

# Z1 Q50 / Q60 COOLANT PUMP UPGRADE INSTALLATION MANUAL



This Installation Manual is intended for the following models:

2016+	Infiniti Q50 (VR30)
2017+	Infiniti Q60 (VR30)

## 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 Coolant Pump Controller, consult with a Professional Mechanic or contact Z1 Motorsports for more information.

## **PARTS INCLUDED:**

Item	Quantity	Description
1	1	Coolant Pump and Bracket Assembly
2	1	Coolant Pump Controller
3	1	Controller Bracket
4	1	Controller Wiring Harness
5	1	Z1 Male Dust Cap
6	1	Firewall Grommet
7	1	Secondary Pump Inlet Hose
8	1	Secondary Pump Outlet Hose
9	2	Hose Clamps
10	3	M4 Phillips Head Screw
11	2	M6 Nylon Lock Nut

## **TOOLS REQUIRED:**

- Hydraulic Jack
- (2) 2-Ton (or greater) Jack Stands
- Ratchet
- Ratchet Extension(s)
- Assorted Metric Sockets/Wrenches
- 10mm Open End Wrench
- Torque Wrench
- Funnel
- Drain Bucket
- Pliers
- Phillips Head Screw Driver
- Flat Head Screw Driver

## **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:**

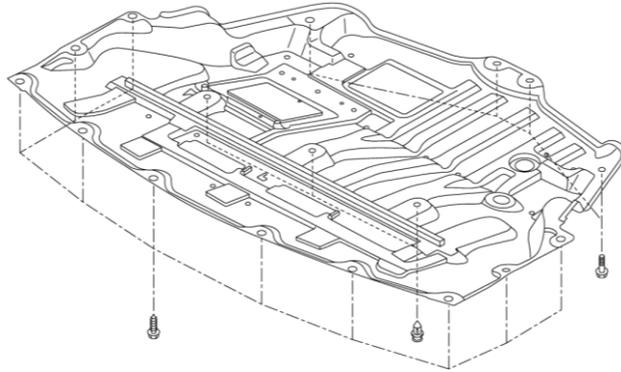
Remove contents from the Z1 Motorsports Coolant Pump Controller and verify that ALL necessary hardware is present.

### **Installation Note:**

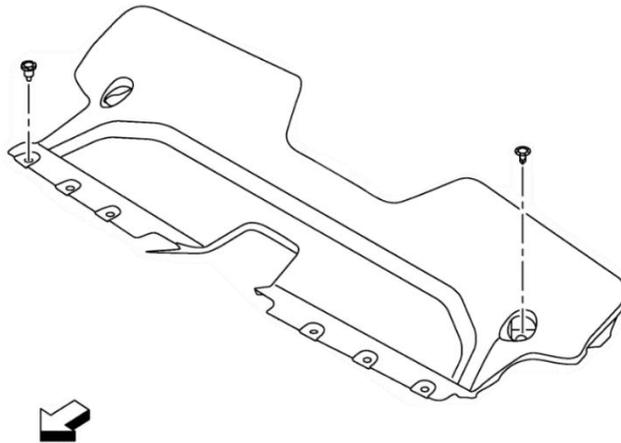
*Models equipped with adaptive cruise control may require the removal of the adaptive cruise control module for installation. If this module is unplugged or dropped, dealership programming may be necessary. Installation of this kit may be possible without removing the adaptive cruise control module, but installation instructions are not provided.*

