

# Z1 VHR 340 DROP-IN FUEL PUMP INSTALLATION MANUAL



This Installation Manual is intended for the following models:	
2009-2020	Nissan 370Z
2008-2015	Infiniti G37/Q60 Coupe
2009-2015	Infiniti G37/Q40 Sedan

## 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 340 Drop-In Fuel Pump, consult with a Professional Mechanic or contact Z1 Motorsports for more information.

## PARTS INCLUDED:

Item	Quantity	Description
1	1	340 LPH Fuel Pump

## TOOLS REQUIRED:

- Hydraulic Jack
- (2) 2-Ton (or greater) Jack Stands
- Ratchet
- Ratchet Extension(s)
- Assorted Metric Sockets
- Assorted Metric Wrenches
- 2.5mm Allen/Hex Key
- 4mm Allen/Hex Key
- Flat Head Screwdriver
- Torque Wrench
- Channel Lock Pliers
- File
- Snips
- Dremel or Body Saw
- Wire Strippers
- Wire Crimp Tool

## SAFETY REQUIREMENTS:

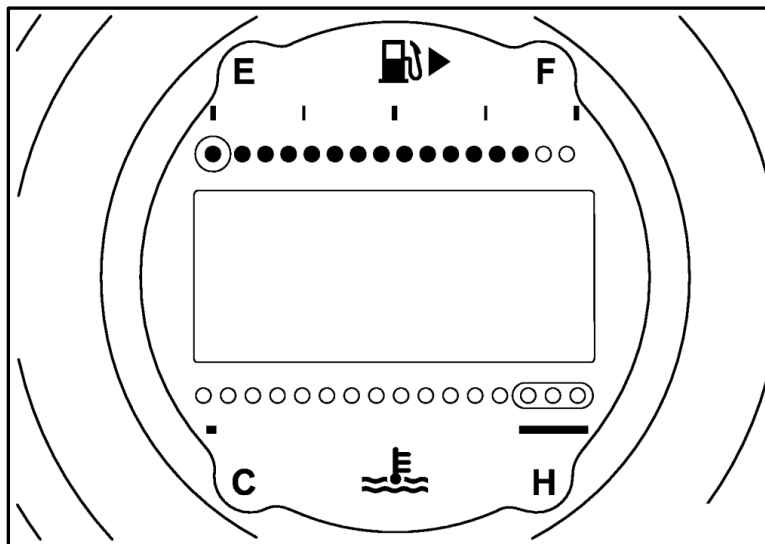
- Always wear safety glasses and any necessary protective garments. If using any fluids, chemicals, or solvents, a respirator is recommended.
- Always turn the ignition to the OFF position and disconnect the NEGATIVE battery terminal.
- Always use properly rated jack stands when working under your vehicle.
- 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 340 Drop-In Fuel Pump and verify that ALL necessary hardware is present.

## PROCEDURE:

- Place the transmission in Park position (or in Reverse gear if equipped with a manual transmission). Apply the parking brake.
- Locate proper jacking points on vehicle's chassis (refer to vehicle's Owner Manual). Raise and support vehicle using jack & jack stands.
- It is recommended to install this kit with the gas tank NOT full. Nissan recommends at least 2 dots on the gas gauge to be unlit, see picture below.

