

# Z1 VQ35 1000CC DROP-IN FUEL INJECTORS INSTALLATION MANUAL



This Installation Manual is intended for the following models:

2003-2008	Nissan 350Z
2003-2008	Infiniti G35

## PROLOGUE:

Study these instructions completely before proceeding to assembly. The installer must have a thorough knowledge of automotive systems operation. If unfamiliar with any of the concepts outlined in this instruction, we recommend the installation be completed by a qualified professional.

## WARNING!

Extreme caution should be taken when performing maintenance or performance upgrades to your vehicle. Please observe and abide by any Warning or Caution labels placed on the various components and tools used when servicing your vehicle. If you have any questions regarding installation or the various components included with the Z1 Motorsports VQ35 1000CC Drop-In Fuel Injectors, consult with a Professional Mechanic or contact Z1 Motorsports for more information.

## **PARTS INCLUDED:**

Item	Quantity	Description
1	6	Z1 Fuel Injectors

## **TOOLS REQUIRED:**

- Hydraulic Jack
- (2) 2-Ton (or greater) Jack Stands
- Ratchet
- Ratchet Extension(s)
- 10mm Socket/Wrench
- 12mm Socket/Wrench
- 14mm Socket/Wrench
- 5mm Allen/Hex Bit
- Pliers

## **SAFETY REQUIREMENTS:**

- Always wear safety glasses and any necessary protective garments. If using any fluids, chemicals, or solvents, a respirator is recommended.
- Always turn the ignition to the OFF position and disconnect the NEGATIVE battery terminal.
- Always use properly rated jack stands when working under your vehicle.
- Always keep limbs and parts away from moving drivetrain parts.
- Only operate drivetrain in safe space and well-ventilated areas.

## **BEFORE YOU BEGIN:**

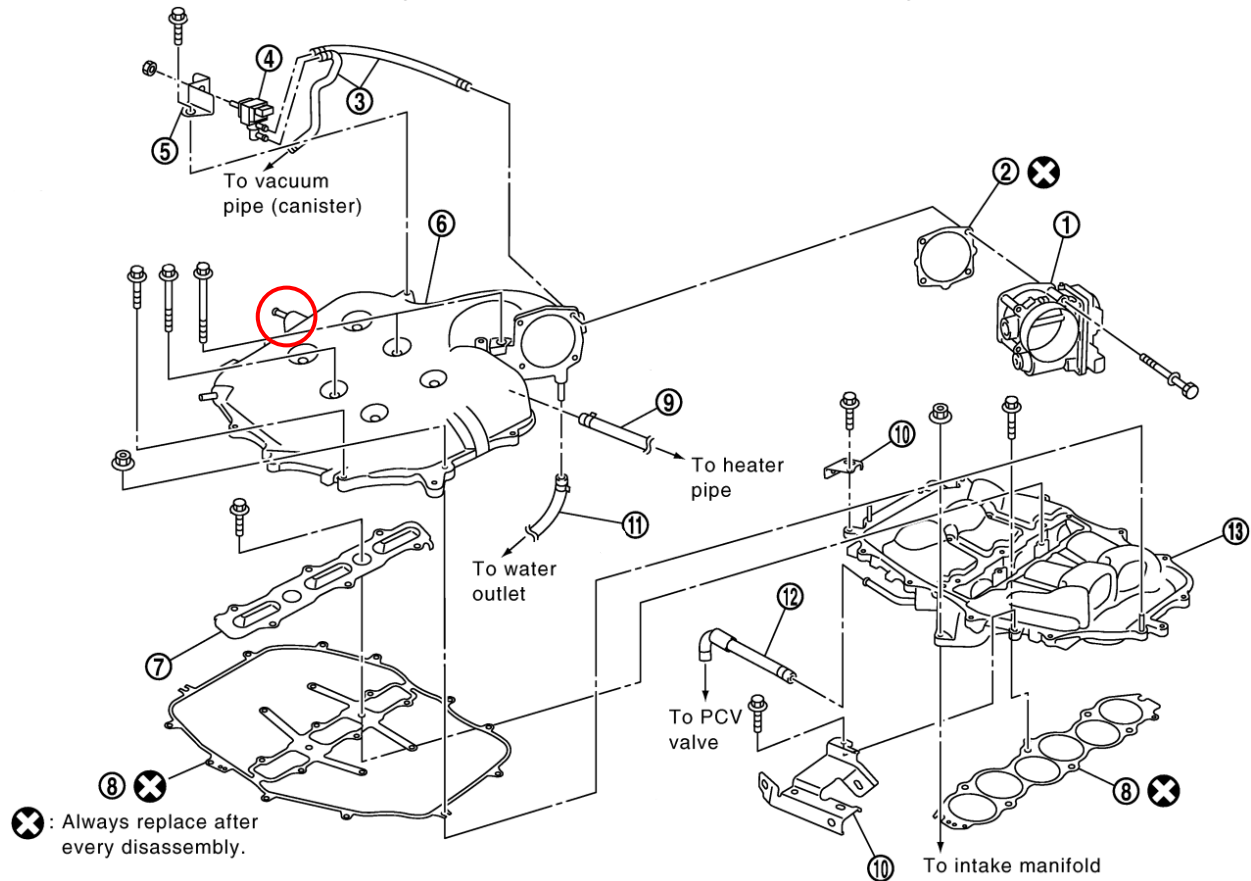
Remove contents from the Z1 Motorsports VQ35 1000CC Drop-In Fuel Injectors and verify that ALL necessary hardware is present.

