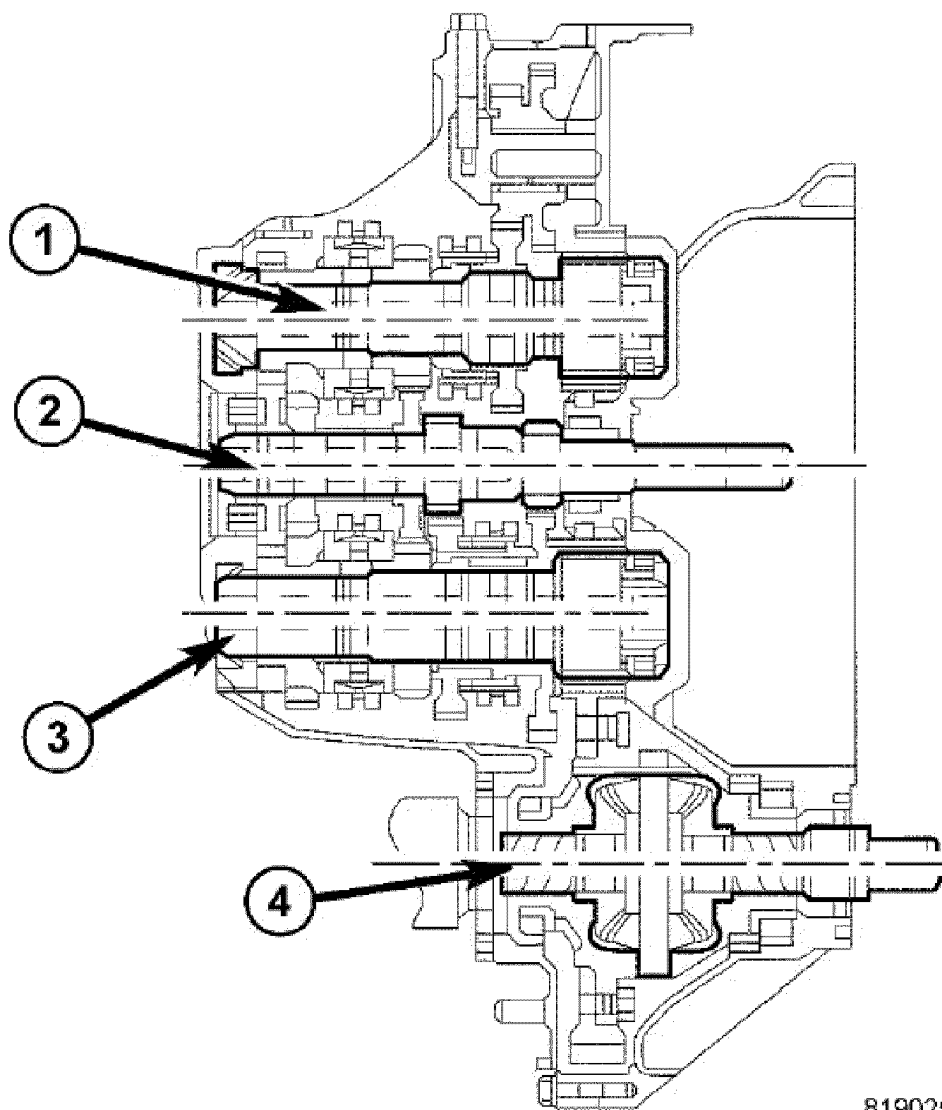


2009 MANUAL TRANSMISSION

BG6 - Service Information - Journey

DESCRIPTION

DESCRIPTION



81902567

Fig. 1: BG6 Manual Transaxle
Courtesy of CHRYSLER LLC

- 1 - OUTPUT SHAFT #2
- 2 - INPUT SHAFT
- 3 - OUTPUT SHAFT #1
- 4 - DIFFERENTIAL

The Aisin BG 6 6-speed transaxle is a constant-mesh transaxle that is synchronized in all gear ranges.

The BG 6 transaxle is a three-shaft design, as opposed to the more common two shaft configuration, to reduce overall length of the unit for easier packaging in the vehicle. The extra shaft is an output shaft. Ratios 1-4 are on one output shaft (2); ratios 5, 6 and Reverse are on the second shaft (1). Each output shaft has a different final drive ratio, which is also different from most transaxles. All ratios are synchronized.

Synchronizers are mounted on the output shafts (1, 3) to reduce the size of the transaxle. Triple-cone synchronizers on 1st through 3rd and dual-cone synchronizers 4th and 5th gears ensure that the rotating masses of gears, shafts and the clutch disc can accelerate quickly for fast, smooth shifting.

The four-plane shift mechanism is cable operated and incorporates a pull-up ring on the shift lever that must be lifted to engage Reverse. This prevents unintentional selection of Reverse when attempting to select 1st gear. Rubber isolation of the shift system at the transaxle minimizes noise carried along the cables to the car's interior.

GEAR RATIOS

GEAR	RATIO
1ST	3.54
2ND	2.05
3RD	1.37
4TH	0.97
5TH	0.90
6TH	0.79
REVERSE	3.83
Final Drive Ratio (FDR)	4.06 or 3.45*
Overall Top Gear	2.73
*Gears 1-4 use the 4.06 final drive; gears 5th, 6th and Reverse use the 3.45 ratio.	

DIAGNOSIS AND TESTING

COMMON PROBLEM CAUSES

The majority of transaxle malfunctions are a result of:

- Insufficient lubrication
- Incorrect lubricant
- Misassembled or damaged internal components
- Improper operation

HARD SHIFTING

Hard shifting may be caused by a misadjusted crossover cable. If hard shifting is accompanied by gear clash, synchronizer clutch and stop rings or gear teeth may be worn or damaged.

Misassembled synchronizer components also cause shifting problems. Incorrectly installed synchronizer sleeves, struts, or springs can cause shift problems.

Worn, damaged, misassembled or leaking hydraulic clutch release system/components can also cause difficult shifting or gear clash.

NOISY OPERATION

Transaxle noise is most often a result of worn or damaged components. Chipped, broken gear or synchronizer teeth, and brinnelled, spalled bearings all cause noise.

Abnormal wear and damage to the internal components is frequently the end result of insufficient lubricant.

SLIPS OUT OF GEAR

Transaxle disengagement may be caused by misaligned or damaged shift components, or worn teeth on the drive gears or synchronizer components. Incorrect assembly also causes gear disengagement.

LOW LUBRICANT LEVEL

Insufficient transaxle lubricant is usually the result of leaks, or inaccurate fluid level check or refill method. **Vehicle must be level to accurately check fluid level.** Leakage is evident by the presence of oil around the leak point. If leakage is not evident, the condition is probably the result of an underfill.

If air-powered lubrication equipment is used to fill a transaxle, be sure the equipment is properly calibrated. Equipment out of calibration can lead to an under fill condition.

CLUTCH PROBLEMS

Worn, damaged, or misaligned clutch components can cause difficult shifting, gear clash, and noise.

A worn or damaged clutch disc, pressure plate, or a faulty slave cylinder can cause hard shifting and gear clash.

REMOVAL

REMOVAL

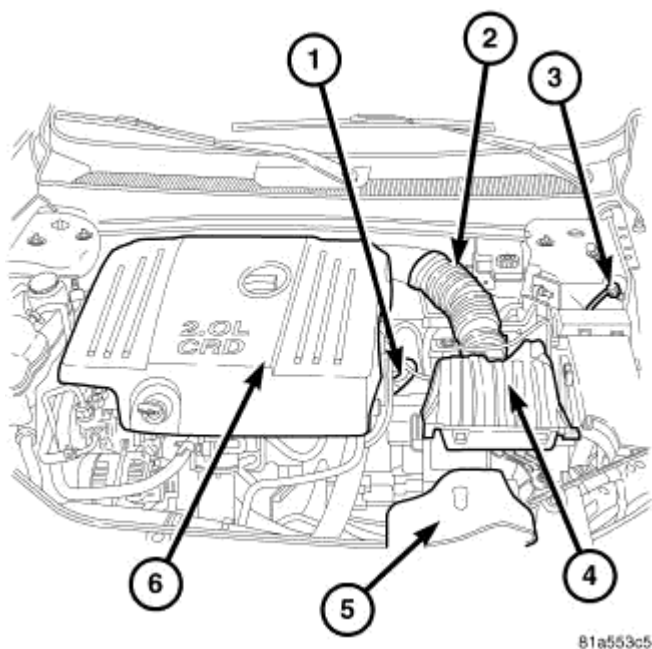


Fig. 2: Engine Cover

Courtesy of CHRYSLER LLC

Remove the engine cover.

1. Disconnect battery negative cable.
2. Remove air inlet tube (2) and air cleaner assembly (4). Refer to **Engine/Air Intake System/BODY, Air Cleaner - Removal**.

