

# ADVANCE ADAPTERS INC.

P.O. Box 247, 4320 Aerotech Center Way

Paso Robles, CA 93447

Telephone: (800) 350-2223 Fax: (805) 238-4201

## P/N: 712578

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## TOYOTA L/C 6 CYLINDER ENGINE USING THE NV4500 5 SPEED TRANSMISSION

### KIT CONSISTS OF:

No.	Qty	Part No.	Description
1.	1	712577-BLK	NEW BELLHOUSING FOR GM ENGINE x NV4500
2.	1	712578-BLK	LARGE STEEL ADAPTER PLATE
3.	2	716123	DOWEL PINS ( <i>Pressed in steel plate</i> )
4.	1	716139	CLUTCH FORK WEDGE
5.	1	716157	PILOT BEARING SLEEVE <i>(Modified to 1/4" shorter before shipping)</i>
6.	1	716176	CLUTCH RELEASE ARM
7.	1	716180	BALL PIVOT STUD ( <i>Installed in bellhousing</i> )
8.	1	716288	SLAVE CYLINDER BRACKET
9.	1	716316	BEARING COLLAR & BEARING ASSEMBLY
10.	8	723704	3/8" LOCK WASHERS
11.	2	723721	H.H.C.S. 3/8"-16 x 1" LONG
12.	6	723722	H.H.C.S. 3/8"-16 x 1-1/4" LONG
13.	4	723735	3/8" WASHERS
14.	1	NV001	NEW VENTURE INSTRUCTION MANUAL
15.	1	TLC001	LAND CRUISER INSTRUCTION MANUAL

### NOTE:

*This adapter is not compatible with 1996 or newer NV4500 transmissions. Special adapters are available for 1996 or newer transmissions.*

### STEP-BY-STEP INSTALLATION PROCEDURES:

1. Secure the vehicle in a position that will prevent any movement from the tires rolling back and forth.
2. Remove the stock skid plate.
3. Remove both front and rear drive shafts.
4. Remove existing exhaust system with the exhaust manifold remaining in position.
5. Disconnect and remove both the transmission and transfer case shifter assemblies.
6. Disconnect the battery.
7. Disconnect both the emergency brake and speedometer cables.
8. Disconnect the back up switch wires from the existing transmission.
9. Remove the transmission and transfer case assembly from the vehicle.
10. Remove the stock 6 cylinder starter motor assembly.
11. Remove the rear factory tubular crossmember support. This will require a torch and you should make sure that all fuel lines and brake lines have sufficient clearance.
12. Disconnect the slave cylinder from the bellhousing.
13. Support the rear of the engine with a small floor jack.
14. Remove the Toyota bellhousing from the back of the engine.
15. Unbolt the pressure plate assembly from the flywheel.
16. Disconnect the bellhousing mounts from the frame to allow clearance for the new bellhousing assembly.
17. Remove the flywheel assembly and have it machined if necessary.
18. Inspect the Toyota rear main seal and take appropriate measures.
19. Remove the Toyota pilot bearing from the back of the engine crank.
20. Install the new pilot bushing supplied with the adapter kit.
21. On the original Toyota bellhousing, you will need to remove the timing pin located on the front side of the bellhousing. The pin must be reinstalled into the Advance Adapter plate in the center of the square opening. Use a hand held drill motor to position the hole for installation of the original Toyota pin.

**SPECIAL NOTE:** The components packaged in this kit have been assembled and machined for specific type of conversions. Modifications to any of the components will void any possible warranty or return privileges. If you do not fully understand modifications or changes that will be required to complete your conversion, we strongly recommend that you contact our sales department for more information. This instruction sheet is only to be used for the assembly of Advance Adapter components. We recommend that a service manual pertaining to your vehicle be obtained for specific torque values, wiring diagrams and other related equipment. These manuals are normally available at automotive dealerships and parts stores.