## **PROCEDURE:**

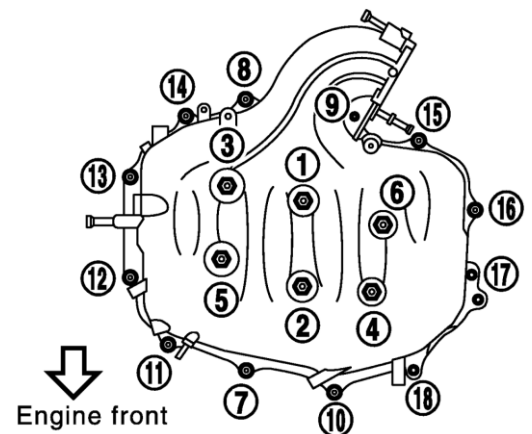
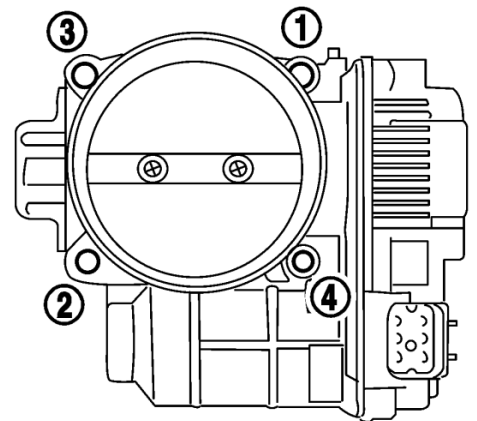
The following steps are for 2003-2006 models with the VQ35DE engine. 2007-2008 models with the VQ35HR engine should skip to page 7.

1. Place the transmission in Park position (or in Reverse gear if equipped with a manual transmission). Apply the parking brake.
2. Unlatch and raise vehicle's hood. Apply hood prop.
3. If present, remove strut tower brace and engine cover, set aside.
4. Remove intake tube running from air filter to throttle body.

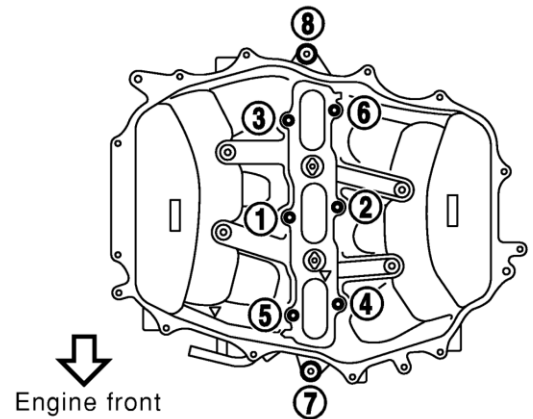
Use the diagram below as reference for the following steps:



5. If a coolant bypass has been installed you can skip this step, otherwise ensure engine is cold. Loosen hose clamps and remove (2) water hoses (9) & (11) running to rear of upper plenum (6). Plug hoses to prevent coolant leakage.
6. Disconnect electrical connector at throttle body (1).
7. Loosen hose clamp and remove the vacuum hose at the side of the upper plenum (circled above).
8. Loosen (4) throttle body mounting bolts in reverse order as shown in figure at right.
9. Carefully remove throttle body and set aside.
10. Remove (1) bolt securing bracket (5) to upper plenum.
11. Loosen hose clamp and remove vacuum hose (3) from port on back of upper plenum.
12. Loosen upper plenum mounting bolts in reverse order as shown in figure at right. It is recommended to not remove the bolts from the upper plenum but instead unscrew them from the lower plenum and leave them in their respective spots inside the upper plenum. The bolts vary in length depending on location. If you remove the bolts completely, ensure you are keeping track of where there they were.



13. Loosen hose clamp and remove PCV hose (12) at front of lower plenum (13).
14. Loosen lower plenum mounting bolts in reverse order as shown in figure at right.
15. Remove lower plenum, metal bracket, and plenum gaskets.
16. Clean and inspect lower intake manifold to lower plenum gasket, replace if necessary.
17. Cover with tape or place rags in intake runners to prevent parts or debris from falling in the engine.