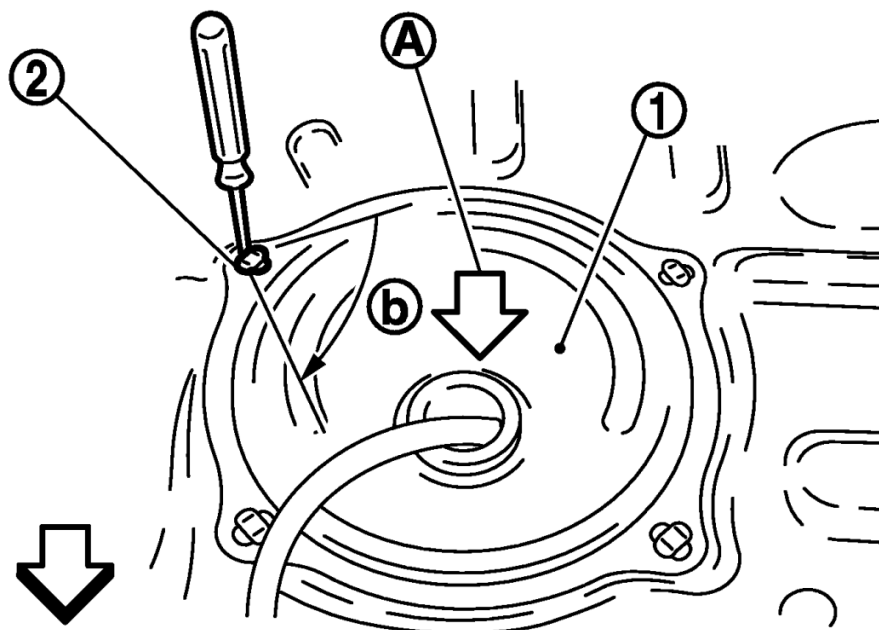
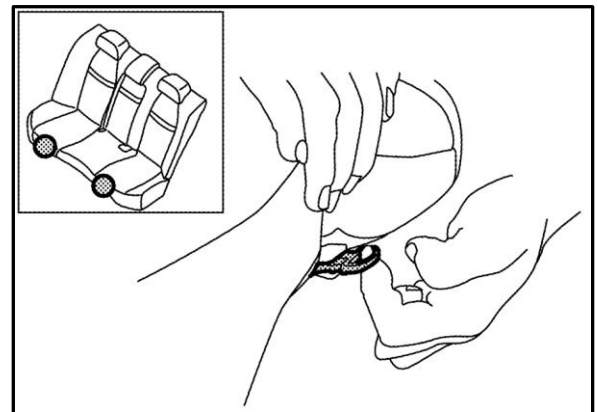


4. 370Z Owners: Remove the carpeted shelf floor behind the passenger seat (shown below).



G37 Coupe Owners: Lift up on the rear seat cushion to remove it. Then remove the floor carpet. Then remove the metal cover by rotating the clips 90 degrees clockwise

G37 Sedan Owners: There will be hook levers to pull to release it. Pull on the levers and at the same time pull upwards on the front of the seat cushion (shown in the diagram at right) to unseat the clips.

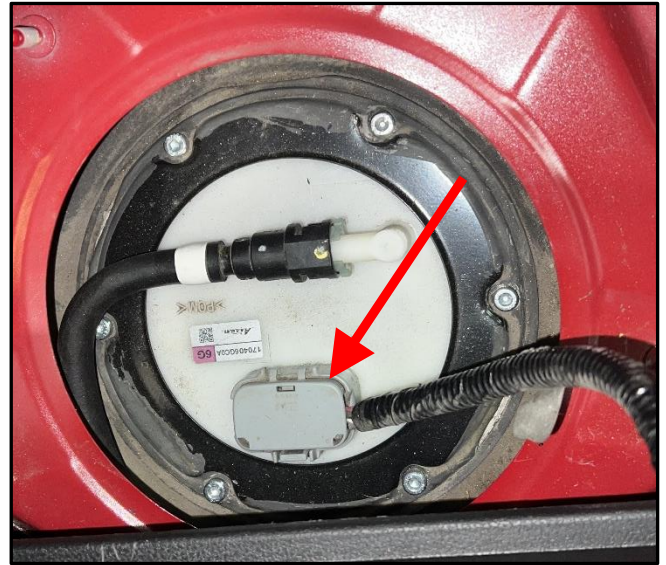


5. 370Z Owners: Remove the nuts securing the inspection cover to the chassis (shown below). Then remove the cover and set aside. The wiring harness will remain attached through the grommet, just rotate the cover out of the way.



