



March 2014

Dealer Service Instructions for:

Safety Recall N65 / NHTSA 13V-610 Transmission Output Shaft

Models

2013 (LD) Dodge Charger
(LX) Chrysler 300

*NOTE: This recall applies only to the above vehicles equipped with a 3.6L engine (sales code **ERB**), 8 speed automatic transmission (sales code **DFG**) and All Wheel Drive (sales code **590**) built from November 24, 2012 through February 16, 2013 (MDH 112422 through 021605).*

2013 (DS) RAM Truck (1500 series)

*NOTE: This recall applies only to the above vehicles equipped with a 3.6L engine (sales code **ERB**), 8 speed automatic transmission (sales code **DFG**) and four wheel drive (sales code **5I4**) built from January 12, 2013 through June 27, 2013 (MDH 011205 through 062714).*

IMPORTANT: Some of the involved vehicles may be in dealer new vehicle inventory. Federal law requires you to complete this recall service on these vehicles before retail delivery. Dealers should also consider this requirement to apply to used vehicle inventory and should perform this recall on vehicles in for service. Involved vehicles can be determined by using the VIP inquiry process.

Subject

The transmission output shaft on about 4,100 of the above vehicles may fracture while driving. If the vehicle experiences this condition there will be a loss of motive power. The condition may also prevent the transmission from being shifted into the “Park” position, the inability to turn off the engine, an instrument cluster warning lamp illumination, and the vehicle could experience unintended vehicle movement after exiting the vehicle. The above conditions could cause a crash under certain driving conditions.

Repair

The transmission output shaft must be tested. If the transmission output shaft breaks during the test, the transmission assembly must be replaced.

NOTE: LD and LX models must first have temporary software installed in the Transmission Control Module (TCM) before the output shaft test can be performed. The temporary software must be removed from the TCM after the output shaft test is complete.

Alternate Transportation

Dealers should attempt to minimize customer inconvenience by placing the owner in a loaner vehicle if inspection determines that transmission replacement is required and the vehicle must be held overnight.

Parts Information

<u>Part Number</u>	<u>Description</u>
RL199893AE	Transmission Package (All DS Models)
RL228863AB	Transmission Package (LD/LX Models / sales code ERB + NGZ / 300 H.P.)
RL149638AL	Transmission Package (LD/LX Models /sales code ERB / 290 H.P)

Each package contains the following components:

<u>Quantity</u>	<u>Description</u>
1	Transmission Assembly
1	Converter, Torque

Due to the small number of involved vehicles expected to require transmission replacement, no parts will be distributed initially. **Transmission packages should be ordered only after testing determines that replacement is required. *Very few vehicles are expected to require transmission replacement.***

<u>Part Number</u>	<u>Description</u>
68218925AA	Fluid, Transmission (ZF 8 & 9 Speed ATF)

Transmission wire harness clips listed below can be ordered as required should they break during transmission replacement (DS Models Only)

<u>Part Number</u>	<u>Description</u>
68257635AA	Clip, Transmission Wiring Harness
68064249AA	Clip, Transmission Wiring Harness

Special Tools

The following special tools are required to perform this repair:

- NPN wiTECH VCI Pod Kit
- NPN Laptop Computer
- NPN wiTECH Software
- 9546 Tool, Cooler Tube Disconnect

A. Install TCM Test Software

IMPORTANT INSTRUCTIONS: Only LX and LD models require test software installation. Continue with Step 1. of this section.

DS models do not require test software installation. DS models continue with Section B: Transmission Output Shaft Test.

NOTE: wiTECH must be used to perform this recall. This procedure must be performed with software release level 14.03 or higher. If the reprogramming flash for the TCM is aborted or interrupted, repeat the procedure.

1. Open the hood. Install a battery charger and verify that the charging rate provides 13.0 to 13.5 volts. Do not allow the charger to time out during the reprogramming process. Set the battery charger timer (if so equipped) to continuous charge.

NOTE: Use an accurate stand-alone voltmeter. The battery charger volt meter may not be sufficiently accurate. Voltages outside of the specified range will cause an unsuccessful flash. If voltage reading is too high, apply an electrical load by activating the park or headlamps and/or HVAC blower motor to lower the voltage.

2. Connect the wiTECH VCI pod to the vehicle data link connector located to the right of the hood release lever.
3. Place the ignition in the “**RUN**” position.
4. Open the wiTECH Diagnostic application.

Service Procedure (Continued)

5. Starting at the “Select Tool” screen, highlight the row/tool for the wiPOD device you are using. Then select “Next” at bottom right side of the screen.
6. Enter your “User id” and “Password”, then select “Finish” at the bottom of the screen.
7. From the “Vehicle View” screen, click on the TCM icon.
8. Select the engineering test flash file and click the green arrow to begin the software update.

- **T0000001XX 2013 LD LX 3.6L AUTO 8 SPD AWD.** This is the test flash file for a 2013 model year LD / LX vehicles with a 3.6L engine, 8 speed automatic transmission, and All Wheel Drive (AWD).
- **T0000002XX 2013 LD LX 3.6L AUTO 8 SPD AWD HO.** This is the test flash file for a 2013 model year LD / LX vehicles with a 3.6L High Output (HO) engine (sales code NGZ), 8 speed automatic transmission, and All Wheel Drive (AWD).

CAUTION: If the test software remains in the vehicle’s TCM after the output shaft test, the transmission will not shift out of first gear and the check engine light will remain illuminated.

9. Follow the screen prompts to complete the test software installation.
10. Clear all Diagnostic Trouble Codes (DTC’s).

NOTE: One active DTC will remain after clearing all DTC’s. This code identifies the test software. The output shaft test can be performed with this active DTC present.

11. Turn Ignition off.
12. Remove the battery charger.
13. Continue with **Section B. Transmission Output Shaft Test.**

CAUTION: If the test software remains in the vehicle’s TCM after the output shaft test, the transmission will not shift out of first gear and the check engine light will remain illuminated.

Service Procedure (Continued)**B. Transmission Output Shaft Test**

1. Start the engine and allow the engine to reach normal operating temperature.
2. Fully apply the parking brake.
3. Depress and hold down the brake pedal.
4. **For DS model vehicles**, shift to 4WD mode for the test procedure.
5. Shift the transmission into the “Drive” position.
6. With the transmission in the “Drive” position, apply Wide Open Throttle (WOT) for 2 seconds and then release throttle.

NOTE: If the transmission output shaft fails during the test, an audible “bang noise” will be heard and the engine RPM’s will flare.

CAUTION: If the transmission output shaft fails during the test, release throttle immediately.

- If the transmission output shaft is intact, after release of the park brake and service brake, the vehicle should creep forward as it normally would while the transmission is in the “Drive” position. Continue with Step 7 of this procedure.
 - If the transmission output shaft has failed, there will be no forward movement of the vehicle while the transmission is in the “Drive” position. Continue with **Section C. Replace Transmission Assembly (DS models)** or **Section D. Replace Transmission Assembly (LD/LX models)**.
7. Shift the transmission into Neutral and wait 10 seconds for the transmission to cool down.
 8. Repeat Steps 6 and 7 until either the transmission output shaft fails or **five stall torque cycles** are performed.
 9. If the transmission output shaft has not failed after five torque cycles, drive the vehicle for five minutes to ensure that the transmission oil temperature has cooled down. Then continue with Step 10 of this procedure.

Service Procedure (Continued)

10. Again, repeat Steps 6 and 7 until either the transmission output shaft fails or an **additional five stall torque cycles** are performed (for a total of 10 stall torque cycles).
11. If transmission output shaft **failure does not occur** in 10 stall torque cycles, the vehicle test is complete and successful:
 - **For DS model vehicles**, return the vehicle to the customer.
 - **For LD and LX model vehicles**, continue with **Section E. – Update TCM Software**.
12. If transmission output shaft **failure occurs** in 10 stall torque cycles, the vehicle transmission assembly must be replaced:
 - **For DS model vehicles**, continue with **Section C. Replace Transmission Assembly**.
 - **For LD and LX model vehicles**, continue with **Section D. Replace Transmission Assembly**.

