



**JAMES BARONE RACING
AFTERMARKET PARTS AND ACCESSORIES**

2016+ MAZDA ND/RF Miata MX-5 Oil Catch Can Installation instructions

Tooling:

- ✓ Jack and jack stand
- ✓ Ratchet wrench
- ✓ Various extensions
- ✓ 8mm 10mm, 11mm, & 14mm sockets
- ✓ 11mm and 14mm wrenches
- ✓ 5mm allen wrench
- ✓ Flat head screw driver
- ✓ Regular and needle nose pliers
- ✓ Teflon tape

Parts List:

- ✓ 1 Fully assembled oil catch can
- ✓ 121" of 3/8" reinforced hose – (one 65", one 36" one 20")
- ✓ 1 catch can mounting bracket
- ✓ 1 quick drain valve
- ✓ 4 hose clamps
- ✓ 4 zip ties

Estimated time to complete the job is 2.5 hours. Give yourself plenty of time to complete the job. We have broken the instructions out into numerous steps. Do not be discouraged. The job is not that hard and although it appears to be a lot of work, it's not. Take your time, enjoy yourself and the time you spend working on your car. Invite your friends over to join in on the fun and lend a hand.

Read and understand the instructions thoroughly before beginning. Now let's get started!

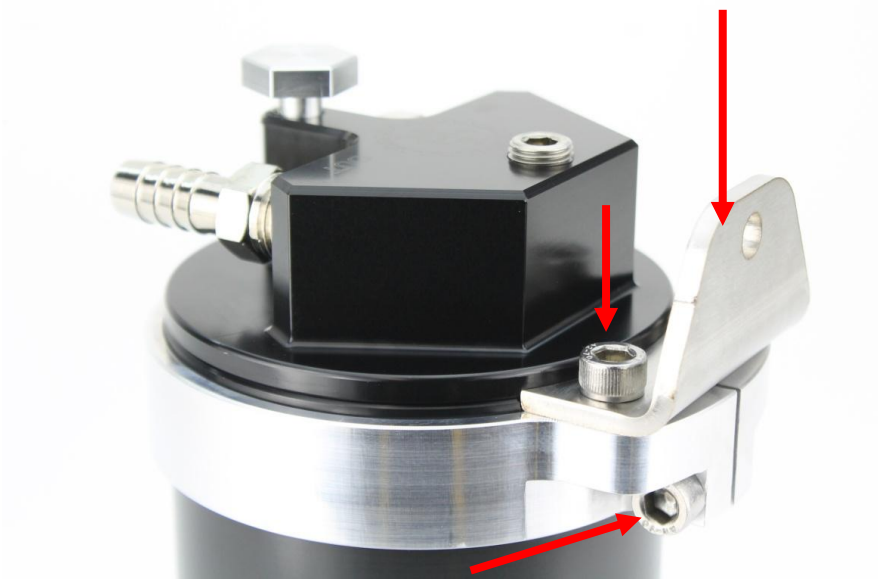
1. Apply Teflon tape to the threads of the drain valve. Attach the drain valve to the bottom of the catch can and tighten with a crescent wrench. Install the drain hose fitting into the bottom of the drain valve. This can be tightened by hand and does not need to be too tight.



2. Apply Teflon tape to the threads of the barbed fittings. Install the barbed fittings into the IN and OUT ports of the catch can using a 14mm deep socket.



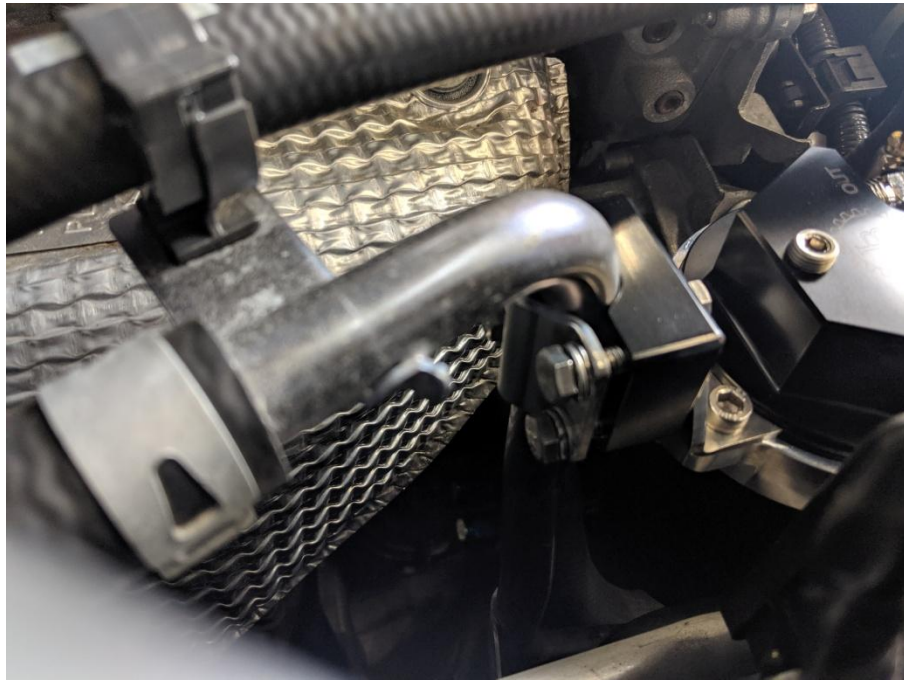
3. If you need to adjust the height of the mounting bracket or the location of the mounting bracket, ALL 3 socket cap bolts must be loosened using a 5mm allen wrench. (No need to adjust for this installation)



4. Using a 6mm bolt, flat washer and lock washer, attach the mounting bracket squarely to the mounting bracket already installed on the catch can. Tighten with a 10mm wrench.



- Using 4, 6mm bolts, flat washers and lock washers along with the V-shaped mounting bracket, install the catch can on to the A/C line located on the passenger side of the engine. Tighten all four bolts evenly until tight with a 10mm wrench. There will be a small gap between the two brackets.