## **PROCEDURE:**

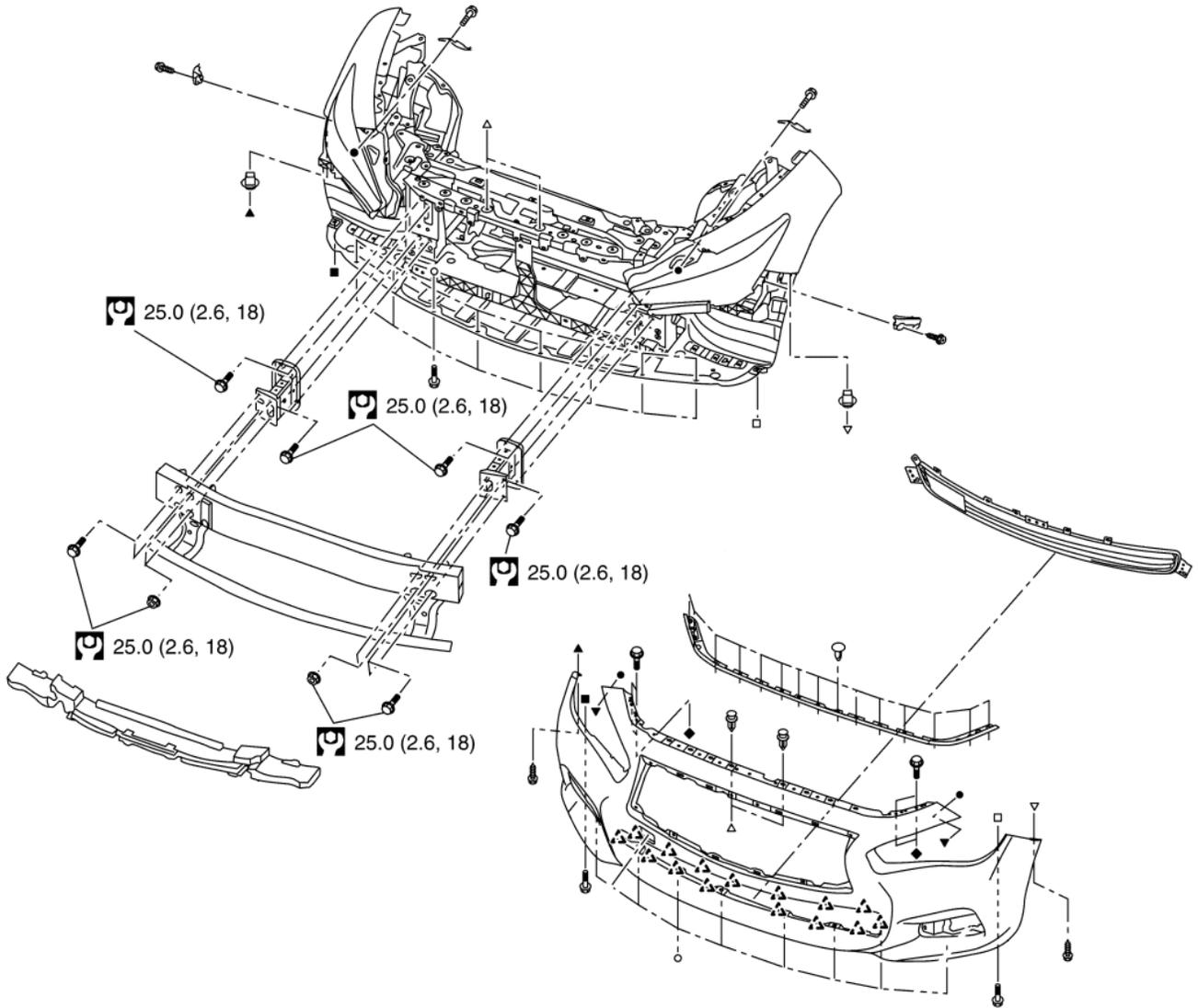
1. Place the transmission in Park position (or in Reverse gear if equipped with a manual transmission). Apply the parking brake.
2. Locate proper jacking points on vehicle's chassis (refer to vehicle's Owner Manual). Raise and support vehicle using jack & jack stands.
3. Unlatch and raise vehicle's hood. Apply hood prop.
4. Remove the lower engine splash shield. Fasteners will be an assortment of 10mm screws and plastic panel pop clips. Use a flat head screwdriver to gently pry the pop clips up.



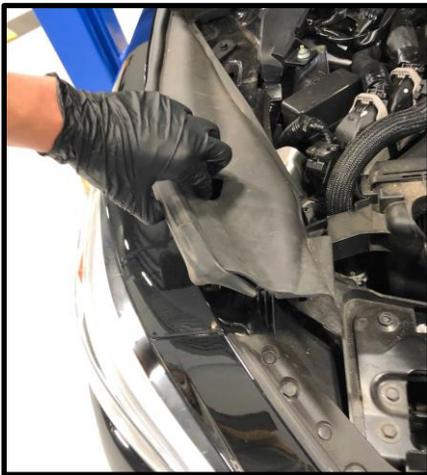
5. Remove the (8) plastic panel pop clips securing the air duct at the top of the front bumper fascia. Remove air duct and set aside.



Use the diagrams below as reference for the following steps:



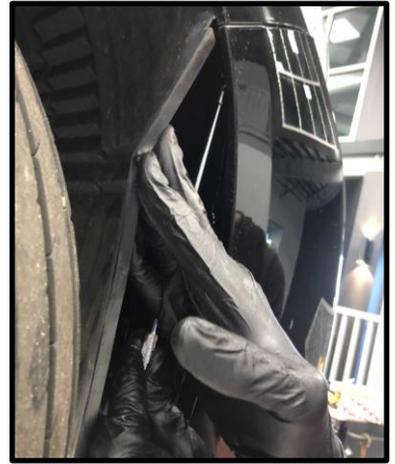
6. Gently pry up the front of plastic panels on both sides of the engine bay to reveal (1) mounting screw at each side securing front bumper fascia to fender (as shown). Remove bolts and set aside.