Service Procedure (Continued)**C. Replace Transmission Assembly (DS Models)**

NOTE: The following procedure is required if the transmission output shaft fractures per the test performed in Section B.

1. Disconnect the negative battery cable.
2. Raise the vehicle on a hoist.
3. Remove and save the exhaust system “Y” pipe (Figure 1).
4. Place alignment marks on the propeller shaft flange and axle flange (Figure 2). Then remove and save the rear propeller shaft (Figure 1).
5. Place alignment marks on the propeller shaft flange and axle flange. Then remove and save the front propeller shaft (Figure 1).
6. Support the transmission with a transmission jack.
7. Remove and save the transmission crossmember (Figure 1).

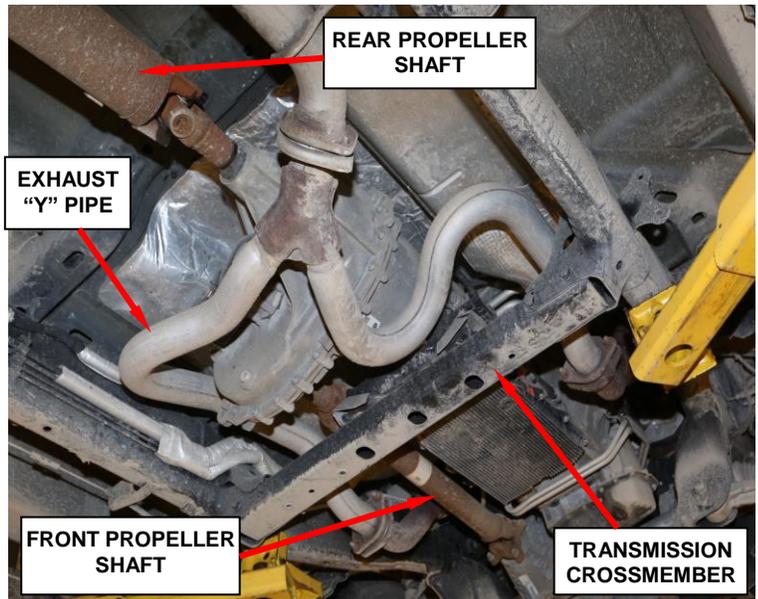


Figure 1 – Exhaust “Y” Pipe

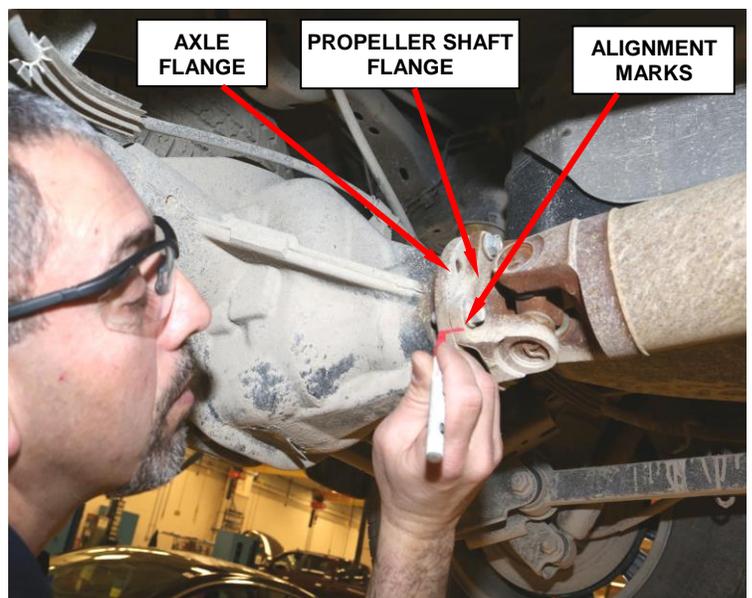


Figure 2 – Alignment Marks

Service Procedure (Continued)

8. Remove and save the transmission mount and adapter bracket (Figure 3).
9. Disconnect the transfer case electrical wiring.
10. Disconnect the transfer case vent hose at the transfer case housing.

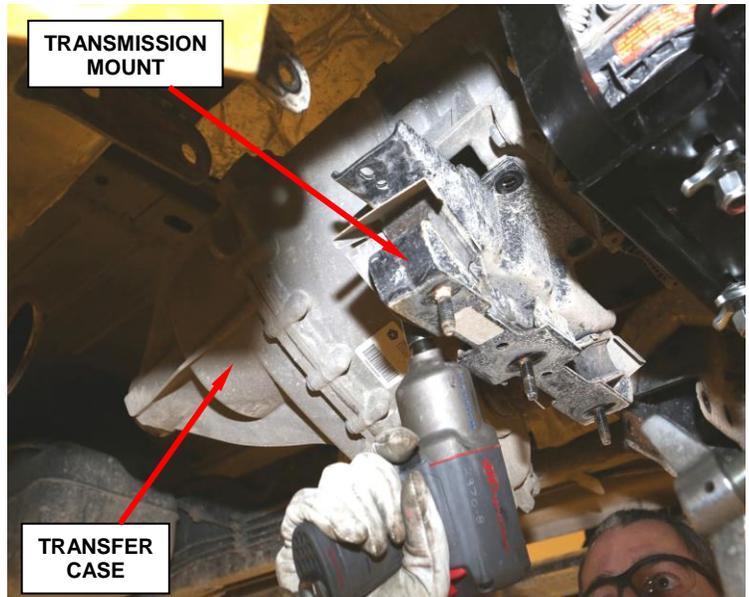


Figure 3 – Transmission Mount

11. Support the transfer case with a transmission jack.

12. Remove and save the transfer case-to-transmission extension housing nuts (Figure 4).

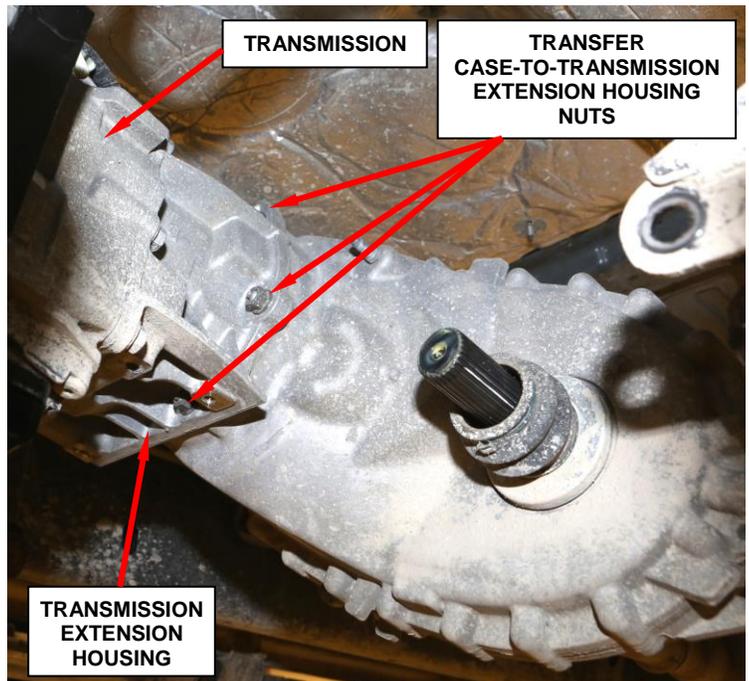


Figure 4 – Transfer Case-to-Transmission Extension Housing Nuts

13. Remove and save the transfer case assembly.
14. Disconnect the manual “Park” release cable.

Service Procedure (Continued)

15. Remove and save the front axle-to-engine bracket (Figure 5).
16. Remove and save the starter motor.
17. Remove and save the six torque converter-to-drive plate bolts.
18. Disconnect all electrical connectors from the transmission.

