

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



This Installation Manual is intended for the following models:	
2009-2020	Nissan 370Z
2008-2013	Infiniti G37
2014-2015	Infiniti Q50 (3.7L)
2014-2015	Infiniti Q60

## 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 VHR 1000CC Drop-In Fuel Injectors, consult with a Professional Mechanic or contact Z1 Motorsports for more information.

## PARTS INCLUDED:

Item	Quantity	Description
1	4	Cyan Z1 Fuel Injector (pictured)
2	2	Purple Z1 Fuel Injector



## 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:

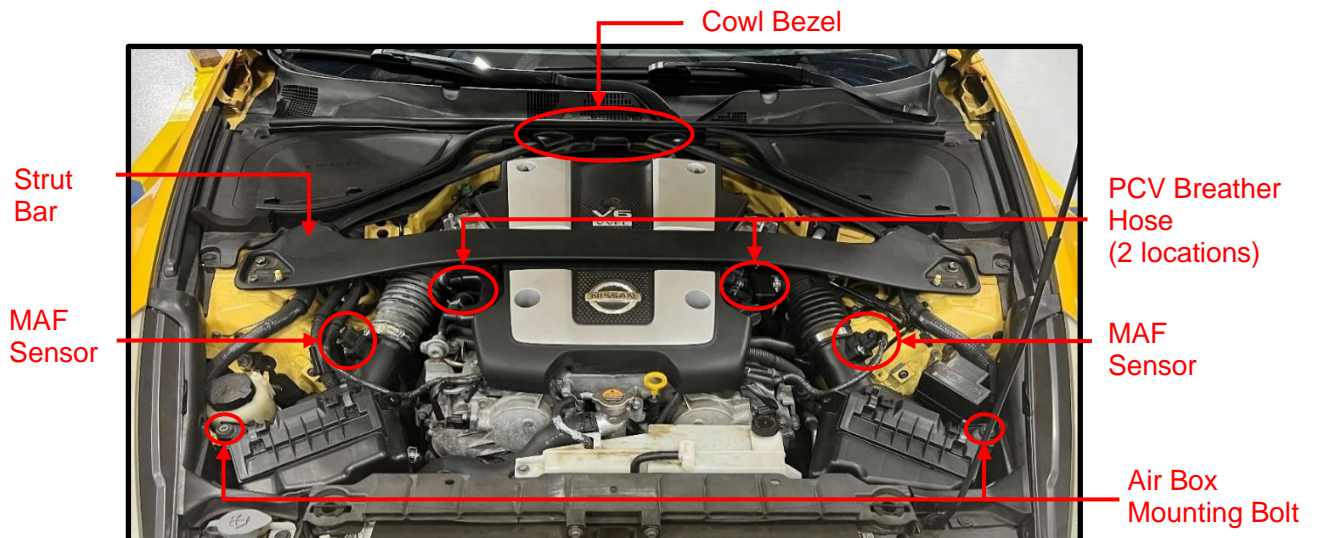
Remove contents from the Z1 Motorsports VHR 1000CC Drop-In Fuel Injectors and verify that ALL necessary hardware is present.

*The following instructions are for people running a factory fuel rail and factory-style fuel system. If you are using an aftermarket return-style fuel rail, please refer to the last page of this manual for additional instructions.*