7. Remove plastic clips and peel back front wheel liner to reveal (1) mounting screw at each side of vehicle which mounts bumper fascia to the vehicle (as shown). Remove mounting screws.

Note: Turn front wheels of vehicle to the inside of the side you are working on for increased accessibility.

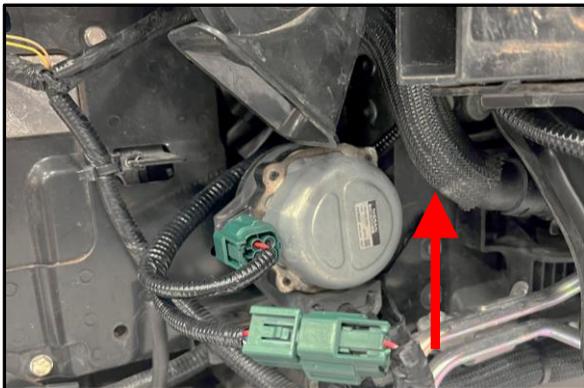
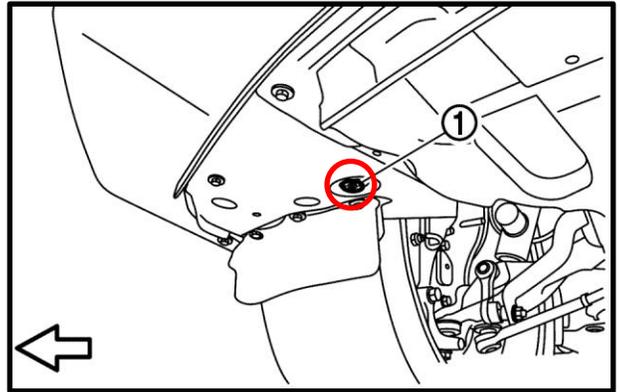
8. Remove the (4) mounting screws on the underside of front bumper fascia, securing the corner of the bumper fascia to the bottom of the fender liners.
9. With a light pull motion, carefully disengage bumper fascia from clips on vehicle around each headlight. Remove bumper fascia and set aside.
10. Remove the foam impact absorber and set aside.



11. To prevent excessive coolant from spilling, you can either drain the charge air coolant, or use a pinch clamps to squeeze shut the hose attached to the first OE water pump. Pinching the hose shut will make the bleeding process later a little easier.

- a. If you choose to drain the coolant, remove the drain plug just in front of the passenger front wheel well (circled at right). Replace plug once coolant has drained.

12. If you choose to use pinch clamps, pinch the outlet hose connected to the first OE water pump. Shown below with arrow.



13. Red Sport models: Remove the OE secondary water pump from the vehicle. It is located in the top left corner of the radiator core support, just to the right of the passenger headlight. The pump will be attached to the vehicle with (2) nuts and a bracket. It will also have an electrical connector that will need to be disconnected and two water hoses (retain the hose clamps). Install the provided Z1 dust cap into the OE green connector that was on the OE pump.

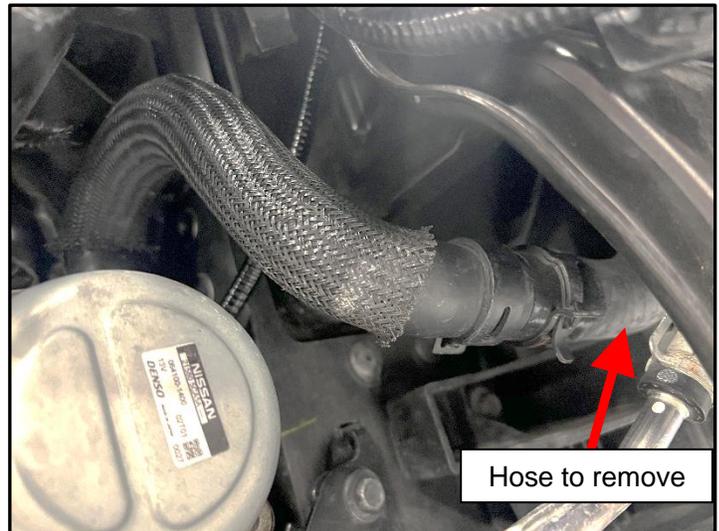
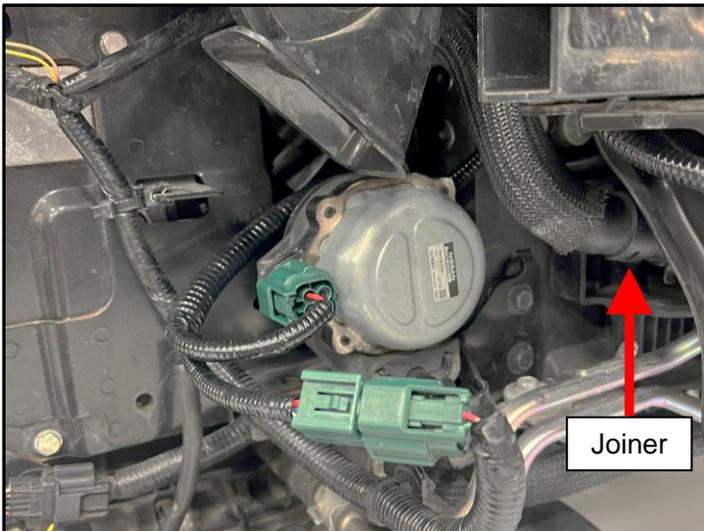
14. Use the image at right as reference.