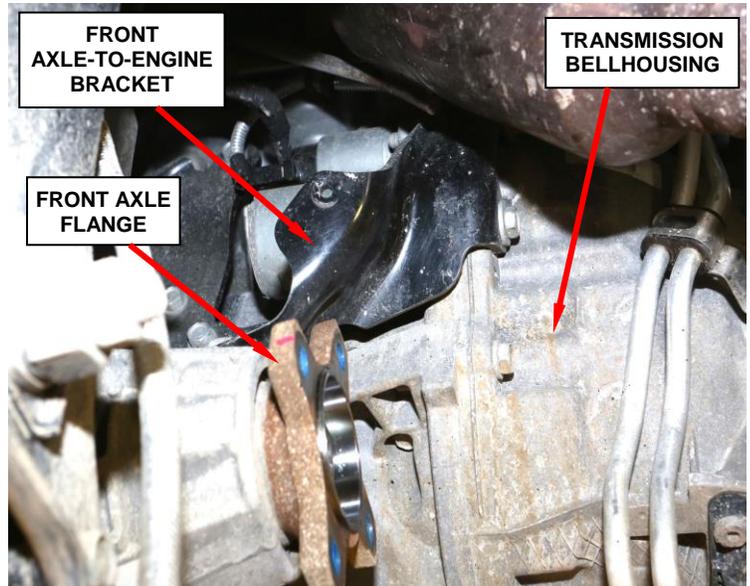


Figure 5 – Front Axle-to-Engine Bracket

19. Lower the transmission slightly and remove and save the coolant tube bracket bolts at the top of the bellhousing.
20. Remove and save the transmission oil cooler tube bracket on the right side of the bellhousing (Figure 6).

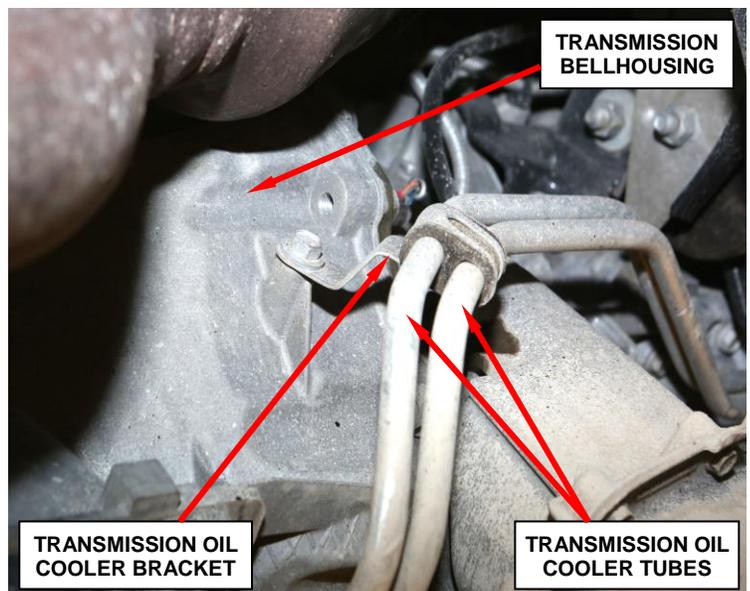


Figure 6 – Oil Cooler Tube Bracket

21. Remove and save the right side bellhousing dust shield.
22. Disconnect the transmission vent hose.
23. Remove and save the remaining bellhousing bolts.

Service Procedure (Continued)

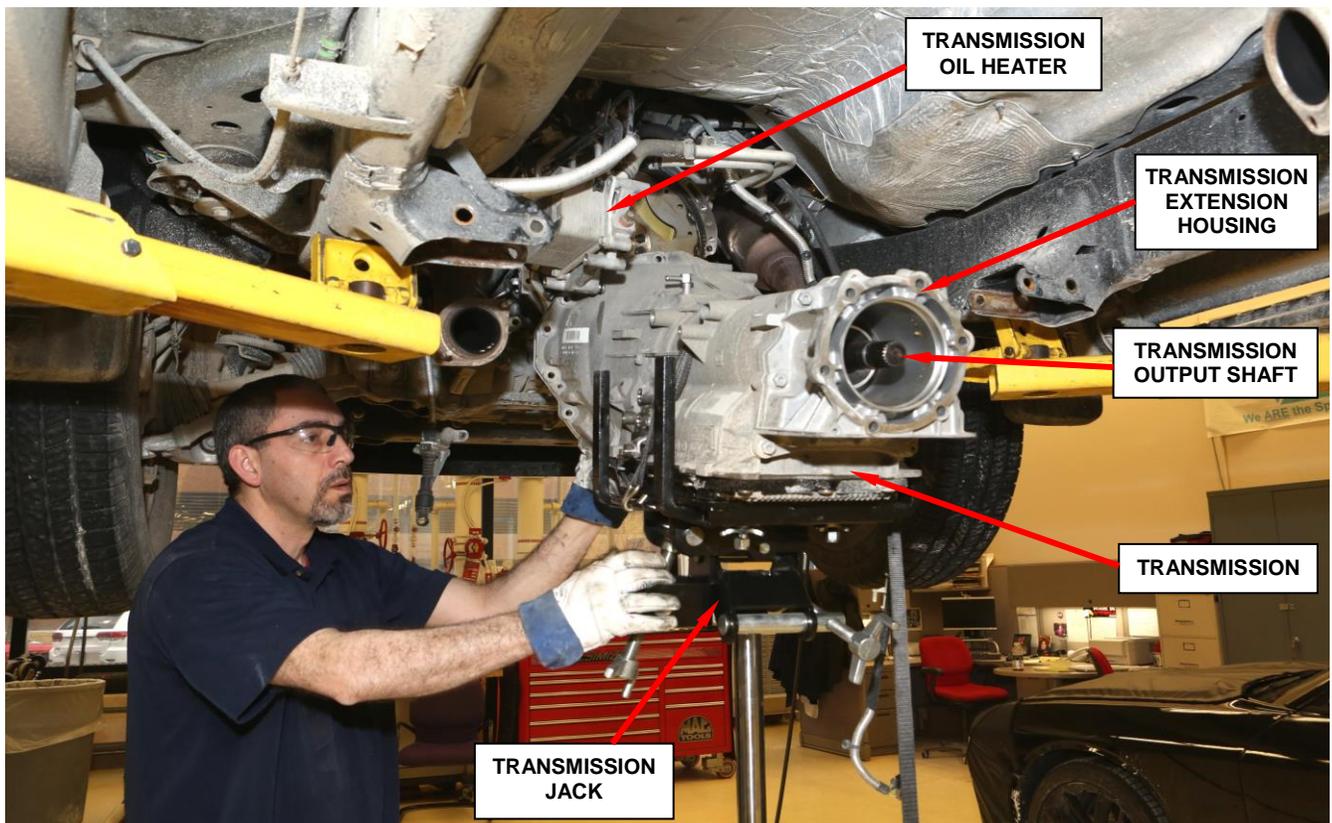


Figure 7 – Lower/Raise Transmission

24. Carefully lower the transmission assembly from the vehicle (Figure 7).
25. Replace any broken electrical wire harness clips.
26. Replace the transmission oil heater O-rings (Figure 8).

NOTE: Each aluminum fittings has two O-rings. Pull the aluminum fittings out of the oil heater body to replace the second O-ring.