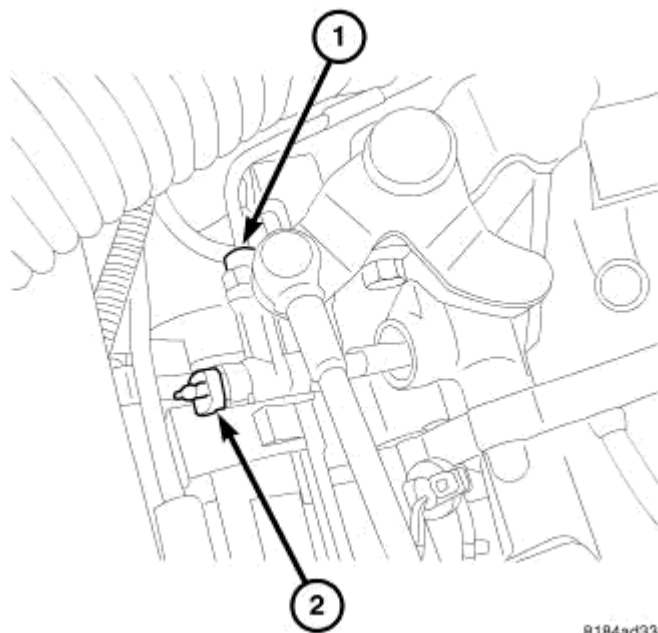


Fig. 3: Bleeder At Slave Cylinder

Courtesy of CHRYSLER LLC

3. Remove hydraulic line (1) and the bleed adaptor (2) at the slave cylinder.

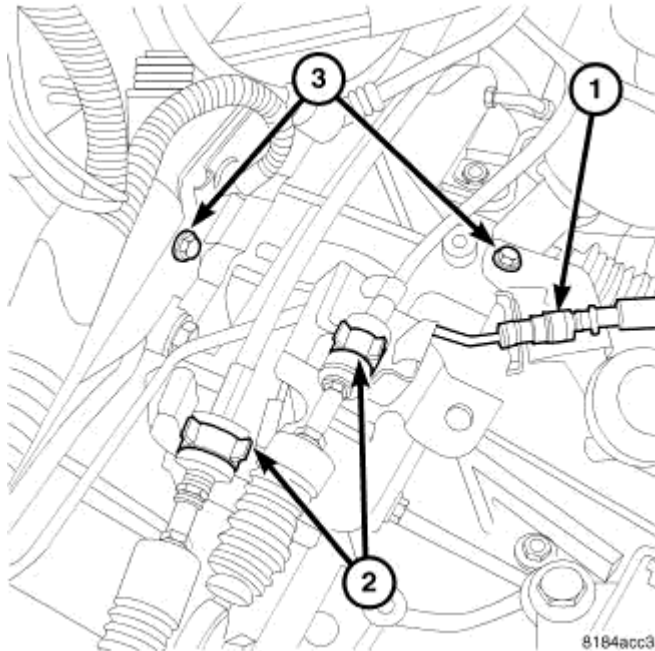
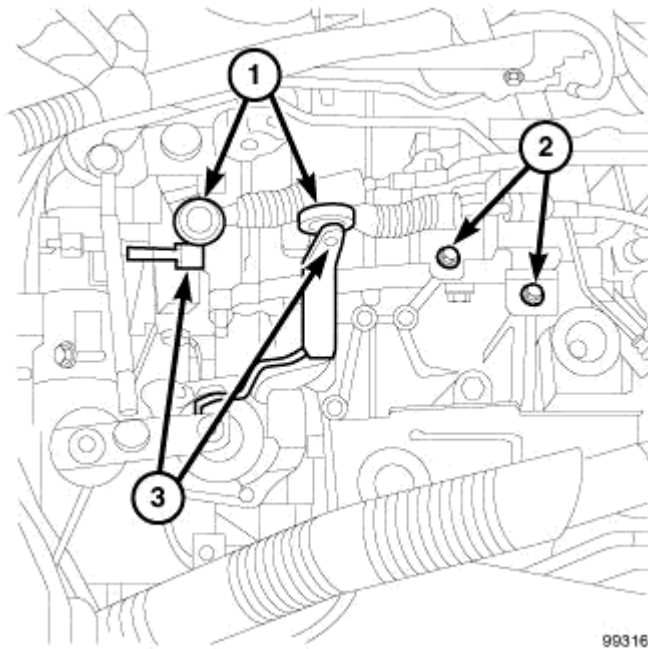


Fig. 4: Hydraulic Line

Courtesy of CHRYSLER LLC

NOTE: Do not remove the shifter cable brackets from the transmission or loosen the bolts.

4. Remove clip (1) to the hydraulic clutch slave cylinder.
5. Release clips (2) at the shift cables and lift cables out of bracket slot.
6. Remove the bolts (3) at the clutch hydraulic line and move the line out of the way.



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Fig. 5: Shift Cables & Bracket
Courtesy of CHRYSLER LLC

NOTE: Never loosen the shift cable bracket bolts (2) for just removal. If the transmission is disassembled, see Adjustments.

CAUTION: Insure the shift levers are not deformed when removing cables.

7. Remove shift cables from shift levers (3) by tilting cable and prying from beneath with screwdriver tip.
8. Unplug connectors and move wiring harness at the top of the transmission out of the way.

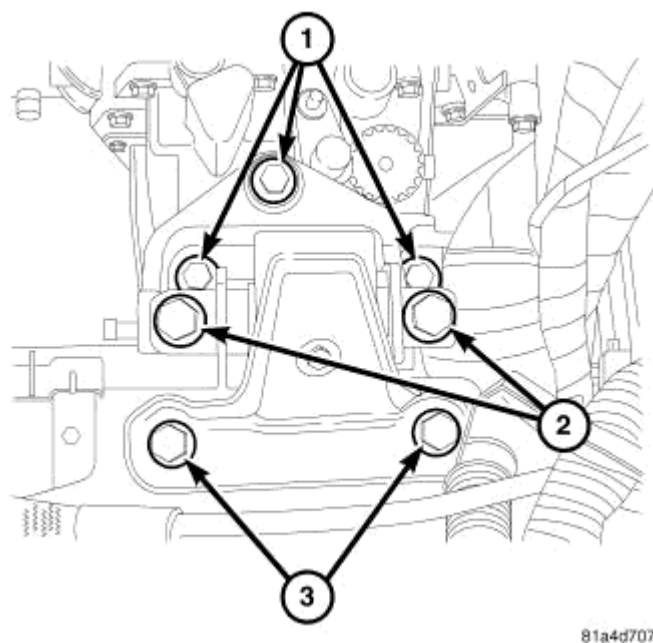


Fig. 6: Left Bracket To Transmission Bolts
Courtesy of CHRYSLER LLC

9. Support transmission with a jack.
10. Remove the bolts at the upper transmission mount (2).
11. Remove the upper bell housing bolts.
12. Remove the Jack from the transmission.

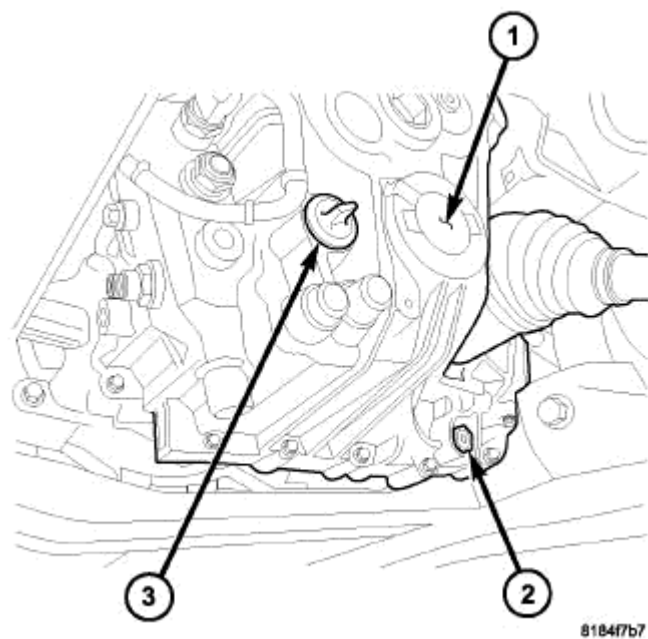
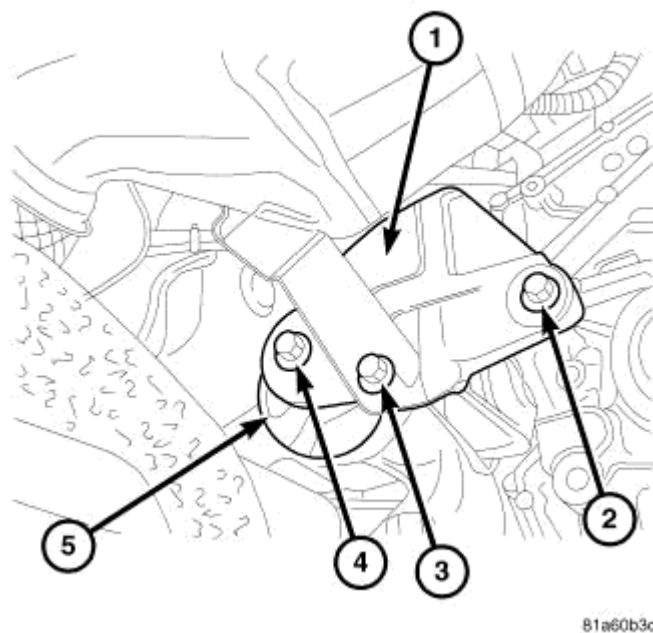


Fig. 7: Drain Plug

Courtesy of CHRYSLER LLC

13. Raise the vehicle on the hoist.
14. Remove left front and lower splash shields. Refer to **Body/Exterior/SHIELD, Splash - Removal**.
15. Remove the drain plug (2) and drain the transmission fluid.
16. Remove both front wheels.
17. Remove the right and left halfshafts. Refer to **Differential and Driveline/Half Shaft - Removal**.

**Fig. 8: Rear Mount**

Courtesy of CHRYSLER LLC

18. Remove the bolt at the catalytic converter support bracket (3).
19. Support engine and transmission with a jack.
20. Support the transmission with a transmission jack and raise to gain access to mount (5).
21. Remove rear transmission mount through bolt (4).
22. Remove the front transmission mount through bolt.
23. Remove the transmission crossmember bolts. Refer to **Frame and Bumpers/Frame/CROSSMEMBER - Removal**.
24. Remove the starter. Refer to **Electrical - Engine Systems/Starting/STARTER - Removal**.
25. Remove the rear transmission mount retaining bolts from the cradle.
26. Remove the rear transmission mount bracket from cradle.