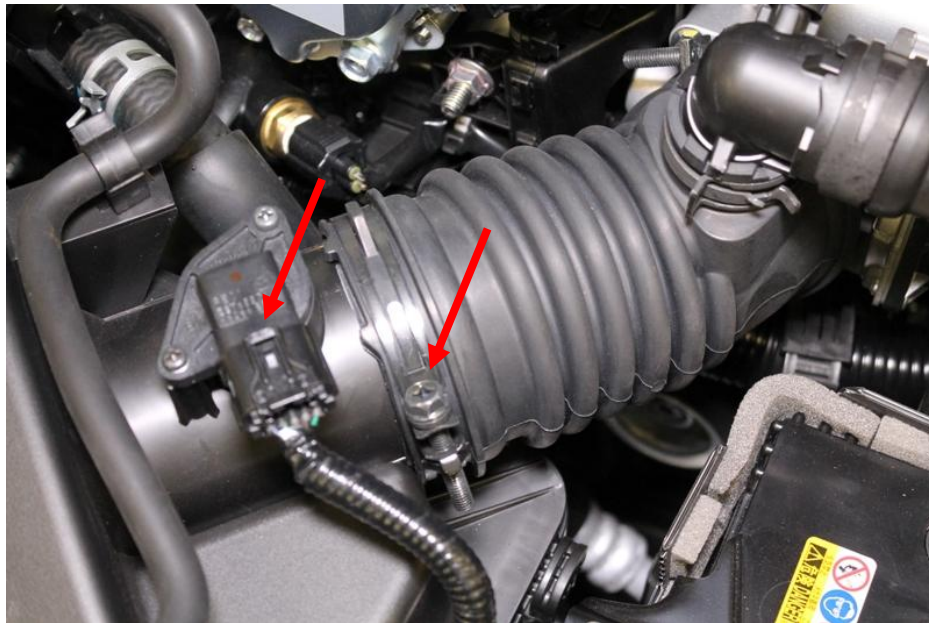


The drain hose should be routed down near the area of the oil pan drain plug

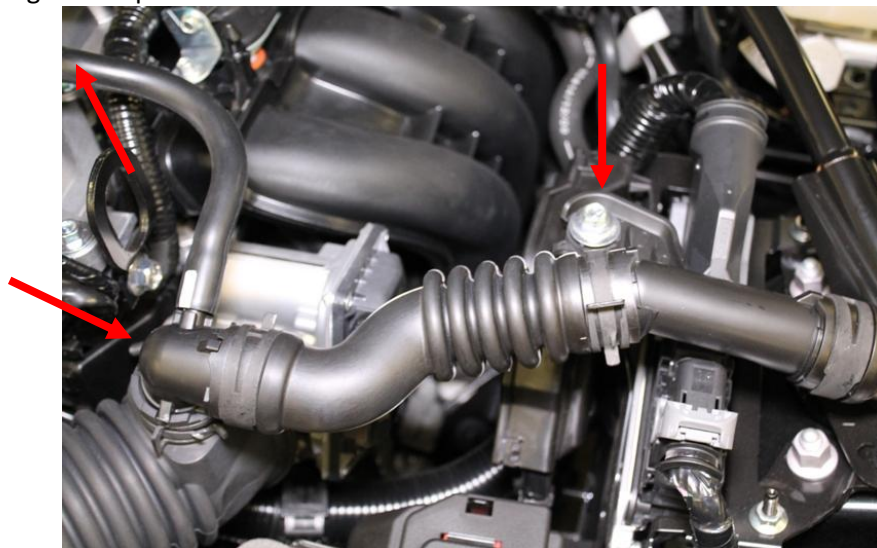
- Remove the negative battery terminal using a 10mm socket.



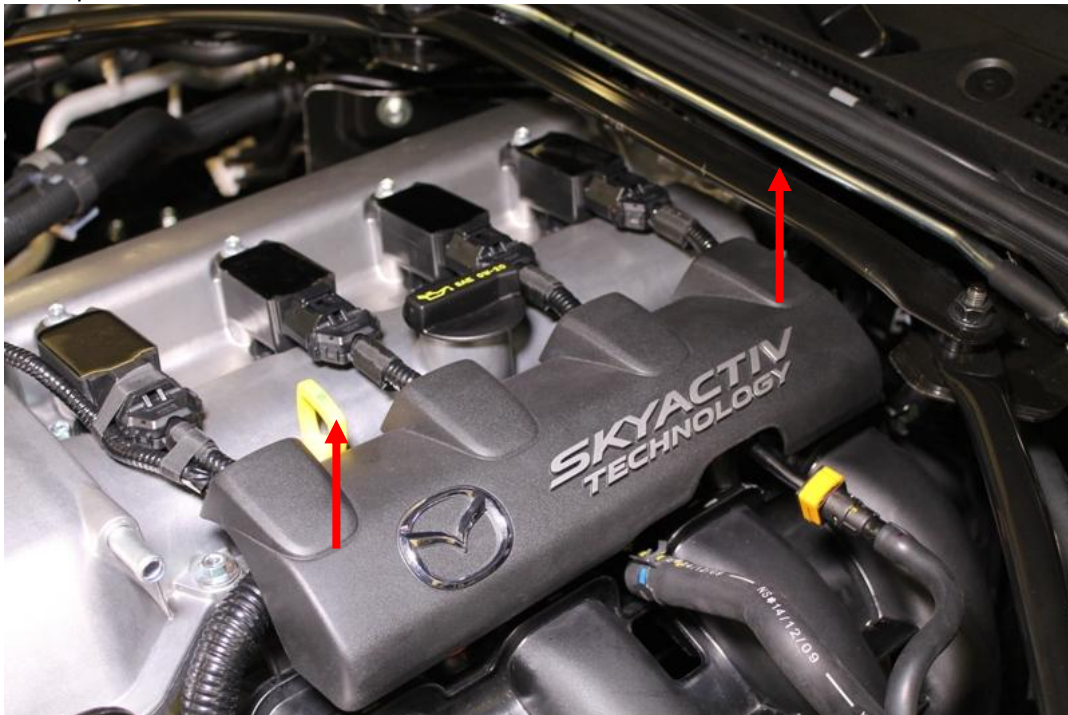
7. Next, remove the lead connected to the MAF sensor by depressing the tab at the rear of the connector and pulling the connector towards the driver's side of the car. Loosen the hose clamp at the air box using a 10mm socket.



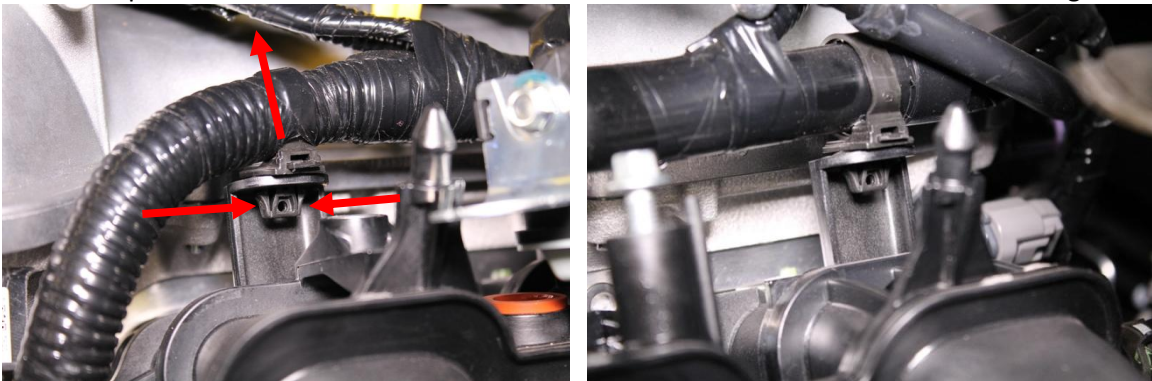
8. Loosen the hose clamp at the throttle body and the bolt securing the sound enhancer (if equipped) using a 10mm socket.
9. Remove the hose connected to the valve cover.
10. Remove and pivot the intake hose and sound enhancer out of the way towards the driver's side of the engine compartment.



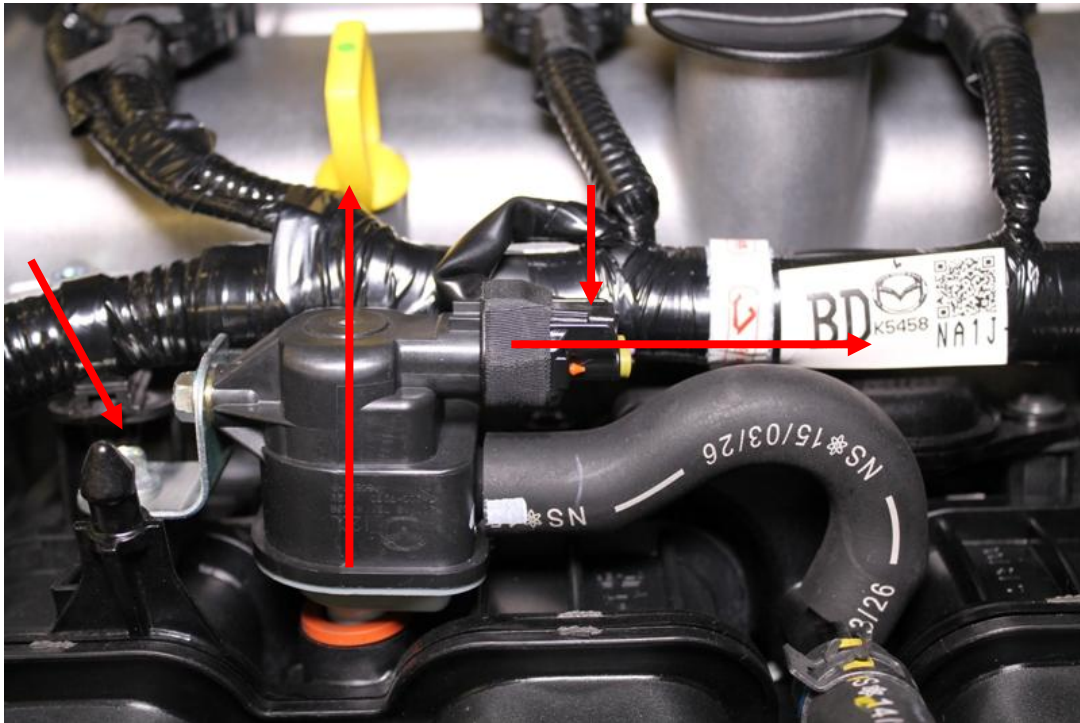
11. Pull up on each end of the fuel rail cover and remove.