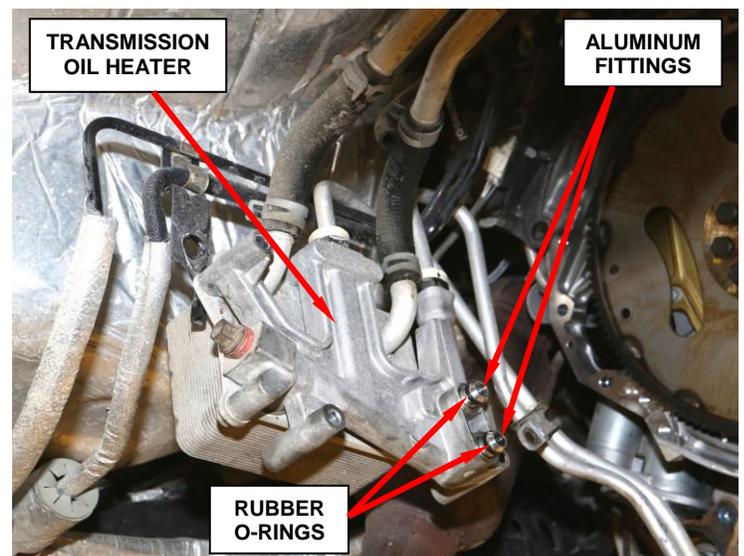


Figure 8 – Transmission Oil Heater O-Rings

Service Procedure (Continued)

27. With the help of a lifting device, remove and discard the original transmission from the transmission jack.
28. With the help of a lifting device, place the new transmission onto the transmission jack.
29. Raise the transmission into position (Figure 7).
30. Install the bellhousing bolts. Tighten the bolts to 41 ft. lbs. (55 N·m).
31. Connect and route the transmission electrical wiring.
32. Install the transmission oil heater. Tighten the bolts to 18 ft. lbs. (25 N·m).
33. Install the six torque converter-to-drive plate bolts. Tighten the bolts to 31 ft. lbs. (42 N·m).
34. Install the starter motor. Tighten the starter motor bolts to 40 ft. lbs. (54 N·m).
35. Install the front axle-to-engine bracket (Figure 5). Tighten the bolts to 48 ft. lbs. (65 N·m).
36. Install the manual “Park” release cable.
37. Install the right side bellhousing dust shield.
38. Install the transmission oil cooler tube on the right side of the bellhousing (Figure 6).
39. Install the coolant tube bracket bolts at the top of the bellhousing.
40. Connect the transmission vent hose.
41. Using a transmission jack, install the transfer case assembly to the back of the transmission.

NOTE: Be sure to remove the broken transmission output shaft from the transfer case input coupler.

Service Procedure (Continued)

42. Install the transfer case-to-transmission extension housing nuts (Figure 4). Tighten the nuts to 25 ft. lbs. (34 N·m).
43. Connect the transfer case vent hose at the transfer case housing.
44. Connect the transfer case electrical wiring.
45. Install the transmission mount and adapter bracket (Figure 3).
46. Install the transmission crossmember (Figure 1). Tighten the bolts to 48 ft. lbs. (65 N·m).
47. Using new bolts, align the alignment marks and install the front propeller shaft. Tighten the bolts to 85 ft. lbs. (115 N·m).
48. Using new bolts, align the alignment marks and install the rear propeller shaft (Figure 2). Tighten the bolts to 85 ft. lbs. (115 N·m).
49. Install the exhaust system “Y” pipe (Figure 1).
50. Lower the vehicle from the hoist.
51. Connect the negative battery cable.
52. Continue with **Section F. Check Transmission Fluid Level.**

Service Procedure (Continued)**D. Replace Transmission Assembly (LD / LX Models)**

NOTE: The following procedure is required if the transmission output shaft fractures per the test performed in Section B.

1. Disconnect the negative battery cable at the battery.
2. Use the following procedure to remove the entire exhaust system:
 - a. Disconnect the right and left upstream exhaust oxygen sensor electrical connectors.
 - b. Place the transmission in neutral.
 - c. Lift the vehicle on an appropriate hoist.
 - d. Disconnect the right and left downstream exhaust oxygen sensor electrical connectors.
 - e. Remove and save the two tunnel reinforcement brackets (Figure 9).

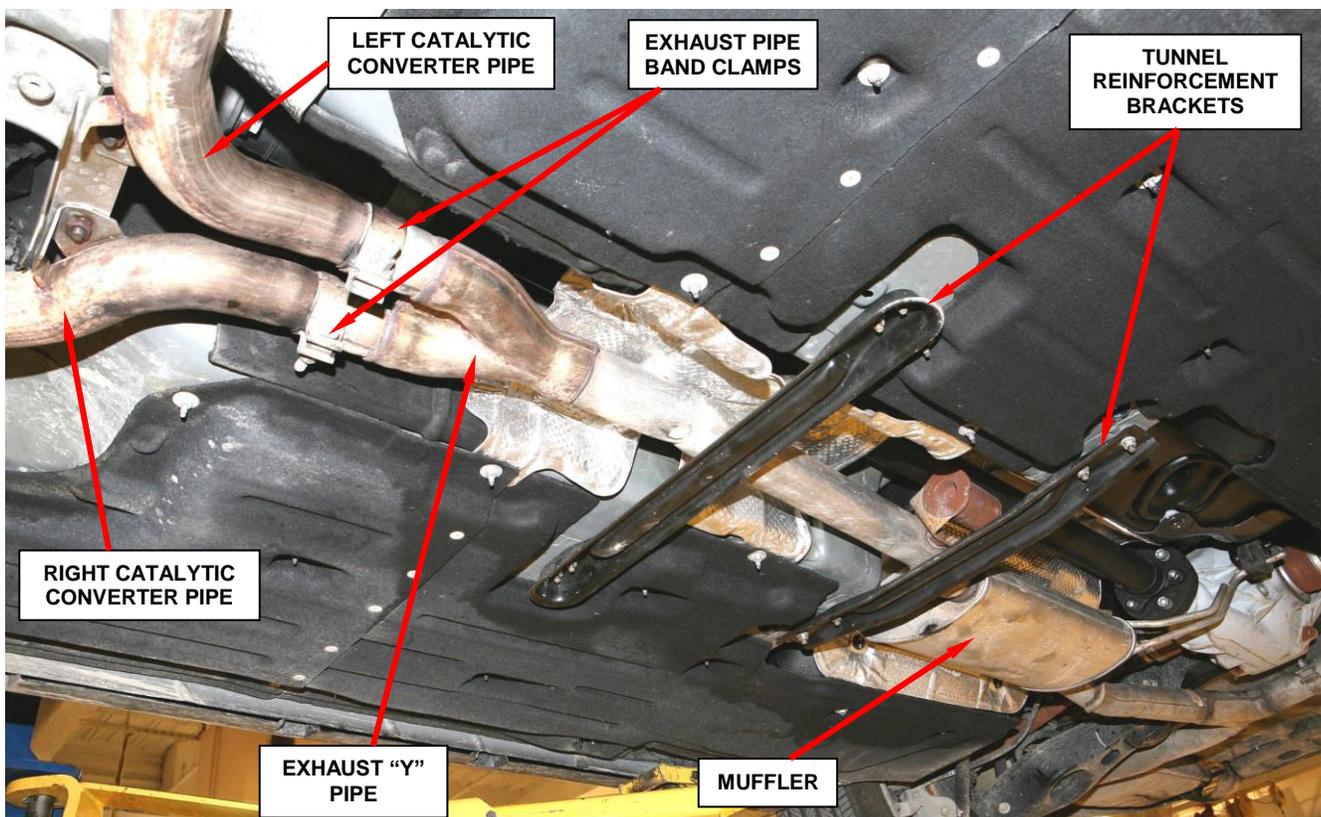
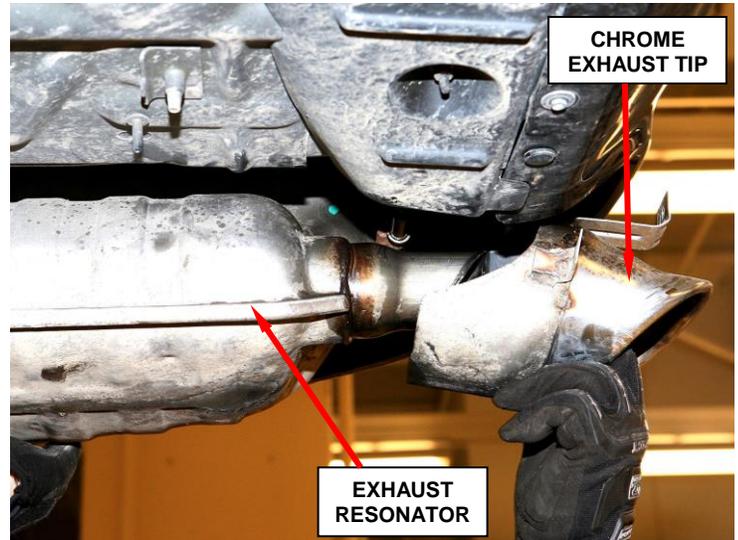
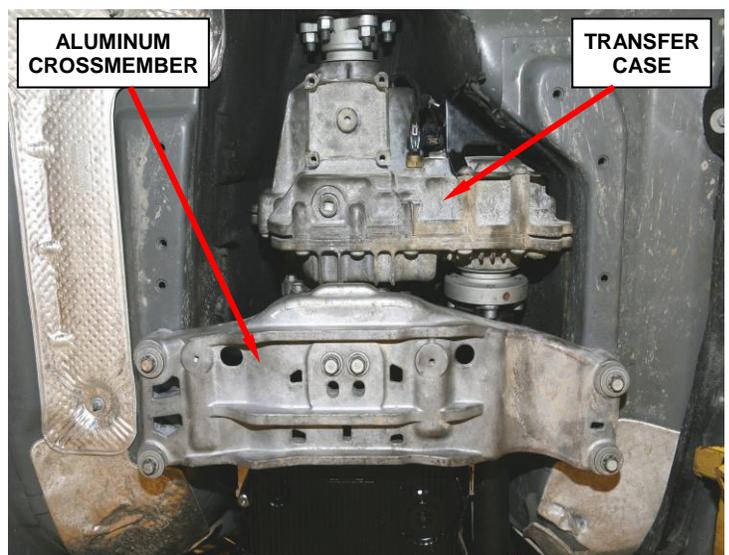