Note: The image shows a prototype pump we used in testing, the OE pump will be in the same location but look just like the pump at the bottom left corner of the crash bar.

15. Red Sport models: Remove the OE secondary pump outlet hose from joiner in front of radiator core support. The outlet hose is shown with an arrow in the image at right.

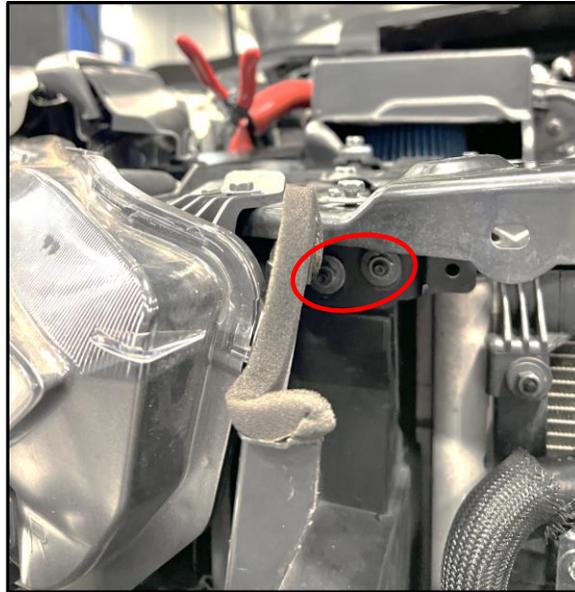


16. Non-Red Sport Models: The outlet hose coming off the first water pump has multiple hose sections with joiners (shown below). Remove the second hose coming off the joiner that goes towards the front of the radiator and connects to another joiner that contains a sensor. Remove the clamps at both joiners and remove the hose. Retain the hose clamps as they will be reused.



17. Locate assembled Z1 coolant pump and brackets. The pump should come pre-assembled with the brackets already attached to the pump.

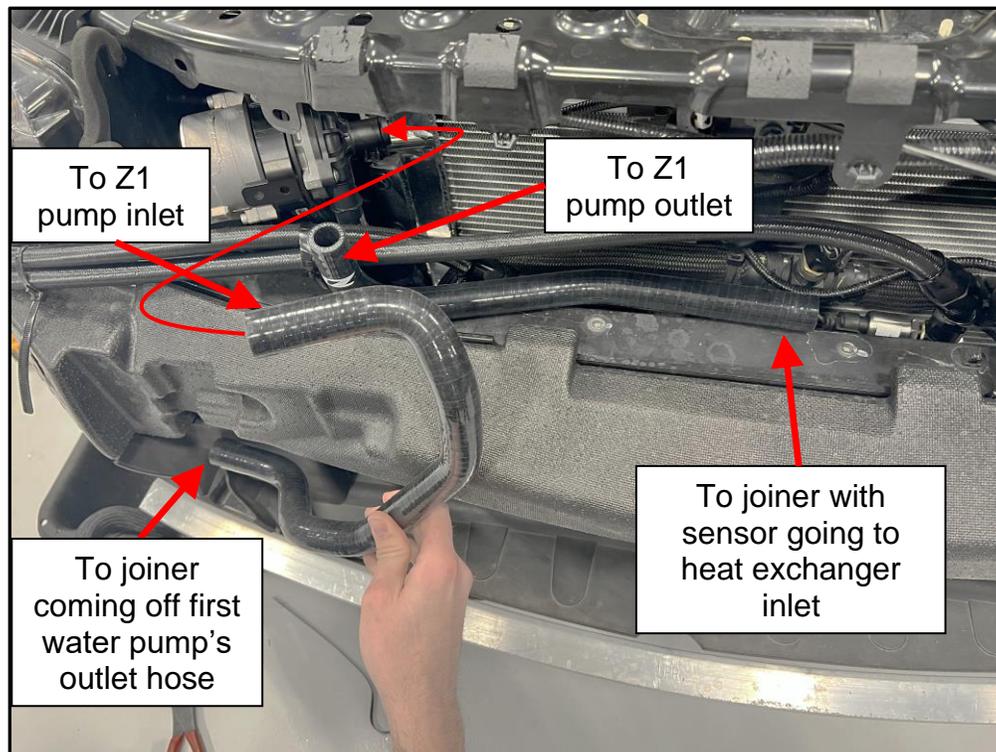
18. Non-Red Sport Models: Remove the two nuts located above the top left corner of the radiator and AC condenser. They are a little hard to see but are circled in the image below.