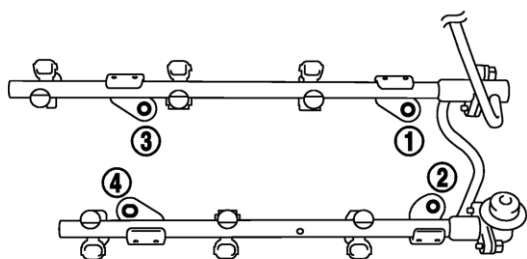
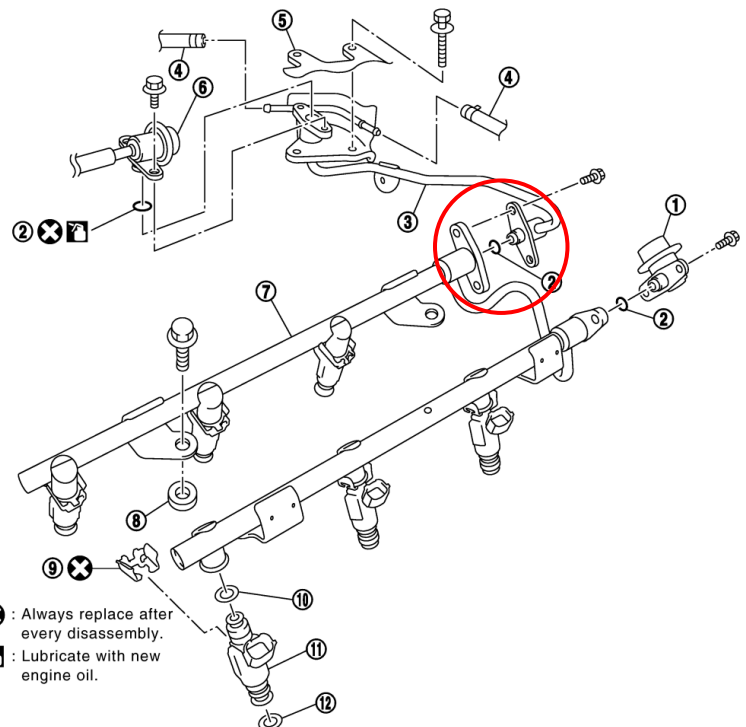
18. At this stage, it is time to release fuel pressure. There are a couple ways to do this:

- a. If you have access to CONSULT:
  - i. Turn ignition switch ON.
  - ii. Perform "FUEL PRESSURE RELEASE" in "WORK SUPPORT" mode with CONSULT.
  - iii. Start engine.
  - iv. Wait for engine to run out of fuel and stall.
  - v. Crank engine over two or three times to release remaining fuel pressure.
  - vi. Turn ignition switch OFF.
- b. If you do not have access to CONSULT:
  - i. Locate the fuse box next to the battery.
  - ii. Remove fuse box cover. If present, use the sticker on the cover as reference to locate the fuel pump fuse, otherwise refer to the image on the last page of this manual.
  - iii. Remove fuel pump fuse.
  - iv. Start engine.
  - v. Wait for engine to run out of fuel and stall.
  - vi. Crank engine over two or three times to release remaining fuel pressure.
  - vii. Turn ignition switch OFF.
  - viii. Reinstall fuel pump fuse after servicing fuel system.

19. Place a rag around the fuel damper connected to the fuel feed hose at the rear of the fuel rail (circled at right). While applying light pressure to the damper, loosen the (2) bolts securing it to the fuel rail.

20. Carefully remove the fuel sub tube (3) from the fuel rail (7). Inspect the o-ring on the damper, replace if necessary.

21. Loosen (4) bolts which attach the fuel rail to the lower intake manifold in reverse order as shown in figure below.



Engine front ←

22. Carefully lift straight up on the front of the fuel rail to unseat injectors.
23. Disconnect the fuel injectors electrical connector at the rear of the fuel rail.

24. Open and remove the clip ③ securing each fuel injector to the fuel rail. These can be removed by pressing down on the tapered edge on each side to unseat them from the fuel rail or by pushing straight back away from the electrical connector.

25. Remove each fuel injector from fuel rail by pulling straight.

26. Remove clip ③ from the mounting groove ⑥ in each injector. Inspect the clips and replace if necessary.

27. Insert a clip into the clip mounting groove on each Z1 Fuel Injector. Insert clip so that the protrusion on the fuel injector ⑤ matches the cut-out of the clip ③ (as shown).

28. Lubricate the upper o-rings (black) with oil or petroleum jelly.

29. Insert Z1 Fuel Injectors into the fuel rail by pushing straight up with the clips attached.

**Note:** Insert injector so that the protrusion ① on fuel rail matches cut-out of the clip ③

30. Assure that the fuel rail flange ④ is securely fixed in the flange fixing groove ② on each clip.

31. To check proper installation, ensure that the fuel injector does not rotate or come off. Check that protrusions of the fuel injectors and fuel rail are aligned with the cutouts of the clips after installation.

32. Lubricate the lower o-rings (green) with oil or petroleum jelly.

33. Carefully position fuel rail and fuel injector assembly into lower intake manifold.

**Note:** Be careful not to let the tip of the injector nozzle contact other parts.

34. Secure fuel rail to lower intake plenum with (4) bolts removed in step #21 in two steps in numerical order as shown in figure at right.