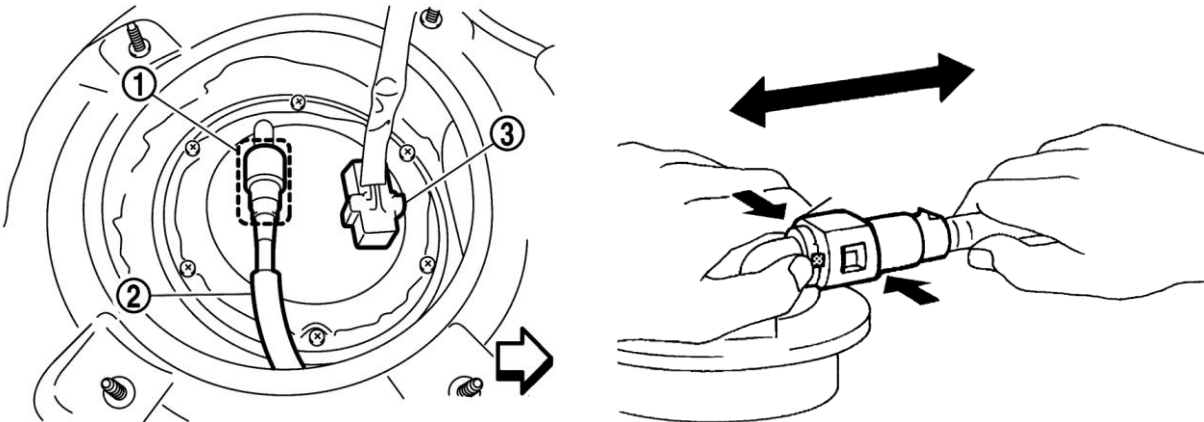
6. It is now time to release the fuel system pressure. There are a couple ways to do this:
- a. If you have access to CONSULT:
    - i. Turn ignition switch ON.
    - ii. Perform "FUEL PRESSURE RELEASE" in "WORK SUPPORT" mode with CONSULT.
    - iii. Start engine.
    - iv. Wait for engine to run out 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. Disconnect the electrical connector on the top of the fuel tank (shown at right).
  - ii. Start engine.
  - iii. Wait for engine to run out of fuel and stall.
  - iv. Crank engine over two or three times to release remaining fuel pressure.
  - v. Turn ignition switch OFF.



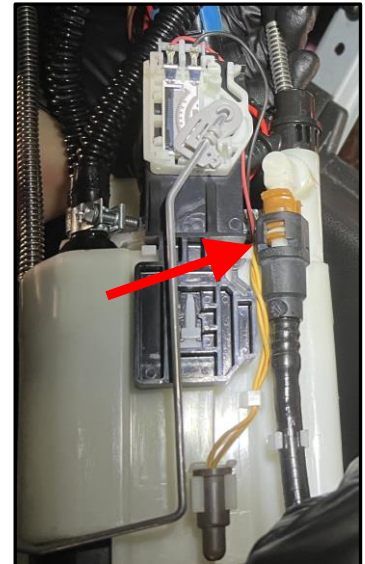
7. Remove the gas filler cap to release any pressure left in the tank.
8. Assure the ignition is in the OFF position and disconnect the NEGATIVE battery terminal.
9. It is recommended to clean the top of the OE fuel top hat and surrounding areas of the tank to prevent dirt or contaminants from falling in when you remove it.

10. Place a rag around the OE fuel supply hose (2) on the OE fuel top hat, and then disconnect the hose by pressing the sides of the retaining clip (1) in and pulling the hose away. If the clip comes off with the hose that is fine, it can be put back on later.