## PROCEDURE:

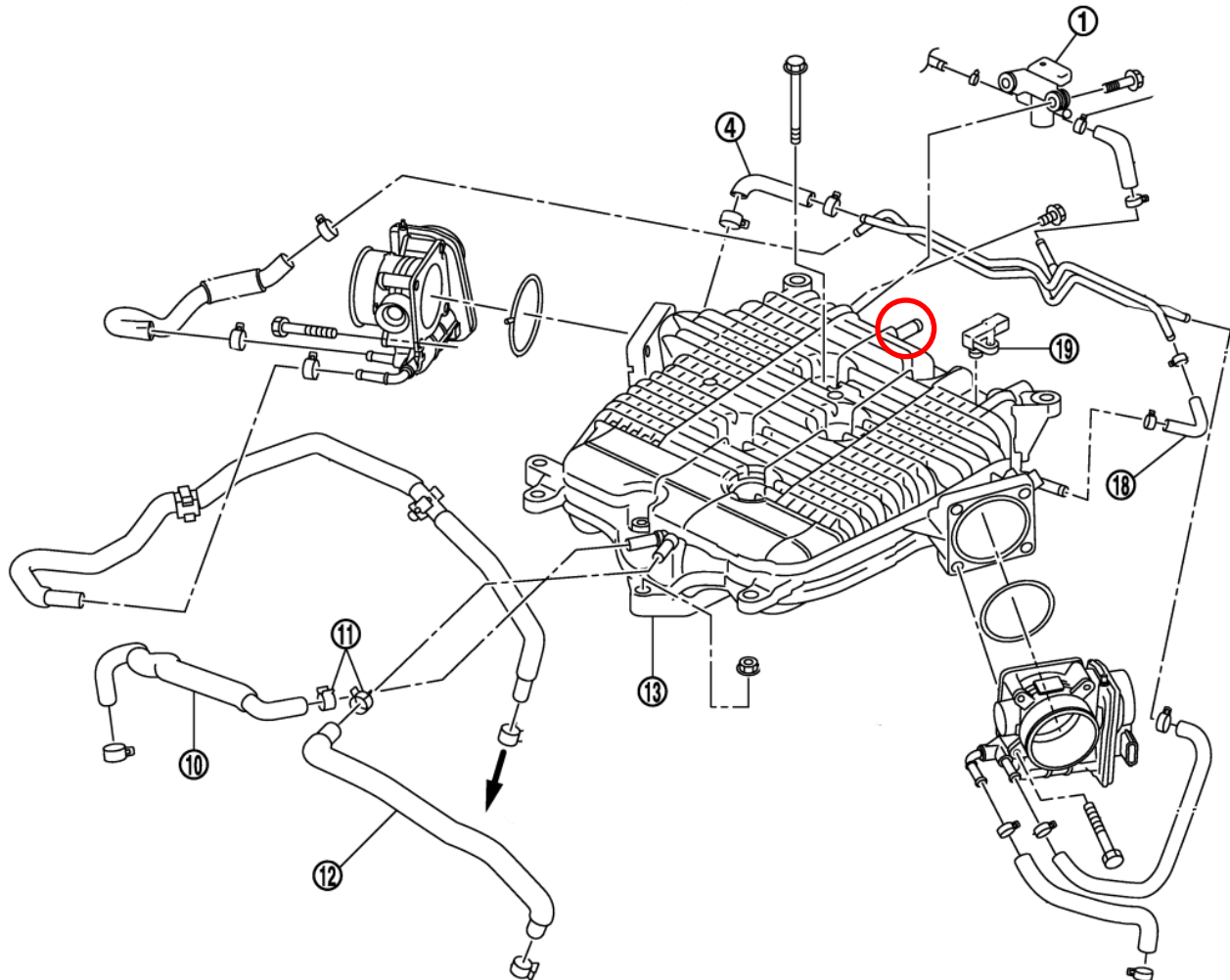
1. Place the transmission in Park position (or in Reverse gear if equipped with a manual transmission). Apply the parking brake.
2. Unlatch and raise vehicle's hood. Apply hood prop.

Use the diagram below as reference for the following steps:



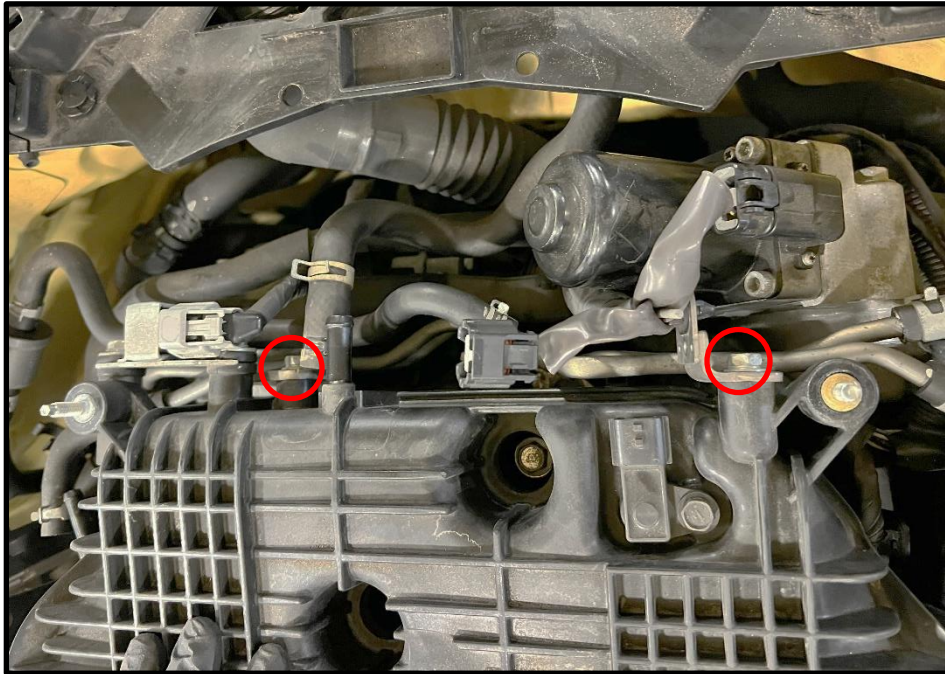
3. Remove the (2) plastic clips which attach the cowl bezel to the cowl assembly.
4. Carefully pry loose backside of cowl bezel. Firmly pull cowl bezel and set aside.
5. Remove (4) bolts and (2) hex nuts which attach strut bar to chassis. Remove strut bar and set aside.
6. Remove nuts and bolts which attach engine cover to engine. Remove cover and set aside.
7. Locate and unplug (2) MAF sensor connectors as well as any plastic harness clips that may be attached to the air box.
8. Remove (1) bolt which attaches passenger side intake canister to plenum (near passenger side PCV hose).
9. Loosen hose clamps and remove OEM PCV Breather hoses at each valve cover end.
10. Loosen large hose clamp at each throttle body.
11. Remove air box mounting bolt which attaches each OEM air box to chassis.
12. Using a light pull motion, remove OEM air boxes and intake tube assemblies.