1<sup>st</sup> step: 6.9-7.9ft-lbs

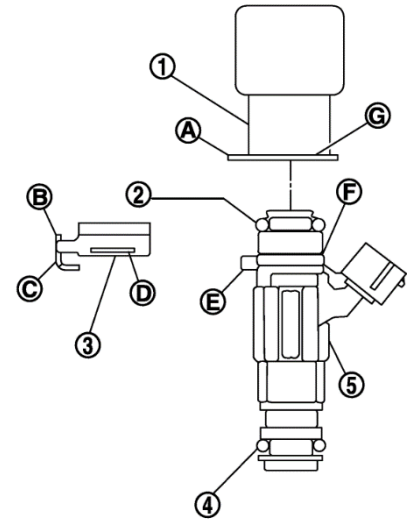
2<sup>nd</sup> step: 16-19ft-lbs

35. Reconnect injector connector that was disconnected in step #23.

36. Reconnect fuel sub tube to fuel rail using (2) bolts that were removed in step #19.

**Note:** Insert fuel damper straight into fuel rail. Tighten mounting bolts evenly. After tightening, check that there is no gap between the flange and sub-tube.

37. Remove the tape/rags from the lower intake manifold.

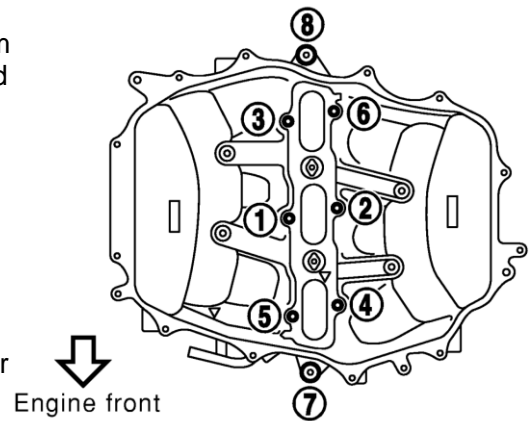


38. Position the lower intake plenum, metal bracket, and lower plenum gasket, onto the lower intake manifold. Secure with bolts removed in step #14 in numerical order as shown in figure at right. Torque bolts to 9-10ft-lbs.

39. Reattach PCV hose removed in step #13 to lower intake plenum, secure with hose clamp.

40. Position upper intake plenum onto lower intake plenum.

41. Secure with nuts and bolts removed in step #12 in numerical order as shown in figure at right. Torque to 9-10ft-lbs.



42. Follow steps #4 through #11 in reverse order to reinstall engine components.

43. Inspect for fuel leaks.

- i. Turn ignition switch ON (with engine stopped).
- ii. Wait for fuel pump to prime.
- iii. Visually inspect and listen for leaks. Use mirrors for checking points out of clear sight.
- iv. Repeat previous 3 steps 2 more times.
- v. If no leaks, start the engine.
- vi. With engine running, check again for leaks.

44. Reinstall engine cover and strut tower brace.

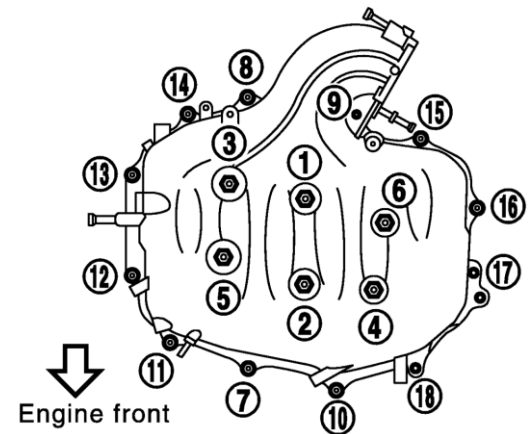
45. Inspect vehicle for loose tools/items