19. Position the Z1 pump and bracket onto the studs where the nuts were taken off in the previous step.

20. Using those OEM nuts, secure the bracket and pump to the vehicle.

21. All Models: Locate the L-shaped silicone hose. Attach the shorter end of the L-shaped hose to the new water pump outlet that is pointing down, secure with (1) supplied hose clamp. Attach the other end to the joiner that contains a sensor in front of the heat exchanger, secure with the OE hose clamp that was removed in step # 14/15. Refer to the image below as reference, the hoses below are shown disconnected and pulled forward to show their positioning and routing.



22. Non-Red Sport Models: Locate the other (longer) silicone hose. Position the hose in place behind the crash bar, with one end connecting to the open end of the joiner from step # 15, secure with the OE hose clamp that was removed in step # 15. Connect the other end to the new water pump inlet, secure with (1) supplied hose clamp. Use the image above as reference.

23. Red Sport models: You can either use the secondary OE pump inlet hose and OE hose clamp (that was removed in step # 13) or remove the OE hose completely and opt to use the Z1 inlet hose following instructions from step # 21, but make sure to transfer over the OE hose clamps.

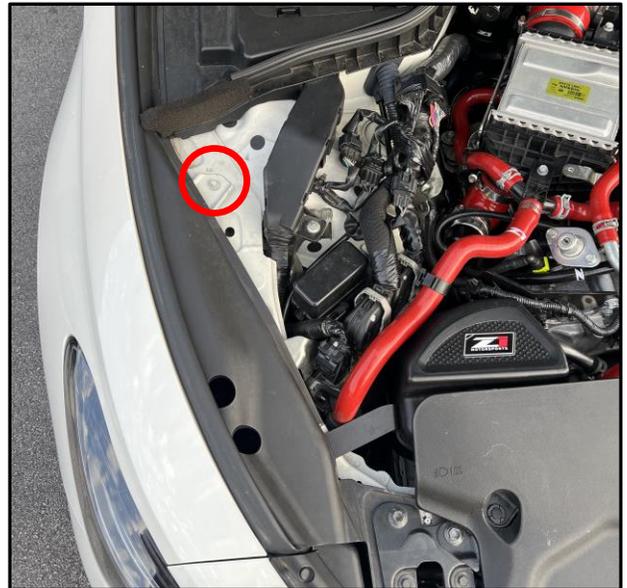
24. Remove (1) bolt on the passenger side of the engine bay connecting the fender to chassis (circled at right).

25. Locate the Coolant Pump Controller enclosure, controller bracket, and (3) M4 screws.

26. Attach the bracket to the controller using (3) M4 screws. DO NOT fully tighten these screws yet.

27. Position the controller and bracket onto vehicle using the OE bolt and mounting hole from step # 23. You will need to use an open end wrench to tighten the bolt as the power cable for the controller will interfere with a socket.

28. The mounting bracket's holes are slotted to allow you to rotate the controller slightly for the best fitment for your vehicle. Position the controller where you'd like and using your index finger and thumb hold them in that position while you unscrew the bolt securing the bracket to the vehicle (as shown below).