Use the diagram below as reference for the following steps:

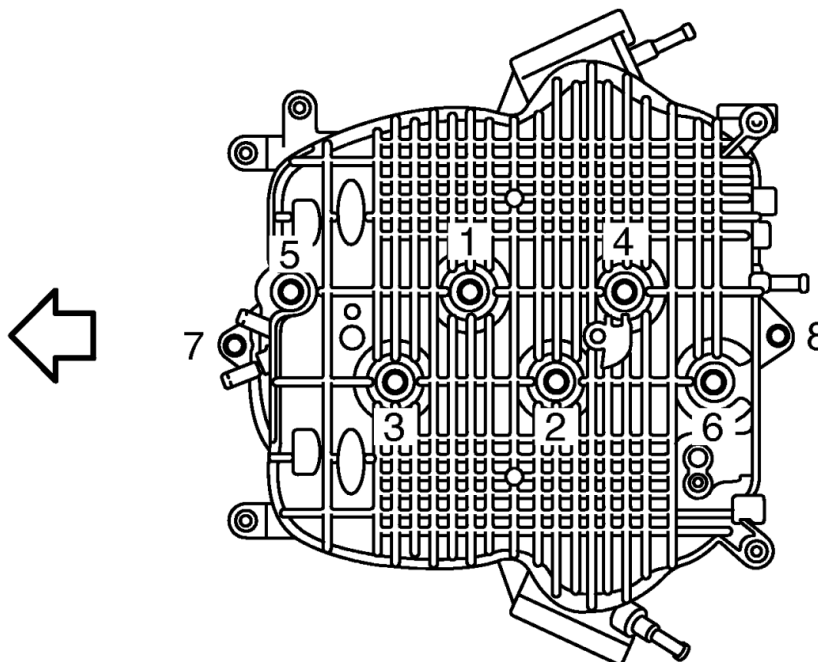


13. Loosen hose clamps (11) and remove OEM PCV Breather hoses (10) & (12) at the front of the intake plenum.

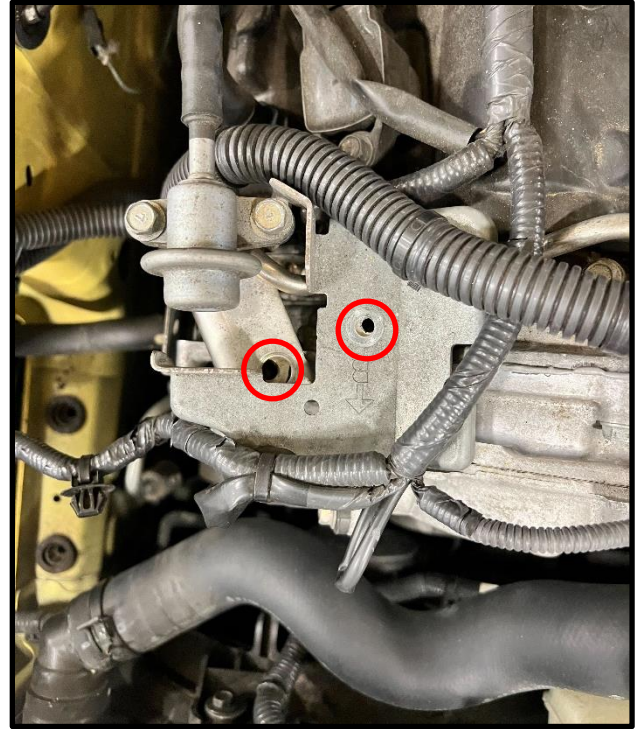
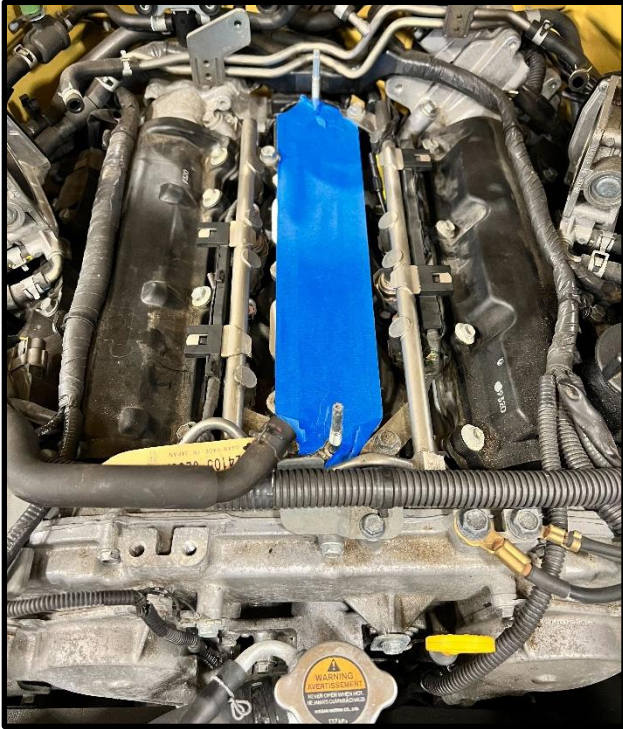
14. Using a 5mm hex bit, remove the (4) bolts on each throttle body which attach it to the intake plenum.
15. Loosen hose clamps and remove hoses ④ & ⑱ that connect to the intake plenum behind each throttle body.
16. Remove (2) bolts securing EVAP canister purge control solenoid valve ① to intake plenum.
17. Loosen hose clamp and remove brake booster hose connected to back of intake plenum (circled above).
18. Disconnect MAP electrical connector ⑲ at back of intake plenum.