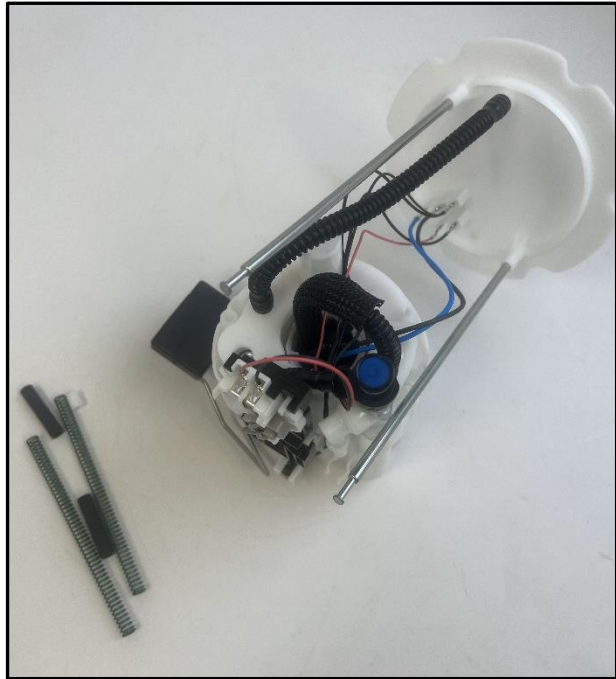
11. Using an 8mm socket, remove the (6) M5 bolts securing the OE fuel top hat to the fuel tank.
12. Carefully lift upwards to begin removing the fuel pump basket assembly. There is an internal siphon hose connected to the basket that needs to be removed. Once the basket is about halfway out, disconnect the siphon hose similar to how the fuel supply hose was disconnected in step #9 (shown at right).

Note: The image at right shows a modified 370Z basket assembly that is fully removed from the car to better show the siphon hose. It is recommended to disconnect the siphon hose prior to fully removing the basket assembly.



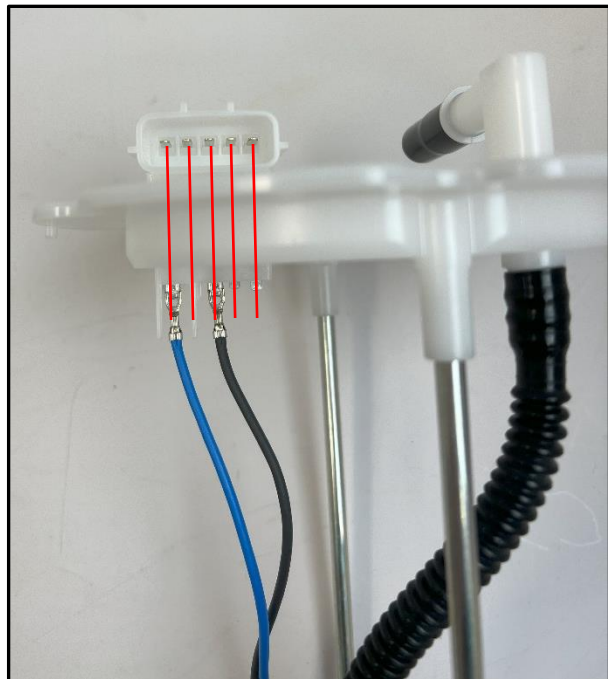
13. Once the siphon hose is disconnected, fully remove the fuel pump basket assembly. Be careful not to bend or damage the floater on its way out.
14. Depending on how much fuel was in your tank, the basket assembly will likely be full of fuel, drain any fuel into an appropriate container.
15. Move to a clean work table to begin disassembly of the OE fuel basket.