Figure 9 – Exhaust System and Reinforcement Brackets

Service Procedure (Continued)

- f. Loosen the two exhaust pipe band clamps (Figure 9).
 - g. Support the exhaust system with a transmission jack and disconnect the exhaust rubber hangers.
 - h. Separate the exhaust “Y” pipe from the right and left catalytic converter pipes (Figure 9).
 - i. Remove and save the right and left chrome exhaust tips (Figure 10).
 - j. Carefully lower the exhaust system.
 - k. Remove and save the right and left side catalytic converter.
3. Remove and save the engine splash shield.
 4. Remove and save the rear propeller shaft center bearing heat shield.
 5. Mark the rear propeller shaft orientation to the transmission flange and rear axle flange.
 6. Remove and save the rear propeller shaft assembly.
 7. Secure the transmission to a transmission jack and remove the transmission aluminum crossmember (Figure 11).
 8. Mark the front propeller shaft orientation to the transfer case flange and front axle flange.

**Figure 10 – Exhaust Tips****Figure 11 – Transmission Aluminum Crossmember**

Service Procedure (Continued)

9. Remove and save the front propeller shaft.
10. Remove and save the starter motor heat shield.
11. Remove and save the starter motor assembly.

NOTE: Do not disconnect the electrical connections from the starter motor. Once the starter motor is unbolted, set the starter aside.

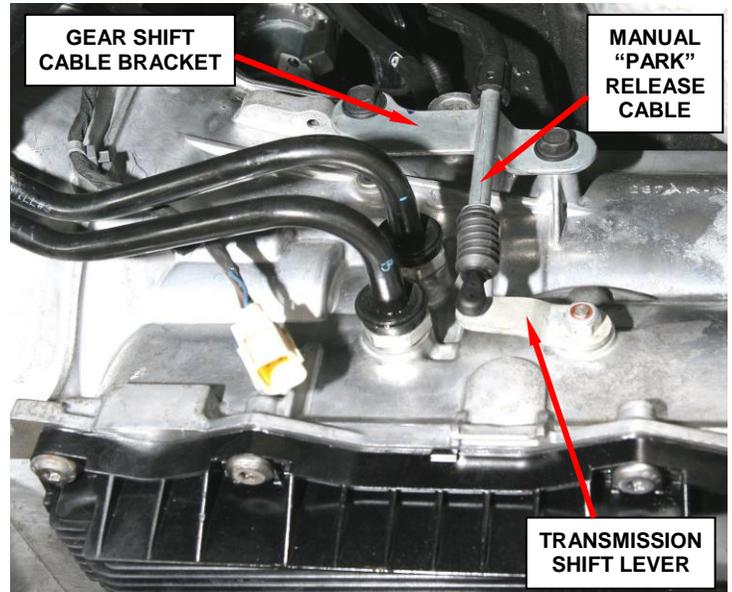


Figure 12 – Gear Shift Linkage

12. Remove and save the six torque converter-to-drive plate bolts.
13. Disconnect the manual “Park” release cable (Figure 12).

14. Disconnect the vent hose located at the top of the transmission case.
15. Disconnect all electrical connectors from the transmission.
16. Remove and save the transmission bellhousing bolts.

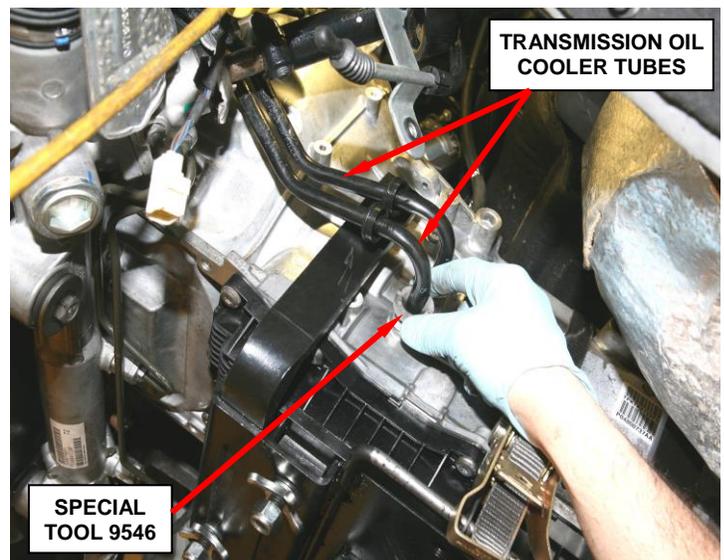


Figure 13 – Transmission Oil Cooler Tubes

17. Using Special Tool 9546, disconnect the transmission oil cooler tubes at the transmission (Figure 13).

Service Procedure (Continued)