19. Remove (2) bolts which attach brackets for the tube assemblies to the back of the intake plenum (circled below).



20. Remove (8) nuts and bolts securing intake plenum to engine in reverse order as shown in figure below.



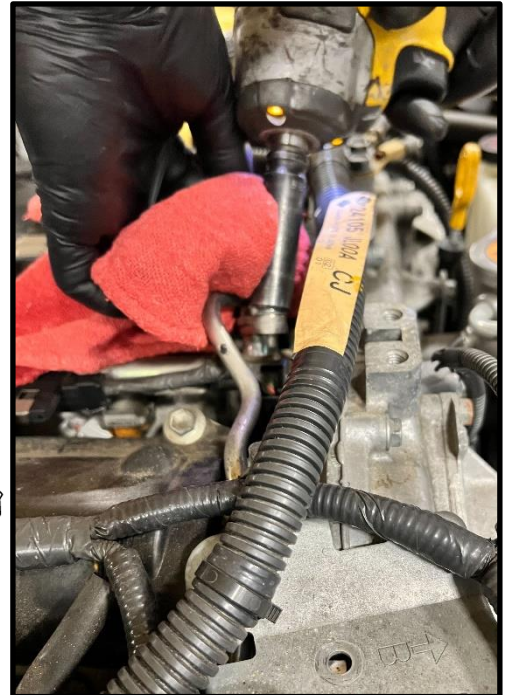
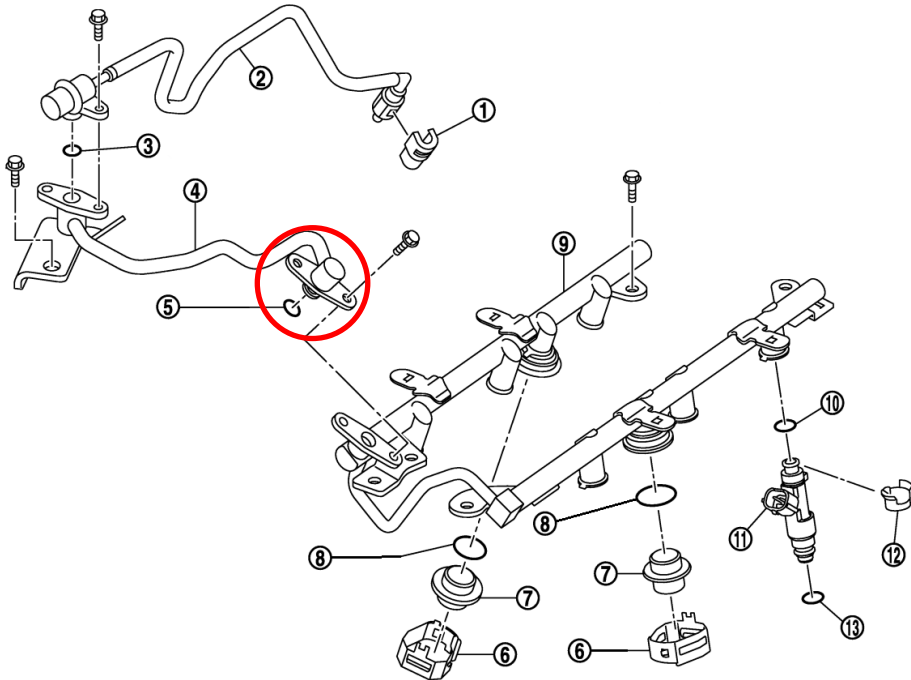
21. Inspect intake plenum and ensure there are no other hoses, connectors, or bolts securing it to the vehicle. Carefully lift up to remove intake plenum and set aside.
22. Clean and inspect lower plenum to upper plenum gasket, replace if necessary.
23. Cover with tape or place rags in intake runners to prevent parts or debris from falling in the engine.
24. Remove (2) bolts which attach harness & fuel line brackets to the front left of the engine (circled below).