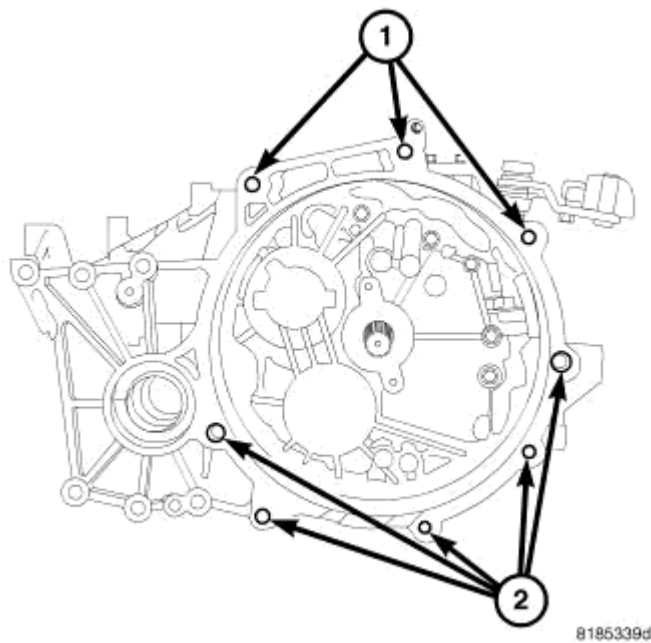
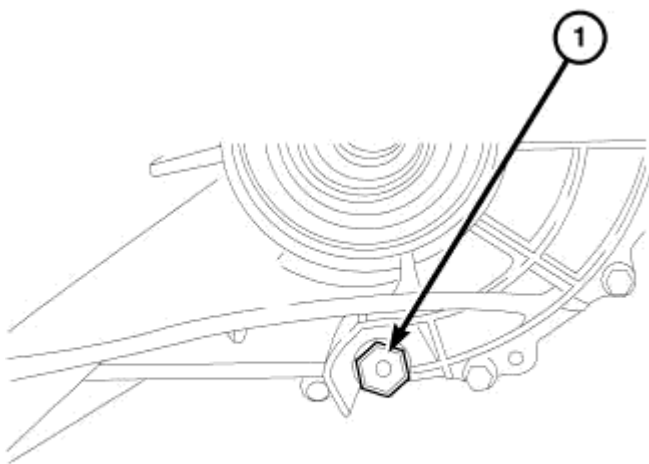


Fig. 9: Bellhousing Bolts
Courtesy of CHRYSLER LLC

27. Remove the lower transmission bellhousing bolts (2).
28. Lower the transmission.

DISASSEMBLY

DISASSEMBLY

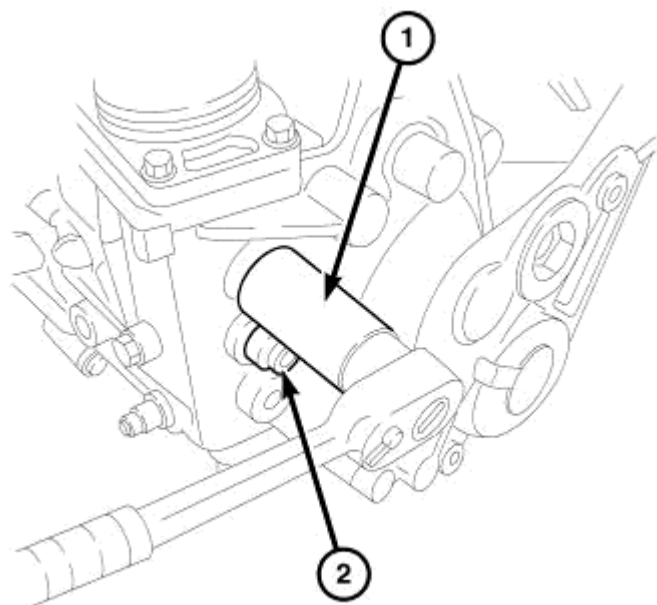


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Fig. 10: Drain Plug

Courtesy of CHRYSLER LLC

1. Remove drain plug (1) and allow transmission oil to drain.

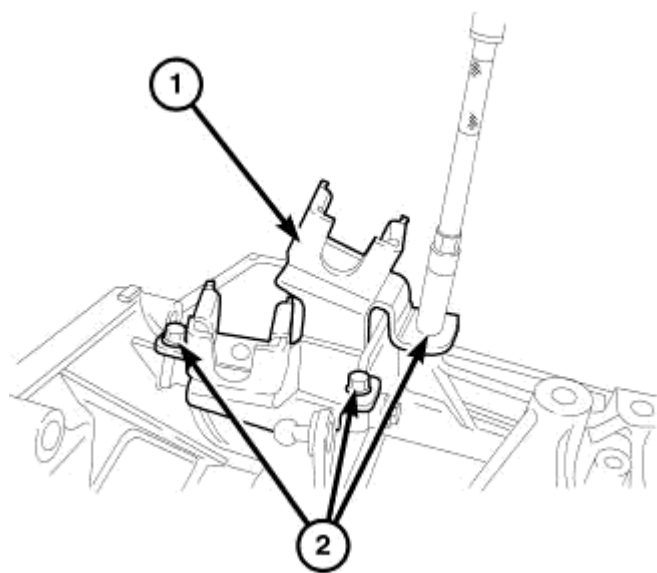


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Fig. 11: Back-Up Lamp Switch

Courtesy of CHRYSLER LLC

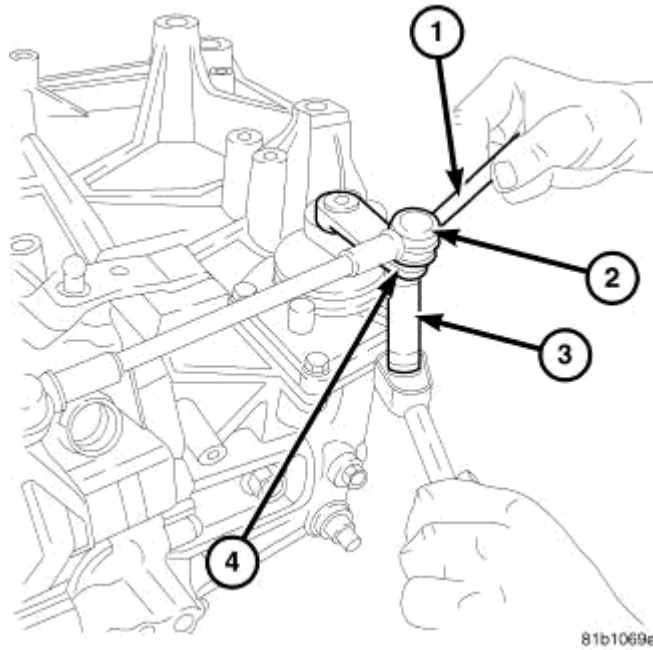
2. Remove backup lamp switch (1).



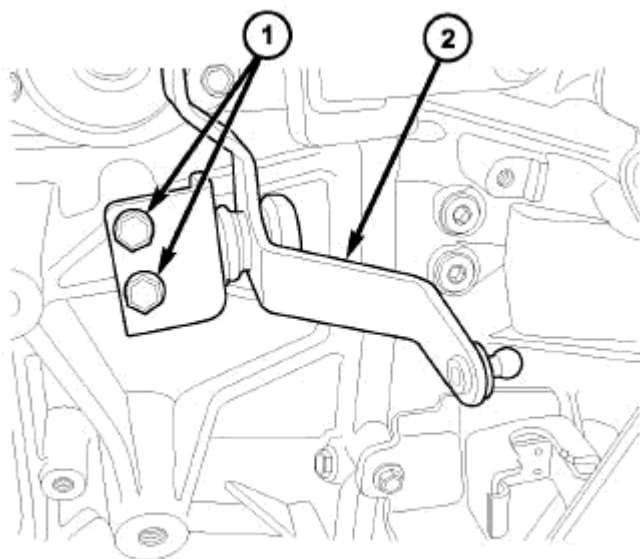
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Fig. 12: Shift Cable Bracket**Courtesy of CHRYSLER LLC**

3. Remove the bolts (2) holding the shift cable bracket (1) to the transmission case.
4. Remove the bracket from the transmission (1).

**Fig. 13: Nut Crossover Rod To Shift Lever****Courtesy of CHRYSLER LLC**

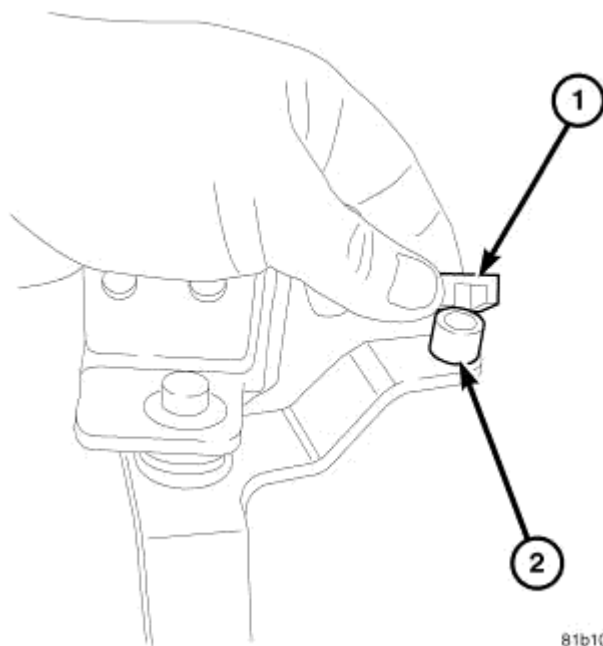
5. Remove the nut (4) holding the crossover rod (2) to the shift lever. Be sure to use a wrench (1) to hold the ball stud to prevent it from rotating in the shift lever.