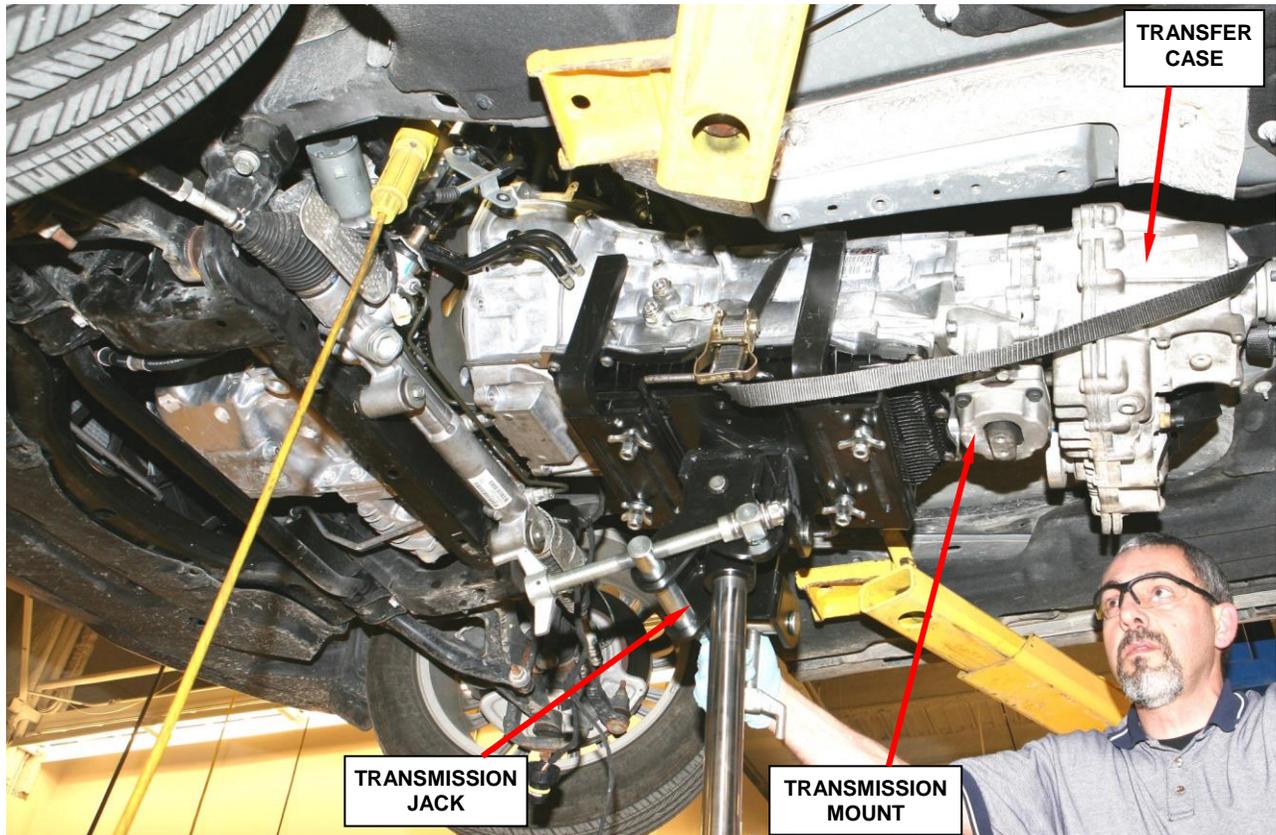


Figure 14 – Transmission Assembly

18. Carefully lower the transmission and transfer case, as an assembly, from the vehicle (Figure 14).
19. Remove and save the transmission mount (Figure 14).
20. Remove and save the transfer case mounting bolts.
21. Remove the transfer case from the back of the transmission (Figure 15).

CAUTION: Keep the transfer case in the upright position to prevent fluid loss from the vent tube.

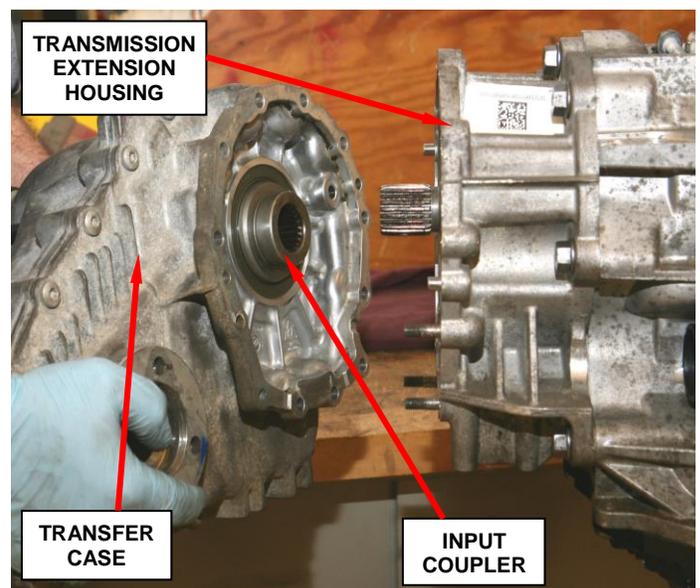


Figure 15 – Remove/Install Transfer Case

Service Procedure (Continued)

22. With the help of a lifting device, remove the transmission from the transmission jack.
23. With the help of a lifting device, place the new transmission assembly onto the transmission jack.
24. Secure the new transmission to the transmission jack.
25. Install the original transfer case to the back of the new transmission. Tighten the transfer case mounting bolts to 41 ft. lbs. (55 N·m).

NOTE: Be sure to remove the broken transmission output shaft from the transfer case input coupler (Figure 15).

26. Apply a small amount of grease to the torque converter hub.
27. Raise the transmission into position and install the bellhousing bolts. Tighten the bolts to 41 ft. lbs. (55 N·m).
28. Connect the transmission oil cooler tubes.
29. Install the six torque converter-to-drive plate bolts. Tighten the bolts to 31 ft. lbs. (42 N·m).
30. Install the starter motor assembly. Tighten the starter motor bolts to 40 ft. lbs. (54 N·m).
31. Install the starter heat shield. Tighten the small bolt to 22 ft. lbs. (30 N·m) and the large bolt to 45 ft. lbs. (61 N·m).
32. Connect the vent hose to the top of the transmission case.
33. Connect the oxygen sensor wire clips to the transfer case.
34. Connect the transmission wiring harness to the transmission.
35. Connect the manual “Park” release cable to the transmission shift lever.
36. Install the front propeller shaft. Tighten the bolts to 48 ft. lbs. (64 N·m).

Service Procedure (Continued)

37. Install the transmission mount. Tighten the bolts to 24 ft. lbs. (53 N·m).
38. Install the transmission aluminum crossmember. Tighten the mounting bolts to 48 ft. lbs. (65 N·m).
39. Install the rear propeller shaft. Tighten:
 - Center bearing-to-body bolts to 20 ft. lbs. (27 N·m).
 - Propeller shaft coupler to the rear axle flange bolts to 43 ft. lbs. (58 N·m).
 - Propeller shaft coupler to the transfer case to 43 ft. lbs. (58 N·m).
40. Install the rear propeller shaft center bearing heat shield.
41. Install the left side catalytic converter. Tighten the flange bolts to 17 ft. lbs. (23 N·m).
42. Install the right side catalytic converter. Tighten the flange bolts to 35 ft. lbs. (47 N·m).
43. Install the exhaust system and muffler. Tighten the band clamps to 45 ft. lbs. (61 N·m).
44. Install the chrome exhaust tips.
45. Install the tunnel reinforcement brackets. Tighten the nuts to 41 ft. lbs. (55 N·m).
46. Connect the right and left downstream oxygen sensors.
47. Install the engine splash shield.
48. Lower the vehicle.
49. Connect the upstream oxygen sensors.
50. Connect the negative battery cable.
51. Continue with **Section E. – Update TCM Software.**

Service Procedure (Continued)**E. Update TCM Software (LX/LD Models Only)**

CAUTION: If the test software remains in the vehicle's TCM, the transmission will not shift out of first gear and the check engine light will remain illuminated.

1. Install a battery charger and verify that the charging rate provides 13.0 to 13.5 volts. Do not allow the charger to time out during the reprogramming process. Set the battery charger timer (if so equipped) to continuous charge.

NOTE: Use an accurate stand-alone voltmeter. The battery charger volt meter may not be sufficiently accurate. Voltages outside of the specified range will cause an unsuccessful flash. If voltage reading is too high, apply an electrical load by activating the park or headlamps and/or HVAC blower motor to lower the voltage.

2. Connect the wiTECH VCI pod to the vehicle data link connector located to the right of the hood release lever.
3. Place the ignition in the “**RUN**” position.
4. Open the wiTECH Diagnostic application.
5. Starting at the “Select Tool” screen, highlight the row/tool for the wiPOD device you are using. Then select “**Next**” at bottom right side of the screen.
6. Enter your “**User id**” and “**Password**”, then select “**Finish**” at the bottom of the screen.
7. From the “**Vehicle View**” screen, click on the TCM icon.

Service Procedure (Continued)

8. Select the flash file and click the green arrow to begin the software update.

NOTE: The following are the update files at time this recall was released. There may be new files in the future if a new update is released for this TCM.

- **68249620AA for 2013 LD LX 3.6L AUTO 8 SPD AWD HO.** This is the flash file for a 2013 model year LD / LX vehicles with a 3.6L High Output (HO) engine (sales code NGZ), 8 speed automatic transmission, and All Wheel Drive (AWD).
- **68249621AA 2013 LD LX 3.6L AUTO 8 SPD AWD.** This is the flash file for a 2013 model year LD / LX vehicles with a 3.6L engine, 8 speed automatic transmission, and All Wheel Drive (AWD).

CAUTION: If the test software remains in the vehicle's TCM after the output shaft test, the transmission will not shift out of first gear and the check engine light will remain illuminated.