Note: Picture is shown with bolts already removed.

25. At this stage, it is time to release fuel pressure. There are a couple ways to do this:
  - i. 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.
  - ii. 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 second to 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.

26. Place a rag around the fuel damper at the front of the fuel rail (circled below). While applying light pressure to the damper, loosen the (2) bolts on the fuel damper.

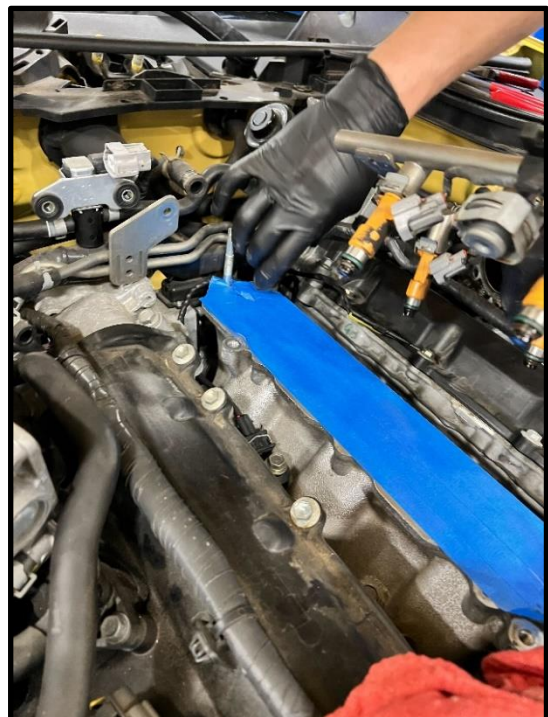
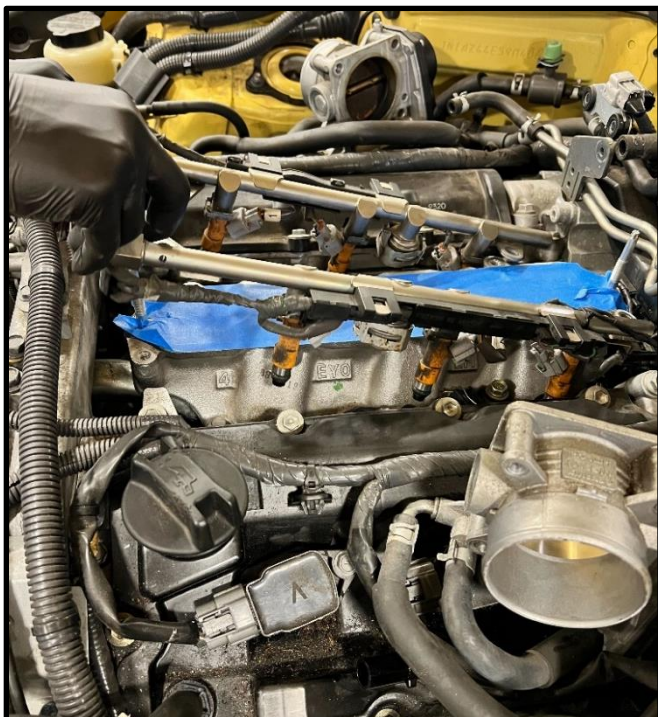
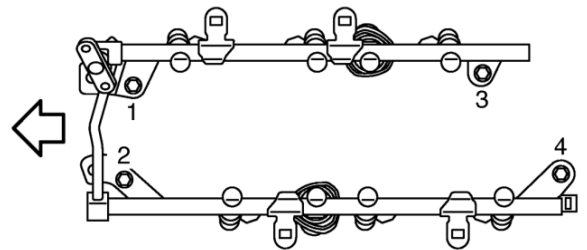


27. Carefully remove the fuel sub tube ④ from the fuel rail ⑨. Inspect the o-ring on the damper, replace if necessary.

28. Loosen (4) bolts which attach the fuel rail to the lower intake plenum in reverse order as shown in figure at right.

29. Carefully lift straight up on the front of the fuel rail to unseat injectors (as shown).

30. Gently rotate fuel rail to provide access to disconnect the electrical connector at the rear of the fuel rail (as shown).