12. Using a pair of needle nose pliers, squeeze and disconnect the clips holding the wiring harness to the top of the intake manifold. There is one at the front and one at the rear of the engine.



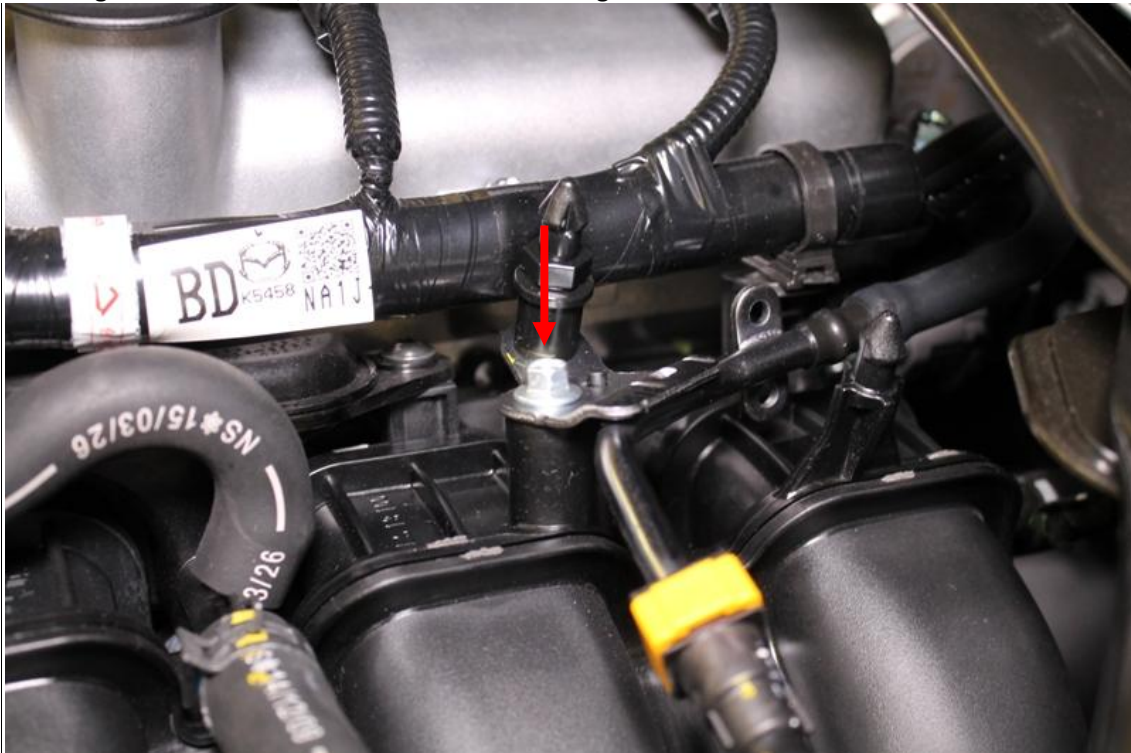
13. Next remove the lead connected to the vacuum solenoid by depressing the tab at the rear of the connector and pulling the connector towards the rear of the car.
14. Using an 8mm socket remove the nut securing the vacuum solenoid to the intake manifold. Wiggle the solenoid and raise it up out of the manifold



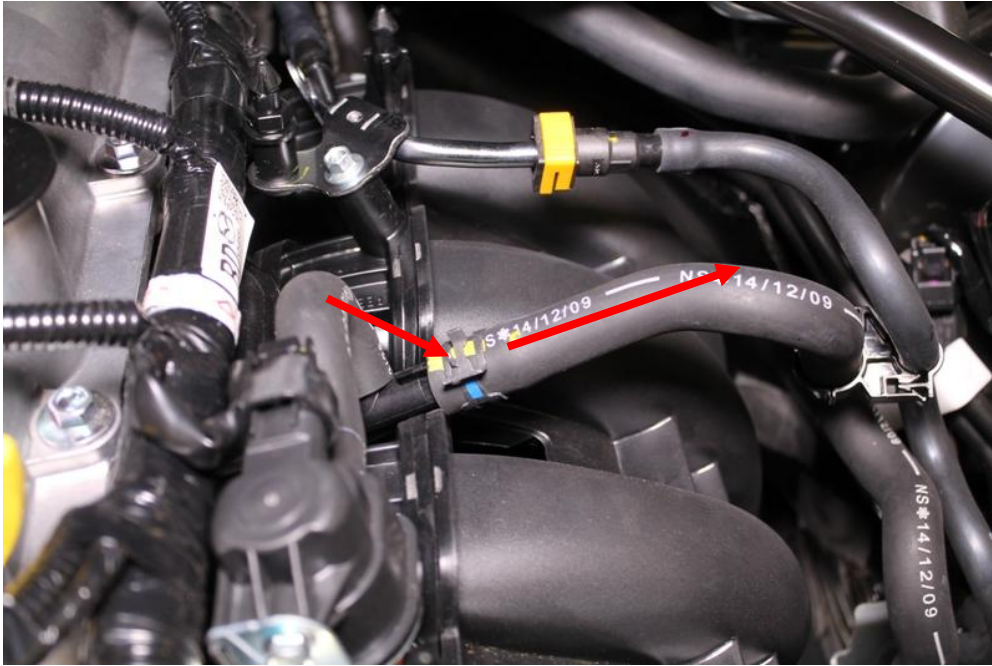
15. Using your finger nails carefully spread the tabs furthest from the driver's side and pull up on the yellow clip. The clip is designed to stay on the line. Some fuel may drip. Place a rag below the connection.



16. Using an 8mm socket, remove the bolt securing the fuel line to the intake manifold.



17. Using a pair of pliers, squeeze the spring clip and slide it back towards the driver's side. Twist to loosen and carefully remove the vacuum hose. DO NOT attempt to remove it until it twists loose.



Tie back the fuel line and vacuum lines removed in steps 14 and 15 to keep them out of the way.

18. Using a pair of pliers, squeeze the spring clamp, slide it back and remove the vacuum hose found just off center, close to the cowl on the driver's side. Twist to loosen and then remove.