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Fig. 14: Crossover Bellcrank
Courtesy of CHRYSLER LLC

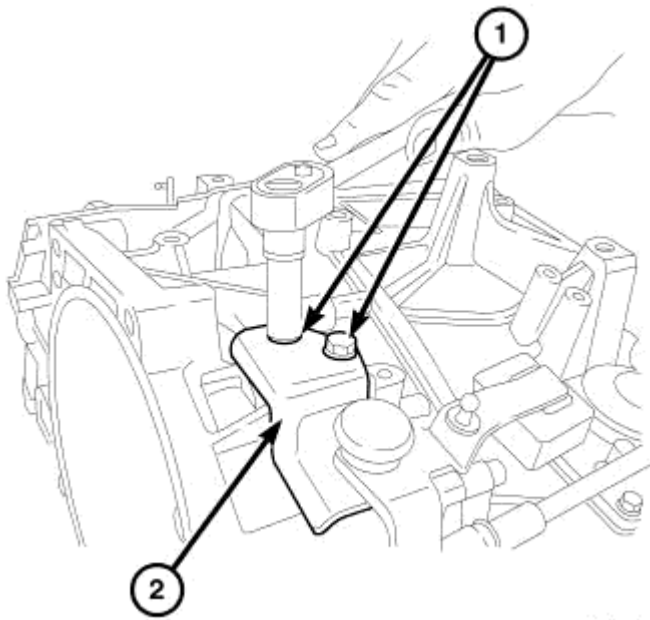
6. Remove bolts (1) holding crossover bellcrank (2) to the transmission case.
7. Remove the crossover bellcrank from the transmission.



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Fig. 15: Bell Crank Bushing
Courtesy of CHRYSLER LLC

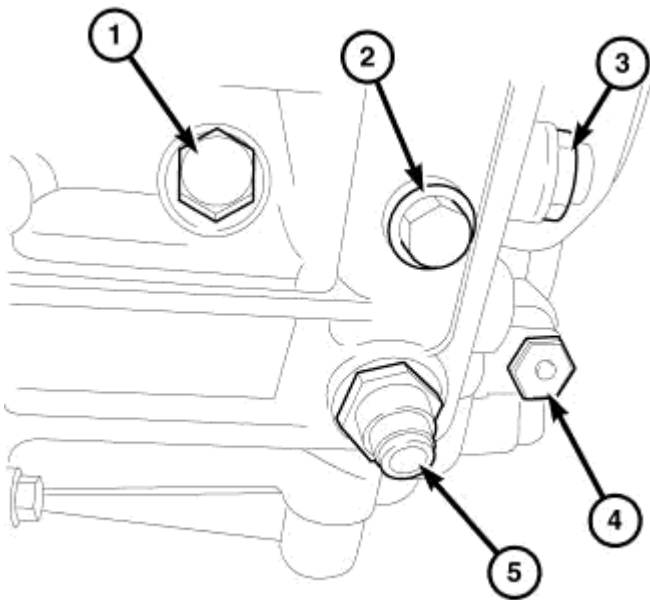
8. Be sure to locate the bell crank bushing on the bell crank or the shift lever and set aside for installation.



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Fig. 16: Crossover Bracket
Courtesy of CHRYSLER LLC

9. Remove the bolts (1) at the shift lever bracket (2).
10. Remove the shift lever bracket (2).



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Fig. 17: Anti-Rotation Bolt
Courtesy of CHRYSLER LLC

11. Loosen and remove shift lock ball for the shift detent (5).
12. Loosen and remove shift lock ball for the select detent (3).
13. Loosen and remove shift guide pin (2).

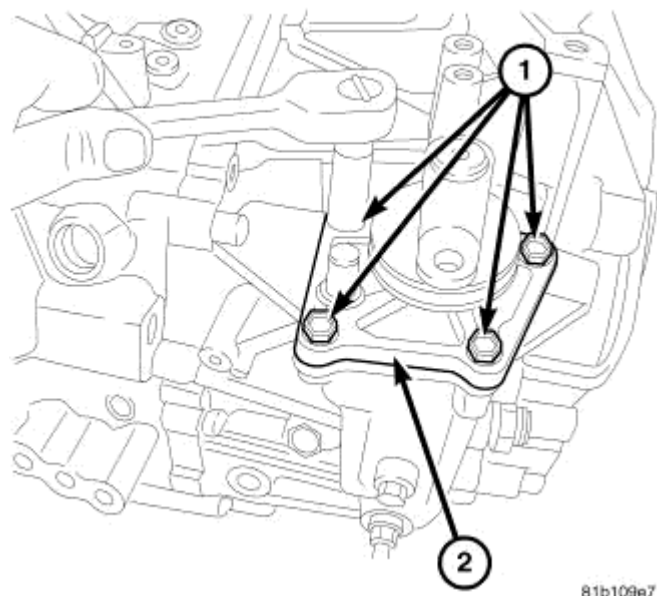


Fig. 18: Shift Lever Assembly Bolts
Courtesy of CHRYSLER LLC

14. Remove the bolts holding the shift lever assembly to the transmission.

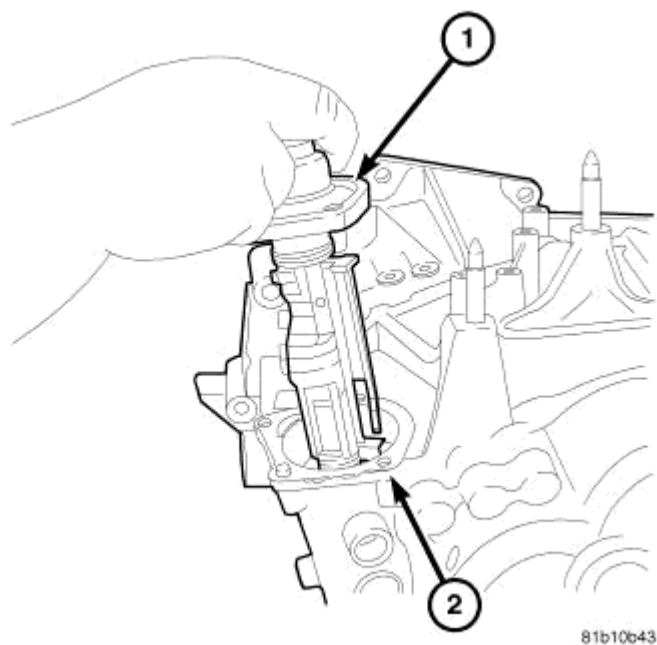
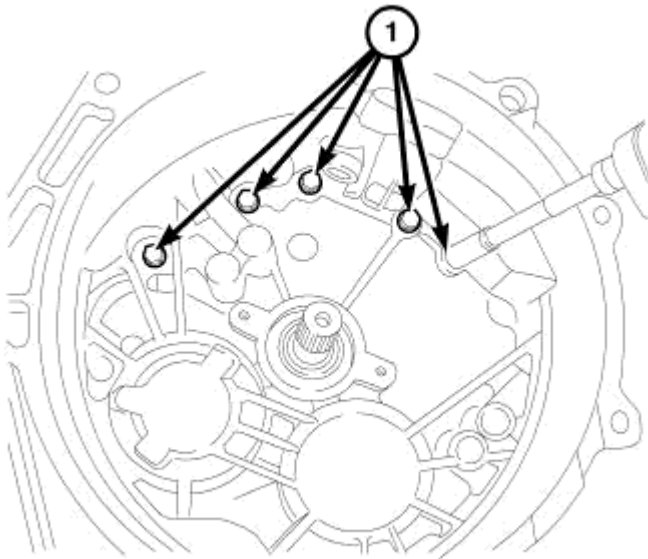


Fig. 19: Shift Lever Assembly
Courtesy of CHRYSLER LLC

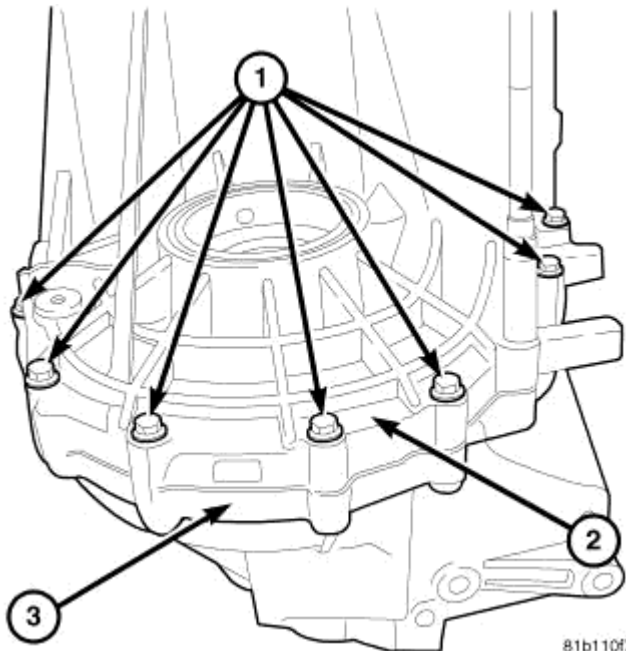
15. Remove the shift lever assembly from the transmission case.