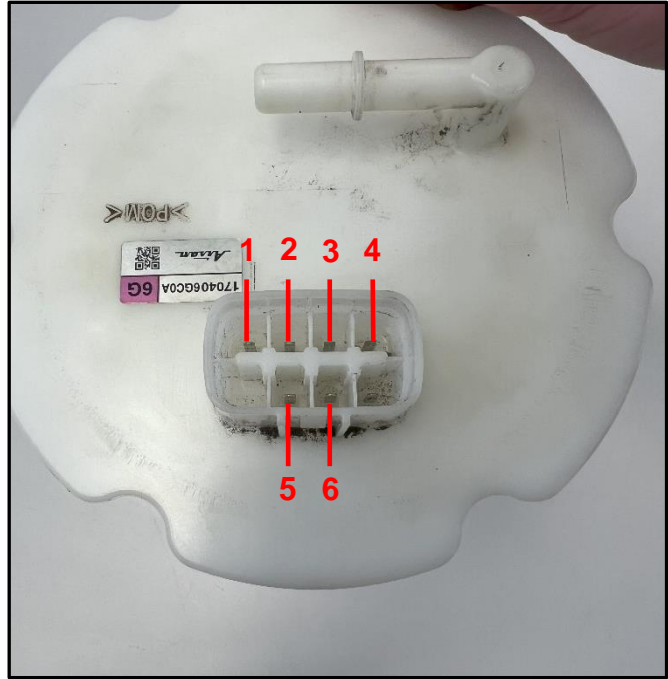
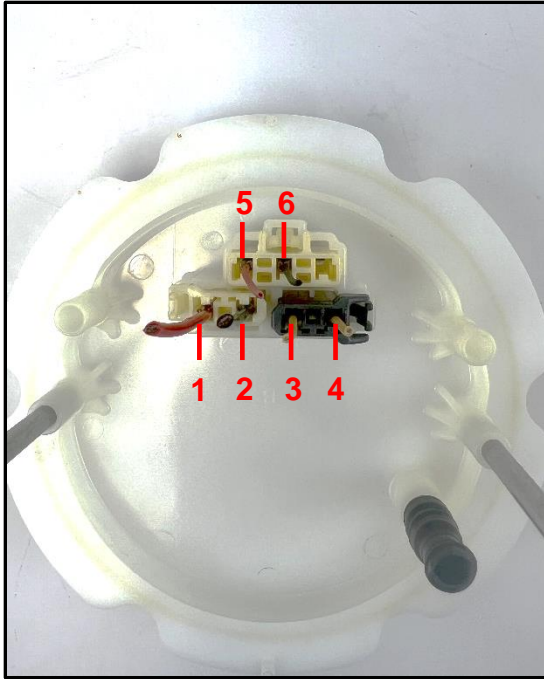
16. Compress the top hat/springs and using a pick or flathead screwdriver, remove the locking retainer on one of the top hat rods (shown below).
17. Once the locking collar is removed, separate the top hat from the lower basket assembly (shown below).



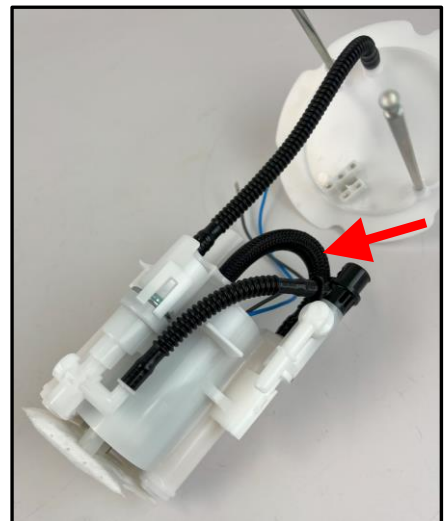
18. There are 2 different styles of the 370Z top hat and they have different style connectors on both the top and underside of the top hat, early model years up to 2015 (production date before 02/2015) and late model years 2015+ (produced after 02/2015). Pictured below is the early style, pictured on the next page is the late style.

Take a picture or note where all the connectors on the underside of the top hat go to AND their position in the connector. For example, in our image/test vehicle below, the thick blue wire goes to the positive side of the fuel pump and is in the top left corner of the connector on the underside, and far left on the top side. The colors and orientation changed over the years. It would be best to use tape or a label of some kind to denote what each wire connects to, but a picture or note at a minimum will work.