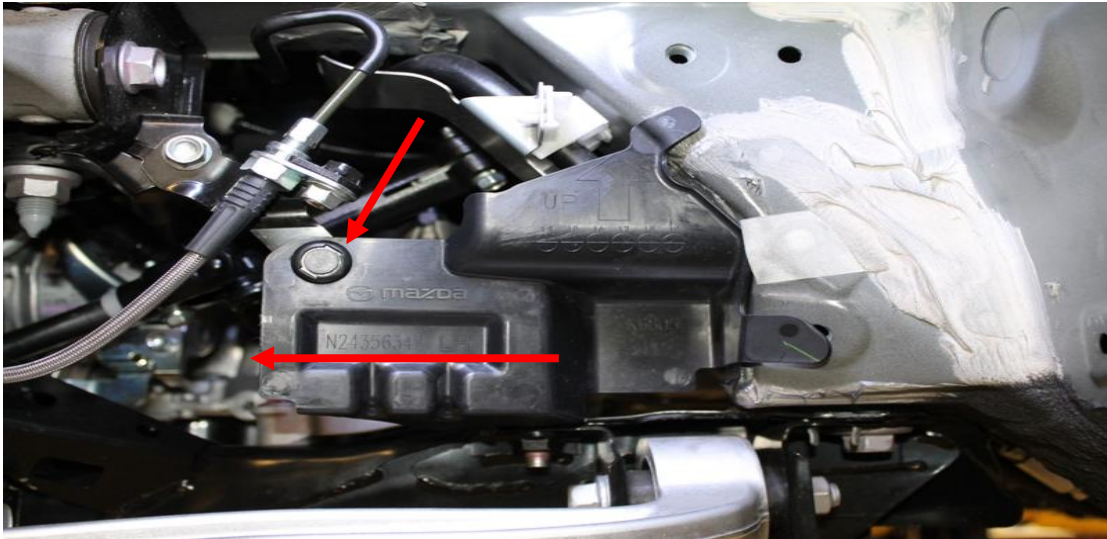


19. Raise the front of the vehicle and place jack stands on either side to support the vehicle.

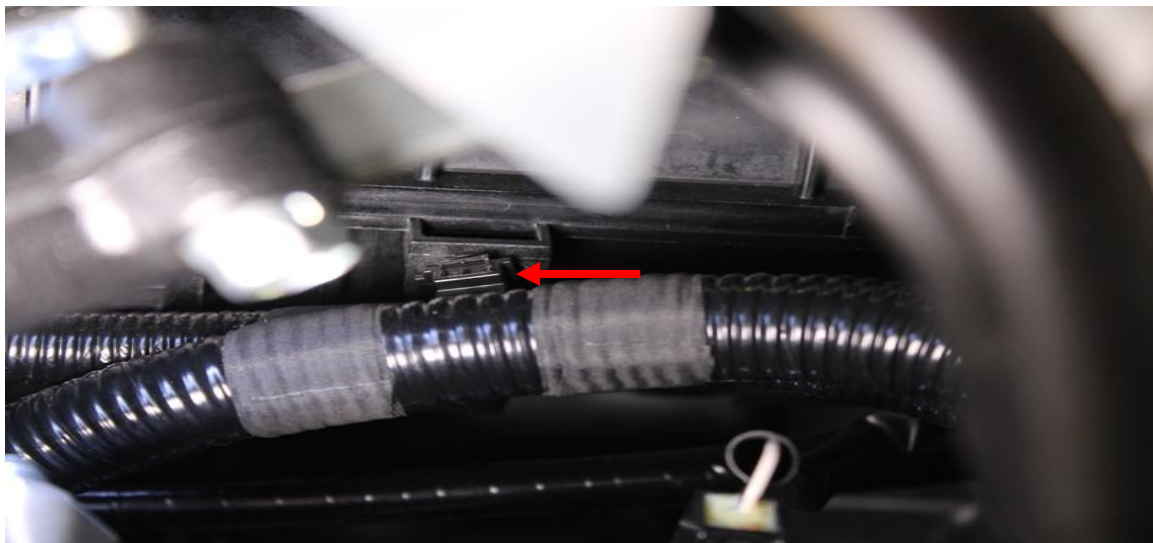


Refer to you vehicles owner's manual for proper jack placement and supporting procedures. **Never get under a vehicle without the proper support in place.**

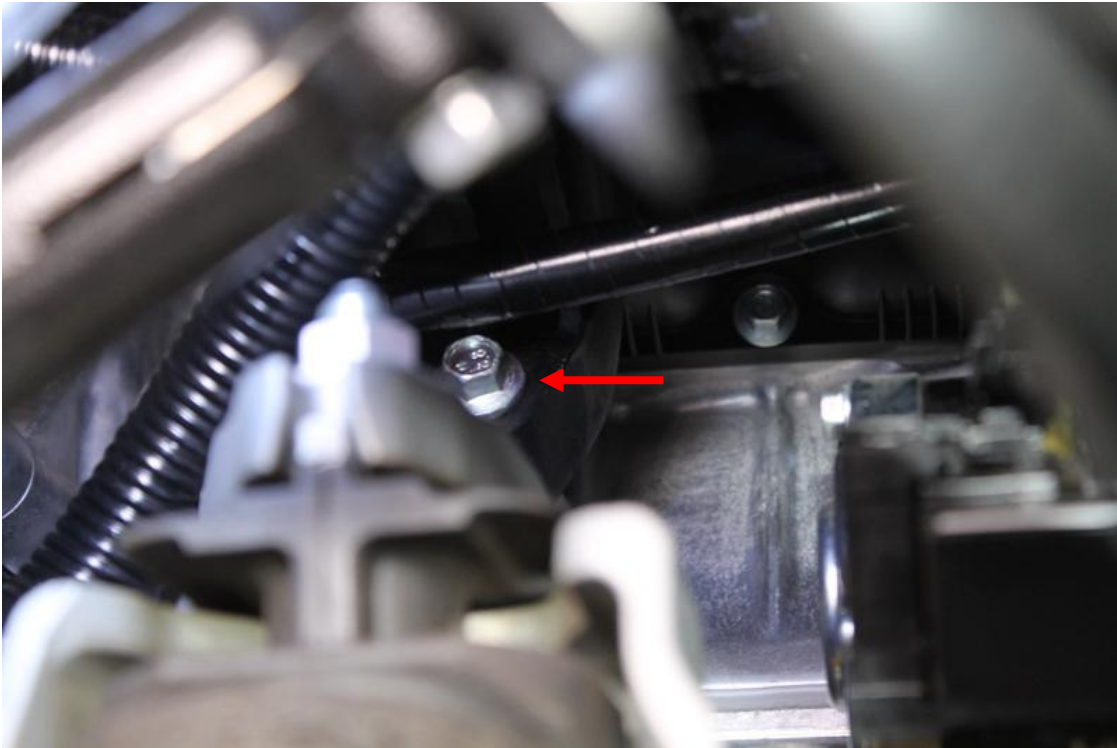
20. Remove the drivers side wheel and using a flat head screw driver carefully remove the head of the plastic push type retainer. The cover then can be removed by pulling towards the front of the vehicle.



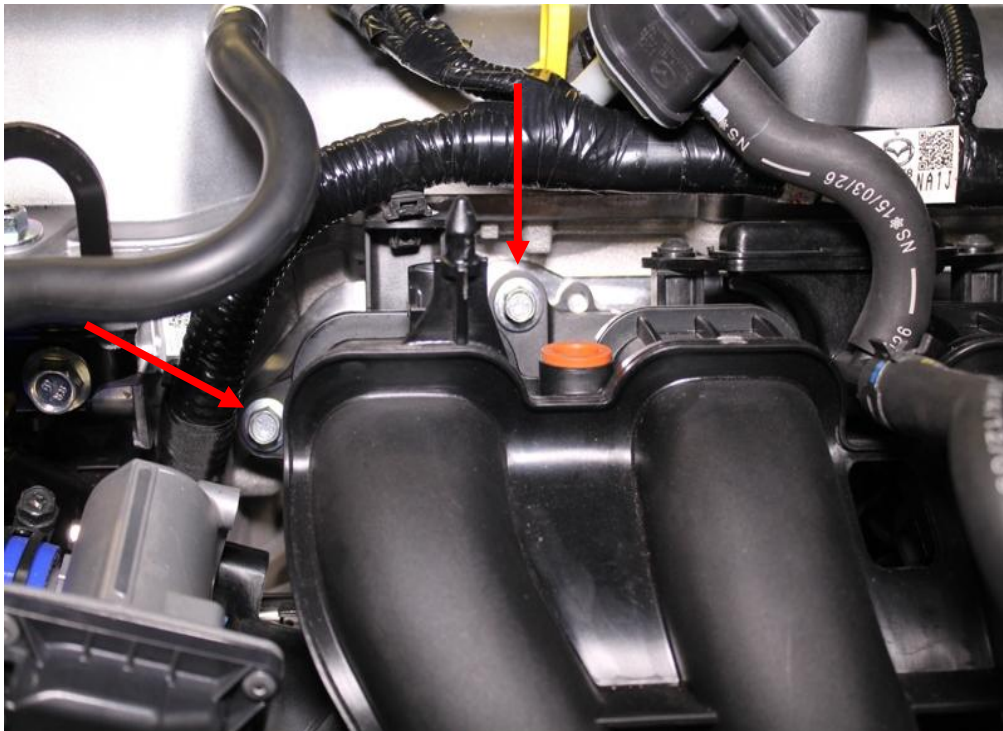
21. Looking in through the area where the cover was removed in the previous step you will see a pair of wire looms that are secured to the bottom of the intake manifold. With a little effort you will be able tug on the clip and pop it off of the manifold.