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Fig. 20: Transmission Case To Clutch Housing Bolts (Inside Clutch Housing)
Courtesy of CHRYSLER LLC

16. Remove the bolts (1) holding the transmission case to the clutch housing from inside the clutch housing.



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Fig. 21: Transmission Case To Clutch Housing Bolts (Transmission Case Side)
Courtesy of CHRYSLER LLC

17. Remove the bolts (1) holding the transmission case (2) to the clutch housing (3) from the transmission case side.

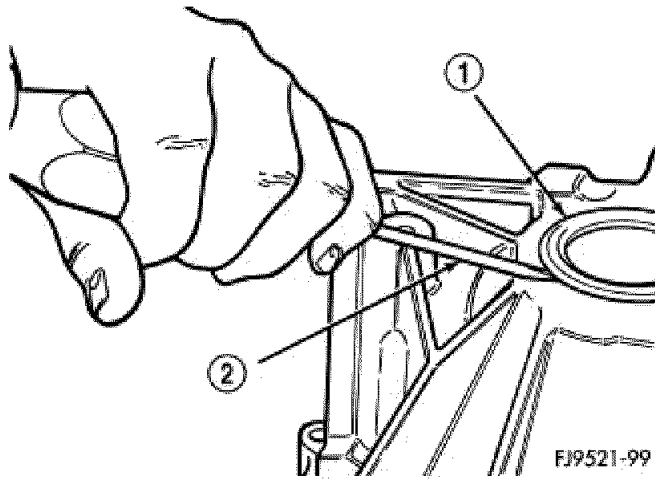


Fig. 22: Axle Shaft Seal Removal
Courtesy of CHRYSLER LLC

18. Insert a flat-blade pry tool (2) at outer edge of axle shaft seals (1).
19. Tap on the pry tool (2) with a small hammer and remove both (case and bell housing sides) axle shaft seals (1).

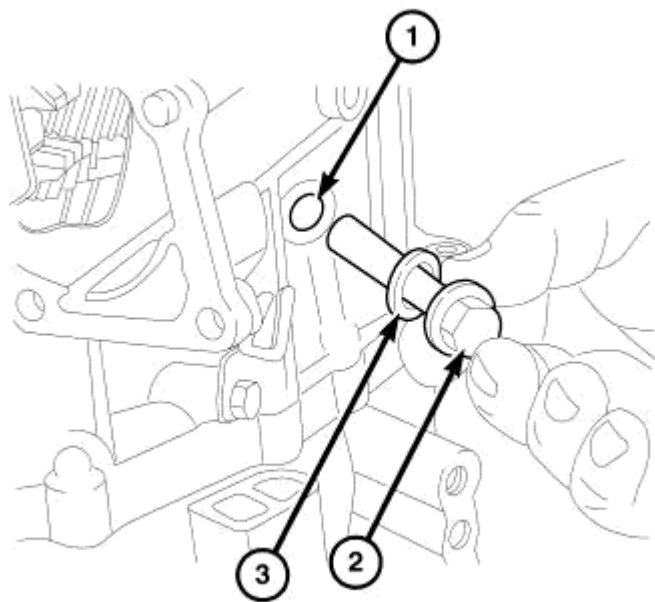
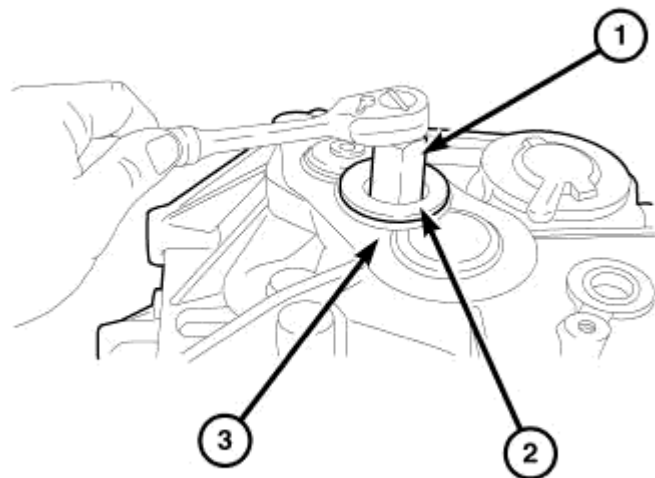


Fig. 23: Idler Shaft Anti-Rotation Bolt

Courtesy of CHRYSLER LLC

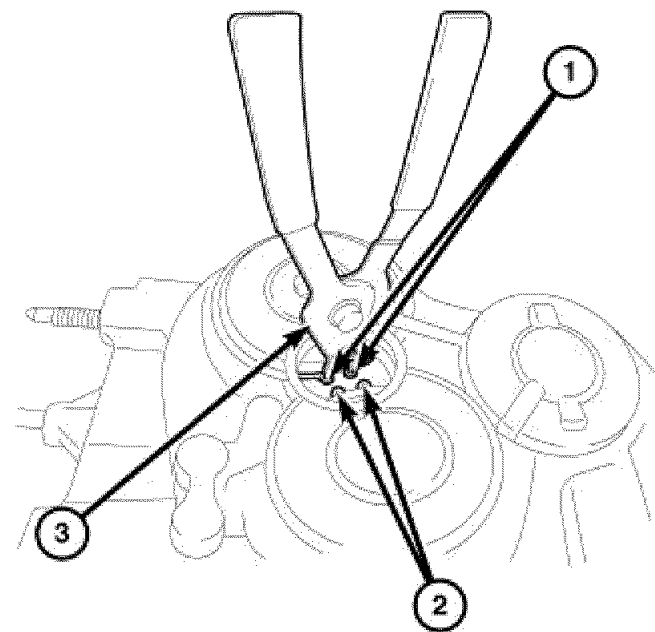
20. Remove anti-rotation bolt (2) and discard old washer a new washer will be used during assembly.



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Fig. 24: 27 MM Hex Adapter For Shaft Plug
Courtesy of CHRYSLER LLC

21. Install a 27 mm (1 1/16 in.) hex adapter (1) into the shaft plug (2) at the rear of the transmission case (3).
22. Loosen and remove the shaft plug (2) in the rear of the transmission case.



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Fig. 25: Snap Rings At Rear Of Transmission Case
Courtesy of CHRYSLER LLC

23. Using suitable snap-ring pliers (3), release the transmission shaft bearing snap-rings (1, 2) at the rear of the transmission case.

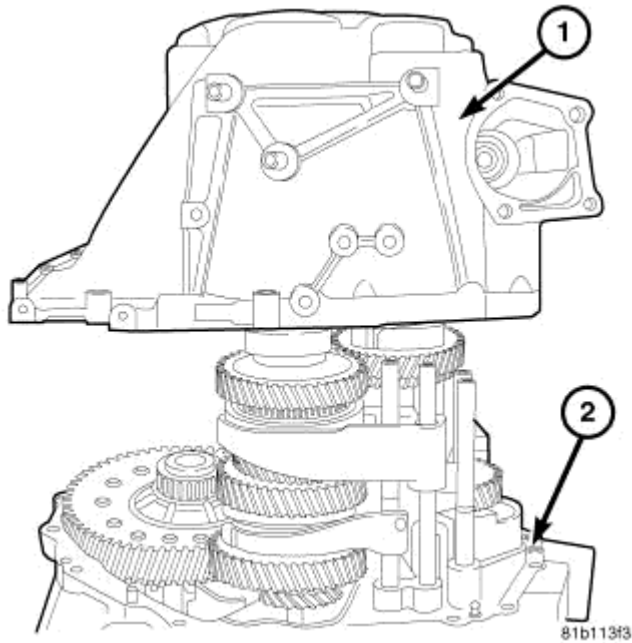


Fig. 26: Transmission Case Half & Clutch Housing
Courtesy of CHRYSLER LLC

24. Remove the transmission case half (1) from the clutch housing (2).

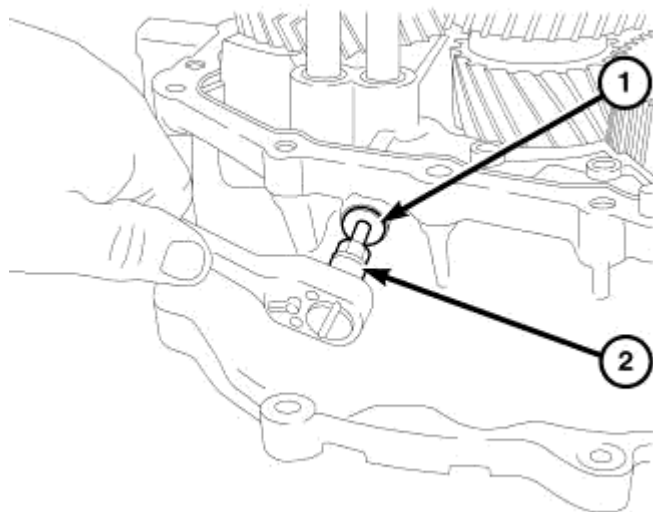


Fig. 27: Fifth & Sixth Gear Shift Rail Detent Plug
Courtesy of CHRYSLER LLC

25. Remove fifth and sixth gear shift rail detent plug (1).

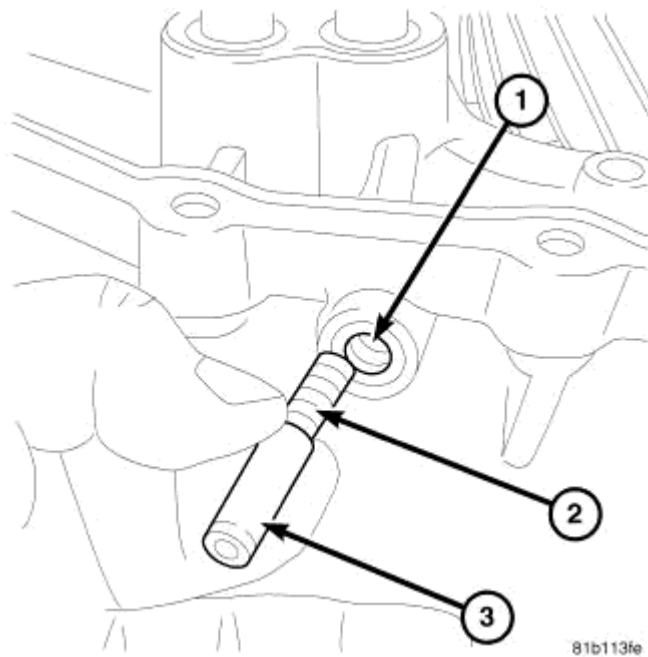


Fig. 28: Fifth & Sixth Gear Shift Rail Detent Spacer & Spring
Courtesy of CHRYSLER LLC

