

# Z1 VQ40 THROTTLE BODY UPGRADE INSTALLATION MANUAL



**NOTE:** This kit is intended for owners who already have the [Z1 05-21 Frontier Cold Air Intake](#) or the [Z1 05-15 Xterra Cold Air Intake](#).

This Installation Manual is intended for the following models:	
2005-2019	Nissan Frontier D40 (with 4.0L)
2005-2015	Nissan Xterra N50 (with 4.0L)

## 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 Off-Road VQ40 Throttle Body Upgrade, consult with a Professional Mechanic, or contact Z1 Off-Road for more information.

## **PARTS INCLUDED:**

Item	Quantity	Description
1	1	Billet Spacer
2	4	M6 x 1.0 Socket Head Screw, 20mm
3	1	VQ40 Throttle Body Adaptor Harness
4	2	Throttle Body Gasket
5	1	75mm Throttle Body
6	1	Coolant Hose
7	1	Throttle Body Coupler

## **TOOLS REQUIRED:**

- Ratchet
- Ratchet Extension(s)
- Assorted Metric Sockets (up to 21mm)
- Assorted Metric Wrenches (up to 21mm)
- Torque Wrench
- Assorted Pliers
- Assorted Allen/Hex Sockets

## **SAFETY REQUIREMENTS:**

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

## **BEFORE YOU BEGIN:**

Remove contents from the Z1 Off-Road VQ40 Throttle Body Upgrade and verify that ALL necessary hardware is present.

**DO NOT TOUCH THE BUTTERFLY VALVE OF THE NEW THROTTLE BODY. TOUCHING OR MOVING THE BUTTERFLY VALVE CAN AFFECT THE CALIBRATION OF THE THROTTLE BODY, MAKING IT INOPERABLE.**

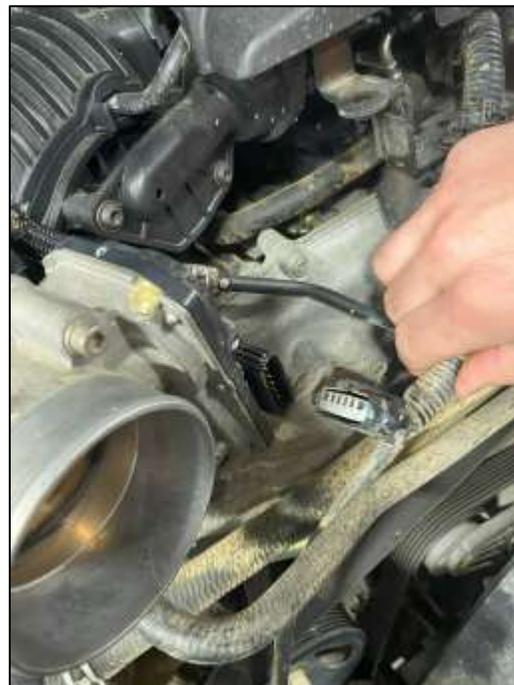
## PROCEDURE:

1. Place the transmission in Park position (or in Reverse gear if equipped with a manual transmission). Apply the parking brake.
2. Open the hood and disconnect the **NEGATIVE (-)** battery terminal.
3. Locate and disconnect the Air Intake Tube from the OEM Throttle Body. Save the (2) two Intake Hose Clamps as they will be reused. *Figure 1.*



*Figure 1*

4. Disconnect the wiring harness to the Throttle Body. *Figure 2.*



*Figure 2*

5. If you want to minimize the spillage of coolant, use vise grip pliers or similar tools to pinch the (2) two small coolant hoses connected to the OEM Throttle Body. *Figure 3.*



*Figure 3*

6. Disconnect the (2) two small coolant hoses connected to the OEM Throttle Body. Be careful, some coolant may spill and could be hot. Clean any spilled coolant as necessary.
7. Remove the (4) four OEM bolts holding the OEM Throttle Body to the Intake Manifold. Hold on to these bolts as they will be reused. *Figure 4.*



*Figure 4*

8. Remove the OEM Throttle Body Gasket from the Intake Manifold.
9. Locate (1) one Throttle Body Gasket and insert it into the stock Intake Manifold as shown in *Figure 5*.



Figure 5

10. Locate the Throttle Body Adaptor and (4) four M6 x 1.0 Screws, 20mm. Install the Throttle Body Adaptor as shown below, securing it with the (4) four M6 x 1.0 Screws. Torque to **74 in-lbs**. *Figure 6*.