31. 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.

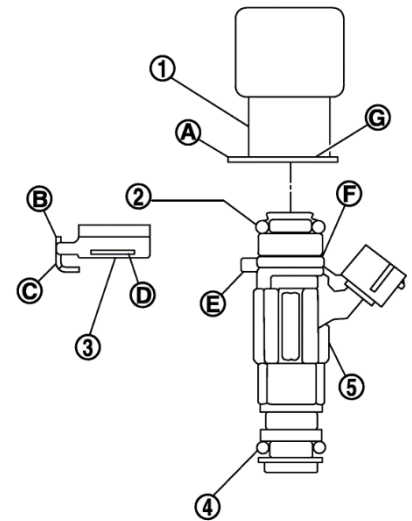
32. Disconnect the harness connector at each fuel injector.

33. 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.

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

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

**Note:** Nissan's Factory Service Manual (FSM) recommends replacing these clips as well as a few other parts here after every disassembly. It can be found [here](#), or if you search "OEM VQ / VR Fuel Injector Clip" on our website.



36. 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).

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

38. One each side of the fuel rail (2) cyan injectors will go in the left and middle slots, while the (1) purple injector will go in the right. This is the case regardless of what side of the fuel rail you are on.

39. 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 ②.

40. Assure that the fuel rail flange ③ is securely fixed in the flange fixing groove ④ on each clip.

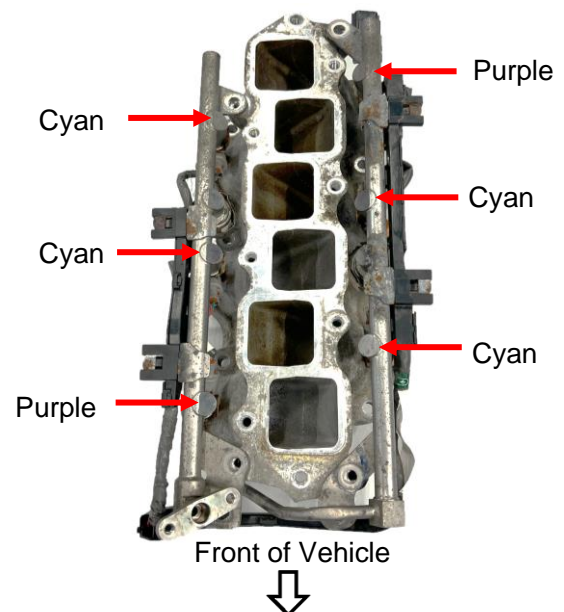
41. To check proper installation, ensure that the fuel injector does not rotate or come off. Check that protrusions of the fuel injectors and fuel rail are aligned with the cutouts of the clips after installation.

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

43. Carefully position fuel rail and fuel injector assembly into lower intake plenum.

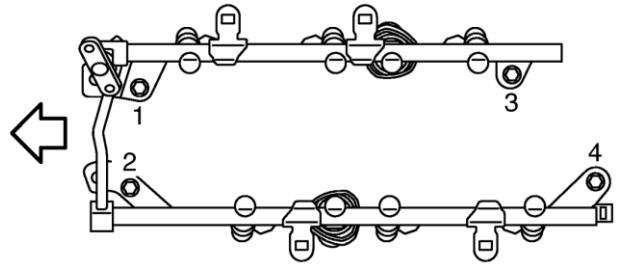
**Note:** Be careful not to let the tip of the injector nozzle contact other parts.

44. Secure fuel rail to lower intake plenum with (4) bolts removed in step #28 in two steps in numerical order as shown in figure at right.



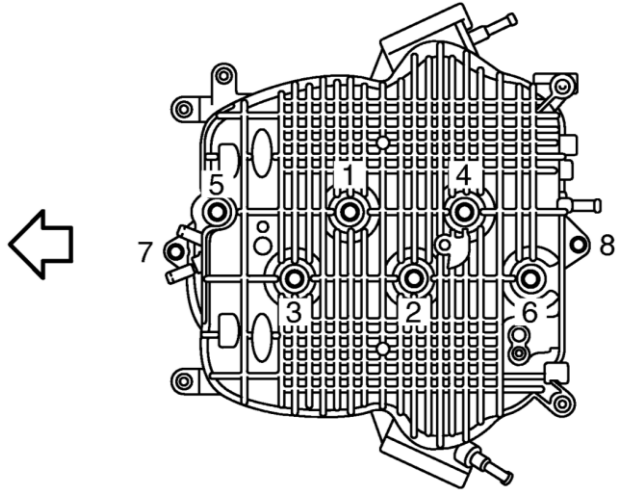
1<sup>st</sup> step: 7ft-lbs  
2<sup>nd</sup> step: 17ft-lbs

45. Reconnect injector connector that was disconnected in step #30.
46. Reconnect fuel sub tube to fuel rail using (2) bolts that were removed in step #26.