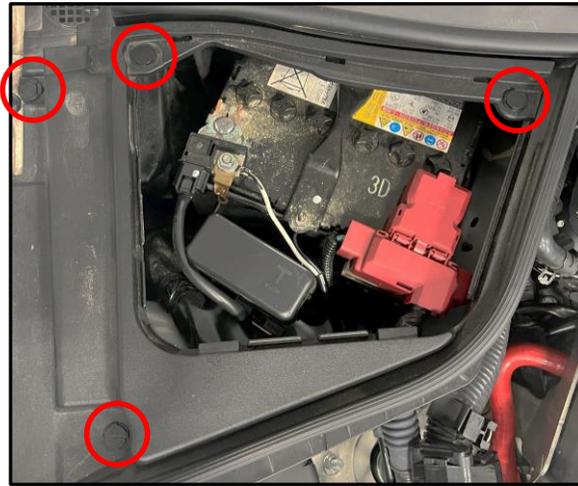


29. While still holding the controller and bracket in the same position, use a phillips head screwdriver to tighten the (3) screws securing the bracket to the controller enclosure.

30. Once tight, reattach the controller and bracket to vehicle using OE bolt and mounting hole from step # 23.

31. Remove the plastic trim cover over the battery compartment.

32. Remove the (4) plastic pop clips securing the passenger side cowl panel to vehicle (shown below). Remove cowl and set aside.



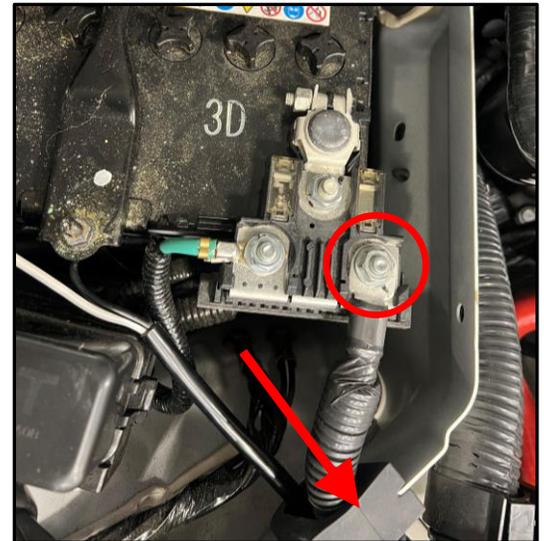
33. Remove the red plastic cover over the positive battery terminal.

34. Remove the nut and disconnect the large power cable on the right side of the positive battery terminal (circled at right).

35. Remove the OE grommet on the battery compartment partition (shown with arrow at right) and pull the power cable through it to remove the grommet.

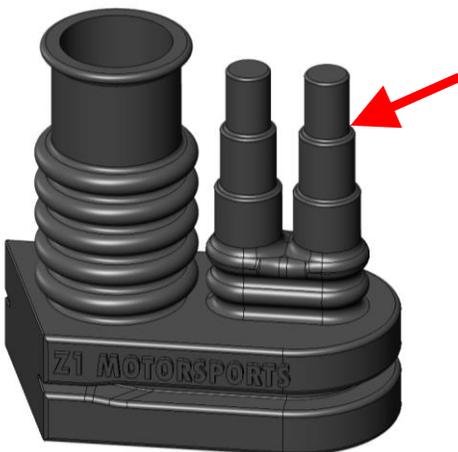
36. Locate the Z1 rubber firewall grommet.

37. Push the vehicles power cable (that was removed in step #33) through the large opening on the Z1 firewall grommet. When pushing the cable through, it will likely pull the outer shell into itself (like an inside out pair of pants). If this happens, just pull a few extra inches of cable through and then back out to fix the grommet.



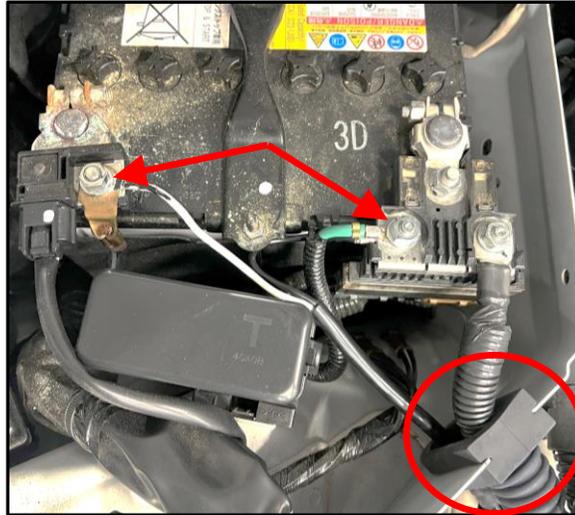
38. If your controller's power cable is pre-installed into the Z1 firewall grommet, part of step 39 will not apply. If it is not installed, there are two closed ports with steps at different diameters. One of them will be used for the controller's power cable. Cut the end off of one port at the first step (shown below).