9. Follow the screen prompts to complete the software installation.
10. Clear all Diagnostic Trouble Codes (DTC's).
11. Turn off the ignition and remove the battery charger.
12. Continue with **Section F. Check Transmission Fluid Level.**

Service Procedure (Continued)**F. Check Transmission Fluid Level (All Models)**

WARNING: THERE IS A RISK OF ACCIDENT FROM VEHICLE MOVING WHEN THE ENGINE IS RUNNING. SECURE VEHICLE TO PREVENT IT FROM MOVING. THERE IS A RISK OF INJURY FROM CONTUSIONS AND BURNS IF YOU INSERT YOUR HANDS INTO THE ENGINE WHEN IT IS RUNNING. DO NOT TOUCH HOT OR ROTATING PARTS. WEAR PROPERLY FITTED WORK CLOTHES.

CAUTION: A unique transmission fluid has been developed for this transmission. This unique transmission fluid is NOT compatible with ATF+4 or any other current Chrysler transmission fluid.

1. Raise and support the vehicle on a level hoist.
2. Start the engine. The engine must continue to run through step 16.
3. Using a scan tool or the vehicle information center, verify that the transmission fluid temperature is below 86°F (30°C).
4. Disable traction control (ESC).
5. Remove the fill plug from the right rear of the transmission case.
6. Add transmission fluid until it trickles from the fill opening.
7. Install the fill plug.
8. Lower the vehicle for access to inside of the vehicle, leaving the tires at least 8 inches off the ground.

Service Procedure (Continued)

9. With the brakes applied, place the transmission in Reverse and hold for 5 seconds.
10. Place the transmission in Drive and hold for 5 seconds.
11. Release the brakes, slowly accelerate to 2nd gear and hold for 5 seconds.
12. Apply the brakes and place the transmission in Neutral.
13. Raise the engine speed to 2000 RPM for 5 seconds.
14. Return the engine to idle and place the transmission in “Park.”

NOTE: A full transmission will have fluid at the fill hole with the transmission between 30°C (86°F) and 50°C (122°F). Do not over fill.

15. Remove the fill plug and allow excess transmission fluid to drain from fill hole or add transmission fluid as necessary.
16. Install the transmission fill plug.
17. Using a scan tool, clear any DTCs.
18. Turn engine off.
19. Continue with **Section G. Perform Transmission TCM Adaptation Procedure.**

Service Procedure (Continued)**G. Perform Transmission TCM Adaptation Procedure (All Models)**

The initial clutch filling pressure and fill times are set at the factory. When a transmission assembly is replaced, the adaptation values must be relearned.

The two procedures to relearn these values are called Fast Filling Adaptation and Standard Clutch Filling Adaptation. Failure to perform these procedures could cause shift quality issues.

WARNING: An assistant will be required to drive the vehicle while the technician watch the wiTECH screen. DO NOT drive the vehicle and attempt to watch the wiTECH screen at the same time. Doing so creates an unsafe driving situation.

Fast Filling Adaptation Procedure

CAUTION: Perform this procedure on a smooth road surface. The TCM or TCMA will abort the adaptation process if it senses rough road conditions. The road should be clear of traffic due to the start, stop, and slow vehicle speeds required during this procedure.

1. With the Scan Tool, erase DTCs.
2. Setup the scan tool to display the Transmission Oil Temperature, Torque, Turbine (Input) Speed Sensor rpm, and Clutch 'X' - Filling Counter for each clutch.
3. Drive the vehicle until the Transmission Oil Temperature is above 86° F (30° C).
4. Stop the vehicle.

Service Procedure (Continued)

5. Drive the vehicle to perform upshifts for all gears under the following conditions:
 - Light to medium throttle position
 - Turbine (Input) Speed between 1,250 - 2,000 rpm
 - Torque between 74 ft. lbs. and 111 ft. lbs. (100 N·m and 150 N·m).
6. Release the throttle (0% position) to coast and allow a 6-5 down-shift.
7. Repeat Steps 4 - 6 until the Filling Counters for each clutch displays 10 counts.

NOTE: The tables below may be used as an alternate reference for the optimal conditions required to learn the Fast Filling Adaptations.

Fast Filling Adaptation Conditions Table

Conditions Where Fast Filling Adaptations Occur			
Condition	Transmission Temperature Range	Torque N·m (ft. lbs.) Range	Input Speed (rpm) Range
Upshifts	Between 86°F and 212°F (30°C and 100°C)	Between 74 ft. lbs. and 111 ft. lbs. (100 N·m and 150 N·m)	Between 1250 and 2000 rpm
6-5 Downshifts for B Clutch	Between 86°F and 212°F (30°C and 100°C)	Between negative (-) 44 ft. lbs. and negative (-) 30 ft. lbs. (negative (-) 60 N·m and negative (-) 40 N·m)	Between 750 and 1100 rpm

Clutch vs Shift Table

Shifts Where Each Clutch Will Fast Adapt					
	A Clutch	B Clutch	C Clutch	D Clutch	E Clutch
Shift	6 - 7	6 - 5	2 - 3 and 4 - 5	3 - 4	1 - 2 and 5 - 6
Optimal conditions under which adaptation learning occurs.	Best performed at highway speeds in excess of 50 mph (80 kph).	Coasting with throttle at 0% position.	Best performed at light to medium-throttle - normal vehicle launch.	Best performed at light to medium-throttle - normal vehicle launch.	Best performed at light to medium-throttle - normal vehicle launch.

8. Continue with the **Standard Clutch Filling Adaptation Procedure**.

Service Procedure (Continued)**Standard Clutch Filling Adaptation Procedure**

NOTE: Perform this procedure on a smooth road surface. The TCM or TCMA will abort the adaptation process if it senses rough road conditions. The road should be clear of traffic due to the start, stop, and slow vehicle speeds required during the procedure.

NOTE: The TCM learns the Standard Clutch Filling Adaptation values when the applicable clutch is not applied.

WARNING: An assistant will be required to drive the vehicle while the technician watch the wiTECH screen. **DO NOT** drive the vehicle and attempt to watch the wiTECH screen at the same time. Doing so creates an unsafe driving situation.

1. With the Scan Tool, erase DTCs.
2. Setup the scan tool to display the Transmission Oil Temperature, Torque, Turbine (Input) Speed Sensor rpm, and Clutch 'X' - Fast Filling Counter for each clutch.
3. Drive the vehicle until the Transmission Oil Temperature is above 122° F (50° C).

NOTE: Adaptation learning will be aborted if the Transmission Oil Temperature is above 212° F (100° C).

4. Stop the vehicle.
5. Drive the vehicle using the paddle shifters or Gear +/- buttons on the steering wheel in order to hold the transmission in the desired gear.

NOTE: First and second gears do not require a Standard Clutch Filling Adaptation procedure

NOTE: If attempting to resolve a specific shift quality issue, use the Gear vs. Clutch Table below to see which clutches require further adaptation. For instance, if a rough 2-1 downshift is noted, note that clutch C and clutch E are applying and releasing. Then use the Clutch vs. Shift Table above to note that clutch C and clutch E require the adaptation procedure performed in 4th and 7th gear.

Service Procedure (Continued)

6. In 3rd gear, drive the vehicle within the following conditions until the Clutch D - Fast Filling Counter increments by one count:
 - Vehicle speed between 20 - 35 mph (32 - 56 kph).
 - Turbine (Input) speed between 950 - 1750 rpm
 - Torque between 18 ft. lbs. - 133 ft. lbs. (25 N·m - 180 N·m).

7. In fourth gear, drive the vehicle within the following conditions until the Clutch C - Fast Filling Counter increments by one count:
 - Vehicle speed between 20 - 35 mph (32 - 56 kph).
 - Turbine (Input) speed between 950 - 1750 rpm
 - Torque between 18 ft. lbs. – 89 ft. lbs. (25 N·m - 120 N·m).