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.

47. Reattach the brackets removed in step #24.
48. Remove the tape/rags from the lower intake plenum.
49. Position the upper intake plenum onto the lower intake plenum. Secure with nuts and bolts removed in step #20 in numerical order as shown in figure at right. Torque to 14ft-lbs.
50. Follow steps #7 through #19 in reverse order to reinstall engine components.



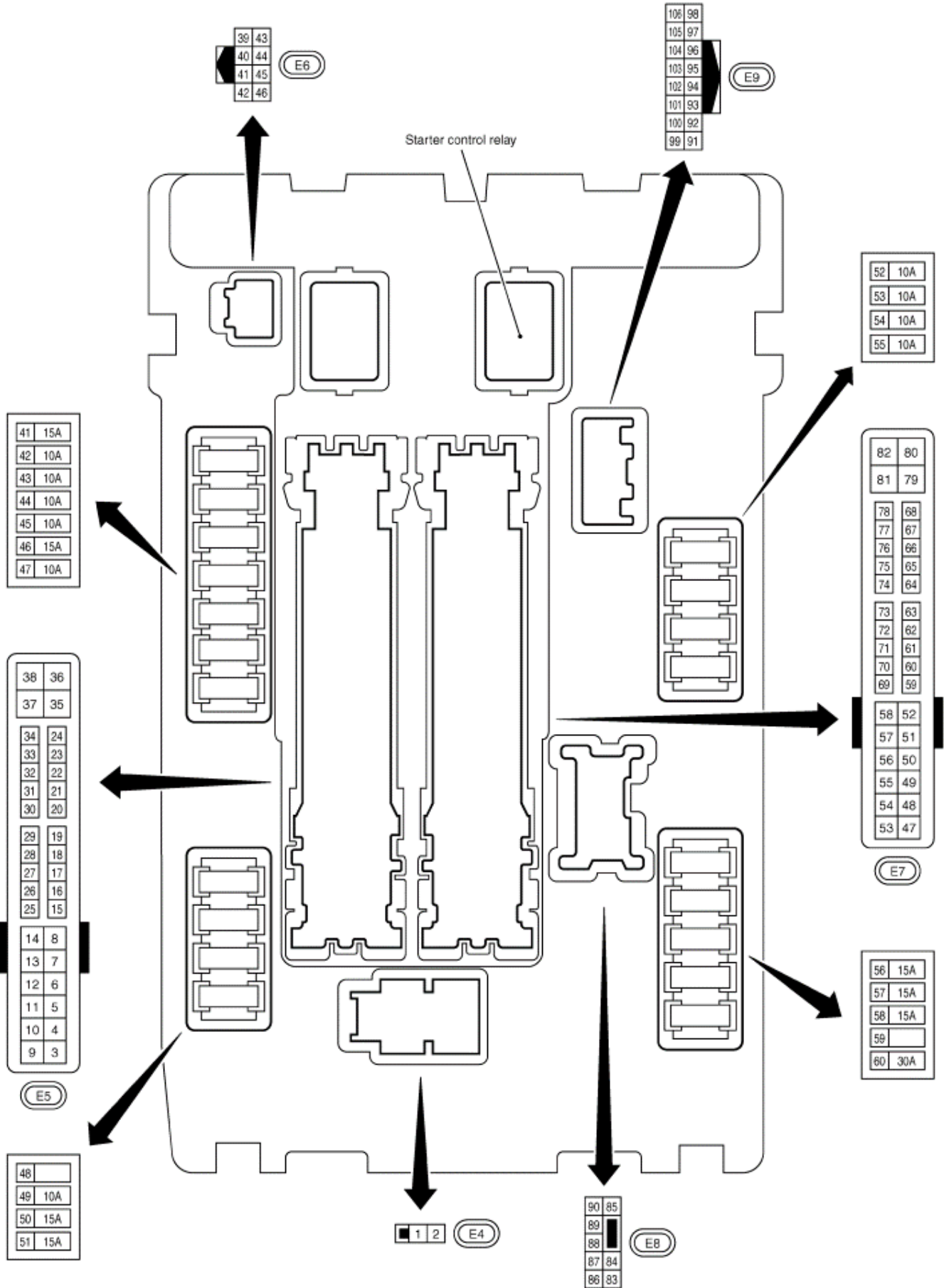
51. Inspect for fuel leaks.
  - i. Turn ignition switch ON (with engine stopped).
  - ii. Wait for fuel pump to prime.
  - iii. Visually inspect and listen for leaks. Use mirrors for checking points out of clear sight.
  - iv. Repeat previous 3 steps 2 more times.
  - v. If no leaks, start the engine.
  - vi. With engine running, check again for leaks.
52. Follow steps #3 through #6 in reverse order to reinstall engine cover and strut brace.
53. Inspect vehicle for loose tools/items
54. Lower hood of vehicle.
55. Perform or reflash new engine tune.
56. 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