19. Disconnect or cut the (2) wires on the OE fuel pump as close to the connector/terminals at the fuel pump end.
20. Disconnect but DO NOT cut the fuel level sensor and temp sensor wires from the OE top hat.
21. Remove the fuel level sensor and fuel temp sensor from the lower basket.
22. Remove the fuel pump housing from the lower basket that contains the fuel pump by squeezing/wiggling the lower basket to unclip it. Once unclipped, firmly pull up to remove the fuel pump housing.



23. Cut the black corrugated fuel tube connecting the OE fuel pump to the OE fuel filter (shown with arrow in picture above at right). Then remove the corrugated tube from the top of the fuel filter by cutting down the side of the remaining tube with a razor.

24. Using (2) screwdrivers or picks, unclip the fuel pump and rotate it counterclockwise to remove it from the housing.



25. For all upgraded fuel pumps: Using snips/Dremel/body saw, cut the retaining clip out of the interior of the fuel pump housing. Using a file or Dremel, smooth out the bore to remove any burrs until it is relatively smooth.



Note: The image above shows both corrugated fuel tubes cut. For customers who just purchased a drop-in pump and not a return system you should still have the fuel tube connecting the fuel filter outlet and OE top hat.

26. At the bottom of the lower basket there is a small black plastic piece that is part of the venturi refill system. This piece directs the output of the fuel that is bled off by the fuel pressure regulator. When you upgrade your fuel pump and increase the amount of fuel the regulator has to relieve at low idle situations, this venturi component can become a restriction causing high fuel pressure at idle. To increase the amount this piece can flow, you must slightly drill out the orifice on the bottom. The orifice is roughly 0.050" when unmodified.



From the inside of the lower basket, push this venturi refill piece out. You do not need to remove it, pushing it from the inside will push it about halfway out, just enough to access the orifice on the side (as shown below).



27. This is not an exact science, as many components affect how well the venturi system will function. If your fuel pressure regulator is unable to maintain low enough fuel pressure at idle, this step will need to be repeated with a slightly larger drill bit. It is better to start small and have to redrill, then to drill too much.

Be careful when drilling as this component is not sold separately and if damaged, will require the purchase of an entire new sending unit/fuel basket. Be careful to make sure the drill bit does not quickly thread into the orifice but is actually drilling. Do not drill through the backside of the piece.

Depending on the size of the upgraded pump you are installing, drill out the orifice to the recommended size shown below:

Pump Size	Recommended Orifice Size	Recommended Drill Bit Size
255lph or 340lph	~0.075"	#49 drill bit = 0.0730", #48 drill bit = 0.076", 5/64 drill bit = 0.0781", 2mm drill bit = 0.0787"

Once drilled, reinstall the venturi orifice piece into the lower fuel basket.

28. Once the lower baskets have been modified for you fuel pump/regulator, locate your new fuel pump.
29. Transfer the OE fuel strainer from the OE pump onto the new pump.
30. With the foam sleeve included with the fuel pump, install the fuel pump into the bore of the fuel pump housing. Use of silicone spray is recommended.
31. Install the submersible fuel hose onto the fuel pump outlet. Secure with a clamp.
32. Install the other end of the hose onto the barb on the top of the OE fuel filter, where the corrugated tube was cut and removed from in step # 23. Secure with a clamp. Make sure the hose is not kinked.
33. Install the fuel pump housing assembly with the new fuel pump into the lower basket making sure the locking tabs on the side are seated.

34. Reinstall the fuel level sensor, fuel temp sensor, and venturi components that were removed earlier back onto the lower basket.
35. Install the plastic collars and springs onto the top hat rods that were removed earlier, then install the stock top hat with the new bulkhead fitting onto the lower basket, secure with the locking collar that was removed in step # 17.
36. Wire up the pump with the included connector pigtail that came with the pump. You will need to connect the pigtail to the OE fuel pump wires that were cut in step # 19 using butt splice connectors.

**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