- NOTE: Fifth gear does not require a Standard Clutch Filling Adaptation procedure.**

8. In sixth gear, drive the vehicle within the following conditions until the Clutch A - Fast Filling Counter increments by one count:
 - Vehicle speed between 45 - 50 mph (73 - 81 kph).
 - Turbine (Input) speed between 950 - 1750 rpm
 - Torque between 37 ft. lbs. – 89 ft. lbs. (50 N·m - 120 N·m).

9. In seventh gear, drive the vehicle within the following conditions until the Clutch B- Filling Counter and Clutch E Fast Filling Counter each increment by one count:
 - Vehicle speed between 45 - 50 mph (73 - 81 kph).
 - Turbine (Input) speed between 950 - 1750 rpm
 - Torque between 37 ft. lbs. – 89 ft. lbs. (50 N·m - 120 N·m).

Service Procedure (Continued)

NOTE: The Standard Clutch Filling Adaptation Conditions Table below may be used as an alternate reference for the optimal conditions required to learn the Standard Clutch Filling Adaptations.

Standard Clutch Filling Adaptation Conditions Table

Steady State Gears And Conditions Where Each Clutch Will Adapt					
Clutch	Gear	Optimal Vehicle Speed Range	Input Speed (rpm) Range	Torque Ft. Lbs. (N.m) Range	Transmission Temperature Range
A Clutch	6th	45-50 mph (73-81 kph)	Between 950 and 1750 rpm	Between 37 ft. lbs. and 89 ft. lbs. (50 N·m and 120 N·m)	Between 122°F and 212°F (50°C and 100°C)
B Clutch	7th	45-50 mph (73-81 kph)	Between 950 and 1750 rpm	Between 37 ft. lbs. and 89 ft. lbs. (50 N·m and 120 N·m)	Between 122°F and 212°F (50°C and 100°C)
C Clutch	4th	20-35 mph (32-56 kph)	Between 950 and 1750 rpm	Between 18 ft. lbs. and 89 ft. lbs. (25 N·m and 120 N·m)	Between 122°F and 212°F (50°C and 100°C)
D Clutch	3rd	20-35 mph (32-56 kph)	Between 950 and 1750 rpm	Between 18 ft. lbs. and 89 ft. lbs. (25 N·m and 120 N·m)	Between 122°F and 212°F (50°C and 100°C)
E Clutch	7th	45-50 mph (73-81 kph)	Between 950 and 1750 rpm	Between 37 ft. lbs. and 89 ft. lbs. (50 N·m and 120 N·m)	Between 122°F and 212°F (50°C and 100°C)

10. Perform steps 4-9 until the Fast Filling Counters for each clutch has incriminated by at least five counts.

11. Evaluate shift performance for all gears. If the shift quality for any gear is insufficient, execute the appropriate driving conditions until shift quality improves. Incrementing the Fast Filling Counters by 12 counts for each clutch may be necessary to properly learn the adaptation values.

Service Procedure (Continued)

NOTE: The following table can be used to determine which clutches are involved in a specific up-shift or down-shift quality issue. “X” indicates when a clutch is applied. The Standard Clutch Filling Adaptation learning occurs when the applicable clutch is not applied and the transmission is in a steady state (not shifting).

Gear vs Clutch Table

Gear	Clutch A	Clutch B	Clutch C	Clutch D	Clutch E
1st	X	X	X		
2nd	X	X			X
3rd		X	X		X
4th		X		X	X
5th		X	X	X	
6th			X	X	X
7th	X		X	X	
8th	X			X	X
Reverse	X	X		X	

NOTE: Read the information below for details regarding this procedure.

Reading Clutch Adaptation Data

The Clutch Packs will each have 4 scan tool data labels to observe under the TCM section. Using Clutch A as an example, the data labels are:

Clutch A- Fast Filling Counter: This data label displays the number of Clutch Filling Pressure adaptations that have been performed. These adaptations are the first learned values on a new transmission or after clutch adaptation values are reset. You will need to allow 5 to 12 fast filling counts per clutch to properly learn the clutch adaptations. If the shift quality is sufficient after 5 counts, no further adaptation learns for that clutch are necessary.

Clutch A- Filling Counter: This data label displays the number of Clutch Filling Time adaptations that have been performed. You will need to allow 5 to 12 filling counts per clutch to properly learn the clutch adaptations. If the shift quality is sufficient after 5 counts, no further adaptation learns for that clutch are necessary.

Service Procedure (Continued)

Clutch A- Filling Pressure: This data label displays the clutch filling pressure value that is learned during the TCM Adaptation procedure. The TCM adaptation software will increase or decrease the clutch fluid filling pressure to improve shift performance. The clutch Filling Pressure value will change over the life of the transmission based first on initial transmission build variation and then due to normal clutch wear.

Clutch A- Filling Time: This data label displays the clutch filling time value that is learned during the TCM Adaptation procedure. The TCM adaptation software will increase or decrease the Clutch Filling Time to improve shift performance. The clutch Filling Time value will change over the life of the transmission based first on initial transmission build variation and then due to normal clutch wear.

Complete Proof of Correction Form for California Residents

This recall is subject to the **State of California Registration Renewal/Emissions Recall Enforcement Program**. Complete a Vehicle Emission Recall Proof of Correction Form (**Form No. 81-016-1053**) and **supply it to vehicle owners residing in the state of California** for proof that this recall has been performed when they renew the vehicle registration.

Completion Reporting and Reimbursement

Claims for vehicles that have been serviced must be submitted on the DealerCONNECT Claim Entry Screen located on the Service tab. Claims submitted will be used by Chrysler to record recall service completions and provide dealer payments.

Use one of the following labor operation numbers and time allowances:

	<u>Labor Operation Number</u>	<u>Time Allowance</u>
Install test-software, test transmission output shaft, and install updated TCM software (LX/LD models)	21-N6-51-82	0.6 hours
Install test-software, test transmission output shaft, install updated TCM software and replace transmission assembly (LX/LD models) (includes fluid level check and Clutch Filling Adaptation Procedure)	21-N6-51-83	7.3 hours
Test transmission output shaft (DS models)	21-N6-51-84	0.4 hours
Test transmission output shaft and replace transmission assembly (DS models) (includes fluid level check and Clutch Filling Adaptation Procedure)	21-N6-51-85	5.9 hours

Add the cost of the recall parts package plus applicable dealer allowance to your claim.

NOTE: See the Warranty Administration Manual, Recall Claim Processing Section, for complete recall claim processing instructions.

Optional Equipment

Skid Plate (DS Models)	21-N6-51-60	0.4 hours
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Special Service Operation

Fuel Allowance	95-14-01-03	\$32.00
Road Test Assistant	95-09-45-04	\$25.00

Dealer Notification

To view this notification on DealerCONNECT, select “Global Recall System” on the Service tab, then click on the description of this notification.

Owner Notification and Service Scheduling

All involved vehicle owners known to Chrysler are being notified of the service requirement by first class mail. They are requested to schedule appointments for this service with their dealers. A generic copy of the owner letter is attached.

Enclosed with each owner letter is an Owner Notification postcard to allow owners to update our records if applicable.

Vehicle Lists, Global Recall System, VIP and Dealer Follow Up

All involved vehicles have been entered into the DealerCONNECT Global Recall System (GRS) and Vehicle Information Plus (VIP) for dealer inquiry as needed.

GRS provides involved dealers with an updated VIN list of their incomplete vehicles. The owner’s name, address and phone number are listed if known. Completed vehicles are removed from GRS within several days of repair claim submission.

To use this system, click on the “**Service**” tab and then click on “**Global Recall System.**” Your dealer’s VIN list for each recall displayed can be sorted by: those vehicles that were unsold at recall launch, those with a phone number, city, zip code, or VIN sequence.

Dealers must perform this repair on all unsold vehicles before retail delivery. Dealers should also use the VIN list to follow up with all owners to schedule appointments for this repair.

Recall VIN lists may contain confidential, restricted owner name and address information that was obtained from the Department of Motor Vehicles of various states. Use of this information is permitted for this recall only and is strictly prohibited from all other use.

Additional Information

If you have any questions or need assistance in completing this action, please contact your Service and Parts District Manager.

Customer Services / Field Operations
Chrysler Group LLC