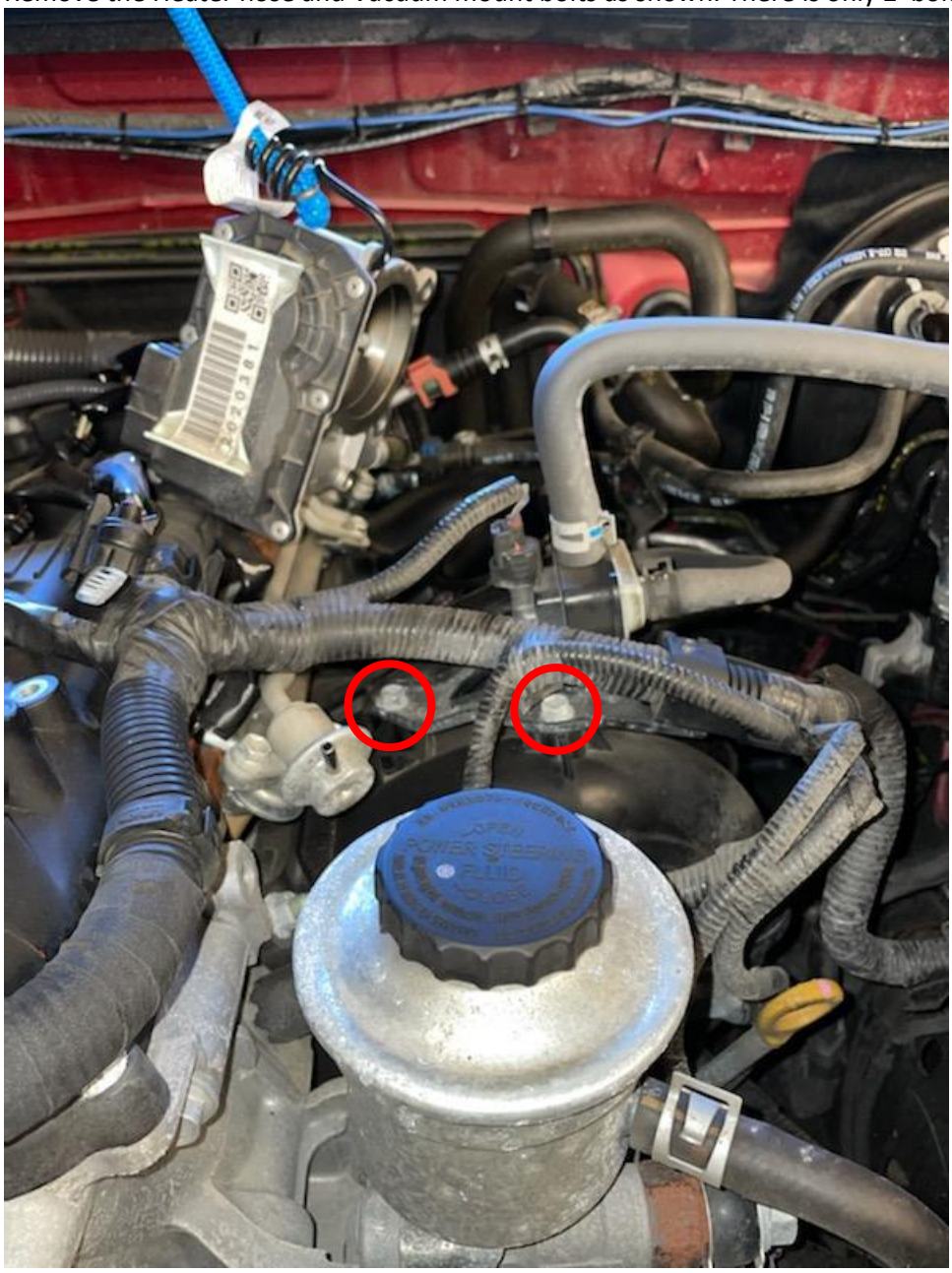
3. Remove Disconnect all vacuum hoses as shown below and remove the dipstick bracket by removing the attaching bolt. This will be reconnected later.
4. Unbolt (1 bolt) the rear heater hose bracket and pull the coolant by-pass hose from the slot located in the side the of the intake manifold as shown below.
   Note: The 12mm bolt located supporting the oil dipstick will need removed.