39. Route the controller's power cable (and grommet if pre-installed) underneath the large OE wiring harnesses at the bottom left of the engine bay, and then towards the battery compartment. Refer to the image below as reference.

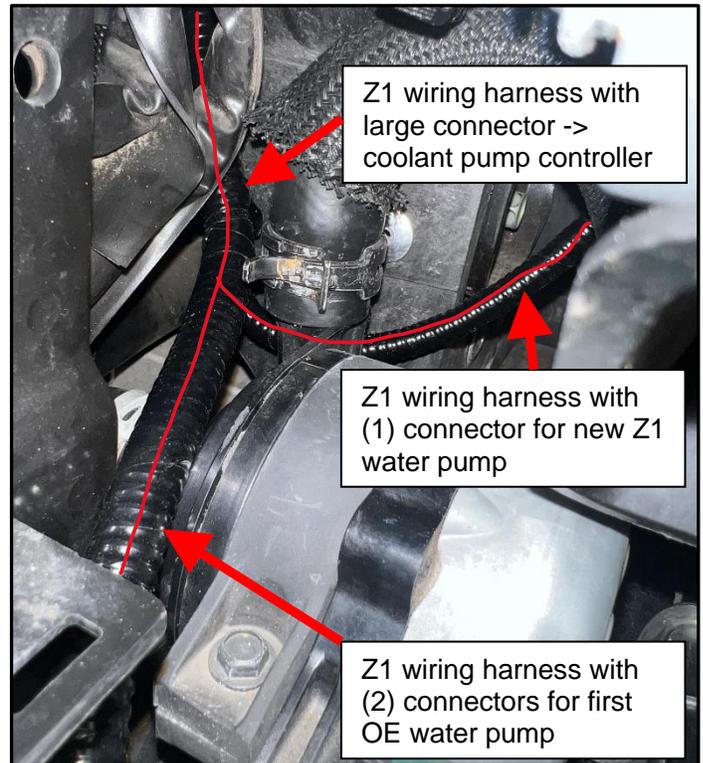


**Note:** The image at left is shown with the grommet and wiring harness already installed. Instructions for those steps are below. The image is to be used as reference for how to route the power cable.

40. Push the controller's power cable and ring terminals through the opened port just like the large cable from step # 36.
41. Once the vehicles large power cable and the Z1 controller's power cable are pulled through the new Z1 grommet, reinstall the grommet onto the battery compartment partition (shown below).
42. Attach the negative (white) wire's ring terminal to the negative battery terminal (shown below).
43. Attach the positive (black) wire's ring terminal to the left side of the positive battery terminal (shown below).

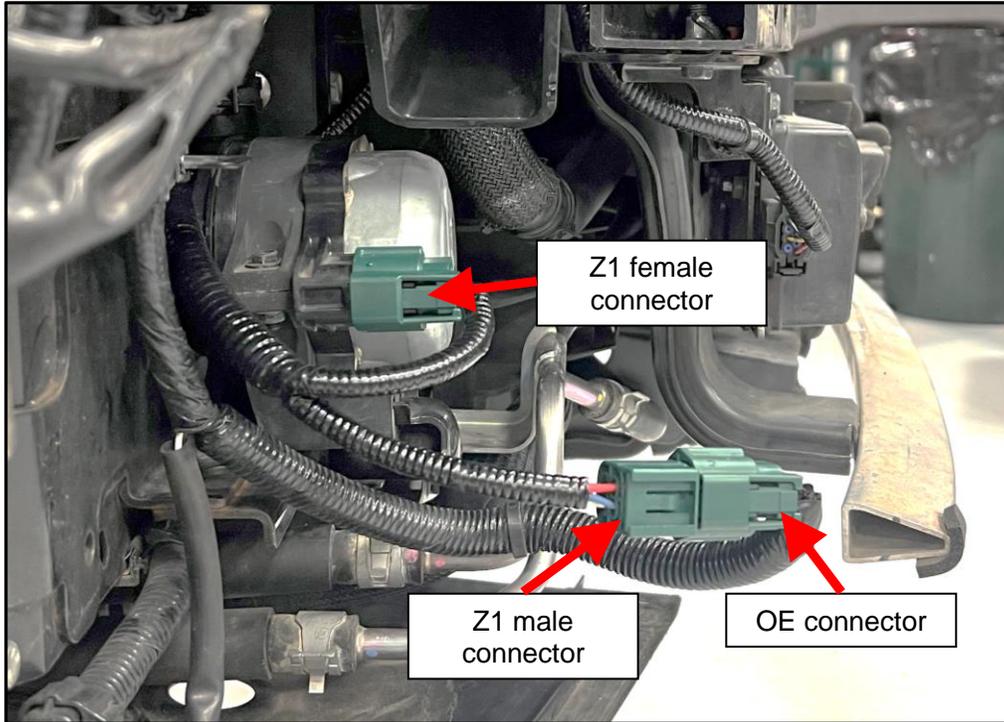


44. Locate the Z1 wiring harness.
45. Starting by the first OE water pump, route the large connector of the wiring harness up towards the engine bay, under the large OE wiring harness in the bottom left of the engine bay, and then towards the coolant pump controller. Please use the image below as reference.