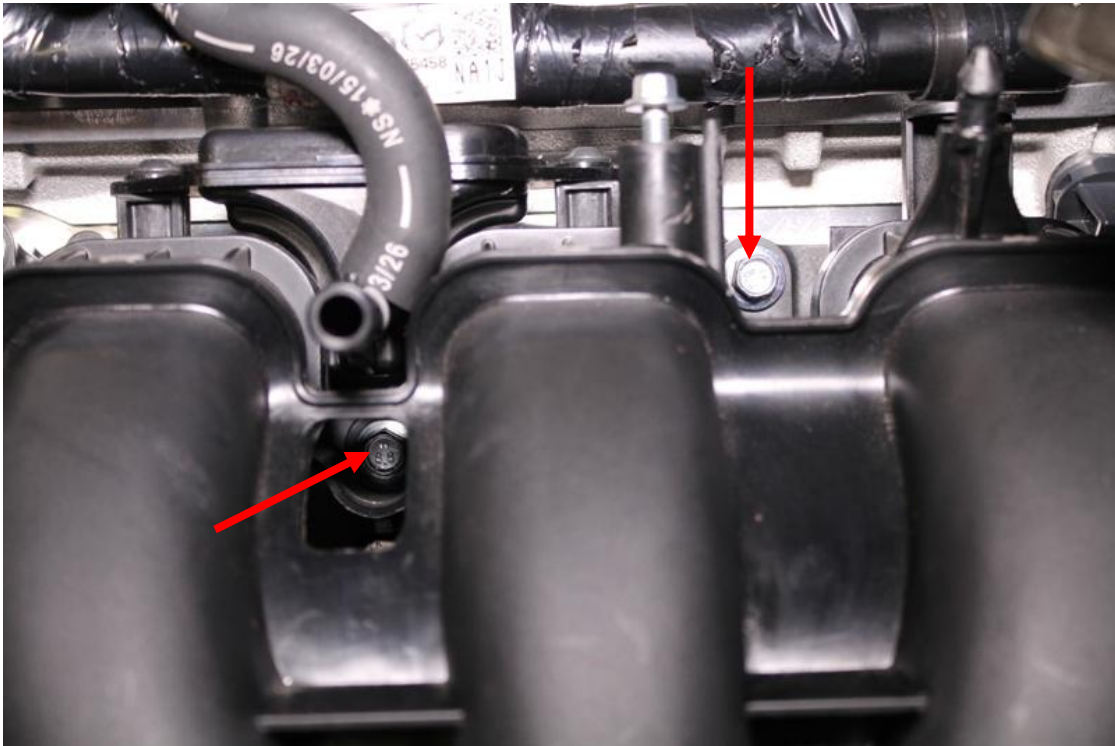


22. Now, using a 10mm socket remove the bolt that secures the bottom support of the intake manifold.

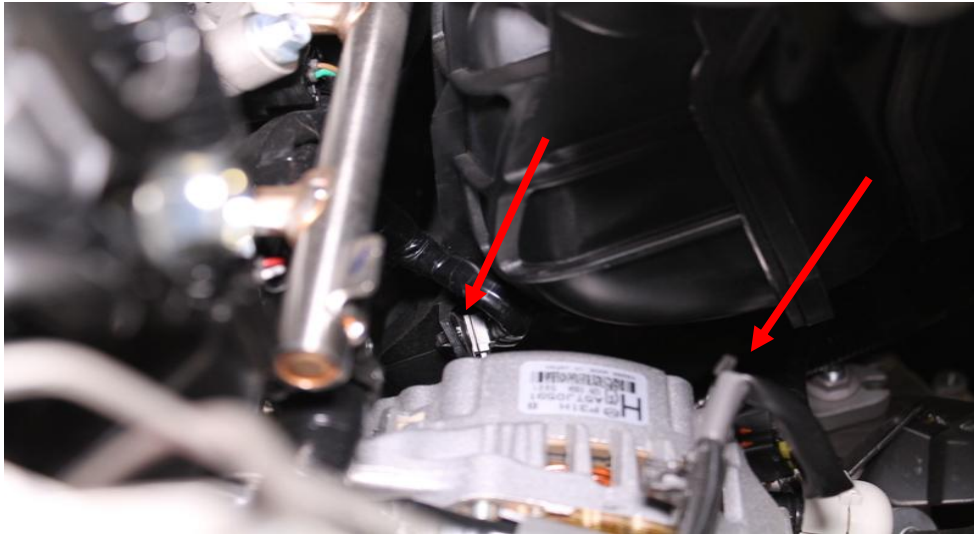


23. Now, remove the five 10mm bolts that secure the intake manifold to the head. The next three pictures show their locations. Do not attempt to remove the manifold yet.





24. Carefully separate the manifold from the engine and look for another wiring harness in the front, above the alternator, held by two of the same clips removed in steps 12 and 21.



NOTE Removing the wiring harness in the previous step will now allow you to move the manifold forward and pivot it up a bit. Do not try to remove it yet. There are a few more connections at the rear of the manifold. These can be seen from below. We chose to use pictures with the manifold out of the car to demonstrate where they are located and how to remove them.

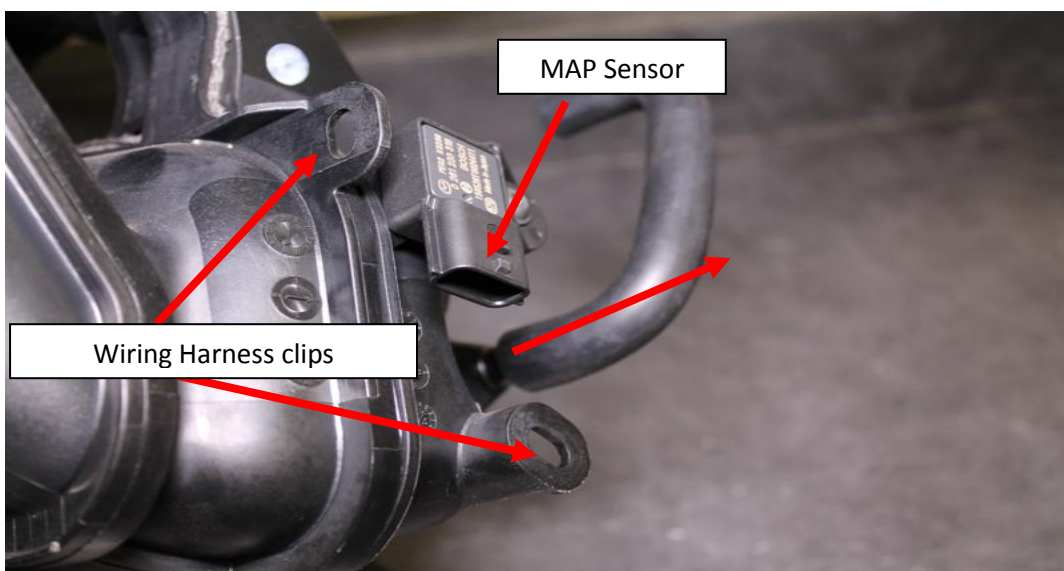
25. Disconnect the Map sensor by squeezing the tab at the rear of the connector then pull it off the connector is similar to the connector removed from the MAF sensor in step 6.

➤ It's easier to push the connector on, depress the tab then pull it off.

26. Pull the PCV hose off the port on the intake manifold.

27. Remove the two clips securing the wiring harness.

The order the three previous steps are performed in is not important.



28. Now lift the manifold up in the front and begin to carefully wiggle it out from the engine bay.



The hard part is over. Now would be a good time to take a break.