26. Remove fifth and sixth gear shift rail detent spacer (3) and spring (2).

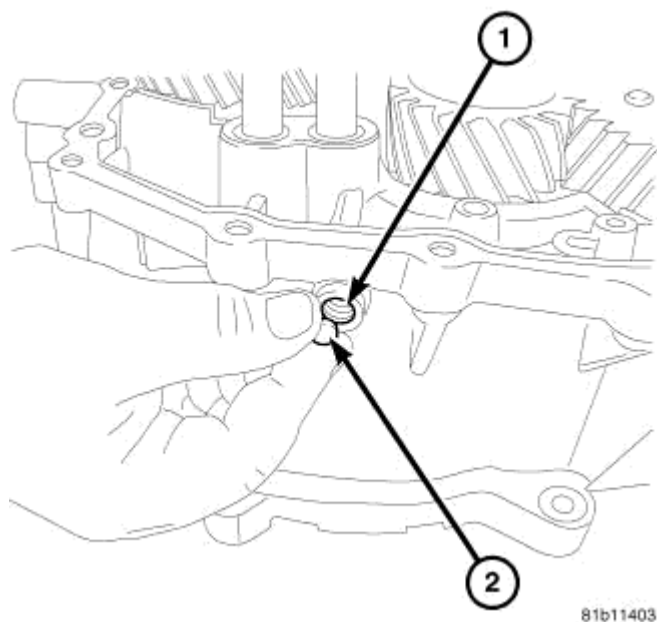


Fig. 29: Fifth & Sixth Gear Shift Rail Detent Ball
Courtesy of CHRYSLER LLC

27. Remove fifth and sixth gear shift rail detent ball (2).

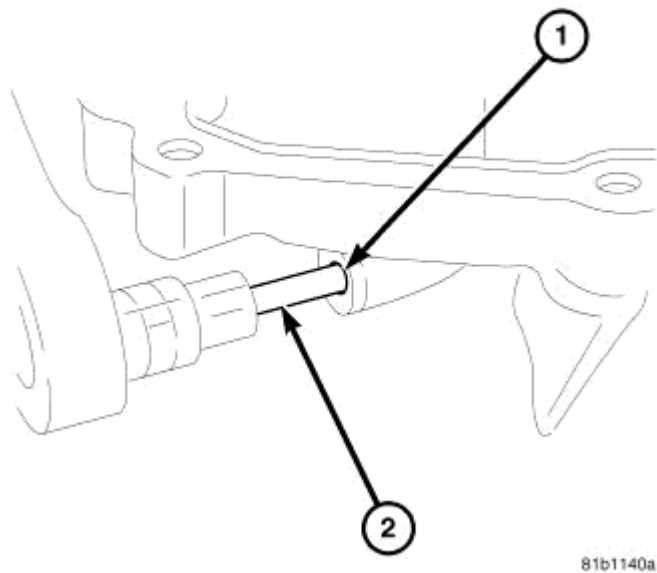


Fig. 30: Reverse Shift Rail Detent Plug
Courtesy of CHRYSLER LLC

28. Remove reverse shift rail detent plug (1).

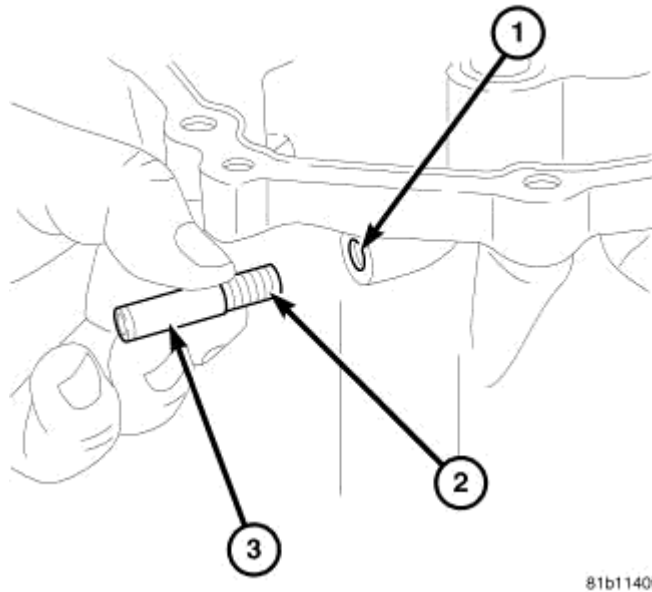


Fig. 31: Reverse Shift Rail Detent Spacer & Spring
Courtesy of CHRYSLER LLC

29. Remove the reverse shift rail detent spacer (3) and spring (2).

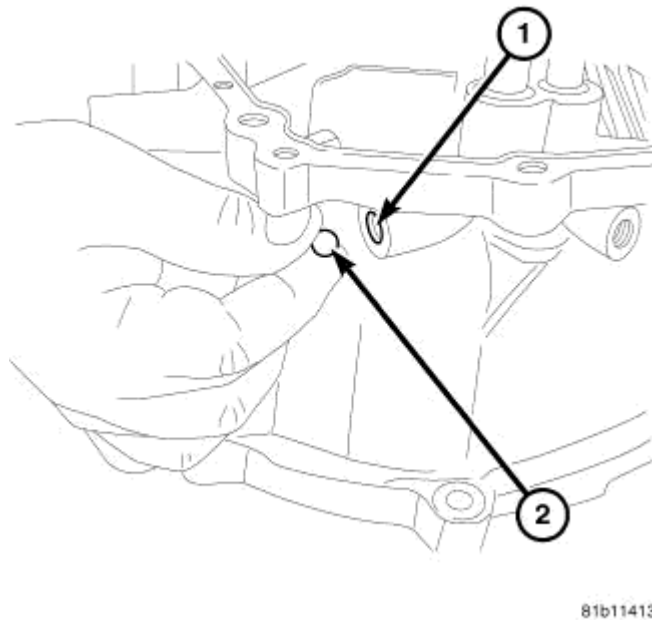
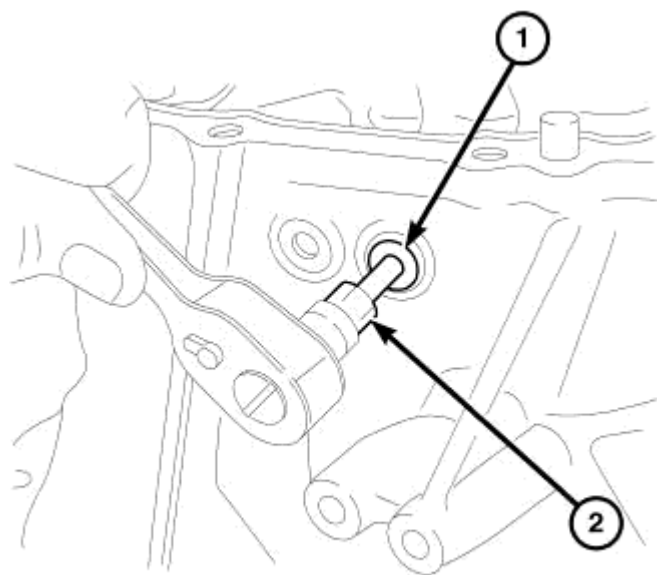


Fig. 32: Reverse Shift Rail Detent Ball
Courtesy of CHRYSLER LLC

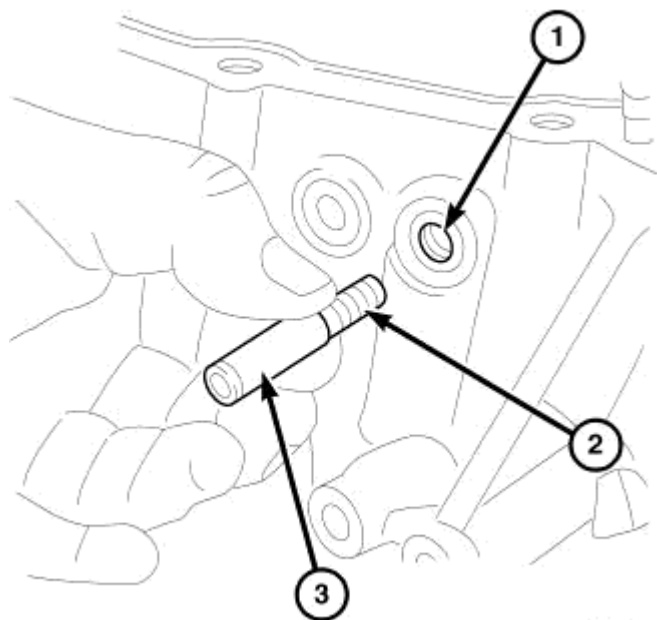
30. Remove the reverse shift rail detent ball (2).