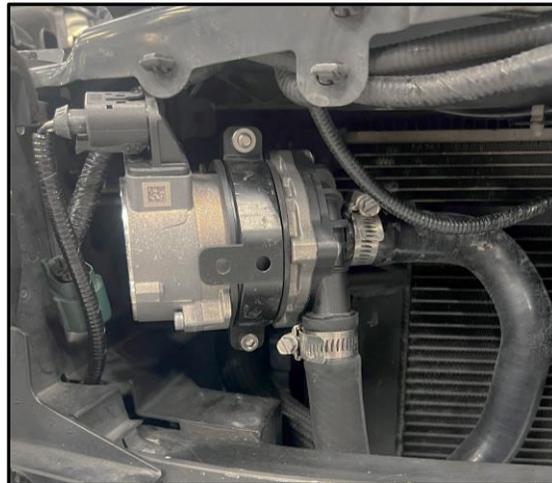


Note: Removing the passenger side front fender liner will provide greater access for this step.

46. Connect the large connector to the Z1 Coolant Pump Controller.
47. Disconnect the electrical connector on the OE water pump.
48. Connect the OE connector to the green male connector coming off the Z1 harness. Then connect the green female connector on the Z1 harness to the OE water pump. Please refer to image below.

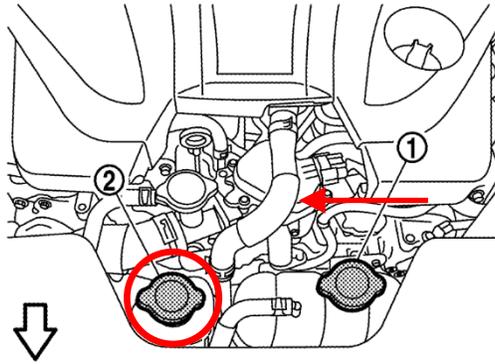


49. Route the last remaining end of the Z1 harness through the plastic trim, behind the crash bar, and up towards the new Z1 water pump. Refer to the image at the bottom right of page 10.
50. Connect the grey female connector on the Z1 harness to the new Z1 water pump.



51. It is now time to refill and bleed the system. Bleeding the intercooler and heat exchanger system on VR30 vehicles is difficult as the intercoolers on top of the engine are the highest point. It is highly recommended to use a vacuum bleeder or the Z1 Elite Diagnostic Scan tool. Follow the instructions from your vacuum bleeder manufacturer, general instructions are listed below in the following steps.

52. Open the charge air cooling system reservoir tank cap ②. Using a vacuum bleeder, suck out as much air as possible.



53. Using the vacuum bleeder, draw coolant back into the system. Make sure the feed hose of the vacuum bleeder is submerged in coolant/water.
54. If you do not have access to a vacuum bleeder, you may use the [Z1 Elite Diagnostic Scan Tool](#). Depending on how much fluid drained out in the previous steps, refill the reservoir to the MAX level line.
55. Start the vehicle and using the [Z1 scan tool](#), navigate to the “Charge air cooler cooling electric water pump” active test under the “Control Modules” in the “Engine” section.
56. Then, select the “Charge air cooler coolant temp” parameter from the list and hit OK(F3). You can then hit F2 to go to “Full drive” mode.
57. Watch the reservoir tank, as the coolant level drops, fill it back up to the MAX line.
58. When coolant level stops dropping, turn off water pump(s).
59. Once the system is bled, reinstall reservoir tank cap.
60. Follow steps # 4-11 in reverse order to reinstall bumper and trim components.
61. Check vehicle for loose tools/items.
62. Properly lower vehicle from jack stands.
63. Perform a final test drive of vehicle.
64. For Redsport Owners: After install there will be a pending code, P14AE “Charge Air Cooler Cooling Electric W/P”, on your ECU. It will not affect performance and will not throw a CEL. The pending code is just indicating that the 2<sup>nd</sup> factory pump has been disconnected.

**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