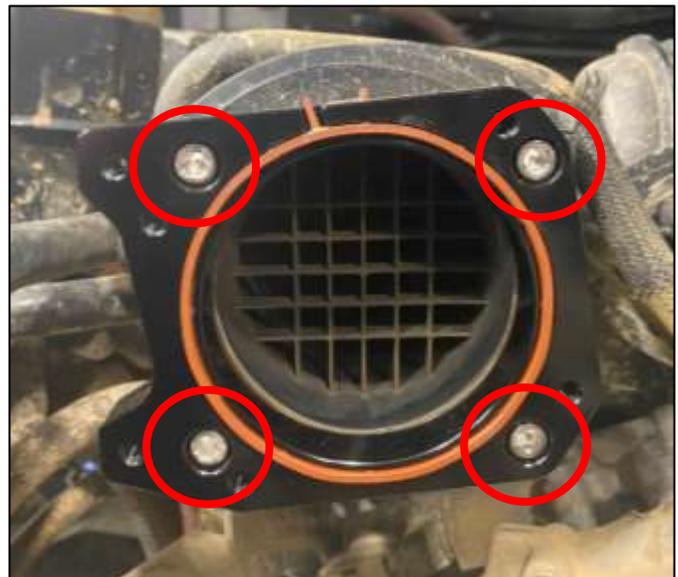


Figure 6

11. Locate (1) one Throttle Body Gasket and install it into the Throttle Body Adaptor. *Figure 7.*



*Figure 7*

12. Locate the new 75mm Throttle Body and the (4) four OEM Bolts removed in *Step 7*. Install the 75mm Throttle Body onto the Throttle Body adaptor as shown, securing with the OEM Bolts. Torque to **74 in-lbs.** *Figure 8.*

**DO NOT TOUCH THE BUTTERFLY VALVE OF THE NEW THROTTLE BODY. TOUCHING OR MOVING THE BUTTERFLY VALVE CAN AFFECT THE CALIBRATION OF THE THROTTLE BODY, MAKING IT INOPERABLE.**



*Figure 8*

13. Locate the Throttle Body Adaptor Harness and connect it to the OEM Wiring Harness and the connector on the new 75mm Throttle Body. *Figure 9.*

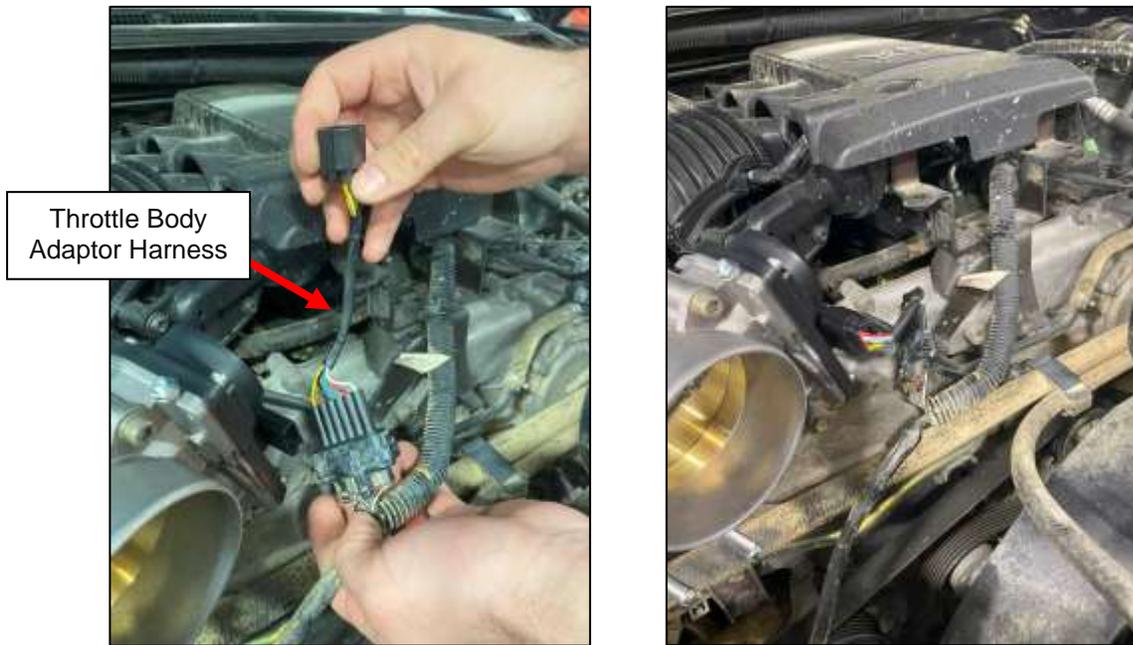


Figure 9

14. Remove the OEM Coolant Hose that connects to the left port of the heater lines. Retain the Hose Clamps as they will be reused in the next step. Be careful as coolant will most likely leak out and may be hot. Clean up coolant as necessary. *Figure 10.*