Now it's time to route the hoses from the PCV and intake manifold to the catch can.

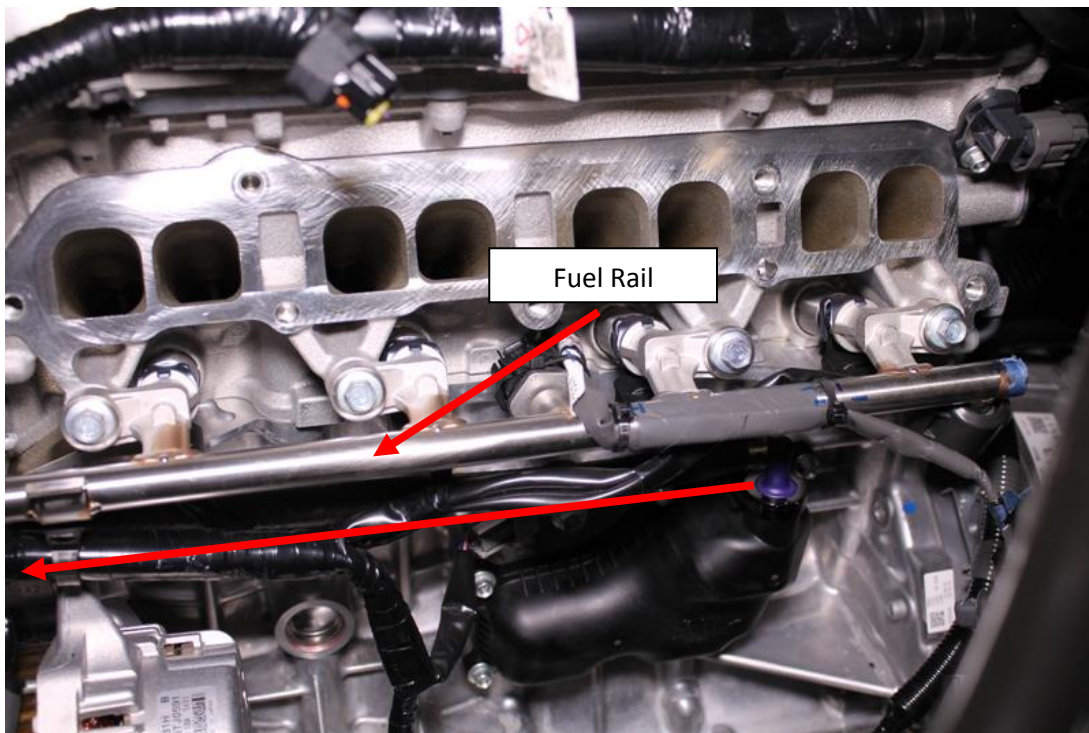
29. If the PCV hose is still attached to the PCV valve, remove it. Rotate the outlet of the valve so it points towards the front of the vehicle.



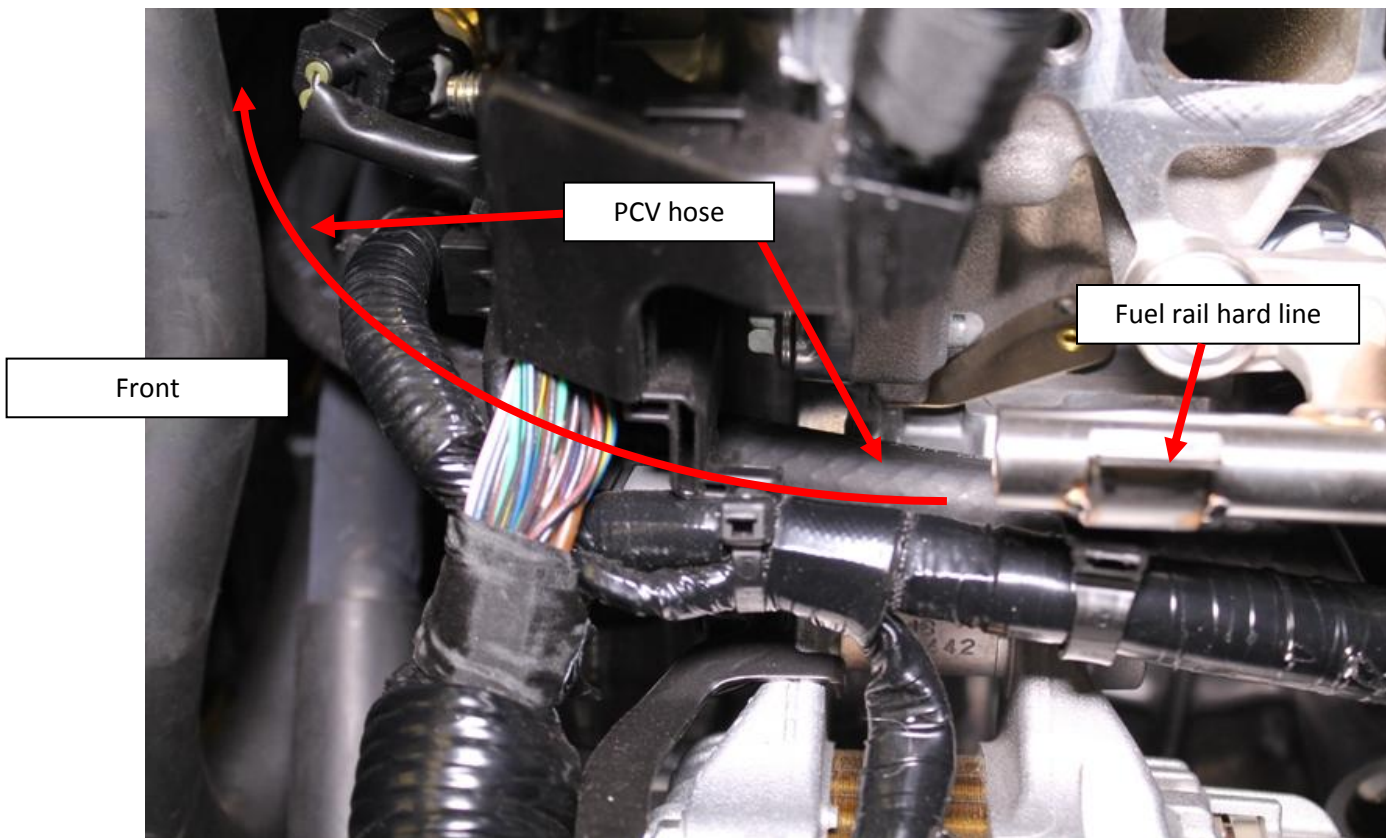
30. Attach and secure the 36" piece of hose to the PCV with one of the small hose clamp provided using a flat head screw driver.



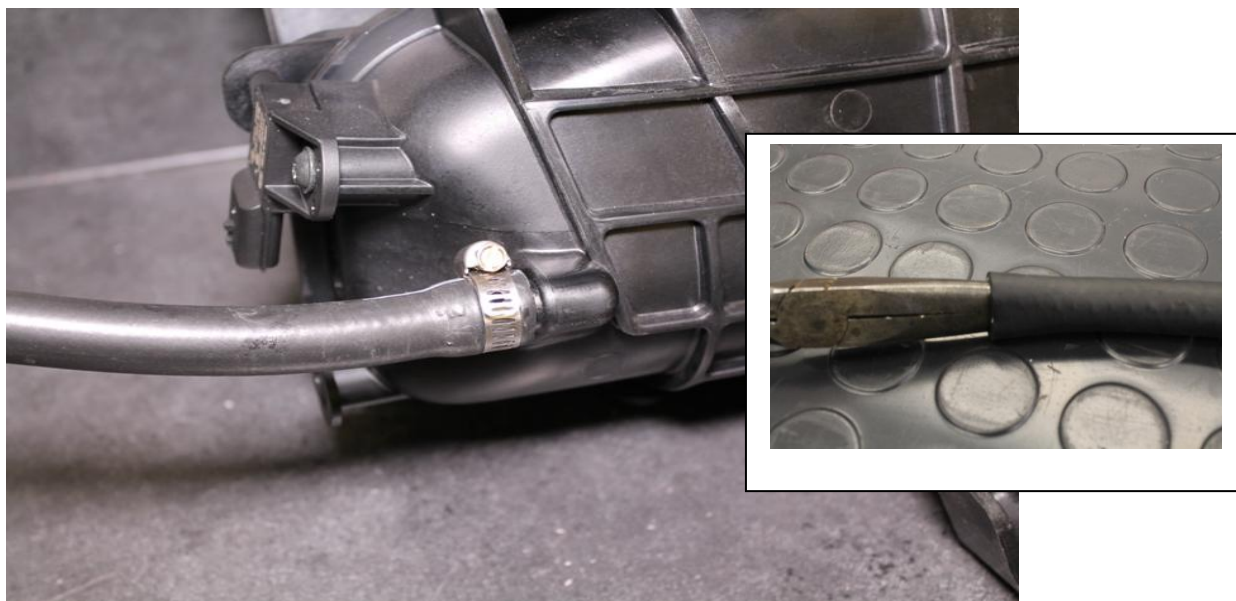
31. The hose leading from the PCV is to be routed behind the fuel rail towards the front of the vehicle.