46. Start vehicle. While at idle, check for leaks or faulty operation of air intake kit.

47. Lower hood of vehicle.

48. Perform or reflash new engine tune.

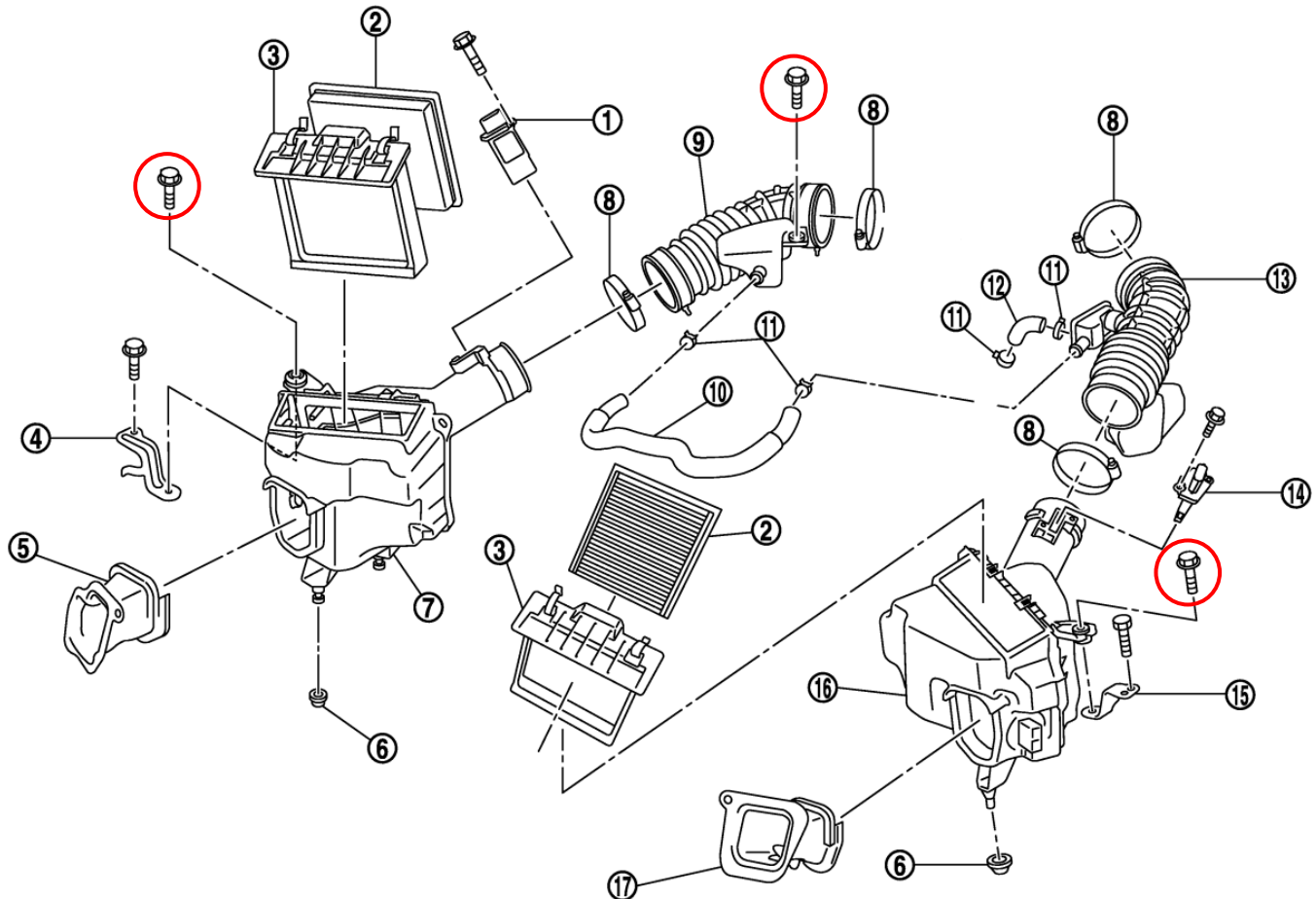
49. Perform a final test drive of vehicle.



## VQ35HR PROCEDURE:

1. Place the transmission in Park position (or in Reverse gear if equipped with a manual transmission). Apply the parking brake.
2. Unlatch and raise vehicle's hood. Apply hood prop.
3. If present, remove strut tower brace and engine cover, set aside.

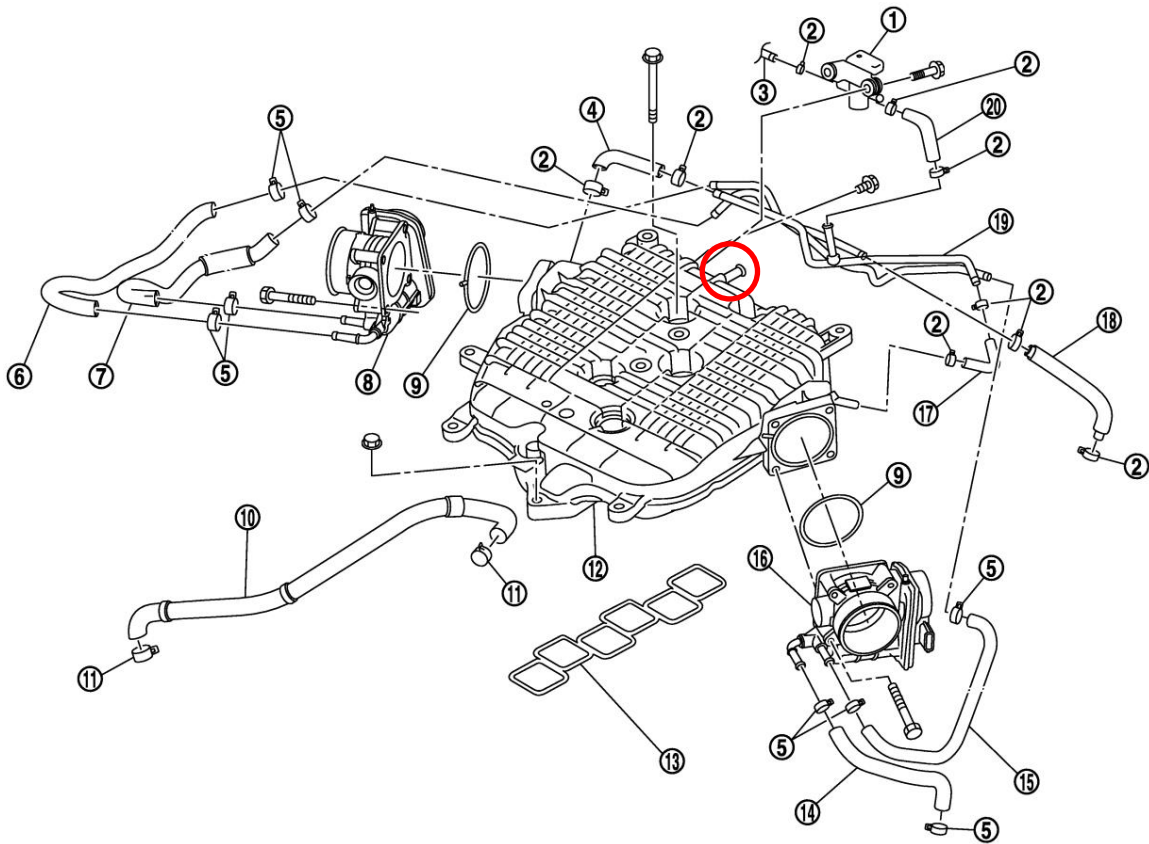
Use the diagram below as reference for the following steps:



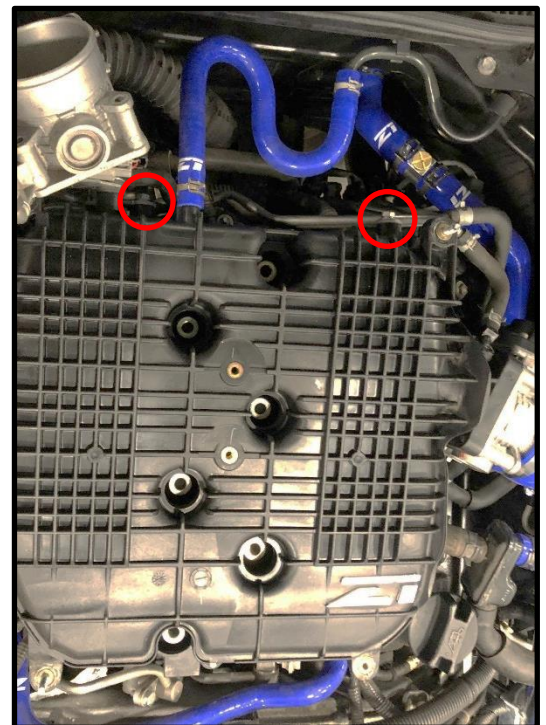
4. Locate and unplug (2) MAF sensor connectors (1) & (14) as well as any plastic harness clips that may be attached to the air box.
5. Remove (1) bolt which attaches passenger side intake canister to plenum (circled above).
6. Loosen hose clamps and remove OEM PCV Breather hose (12) from driver side air inlet duct (13).
7. Loosen large hose clamp at each throttle body.
8. Remove air box mounting bolt which attaches each OEM air box to chassis (circled above).
9. Using a light pull motion, remove OEM air boxes and intake tube assemblies.



Use the diagram below as reference to the following steps:

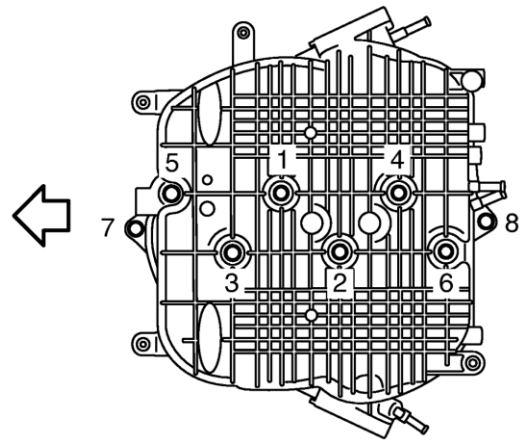


10. Disconnect electrical connection at each throttle body ⑧ & ⑯ .
11. Using a 5mm hex bit, remove the (4) bolts on each throttle body which attach it to the intake plenum.
12. Loosen hose clamps and remove hoses ④ & ⑰ that connect to the intake plenum behind each throttle body.
13. Remove (2) bolts securing EVAP canister purge control solenoid valve ① to intake plenum.
14. Loosen hose clamp and remove brake booster hose connected to back of intake plenum (circled above).
15. Remove (2) bolts which attach brackets for the tube assemblies to the back of the intake plenum (circled at right).