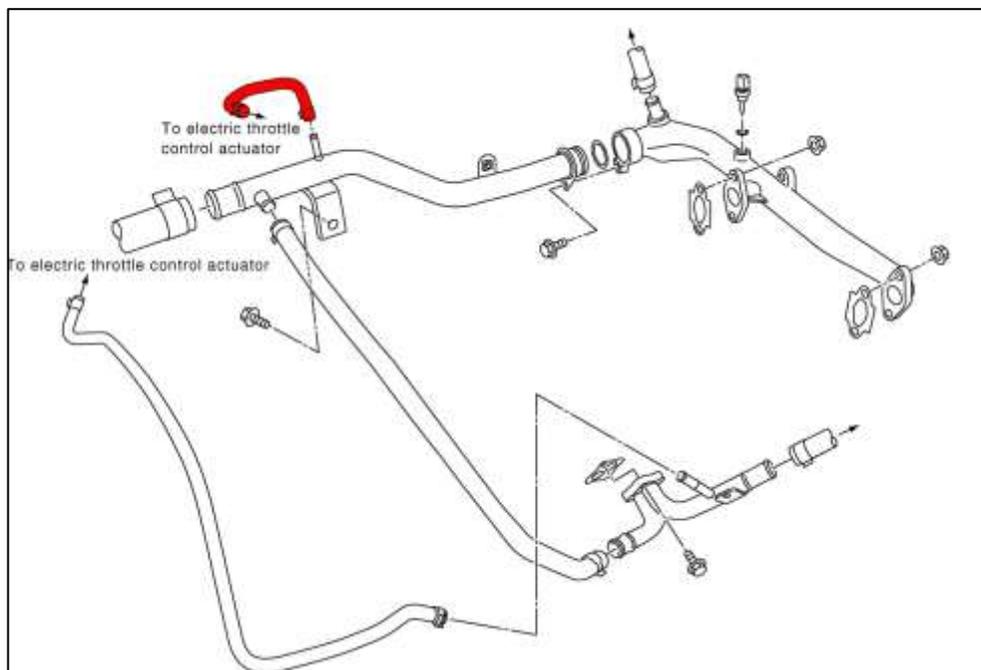


Figure 10

15. Locate the new Coolant Hose, and attach it to OEM Location, and the left port of the Throttle Body. Utilize the hose clamps removed in *Step 14* and secure the hose in its new location. *Figure 11*.



*Figure 11*

16. Install the OEM Coolant Hose to the right port of the throttle body. Secure with the OEM Hose Clamp. If you decided to pinch the coolant hoses with pliers, you can now remove them. *Figure 12*.



*Figure 12*

17. Locate the Throttle Body Coupler and install the smaller diameter side onto the 75mm Throttle Body. Position the Intake Hose Clamps removed in *Step 3* over the Throttle Body Coupler. *Figure 13*.



*Figure 13*

18. Install the Z1 Cold Air Intake Tube into the Throttle Body Coupler. Tighten the Intake Hose Clamps until the Throttle Body Coupler and the Intake Tube are secure. *Figure 14*.



*Figure 14*

19. If you are using a Z1 Catch Can, mount it to the Throttle Body Adaptor with Catch Can hardware. The orientation of the Catch Can may need to be adjusted to fit properly. *Figure 15.*



*Figure 15*

20. Reconnect **NEGATIVE (-)** battery terminal.
21. Refill coolant as needed. If necessary, bleed the coolant system.
22. Perform a *Throttle Body Closed Position Learning Procedure*, *Idle Air Volume Learning Procedure*, and the *Accelerator Pedal Released Position Learning Procedure*. Refer to our [Blog Post](#) or your Factory Service Manual (FSM) for proper procedures.
23. Remove and account for tools.
24. Take your vehicle for a test drive.

**END**

**Additional Technical Support:**

Contact Z1 Off-Road at [info@z1offroad.com](mailto:info@z1offroad.com)  
Or call 678-839-8019 between 9am and 6pm ET