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22. Install new Advance Adapter plate to the back of the engine using the original bolts that were used with stock bellhousing.
23. Install flywheel and check the alignment pin for correlation with flywheel marks.
24. Install starter motor after modifying to fit the Advance Adapter plate and double check engagement into flywheel assembly. The shroud area of the starter motor will need to be modified for the new position in the steel plate.
25. Install clutch assembly using clutch alignment tool. The clutch disc must be a Chevrolet or Midway clutch No. 383303. This clutch has a 1-1/8" 10 spline. The original Toyota clutch disc should not be used with the NV4500 transmission.
26. On the inside of the vehicle, cut a 5" diameter hole, 5-3/4" center to center, back from the original transmission tunnel hole for the new shifter location.
27. Trim out the excess sheet metal at the rear of the tunnel area. This will provide extra height for the rear of the transfer case assembly.
28. Install the new bellhousing assembly as illustrated in the diagram. A new clutch fork and clutch fork release bearing assembly have been provided for the bellhousing.
29. A new GM backup switch, Part No. 12085485 can be installed into the top shift cover assembly of the new transmission. This backup switch will be compatible with the original Toyota assembly.
30. Install the transmission and transfer case assembly onto the new bellhousing.
31. Install the clutch slave cylinder bracket No. 716288, to the driver's side of the bellhousing. You may have to move the slave cylinder from the passenger's side to the driver's side which will require making a new slave cylinder hydraulic line.
32. Install the dust shield to the front face of the bellhousing. Modifications may be necessary for clearance.
33. Install the transmission shifter. You may want to heat up and reposition the shifter handle depending on driver's preference. The original boot assembly should work if desired. The old tranny hole should be covered to keep heat and elements out of the vehicle. A 5-1/2" square piece of sheet metal should work effectively.
34. The transfer case linkage can now be assembled at this time. Note that the shifter coming through the floor should be lengthened if the original position is to be retained. The factory boot can also be reused.
35. Hook up the battery and starter cables.
36. The exhaust system may need rerouting due to the clutch linkage location.
37. Drive shafts should be measured and recut to the appropriate lengths.
38. Speedometer cable should be lengthened.
39. Emergency brake cable should also be lengthened. B.T.B. can supply new cables if necessary.
40. Fill transmission with the appropriate fluid.

### PARTS LIST FOR THIS CONVERSION

Description	Part Number
<b>NV4500 Transmission</b>	
<b>Bellhousing Adapter</b>	Advance Adapter #712578
<b>Rear Truss Adapter</b>	Advance Adapter #716022-TSW
<b>GM Backup Switch</b>	GM#12085485
<b>Advance Adapter Crank Bushing</b>	Advance Adapter #716157 <i>(Included with bellhousing)</i>
<b>GM Synthetic Oil</b>	GM#12345871
<b>Anaerobic Sealer</b>	GM#1052943
<b>Transfer Case Adapter</b>	
<b>Slave Bracket</b>	Advance Adapter #716288 <i>(Included with bellhousing)</i>
<b>Speedo Cable</b>	BTB - 150 N. Gibson Road, Henderson, NV 89014, (702)-568-1511
<b>E-Brake Cable</b>	BTB - 150 N. Gibson Road, Henderson, NV 89014, (702)-568-1511
<b>New Centerforce Clutch Assembly</b>	Advance Adapter #CF043518 <i>(This disc will work with the NV4500)</i>
<b>(or) Centerforce Clutch Disc</b>	#383303
<b>GL4 for Transfer</b>	3 Quarts
<b>716632</b>	Boot

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### **NOTES:**

1. The original bellhousing mounts are removed from frame to allow for new bellhousing clearance.
2. A new rear mount on the back side of transfer case #716022-TSW will be required on FJ40. FJ40 with split T/C 19 spline and FJ60 will need new crossmember under adapter.
3. Longer speedometer cable and emergency brake cables are available from B.T.B. Products.
4. To maximize clutch engagement, slave cylinder works best when installed to inner slot.

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