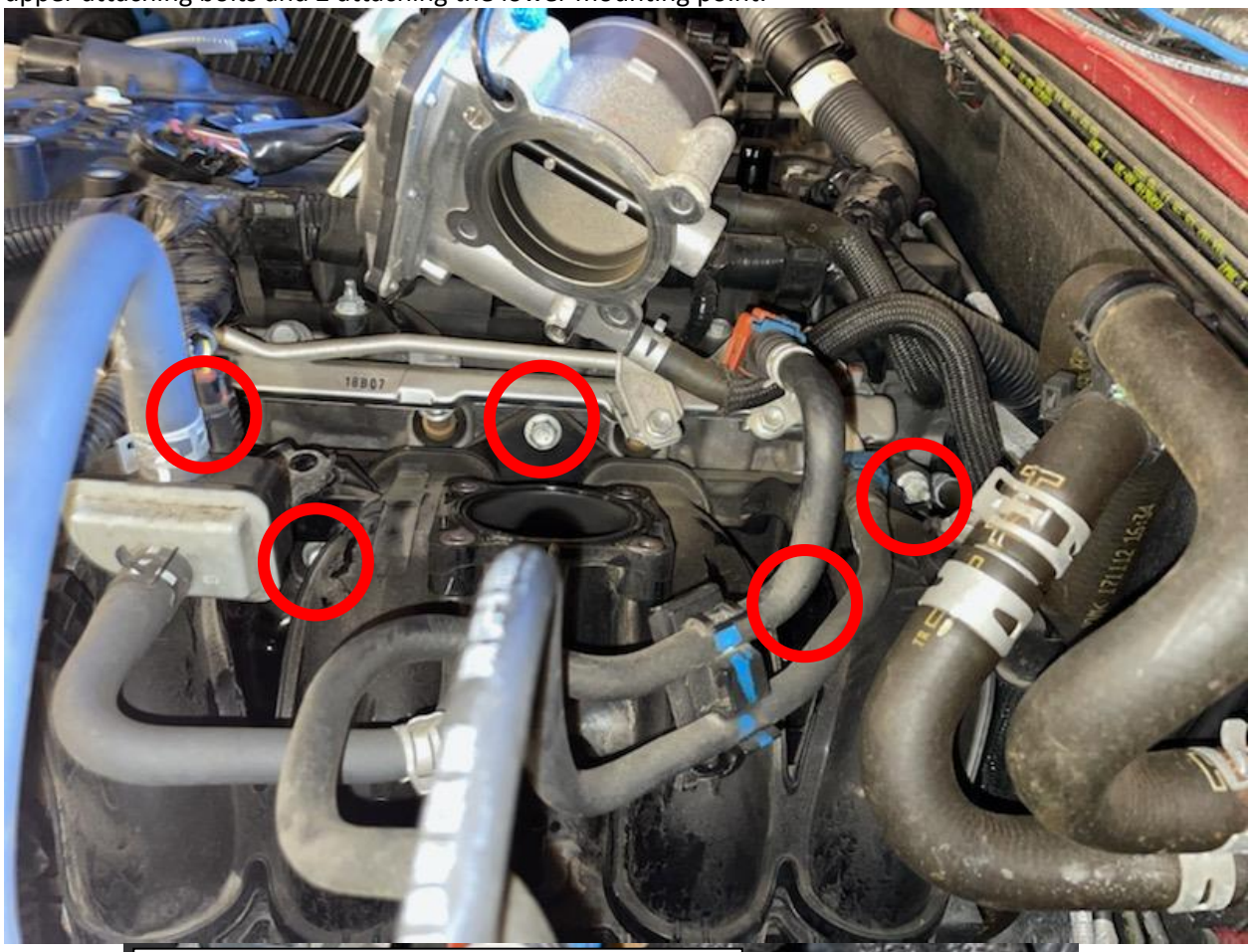
5. Remove PCV hose located in the back of the intake manifold. It is the most difficult to access.