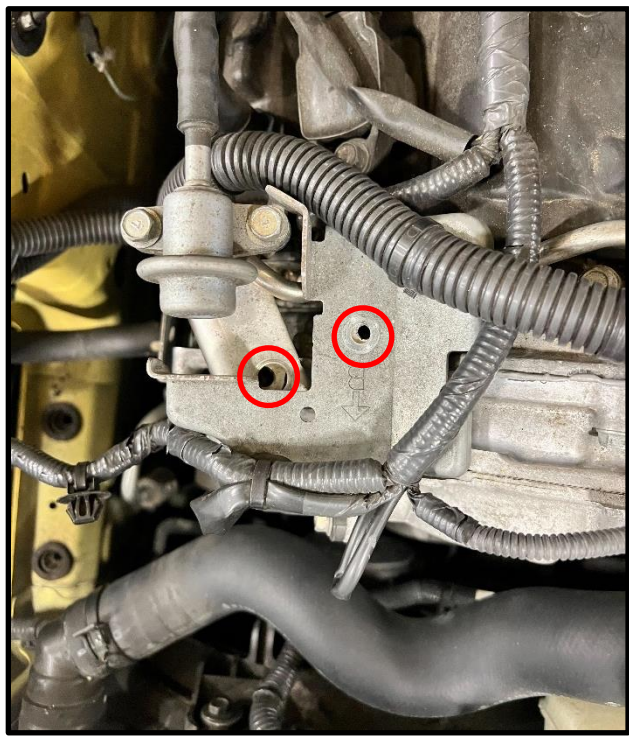


16. Remove (8) nuts and bolts securing intake plenum to engine in reverse order as shown in figure at right.
17. Inspect intake plenum and ensure there are no other hoses, connectors, or bolts securing it to the vehicle. Carefully lift up to remove intake plenum and set aside.
18. Clean and inspect lower plenum to upper plenum gasket, replace if necessary.
19. Cover with tape or place rags in intake runners to prevent parts or debris from falling in the engine.
20. At this stage, it is time to release fuel pressure. There are a couple ways to do this:

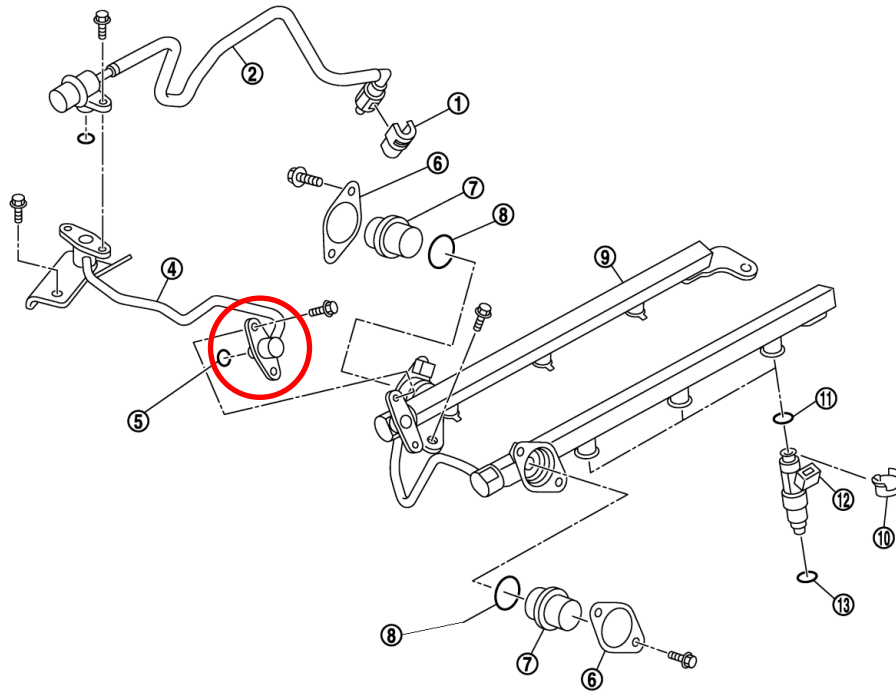


- a. If you have access to CONSULT:
  - i. Turn ignition switch ON.
  - ii. Perform "FUEL PRESSURE RELEASE" in "WORK SUPPORT" mode with CONSULT.
  - iii. Start engine.
  - iv. Wait for engine to run out of fuel and stall.
  - v. Crank engine over two or three times to release remaining fuel pressure.
  - vi. Turn ignition switch OFF.
- b. If you do not have access to CONSULT:
  - i. Locate the fuse box next to the battery.
  - ii. Remove fuse box cover. If present, use the sticker on the cover as reference to locate the fuel pump fuse, otherwise refer to the image on the last page of this manual.
  - iii. Remove fuel pump fuse.
  - iv. Start engine.
  - v. Wait for engine to run out of fuel and stall.
  - vi. Crank engine over two or three times to release remaining fuel pressure.
  - vii. Turn ignition switch OFF.
  - viii. Reinstall fuel pump fuse after servicing fuel system.

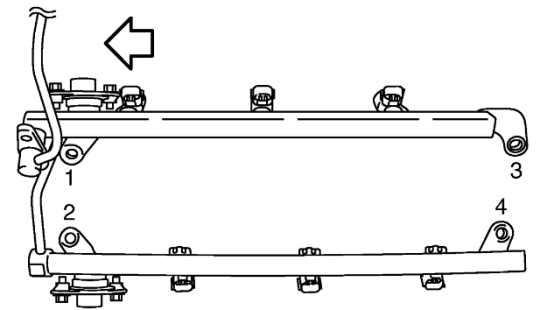
21. Remove (2) bolts which attach harness & fuel line brackets to the front left of the engine (circled below).