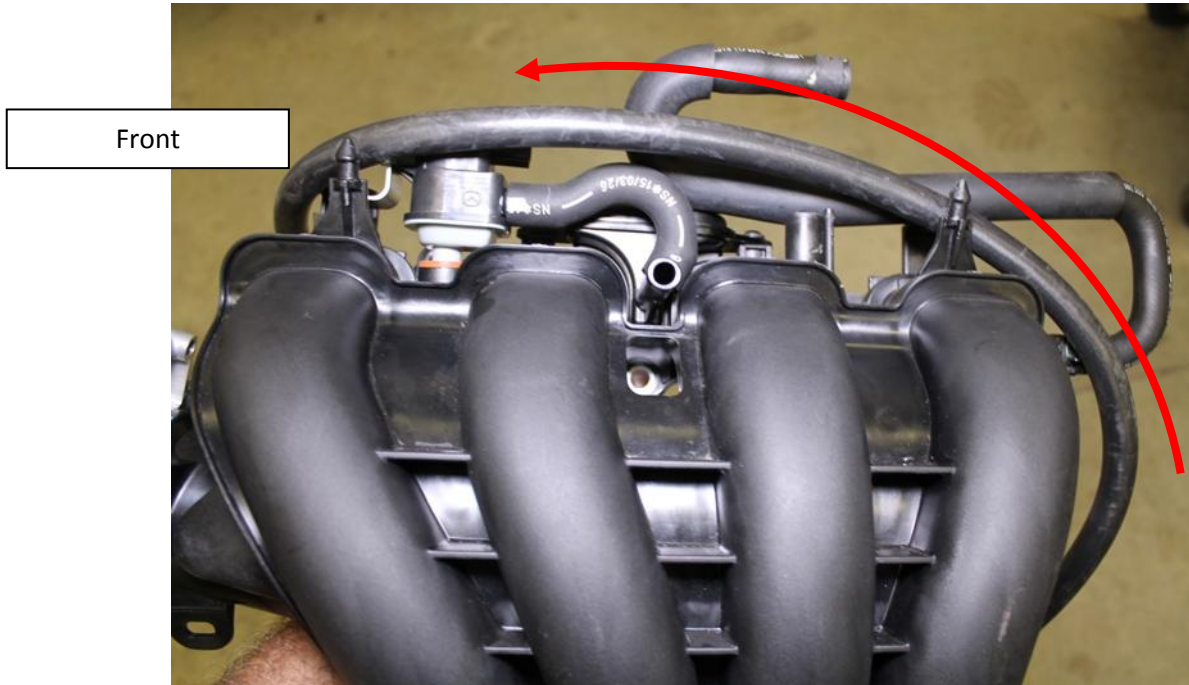
Snake the hose from the PCV behind the wiring harness, towards the front of the vehicle.



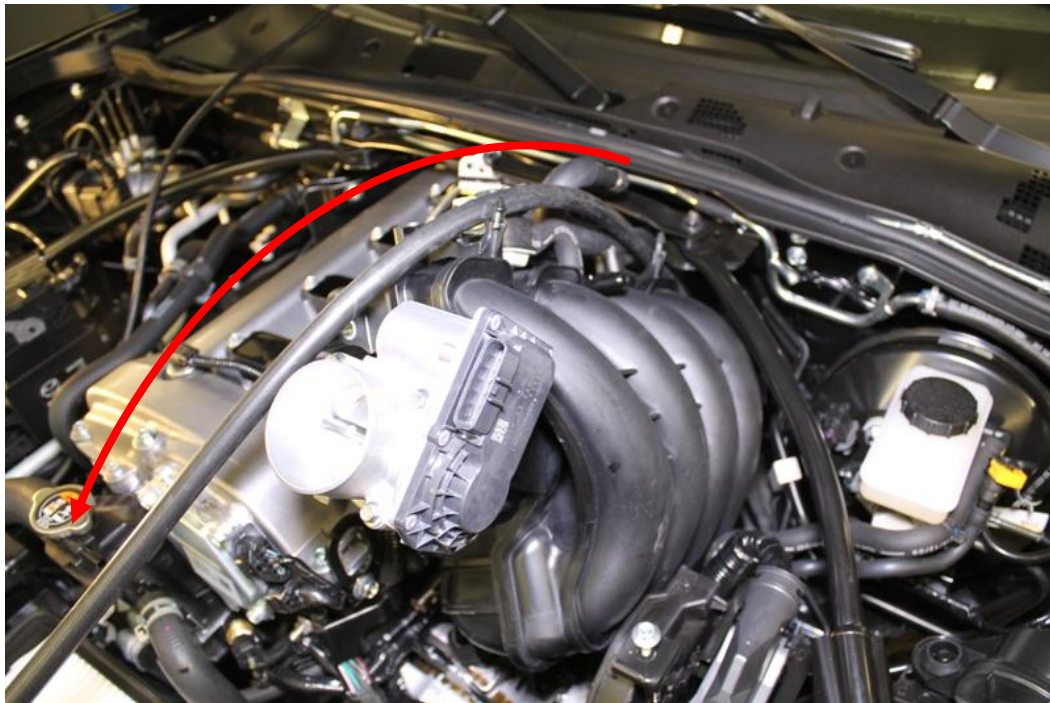
32. Now attach the 65" piece of hose to the inlet port on the intake manifold and secure with a small clamp and flat head screw driver. The hose may be difficult to slip on. If need be, expand the end a bit with a pair of needle nose pliers and use a squirt of WD-40 to slip it on.



33. Route the hose over the top of the intake manifold for the time being.

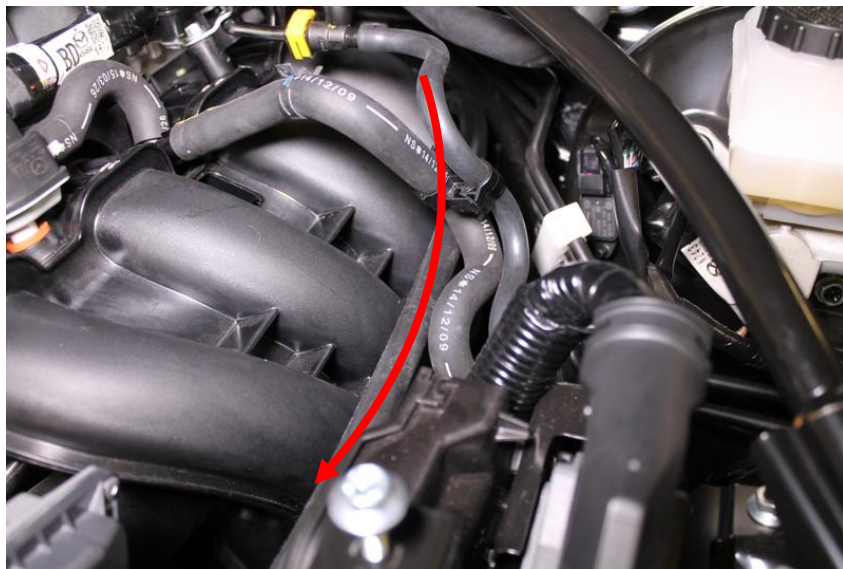


34. Let's now begin re-installing the manifold into the car. With the hose from the inlet on the manifold running over the top of towards the front of the vehicle begin working it back in.

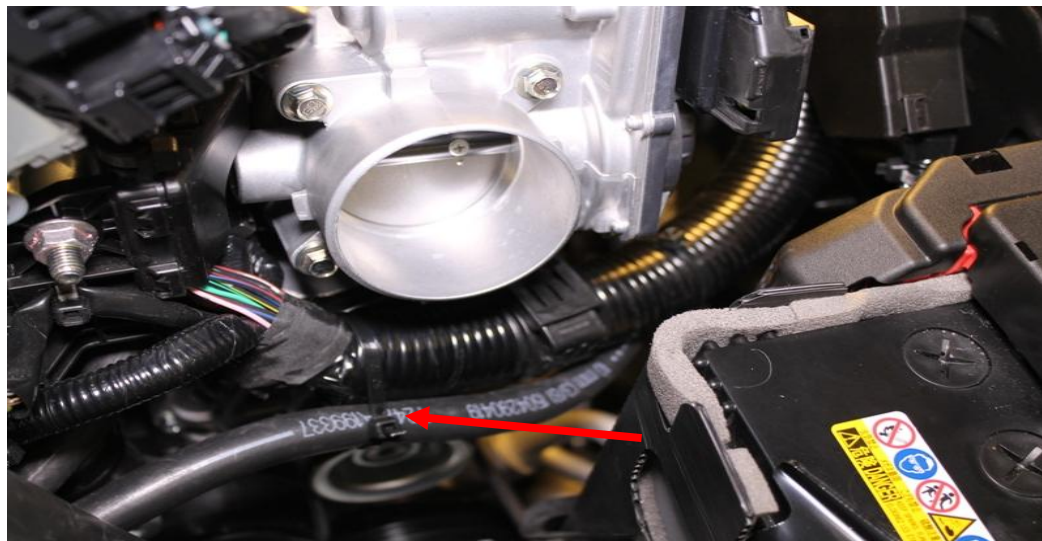


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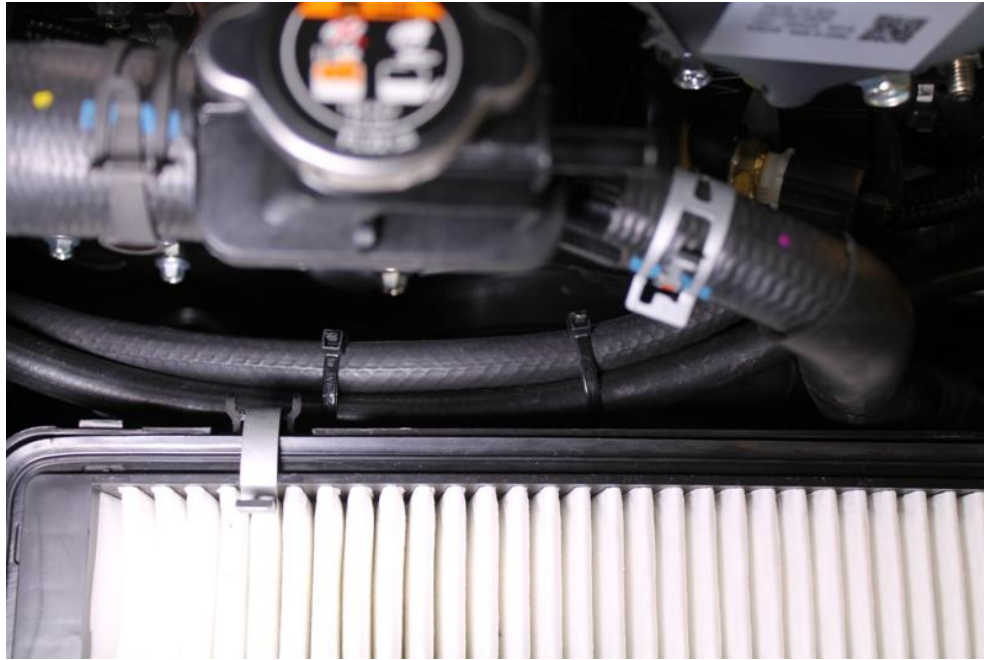
35. With the manifold almost in place, reconnect the MAP sensor and re-attach the clips securing the wiring harness removed in steps 25 and 27.
36. Reconnect the two clips securing the wiring harness to the front of the intake manifold removed in step 24.
37. Fit the manifold to the engine. You'll feel it align and fall in to place. Loosely install the 5 bolts removed in step 23.
38. Install and tighten to 15ft-lbs the bolt removed securing bottom support of the intake manifold removed in step 22.
39. Tighten the 5 bolts removed in step 23 to 15-ft-lbs starting from the center and working out.
40. Route the hose from the port on the intake manifold around the driver's side of the intake manifold.



41. Secure the hose from the intake manifold to the wiring harness below the throttle body.

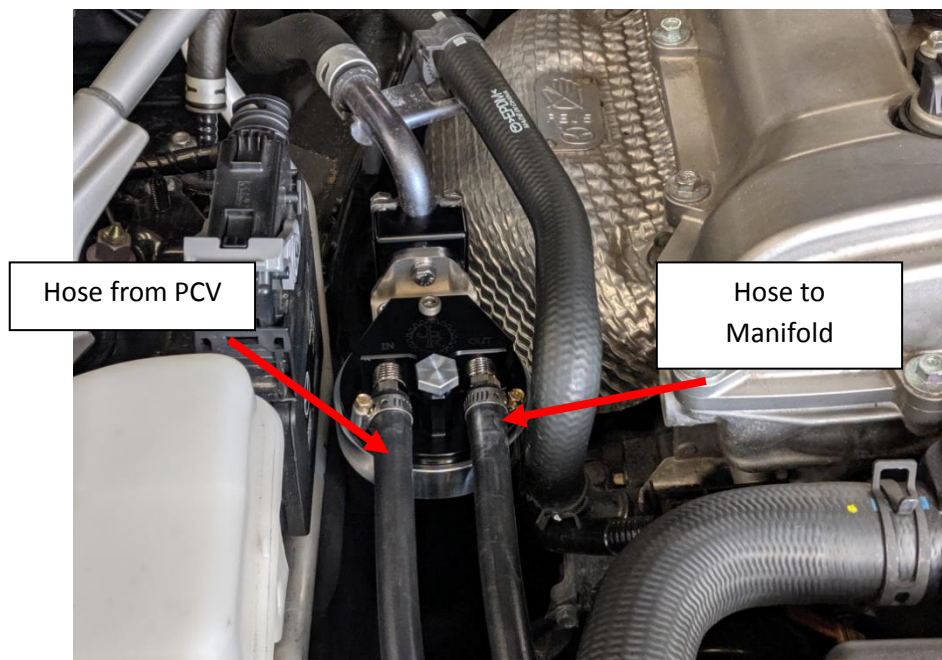


42. The hoses will now both be in front of the air filter box. Secure them to the A/C line using two more zip ties.



43. Connect the 36" hose coming from the PCV to the IN port the catch can and connect the 65" hose coming from the port in the intake manifold to the OUT port.

- You may need to trim the hoses and this can be done with a new, sharp razor knife. You'll want cut each of them to a length that prevents them from pushing or pulling on the catch can keeping the catch can nice and centered in position.



44. Start from the beginning of the instructions and reinstall all components previously removed.
45. Take a few minutes to check over things, pat yourself on the back and admire your work.

Great Job!!

**Congratulations!! You've now completed the installation of
your new JBR Oil Catch Can Kit!!**