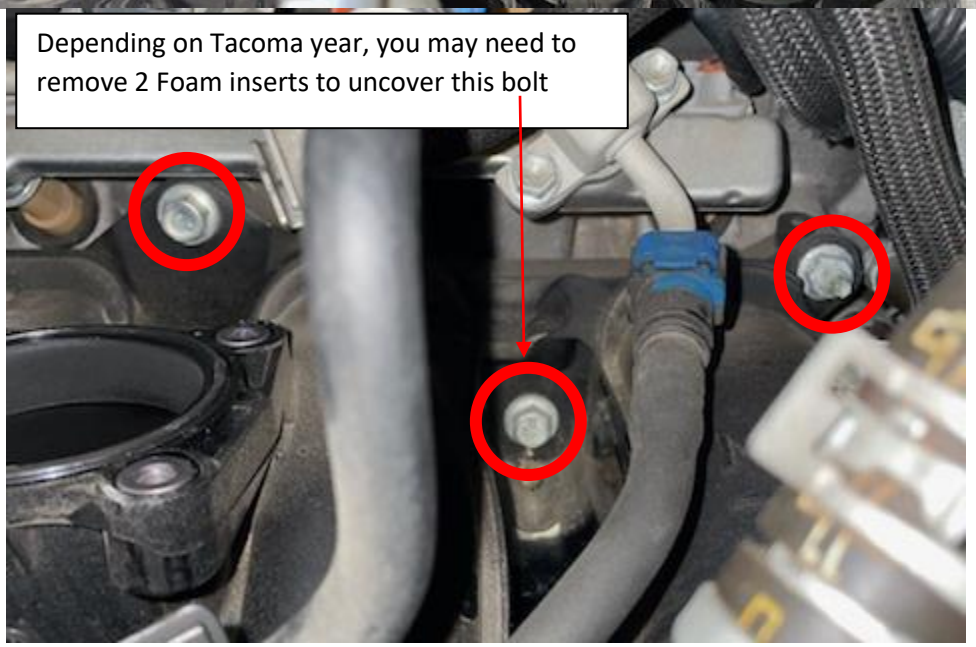


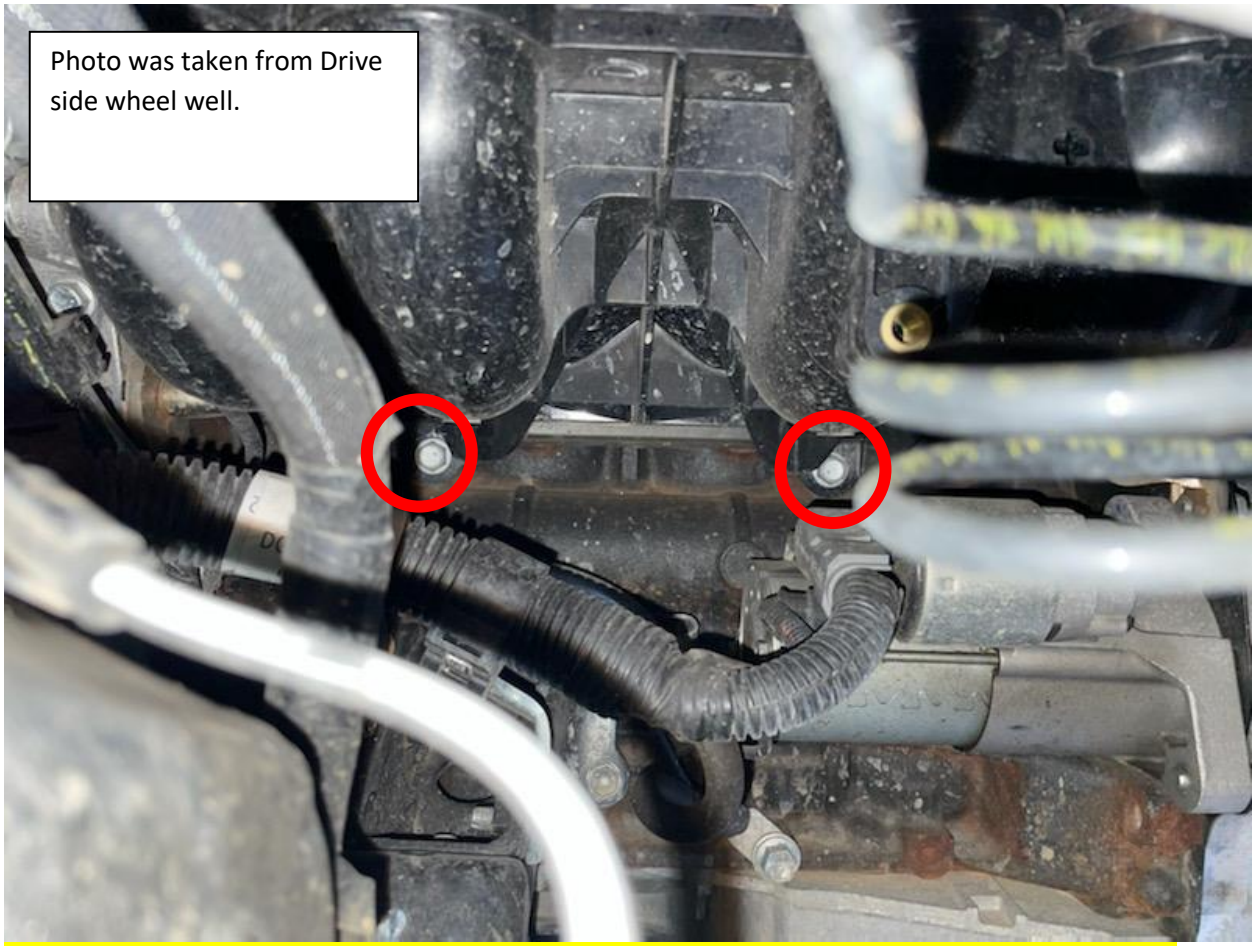
6. Remove the Heater hose and Vacuum mount bolts as shown. There is only 2 bolts



7. Remove 7 total attachment points holding the intake manifold to the engine head. There are 5 upper attaching bolts and 2 attaching the lower mounting point.

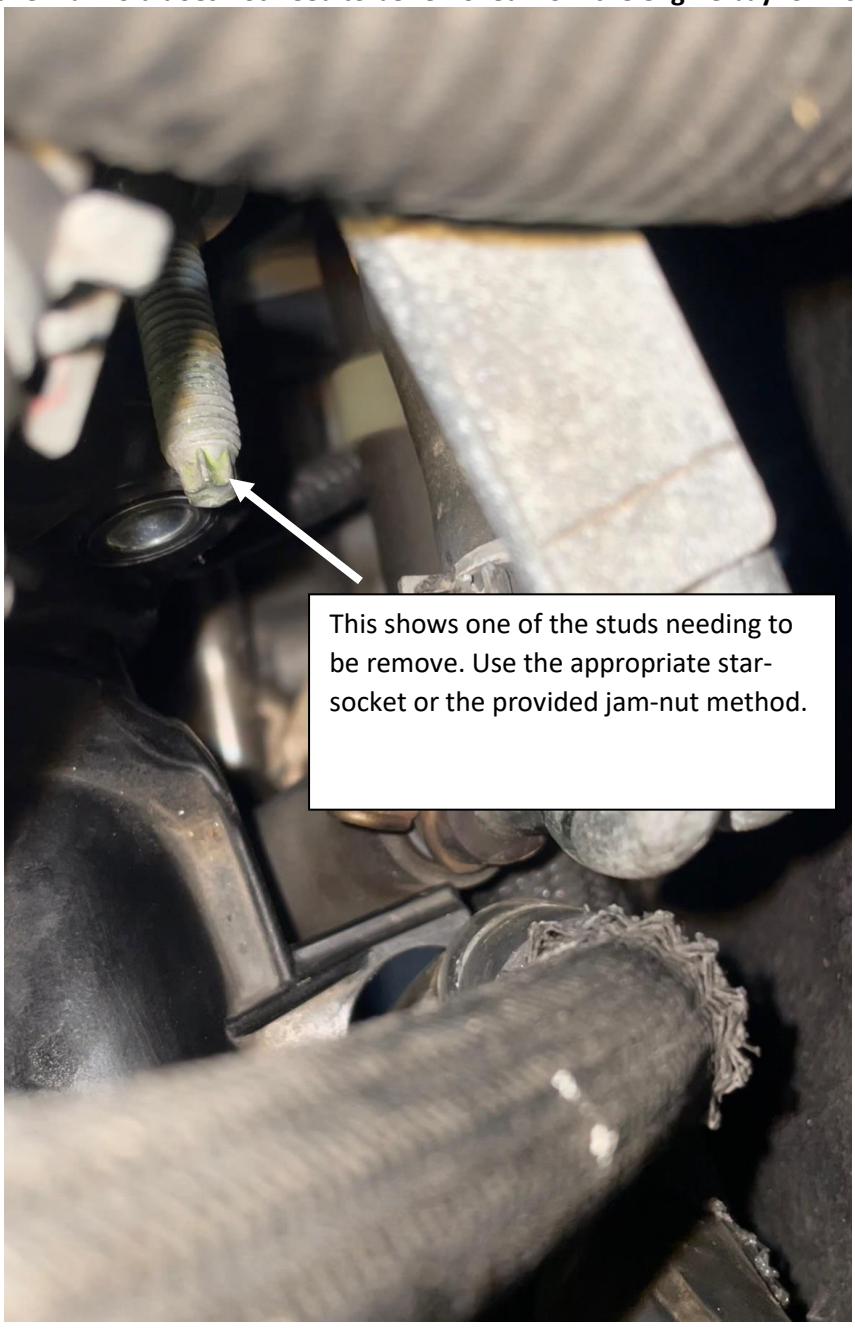






TIP! The bottom 2 bolts can be more easily removed by using the ratchet wrench extensions and removing through driver side wheel well.

8. Remove all 2 studs located in the engine head while the Manifold is in place. These will be replaced by the provided 8m x 1.25 (90mm) bolts. Then Pull the intake manifold from the
   TIP! Using the provided Jam nuts will help with remove the studs if needed. These jam nuts will also be used for installation.
   NOTE: The intake manifold does not need to be removed from the engine bay for installation.



Manifold Runner Installation Guide

1. With the manifold pulled back from the engine, install the Manifold between the engine head and the OEM intake manifold.

2. Using the five (5) 8m x 1.25 bolt with a lock washer provided attached the Manifold Runner to the intake manifold and tighten to the to the engine head in the pattern as show below. Ensure the lock washers engage and are flattened.

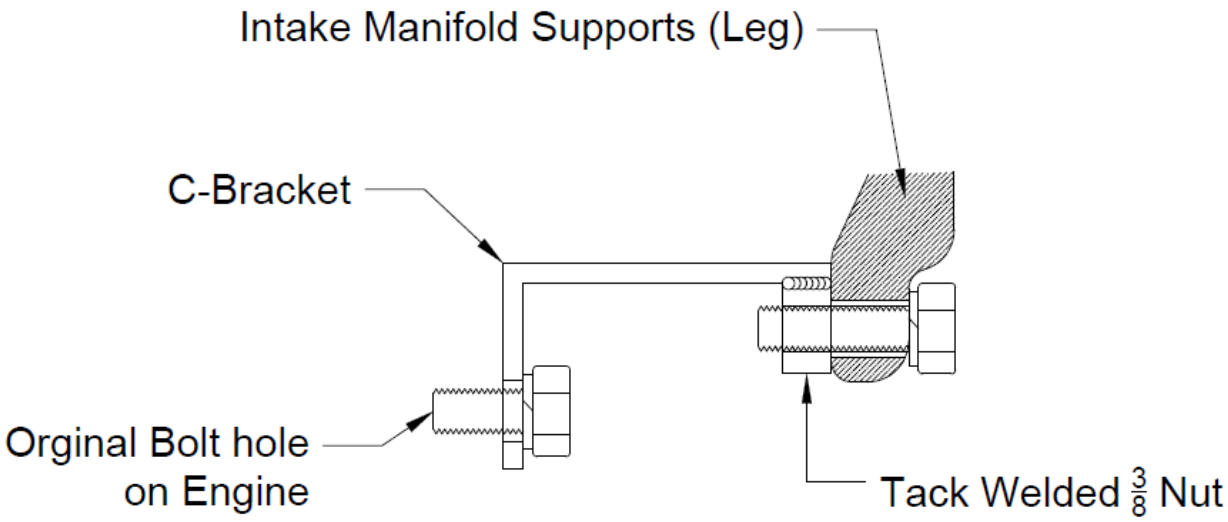
IMPORTANT STEP For ALINGMENT Attach All Top bolts before attempting the lower bolts!



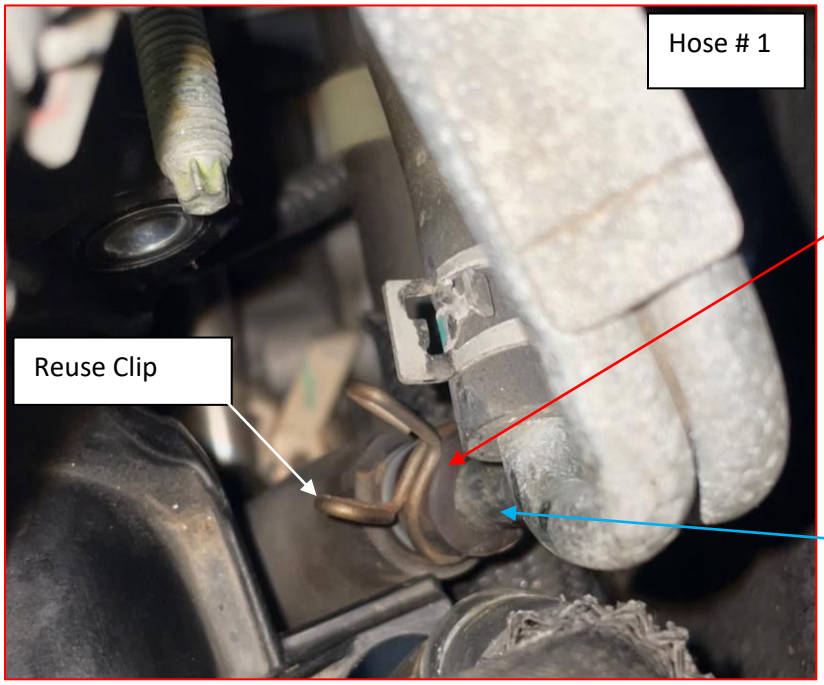
Please read:

Quick Tips! At this stage when everything is unbolted, it is easiest to access "behind" and "underneath" the intake manifold for attaching the Z-bracket / the 3/8 hose. It is recommended to use the extra space at this point to make things go smoother.

3. Next tighten the lower intake manifold bolts as show in the Diagram below:

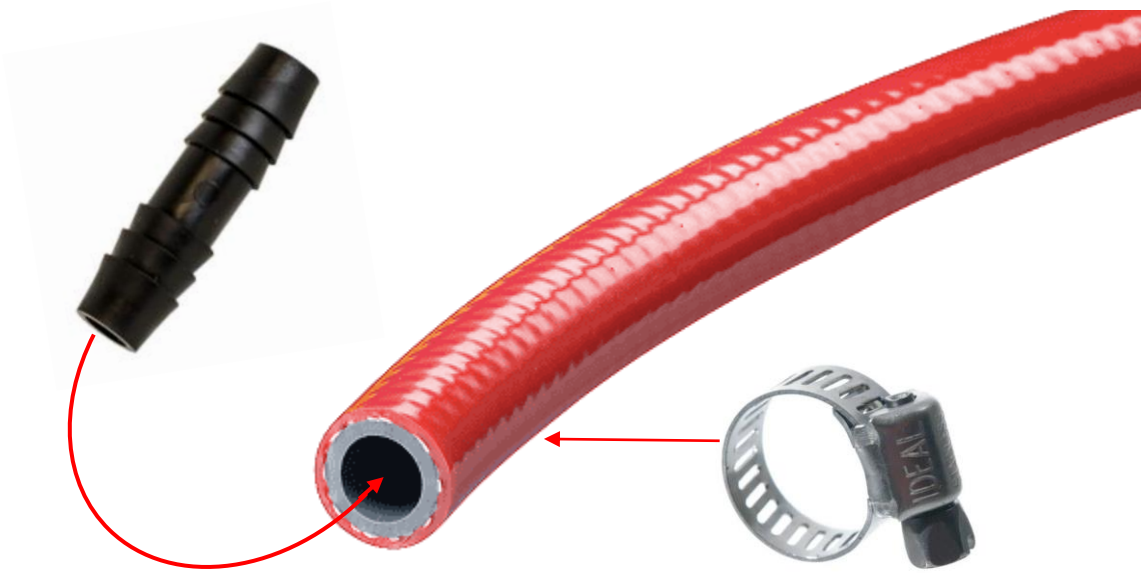


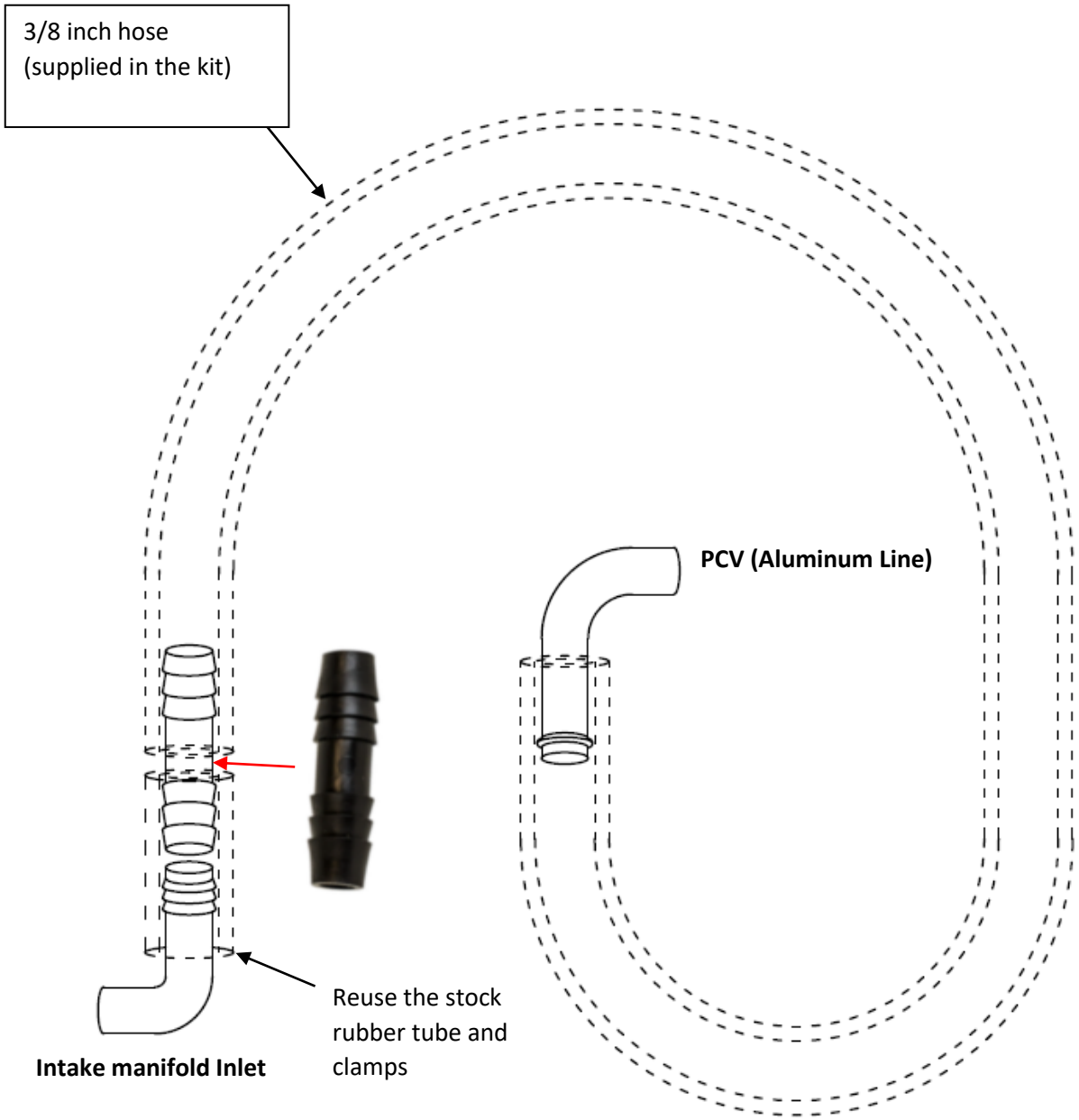
4. 2 of the hoses will need to be replaced using the provided hoses in the intake manifold kits. One is 3/4” (ID) and the other is 3/8” (ID)



The 3/8” ID hose will the metal connect will be installed into one end of the hose and then will be press into this black hose

Use the OEM clips to secure and then loop the loop in a 360 Swirl pattern without kinking the hose and install on to the open metal tube (PCV)




3/8 inch hose
(supplied in the kit)
PCV (Aluminum Line)
Intake manifold Inlet
Reuse the stock rubber tube and clamps







This new hose will replace 3/4” hose as should in the photo. Reuse the attachment clips

Fitment verification

After all is complete, connect the battery and start the truck. If installed incorrectly double check these few items below to help trouble shoot any issues.

This list has been compiled from customer interaction regarding the most common issues:

Symptom:	Correction
Code P0410 or P0411 found	Ensure 7/32 hose from the air injection is connected to air plenum. *This correlating to air injection system on exhaust.*
Rough Idle	Verify all vacuum ports at attached to the corresponding hoses. Please read through document to ensure all is covered. Also verify that both OEM gaskets (original and new) are oriented in the correct direct to ensure proper seal.
Manifold Not Aligning	If having trouble aligning the manifold with the 5 bolt holes, Start at the center position and work outwards. Manifold spacer positioning is held to a tight tolerance and engine casting variations can cause trouble.
Issue with lower intake C-brackets	The bracket are easiest to install if all other bolts are loose. (5 upper manifold bolts). The brackets can be installed by accessing through the drive side wheel well using a few tool extensions. ***Removing the starter is NOT*** necessary for installing these brackets**.

Warranty Information

Service as It Should Be

In today's online shopping market, we believe that honesty is the best policy. That's why we designed the most generous, fair and transparent store policy for our customers. Read the following sections to find out more about our warranty information. Please don't hesitate to contact us if you have any questions!

- All manufactured products sold by Anderson Engineering Solutions LLC have a 120 day limited warranty from the date of sale.
  - This warranty does not cover minor defects as a result of naturally occurring elements and shipping damages including, but not limited to oxidation or corrosion, paint flakes, and burrs or high metal.

- This limited warranty applies to all products and requires an inspection by Anderson Engineering Solutions LLC at its Franklin, OH location to verify if a product defect exists in either the material or workmanship if claim arises.

  For all remaining warranty information. Please visit our "Store Policies", webpage at AESinnovate.com.

  Technical assistance phone number: 937-823-5541