Use the diagram below as reference to the following steps:

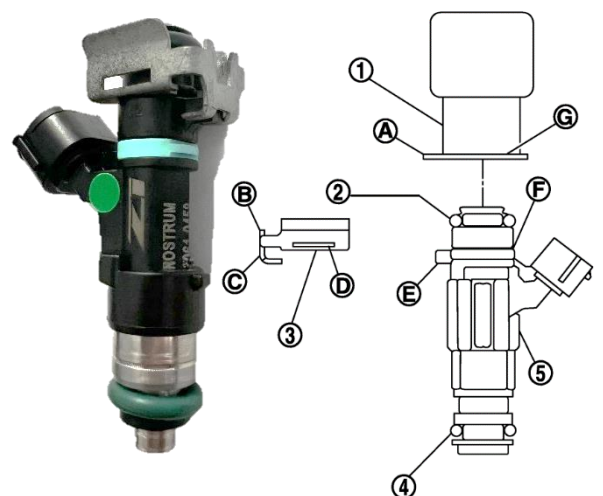


22. Place a rag around the fuel damper at the front of the fuel rail (circled above). While applying light pressure to the damper, loosen the (2) bolts on the fuel damper
23. Carefully remove the fuel sub tube (4) from the fuel rail (9). Inspect the o-ring on the damper, replace if necessary.
24. Disconnect electrical connector from each fuel injector.
25. Loosen (4) bolts which attach the fuel rail to the lower intake plenum in reverse order as shown in figure at right.
26. Carefully lift straight up on the front of the fuel rail to unseat injectors.
27. With the fuel rail and old injectors removed, inspect the lower intake plenum where the fuel injectors sit. Remove any o-rings that may be present and clean the area of any debris, oil, or fuel.



28. Open and remove the clip (3) securing each fuel injector to the fuel rail. These can be removed by pressing down on the tapered edge on each side to unseat them from the fuel rail or by pushing straight back away from the electrical connector.

29. Remove each fuel injector from fuel rail by pulling straight.
30. Remove clip (3) from the mounting groove (F) in each injector. Inspect the clips and replace if necessary.
31. Insert a clip into the clip mounting groove on each Z1 Fuel Injector. Insert clip so that the protrusion on the fuel injector (E) matches the cut-out of the clip (C) (as shown).



32. Lubricate the upper o-rings (black) with oil or petroleum jelly

33. Insert Z1 Fuel Injectors into the fuel rail by pushing straight up with the clips attached.

Note: Insert injector so that the protrusion **(A)** on fuel rail matches cut-out of the clip **(B)**

34. Assure that the fuel rail flange **(C)** is securely fixed in the flange fixing groove **(D)** on each clip.

35. To check proper installation, ensure that the fuel injector does not rotate or come off. Check that protrusions of the fuel injectors and fuel rail are aligned with the cutouts of the clips after installation.

36. Lubricate the lower o-rings (green) with oil or petroleum jelly.

37. Carefully position fuel rail and fuel injector assembly into lower intake manifold.

Note: Be careful not to let the tip of the injector nozzle contact other parts.

38. Secure fuel rail to lower intake plenum with (4) bolts removed in step #25 in two steps in numerical order as shown in figure at right.

1<sup>st</sup> step: 7ft-lbs

2<sup>nd</sup> step: 17ft-lbs

39. Reconnect injector connectors that were disconnected in step #24.

40. Reconnect fuel sub tube to fuel rail using (2) bolts that were removed in step #22.

Note: Insert fuel damper straight into fuel rail. Tighten mounting bolts evenly. After tightening, check that there is no gap between the flange and sub-tube.

50. Remove the tape/rags from the lower intake manifold.

51. Position the upper intake plenum onto the lower intake plenum. Secure with nuts and bolts removed in step #16 in numerical order as shown in figure at right. Torque bolts to 14ft-lbs.

52. Follow steps #4 through #15 in reverse order to reinstall engine components.

53. Inspect for fuel leaks.

- vii. Turn ignition switch ON (with engine stopped).
- viii. Wait for fuel pump to prime.
- ix. Visually inspect and listen for leaks. Use mirrors for checking points out of clear sight.
- x. Repeat previous 3 steps 2 more times.
- xi. If no leaks, start the engine.
- xii. With engine running, check again for leaks.

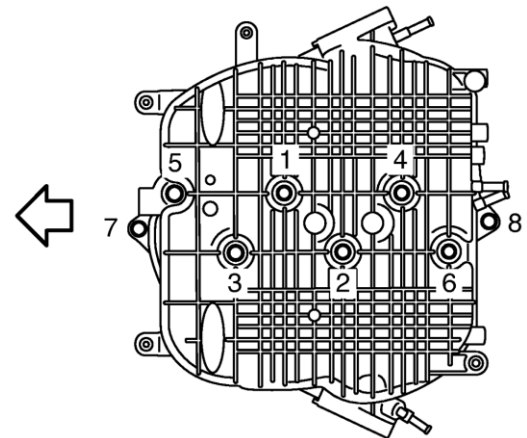
54. Reinstall engine cover and strut tower brace.

55. Inspect vehicle for loose tools/items

56. Lower hood of vehicle.

41. Perform or reflash new engine tune.

42. Perform a final test drive of vehicle.



**END**

**Additional Technical Support:**  
Contact Z1 Motorsports at [info@z1motorsports.com](mailto:info@z1motorsports.com)  
Or call 770-838-7777 between 9am and 6pm ET

# Fuel Pump Fuse Location:

