VQHR+ Concentric Slave Cylinder (CSC) Elimination Kit

WARNING:

Failure to follow these instructions will result in removing the transmission multiple times due to installation error. We understand it is in your DNA to not read instructions. At a minimum, please see Page 7 for the sake of all involved.
VQHR+ (CSC) Elimination Kit – Packing Checklist

☐ Heat Shield
☐ Heat Shield Hardware
☐ Mounting Bracket & Hardware
☐ Dust Cover & Hardware
☐ Slave Cylinder
☐ Stainless Clutch Line
☐ Clutch Release Fork
☐ Clutch Release Fork Hardware
☐ Clevis Anchor & Hardware
☐ Transmission Front Cover
☐ Transmission Front Cover Gasket
☐ Throw Out Bearing Sleeve
☐ Throw Out Bearing
VQHR+ Concentric Slave Cylinder (CSC) Elimination Kit
Installation Manual

PROLOGUE:
Study these instructions completely and thoroughly before proceeding to assemble. Installation can be completed using common tools and automotive procedures. 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 ANY 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 the installation or the various components included with the Z1 Motorsports VQHR+ CSC Elimination Kit, consult with a Professional Mechanic or contact Z1 Motorsports for more information.

This Concentric Slave Cylinder Elimination Kit is completely CAD/CAM designed to be a bolt on solution to common VQ35HR and VQ37VHR Clutch concentric slave cylinder failures. Although it does not require any permanent modification to the Engine or Transmission, installation of this part may void the warranty coverage, if any, on your vehicle.
Quick Reference:

Page 02-04 Component List
Page 05 Installation Guide
Page 07 Stack Height and Shim Height Calculation (CRITICAL)
Page 14 Slave Cylinder Adjustment (CRITICAL)
Page 15 End-User Product Care
Page 16 Troubleshooting

Use the following image as reference for Component List:

Parts Included: (Table 0.1)

<table>
<thead>
<tr>
<th>Component Description</th>
<th>Quantity</th>
<th>Reference#</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z1 CSC Elimination Kit Installation Manual – Z190967</td>
<td>1</td>
<td>Not Pictured</td>
</tr>
<tr>
<td>Transmission Front Cover – 32110-CD000</td>
<td>1</td>
<td>A</td>
</tr>
<tr>
<td>Transmission Front Cover Gasket – 32112-CD000</td>
<td>1</td>
<td>B</td>
</tr>
<tr>
<td>Throw Out Bearing Sleeve – (Dependent upon Clutch)</td>
<td>1</td>
<td>E</td>
</tr>
<tr>
<td>Throw Out Bearing – (Dependent upon Clutch selection)</td>
<td>1</td>
<td>F</td>
</tr>
<tr>
<td>SS Clutch Line 31” -4 straight, -4 90 – Z1-Z34-CSDK</td>
<td>1</td>
<td>T</td>
</tr>
<tr>
<td>Heavy Duty Clutch Release Fork – Z190833</td>
<td>1</td>
<td>C</td>
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</table>
## Clutch Release Fork Hardware

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clutch Release Fork Pivot Clip</td>
<td>1</td>
<td>ⓝ</td>
</tr>
<tr>
<td>Clutch Release Fork Sleeve Clip</td>
<td>1</td>
<td>ⓝ</td>
</tr>
<tr>
<td>Pivot Ball</td>
<td>1</td>
<td>ⓛ</td>
</tr>
<tr>
<td>Pivot Ball Shim – 4.5mm Washer</td>
<td>1</td>
<td>ⓝ</td>
</tr>
<tr>
<td>Pivot Ball Shim – 2.0mm Washer</td>
<td>2</td>
<td>ⓝ</td>
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<tr>
<td>Pivot Ball Shim – 1.0mm Washer</td>
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<td>ⓝ</td>
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<tr>
<td>Pivot Ball Shim – 0.5mm Washer</td>
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## Howe Slave Cylinder Assembly

<table>
<thead>
<tr>
<th>Item</th>
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</tr>
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<tbody>
<tr>
<td>Howe Racing Pull Type Slave Cylinder</td>
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<td>ⓠ</td>
</tr>
<tr>
<td>Bleed Fitting</td>
<td>1</td>
<td>ⓠ</td>
</tr>
<tr>
<td>90 Degree Brass Fitting BSPT</td>
<td>1</td>
<td>ⓠ</td>
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<tr>
<td>80mm Cut 5/16&quot;-24 RH Threaded Rod</td>
<td>1</td>
<td>ⓠ</td>
</tr>
<tr>
<td>Nut - Ball 5/16&quot;-24 RH (used for 2 Rod Ends)</td>
<td>3</td>
<td>ⓠ</td>
</tr>
<tr>
<td>Rod End 5/16&quot;-24 RH Female 5/16&quot; Ball</td>
<td>1</td>
<td>ⓠ</td>
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## Z1 Mounting Bracket & Hardware

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
<th>Code</th>
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</thead>
<tbody>
<tr>
<td>Z1 Slave Cylinder Mounting Bracket</td>
<td>1</td>
<td>ⓞ</td>
</tr>
<tr>
<td>M8x1.25 110L Bolt</td>
<td>2</td>
<td>ⓗ</td>
</tr>
<tr>
<td>M8 Washer</td>
<td>10</td>
<td>ⓗ</td>
</tr>
<tr>
<td>M8x1.25 Lock Nut</td>
<td>3</td>
<td>ⓗ</td>
</tr>
<tr>
<td>M8x1.25 35L Bolt</td>
<td>1</td>
<td>ⓗ</td>
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## Z1 Clevis Anchor Assembly

<table>
<thead>
<tr>
<th>Item</th>
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</thead>
<tbody>
<tr>
<td>Clevis Anchor with attachment bolt</td>
<td>1</td>
<td>ⓜ</td>
</tr>
<tr>
<td>1/4&quot;-20 1&quot; Shoulder Screw</td>
<td>1</td>
<td>ⓜ</td>
</tr>
<tr>
<td>0.5mm Washer Shim M8 Clearance</td>
<td>2</td>
<td>ⓜ</td>
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<tr>
<td>Rod End 5/16&quot;-24 RH Female 5/16&quot; Ball</td>
<td>1</td>
<td>ⓜ</td>
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<tr>
<td>M6 Washer</td>
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<td>ⓜ</td>
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<tr>
<td>1/4&quot;-20 Lock Nut</td>
<td>1</td>
<td>ⓜ</td>
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<tr>
<td>3/8&quot; Large Diameter Washer with pre-drilled hole</td>
<td>2</td>
<td>ⓢ</td>
</tr>
<tr>
<td>M8 Large Diameter Washer with pre-drilled hole</td>
<td>1</td>
<td>ⓢ</td>
</tr>
<tr>
<td>M8x1.25 Lock Nut</td>
<td>1</td>
<td>ⓜ</td>
</tr>
<tr>
<td>Return Spring</td>
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Z1 Heat Shield & Hardware

<table>
<thead>
<tr>
<th>Item</th>
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<tr>
<td>Z1 Heat Shield</td>
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<tr>
<td>M10x1.5 35L Bolt</td>
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<tr>
<td>Nylon Spacer 1&quot;OD 1/2&quot;L 1/2&quot; Screw Clearance</td>
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<tr>
<td>Transmission Spline Grease Packet</td>
<td>1</td>
</tr>
<tr>
<td>Small Packet Loctite</td>
<td>1</td>
</tr>
<tr>
<td>Small Conduit Strap</td>
<td>2</td>
</tr>
<tr>
<td>M6x1.0 16L</td>
<td>2</td>
</tr>
<tr>
<td>M6x1.0 Nut</td>
<td>2</td>
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<tr>
<td>M6 Washer</td>
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<tr>
<td>8&quot; Zip Ties</td>
<td>4</td>
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<td><strong>Total</strong></td>
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Z1 Dust Cover & Hardware

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Clutch Fork Dust Cover</td>
<td>1</td>
</tr>
<tr>
<td>M6x1.0 16L</td>
<td>2</td>
</tr>
<tr>
<td>M6 Washer</td>
<td>2</td>
</tr>
<tr>
<td>Nylon Spacer 1/2&quot;OD 3/16&quot;L 1/4&quot; Screw Clearance</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>5</strong></td>
</tr>
</tbody>
</table>

Recommended Tools:

- Hydraulic Jack
- (4) 2-Ton (or greater) Jack Stands
- Wheel Chock
- Assorted Metric Wrenches (10-19mm)
- Assorted Screwdrivers
- Funnel or Fill Pump
- T55 Torx Bit
- Concentric Slave Cylinder Torx Bit T30
- Assorted Metric Sockets (10-19mm)
- Ratchet
- Assorted Allen Wrenches
- Pliers and other assorted hand tools
- Calipers (0-150mm)

Safety Requirements:

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

*BEFORE YOU BEGIN!
Remove contents from the Z1 Motorsports VQHR+ CSC Elimination Kit and verify that ALL necessary hardware is present.

Installation Note #1:
It is recommended that this kit is installed when the vehicle requires a Clutch and/or Transmission fluid service. This is due to the necessity of removing the Transmission and loss of fluid.

Installation Note #2:
Consult with the Nissan Factory Service Manual (FSM) regarding the removal & installation procedure of OEM components.

1. Park vehicle, apply parking brake, and properly raise and support the vehicle. Refer to the Vehicle Owner’s Manual for further information. Assure that vehicle is raised a minimum of 16”.

2. Remove and set aside Exhaust System from behind Catalytic Converters/Test Pipes.

3. Remove and set aside Driveshaft as outlined in FSM.


5. Remove Crankshaft Position Sensor as outlined in FSM.

6. Remove Starter Motor as outlined in FSM.

7. Disconnect OEM CSC Hydraulic Lines and drain fluid.

Installation Note #3:
Clutch Fluid is highly detrimental to painted surfaces. Keep painted surfaces on the body of the car free and clear of Clutch Fluid. Wipe up immediately and wash affected area with water.

Installation Note #4:
Do not depress Clutch pedal during removal procedure. Insert a suitable plug to the Clutch hose after removing.

8. Remove Rear Plate Cover as outlined in FSM.


10. Disconnect (2) Heated Oxygen Sensors as outlined in FSM.

[THIS SECTION INTENTIONALLY LEFT BLANK]
11. For those vehicles equipped with S-MODE, Disconnect Gear lever position sensor connector (A), as shown.

   **Note:** DO NOT remove connector (B)

12. Remove Rear Engine Mounting Insulator mounting nuts as outlined in FSM.

13. Remove Rear Engine Mounting Member as outlined in FSM.


15. Disconnect Back-up Lamp Switch connector. Remove harness & brackets and temporarily secure them to a position where it will not inhibit work.

16. Remove Transmission as outlined in FSM.

**CAUTION:**
Secure Transmission Assembly to a suitable jack before removing it. The Transmission Assembly must not interfere with exhaust piping, wire harnesses, or Clutch hose. The input shaft of Transmission must not interfere with Pressure Plate. Never hold control lever housing to prevent the bushing of control lever housing from deformation when moving Transmission Assembly.

17. Remove and set aside Pressure Plate, Clutch Disc, and hardware.

18. Remove and set aside Flywheel and hardware.

19. If re-using Clutch and Flywheel components, perform an inspection of components according to the Factory Service Manual to ensure proper function.

20. Assemble Clutch and Flywheel configuration on a work bench. Center Clutch Disc on Flywheel and mount Pressure Plate to Flywheel with Hardware. Torque Bolts to **29 ft-lbs**, just as it were being installed in vehicle.

**[THIS SECTION INTENTIONALLY LEFT BLANK]**
!! IMPORTANT !!

Measure stack height of Clutch & Flywheel Assembly. **Recommended precision is within 0.5 millimeters (mm).** This measurement must be from the Engine-side of the flywheel to the Transmission side of the Clutch pressure plate, where the pressure plate fingers contact the Throw Out Bearing.

Be very careful to note the location at which the pressure plate fingers contact the Throw Out Bearing by placing the Throw Out Bearing as axially centered as possible against the Pressure Plate. Ensure that the Throw Out Bearing seats properly on the pressure plate fingers – different Clutches mate to different Throw Out Bearings, as specified by the end user. See the following for a graphical representation figure 4.1. **This measurement will determine the crucial amount necessary to shim the pivot ball.** A miscalculation could require repeated instances of removing and installing the Transmission. Use the following equation to calculate the required pivot shim.

### Table 0.2 – Standard Clutch/Flywheel Stack Heights & Pivot Ball Shim Calculation:

<table>
<thead>
<tr>
<th>Clutch</th>
<th>Flywheel</th>
<th>Stack Height</th>
<th>Pivot Shim</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z1 HR Kit</td>
<td>Z1 Flywheel</td>
<td>82.5</td>
<td>7</td>
</tr>
<tr>
<td>Z1 HR Kit</td>
<td>OE Nissan</td>
<td>83</td>
<td>6.5</td>
</tr>
<tr>
<td>OE Nissan</td>
<td>Z1 Flywheel</td>
<td>87.5</td>
<td>3.5</td>
</tr>
<tr>
<td>OE Nissan</td>
<td>OE Nissan</td>
<td>88</td>
<td>3</td>
</tr>
<tr>
<td>Z1 Road Race Package</td>
<td>See Table 0.3 (below)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**If Stack Height is less than 79.5, contact Z1 Motorsports**

\[
Pivot\ Ball\ Shim^* = (-0.663 \times Adjusted\ Stack\ Height) + 61.50
\]

*Round up to the nearest 0.5mm shim.

If Pivot Shim Calculates to more than 10mm contact Z1 Motorsports!

### Table 0.3 – Z1 Road Race Package Pivot Ball Shim Calculation:

\[
Pivot\ Ball\ Shim^* = (-0.663 \times (Adjusted\ Stack\ Height - 3.0)) + 61.50
\]

*Round up to the nearest 0.5mm shim.

**Adjusted Stack Height:** Verify the specific Throw Out Bearing – depending on the Clutch Kit specified when ordered, varying Throw Out Bearing will be included. Any bearing that is NOT KOYO RCT40SA3 (indicated on the bearing) will require **subtracting** a 0.6mm factor to the measured stack height to function in this model. See trouble shooting section for stack heights greater than 90mm.
21. Reinstall Flywheel to backside of Engine as outlined in the Nissan Factory Service Manual. Ensure Flywheel is properly aligned as in figure 5.1. Torque Flywheel in typical star pattern as outlined in the Nissan Factory Service Manual to Torque to \(65 \text{ ft-lb}\).

22. Install Clutch Disc and Pressure Plate using alignment tool. Tighten to specified torque evenly in two steps, as shown in figure 5.2. Torque to \(11 \text{ ft-lb}\) and then \(29 \text{ ft-lb}\).

23. Locate Transmission. Remove Concentric Slave Cylinder Assembly as outlined in FSM.

24. Remove Transmission Front Cover & Gasket. Remove and set aside mounting bolts (#1-7) and sealing bolts (#8-11). Refer to figure 6.1.

   **Note:** Be sure to label which bolts are sealing bolts.

25. Locate & Install New Transmission Front Cover and Gasket. Tighten Front Cover Bolts as shown in figure 6.1. Torque to \(13 \text{ ft-lb}\).

   **Note:** Use thread sealant on bolts #8-11.

26. Install Pivot Ball with previously calculated shim height. Apply a small amount of Thread Locker prior to installing. Torque to \(30 \text{ ft-lb}\) for shims less than or equal 4.5mm. Torque to \(24 \text{ ft-lb}\) for shims greater than 4.5mm.

27. Install Throw Out Bearing onto Bearing Sleeve. Assure that stamped part number of Bearing is facing Transmission. Assure that Bearing is evenly pressed onto Sleeve.

28. Install Pivot Ball Retaining Clip onto Clutch Fork.

29. Install Bearing Sleeve & Retaining Clip onto Clutch Fork.

[THIS SECTION INTENTIONALLY LEFT BLANK]
Installation Note #5:
Wipe off old grease, debris, and/or powdery residue left on all Clutch components. Apply an even 1mm coating of Grease included in Packet to splines of the Transmission Input Shaft ONLY. Over-greasing the splines will lead to premature Clutch failure.

Installation Note #6:
Be sure to apply grease to the points specified in figure F6.4. Otherwise, noise, poor disengagement, or damage to the Clutch may result. Excessive grease may cause slip. Wipe off excessive grease from components. Be careful not to spread grease into contact with Clutch Disc, Pressure Plate surface, or Flywheel.

Installation Note #7:
Inspect for smooth operation of components before reinstalling Transmission by sliding Clutch Fork. The Clutch Fork should move freely within the “window” in the Transmission Housing where the concentric slave hydraulic piping was previously located.

Use the following figures as reference for the following steps:
30. Locate and remove (2) Bolts at rear of Transmission Housing, as shown in Figure 7.1.

   **Note:** Those with a Solid Transmission Mount may require removing the Transmission support brace.

31. Locate & Orient Slave Cylinder Mounting Bracket onto Transmission Housing, as shown in Figure 7.2.

   **Note:** Assure that the Bracket clears the dowel and casting ribs of Transmission.

32. Locate (2) M8-1.25 x 110mm Bolts and (8) M8 Flat Washers. Place a Flat Washer at each side of the (4) Mounting Bracket Flanges. Insert Bolt through Mounting Bracket and Transmission Housing, facing the front of vehicle as shown in Figure 7.2.

33. Apply a small amount of Thread Locker near the end of each Bolt.

34. Locate (2) M8-1.25 Hex Nuts. Thread Nut onto each Bolt. Torque to **20 ft-lb**.

35. Reinstall Transmission to Engine. Assure that Transmission-to-Engine bolts are torqued to specification, as shown below.

<table>
<thead>
<tr>
<th>Bolt symbol</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insertion direction</td>
<td>Transmission to engine</td>
<td>Engine to transmission</td>
</tr>
<tr>
<td>Number of bolts</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>Bolt length mm (in)</td>
<td>65 (2.56)</td>
<td>35 (1.38)</td>
</tr>
<tr>
<td>Tightening torque N·m (kg-m, ft-lb)</td>
<td>75 (7.7, 55)</td>
<td>46.6 (4.8, 34)</td>
</tr>
</tbody>
</table>

36. Locate and assemble Clevis Anchor onto threaded end of Howe Slave Cylinder. Use a M8 x 0.5mm shim on each side of Rod End. Assemble using 1/4"-20 shoulder bolt, Flat Washer, and Nyloc Nut. Torque to **10 ft-lb**.

   **Note:** Apply Thread Locker to Clevis Anchor hardware and Rod End Jam Nut.

   [THIS SECTION INTENTIONALLY LEFT BLANK]
Howe Slave Cylinder Assembly should appear as shown:

37. Attach Clevis Anchor Assembly to Clutch Fork. Assure that width of Anchor is aligned with width of Clutch Fork, as shown. Assure that pre-drilled hole of Washer is clear of Clutch Fork. Apply Thread Locker to Clevis threads and torque to **22 ft-lb**.

38. Attach Rod End at rear of Slave Cylinder to Mounting Bracket using (2) M8 flat Washers and M8-1.25 x 40mm Bolt. Apply Thread Locker and Torque to **22 ft-lb**.

**Note:** Assure that Slave Cylinder Bleeder is pointing upward, otherwise all air cannot be bled out of the hydraulic system.

**Installation Note #8:**
The threaded section at the rear of the Slave Cylinder will be used for Clutch adjustment. The components may be tightened, but thread lock is not recommended until the Slave Cylinder is adjusted correctly.

**Installation Note #9:**
Ensure that Rod Ends are fastened in proper alignment to their respective mounting planes. Failure to do so can introduce unwanted slop into the system, or a high misalignment angle that can cause failure. See figure below as the system should sit evenly in installation.
39. Locate and remove Transmission/Engine Bolt directly in line with Clutch Fork.

40. Locate and install (2) 3/8" Washers with pre-drilled hole over Transmission Bolt. Align holes of drilled Washers are aligned. Torque Bolt to 34 ft-lbs.

41. Locate and install Return Spring onto holes in Transmission and Clutch Fork Washers.

   **Note:** Spring should have at least 10mm of preload. Otherwise using a pair of pliers, introduce preload.

42. Locate and install Stainless Steel Clutch Line.

43. Bleed Clutch hydraulic system and ensure proper function. Refer to FSM for further details.

   **Note:** Use DOT4 hydraulic fluid. Ensure that Clutch Fluid Reservoir does not become empty, as it will draw air into hydraulic system. Ensure that debris does not enter the hydraulic system. Do not reuse Clutch Fluid.

44. Locate and remove Clutch Pedal Assembly Helper Spring (09+ vehicles only). Removal of the Helper Spring will introduce a stiffer pedal, but will help increase pedal resolution and reduce play. Simply remove Helper Spring from Clutch Pedal Assembly.

   **[THIS SECTION INTENTIONALLY LEFT BLANK]**
45. Adjustment

This kit will require adjustment in the Clutch Pedal and/or Clutch Slave Cylinder. Depending on initial adjustment and specific Clutch Kit height, the following steps may need to be taken (in order):

A. Adjust threaded rod at rear of Slave Cylinder, ensuring proper gap between Throw Out Bearing to Pressure Plate. *(90% of adjustment)*

B. Adjust Clutch Pedal position, ensuring proper dead pedal and Clutch engagement point.

C. Re-adjust threaded rod at rear of Slave Cylinder, if necessary.

Detailed Steps

A. Adjust the overall length of Slave Cylinder. This can be accomplished by adjusting threads engaged in the rear/static body of Slave Cylinder. Ensure that when adjusted, the Throw Out Bearing does NOT touch Pressure Plate fingers.

**Note:** Contact between the bearing and the pressure plate while disengaged will result in premature failure of the bearing. Approximately 0.5-1.0mm of clearance of air gap should be present between the contact point of the Throw Out Bearing and the fingers of the Clutch pressure plate, as shown. This can be confirmed by either manually testing play of the Return Spring with the Slave Cylinder detached, or by pressing the Clutch Pedal with the Return Spring and Slave Cylinder attached.

B. Adjust Clutch Pedal Position. There should be approximately 2.0-4.0mm of pedal free play when actuated by hand, pressing until Throw Out Bearing contact with Pressure Plate can be felt. If needed, adjust the Clutch Pedal position as outlined in Nissan FSM (CL-5).

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46. Once proper pedal adjustment is confirmed, verify Clutch Fork movement inside Transmission Housing window. Have an assistant engage the Clutch pedal several times while verifying adjustment. Assure that Clutch Fork does not touch either the front or rear of Transmission Housing window.

**Note:** If Clutch Fork touches rear of the window, remove Transmission and increase Pivot Ball shim height.
If Clutch Fork touches front of the window, remove Transmission and decrease Pivot Ball shim height.

Use Figure below as reference for the following steps:

47. Install Clutch Fork Dust Cover using (2) M6 Bolts, Washers, and Nylon Spacer.


**Note:** Ensure that there is little play in the Clutch line to ensure it does not get worn against the Transmission or the heat shield. Failure to do so could cause premature wear of the Clutch line.

49. Inspect and fill Transmission & Clutch Fluid levels.

50. Follow steps #2-15 in reverse order to re-install components into vehicle.
51. Start Engine and inspect for leaks. Shift through ALL gears to ensure proper engagement. Ensure that there is no difficulty shifting into any gears, or engaging the Clutch in any gears. Readjust if necessary.

52. Properly lower vehicle from Jack Stands. Perform a final test drive of the vehicle.

Additional End-User Product Care Information:
Because of the very narrow window in which this product was designed to function as a bolt on solution, this product may require fine-tuning and adjustment. Not unlike a Clutch adjustment, it is strongly recommended to ensure proper Clutch engagement and Throw Out Bearing disengagement, typically at oil change intervals. As the Clutch wears, the stack height will increase as the pressure plate fingers lift rearwards away from the Engine through normal Clutch function and operation. To accommodate this, it may be necessary to simply increase the overall length of the cylinder using the rear-side (static side) threaded rod – a half turn is usually sufficient.

Additional Technical Support:
For further information, contact us at info@z1motorsports.com or call 770 838 7777 between 9am and 6pm ET

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Troubleshooting:

Too much dead pedal/pedal slack?
Check to make sure that there is air gap (but not too much, typically no more than 0.5-1.0mm). Adjust as necessary. If the problem persists, check that the Clutch pedal switches were adjusted properly. Adjust if necessary, typically too much dead pedal will mean the switches need to be adjusted downward (i.e. in the direction of pushing the Clutch pedal).

Car will creep in gear with Clutch pedal fully depressed?
Clutch is not fully disengaged from the Engine. Ensure that the Clutch pedal is fully depressed when shifting. Ensure that there is an air gap between the Throw Out Bearing and the Clutch pressure plate fingers. Adjust the bottom Clutch switch downward (i.e. in the direction of pushing the Clutch pedal). Verify whether or not the Clutch is now fully disengaged. If not or if the pedal hits the rubber stopper, proceed to adjust master cylinder clevis to increase hydraulic leverage/travel.

Difficult to shift into gear/won’t shift into gear with Clutch pedal fully depressed?
Clutch is not fully disengaged from the Engine. Ensure that the Clutch pedal is fully depressed when shifting. Ensure that there is an air gap between the Throw Out Bearing and the Clutch pressure plate fingers. Adjust the bottom Clutch switch downward (i.e. in the direction of pushing the Clutch pedal). Verify whether or not the Clutch is now fully disengaged. If not or if the pedal hits the rubber stopper, proceed to adjust master cylinder clevis to increase hydraulic leverage/travel.

Clutch pedal feels weird (non-linear, twitchy)?
For 09+ models, removal of the Clutch assistant spring is strongly recommended. Pre-09 vehicles do not require this modification, as the pedal geometry was revised and causes a more aggressive “camming” effect not seen pre-09.

Interference with Transmission Front Cover/Stack height >90mm?
In very rare scenarios in combining Clutches and flywheels not designed for each other, the overall stack height will be higher than the acceptable range as allowed in the VQ Transmissions. The typical limit of this stack height is 90mm – for heights taller than this value, there may be interference with the Transmission front cover. It is generally recommended to use a properly designed and purposefully paired Clutch and flywheel; however, for those that chose not to, call Z1 Motorsports and replace the Throw Out Bearing Sleeve with a custom unit that addresses the issue.

Note: Typically, symptoms where one gear is problematic indicates a Transmission issue, whereas symptoms where every gear is problematic indicates a Clutch issue. Ensure that the proper fluid is being used (MT-85 is typically recommended for VQ 6MT applications) and that no pre-existing conditions are causing difficulties.

Additional Technical Support:
For further information, contact us at info@z1motorsports.com
or call 770 838 7777 between 9am and 6pm ET