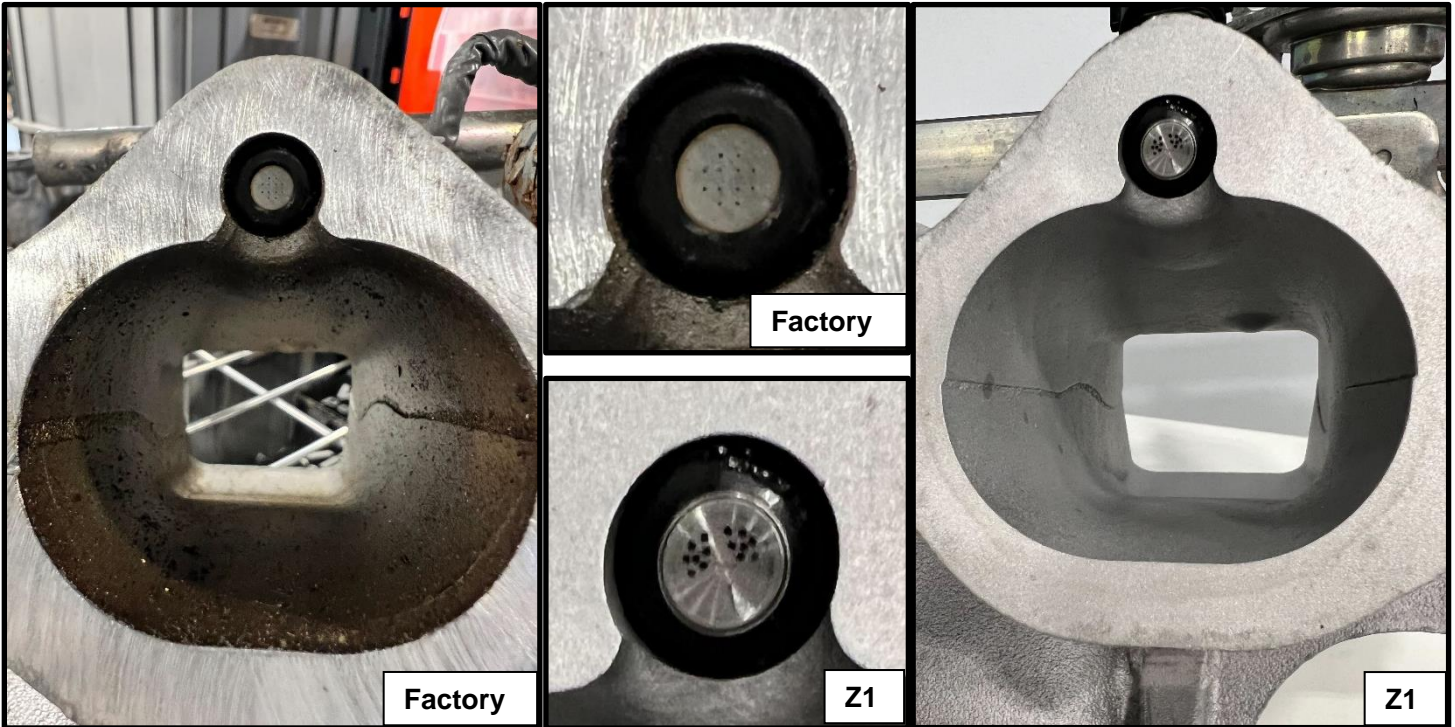
**Fuel Pump Fuse Location:**





## Aftermarket Fuel Rail Instructions

1. On many aftermarket fuel rails the nub used in step #39 above isn't present. However, the orientation of the injectors is still important.
2. For the two cyan injectors on each side, the connector should be on the right side of the injector when looking at it from the side. Additionally, if you look at the Z1 injector's spray nozzle, you will notice the holes are only on one side of the nozzle. The holes should be facing the top or outside of the runner. The pictures below show the nozzles from the factory injector and the Z1 Drop-In Injectors when installed.



Additionally, you can refer to the picture below as reference for the orientation of the connectors.



Front of Vehicle →