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Fig. 33: Third & Fourth Gear Shift Rail Detent Plug
Courtesy of CHRYSLER LLC

31. Remove third and fourth gear shift rail detent plug (1).



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Fig. 34: Third & Fourth Gear Shift Rail Detent Spacer & Spring
Courtesy of CHRYSLER LLC

32. Remove third and fourth gear shift rail detent spacer (3) and spring (2).
33. Remove third and fourth gear shift rail detent ball.

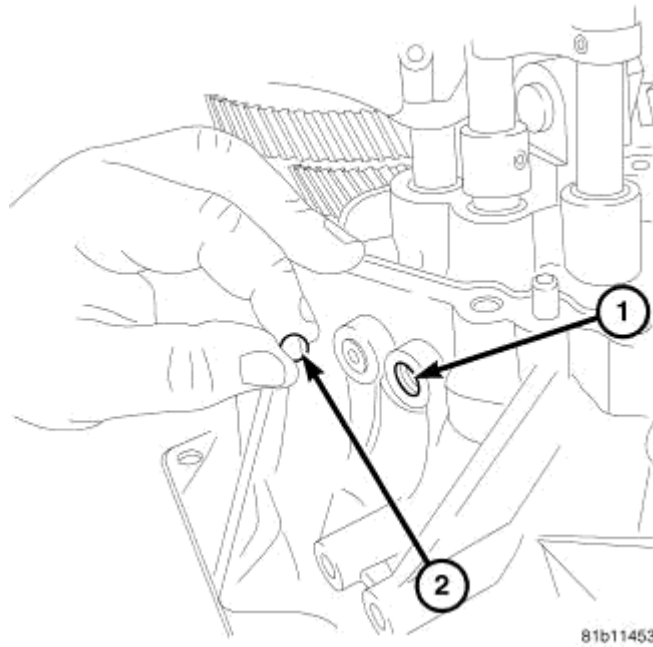


Fig. 35: Third & Fourth Gear Shift Rail Detent Ball
Courtesy of CHRYSLER LLC

34. Remove third and fourth gear shift rail detent ball (2).

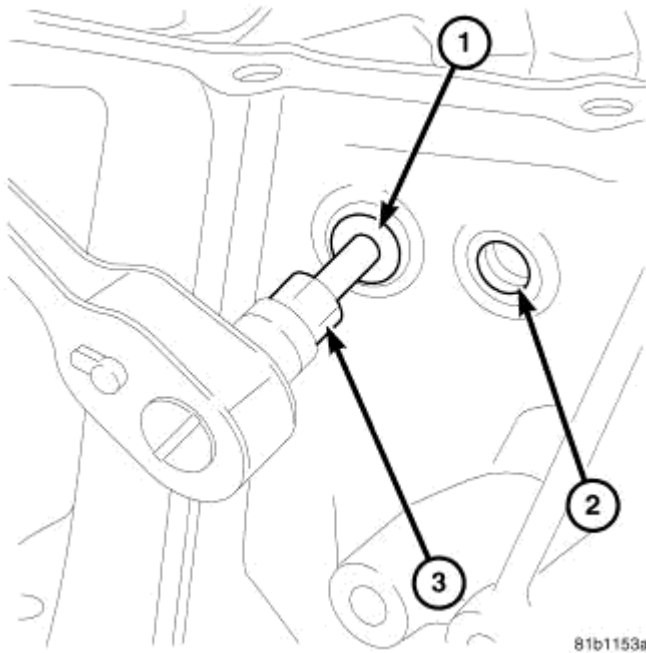


Fig. 36: First & Second Gear Shift Rail Detent Plug
Courtesy of CHRYSLER LLC

35. Remove first and second gear shift rail detent plug (1).
36. Remove first and second gear shift rail detent spacer and spring.

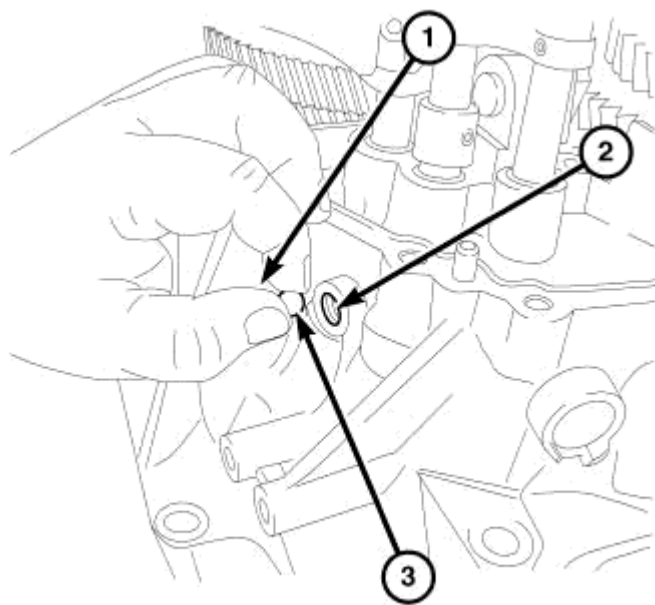


Fig. 37: First & Second Gear Shift Rail Detent Ball
Courtesy of CHRYSLER LLC

37. Remove first and second gear shift rail detent ball (3).

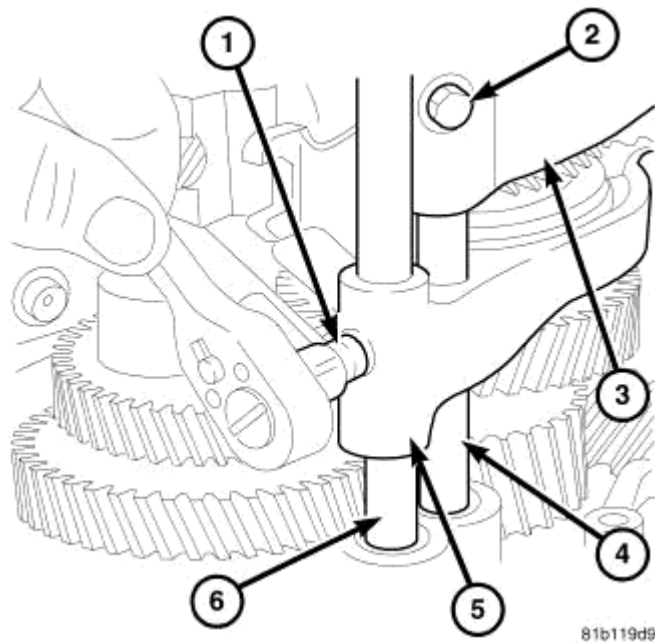


Fig. 38: Reverse Shift Fork To Shift Rail Bolt
Courtesy of CHRYSLER LLC

38. Remove the bolt (1) holding the reverse shift fork (5) to the reverse shift rail (6).

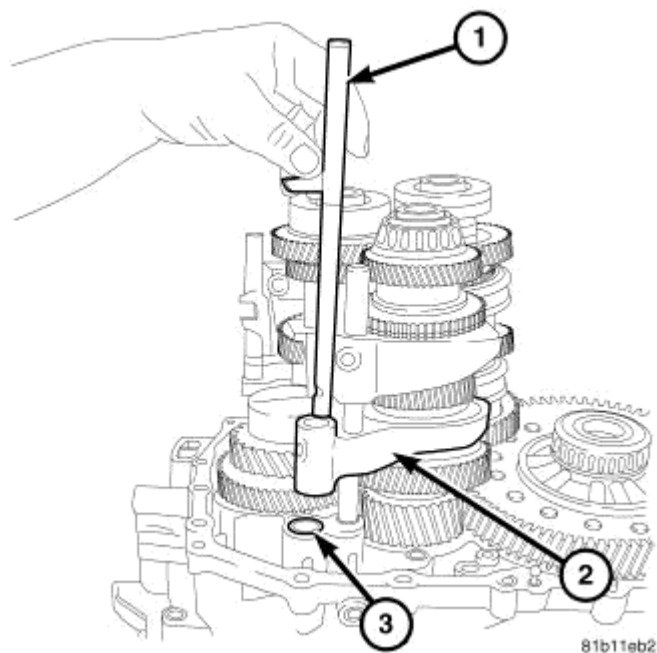


Fig. 39: Reverse Shift Rail
Courtesy of CHRYSLER LLC

39. Remove the reverse shift rail from case and shift fork.

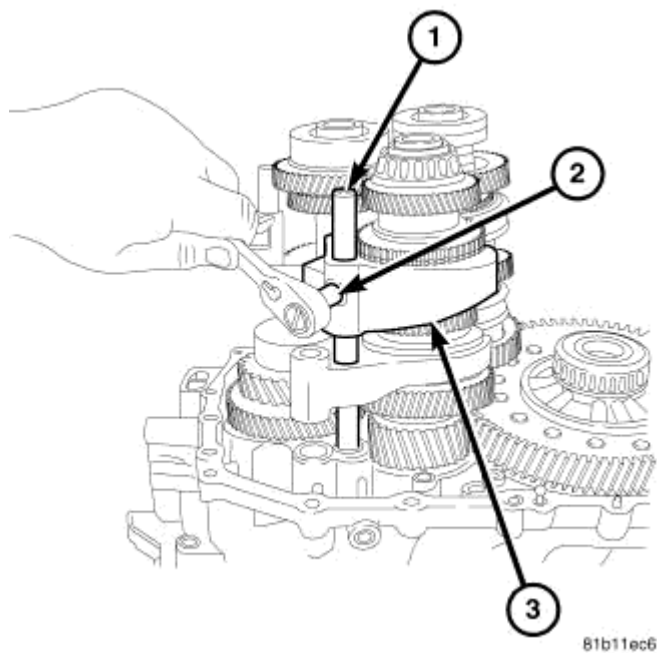


Fig. 40: Fifth & Sixth Gear Shift Fork & Shift Rail Bolt
Courtesy of CHRYSLER LLC

40. Remove the bolt (2) holding the fifth and sixth gear shift fork (3) to the fifth and sixth gear shift rail (1).

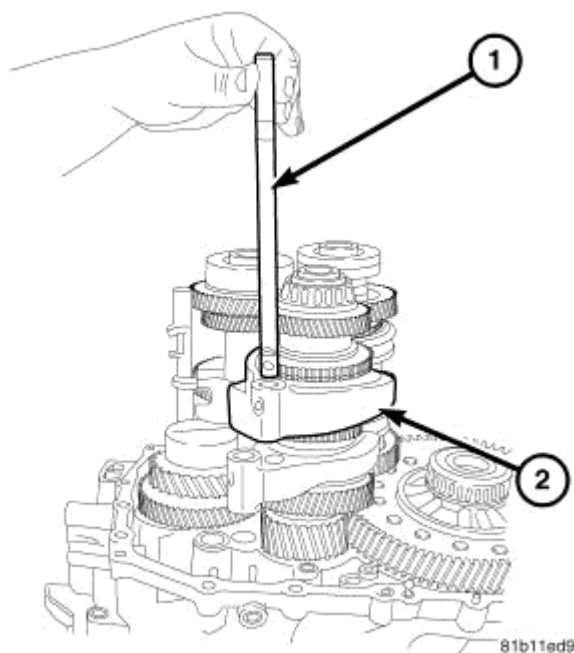


Fig. 41: Fifth & Sixth Gear Shift Rail
Courtesy of CHRYSLER LLC

41. Remove the fifth and sixth gear shift rail (1) from case and shift fork (2).

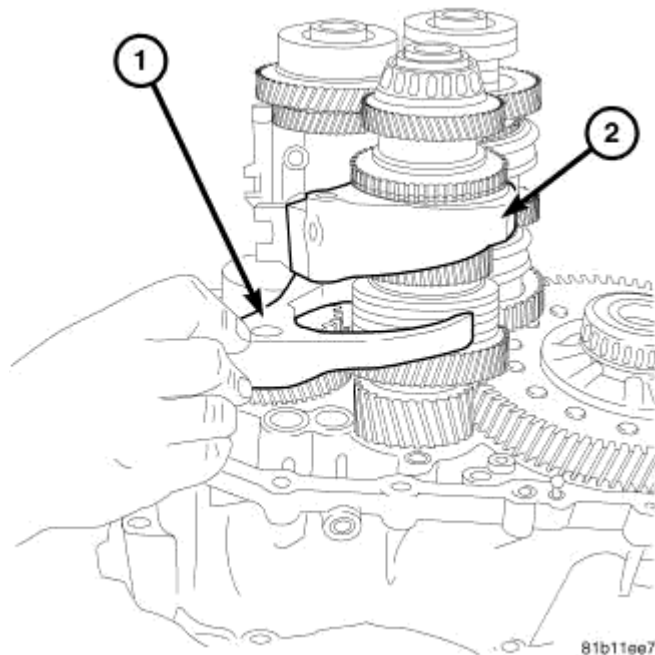
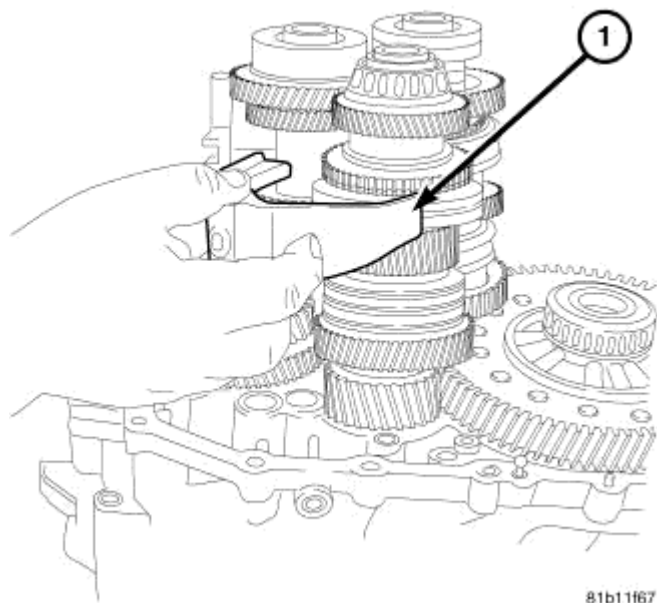


Fig. 42: Reverse Gear Shift Fork
Courtesy of CHRYSLER LLC

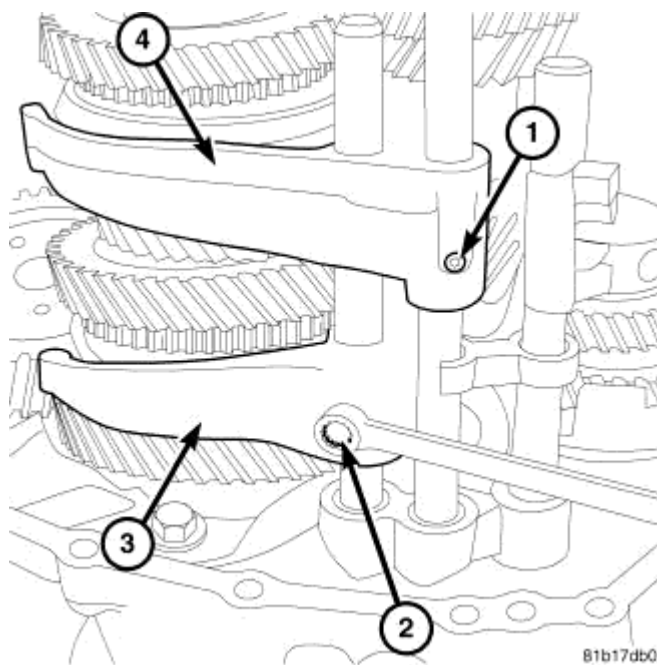
42. Remove the reverse gear shift fork (1).



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Fig. 43: Fifth & Sixth Gear Shift Fork
Courtesy of CHRYSLER LLC

43. Remove the fifth and sixth gear shift fork (2).



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Fig. 44: First & Second Gear Shift Fork To Rail Bolt
Courtesy of CHRYSLER LLC

44. Remove the bolt (2) holding the first and second gear shift fork (3) to the rail.

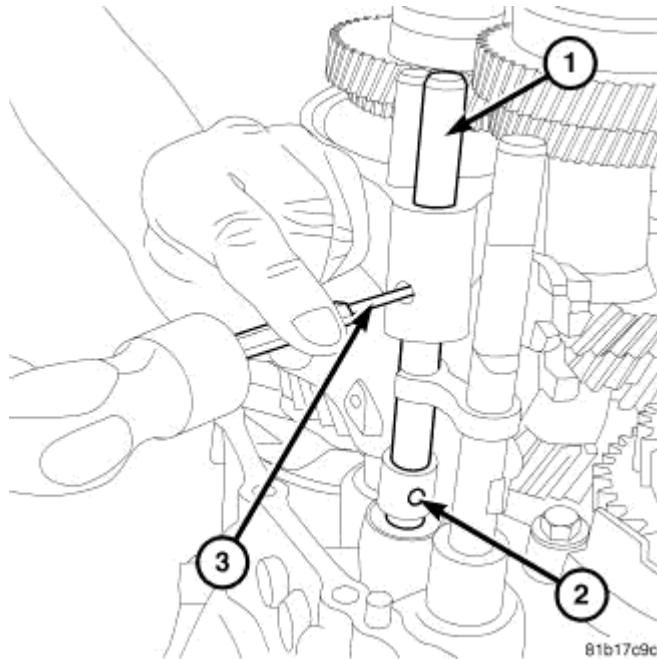


Fig. 45: Roll Pin At Third & Fourth Gear Shift Fork To Rail
Courtesy of CHRYSLER LLC

45. Using a hammer and a punch (3) remove the roll pin at the third and fourth gear shift fork to rail (1).

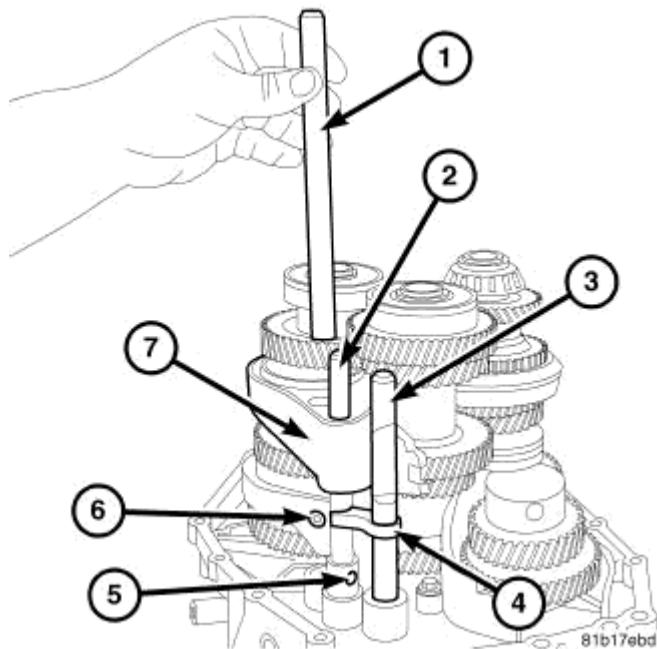


Fig. 46: First & Second Gear Shift Rail
Courtesy of CHRYSLER LLC

46. Remove the first and second gear shift rail (1).

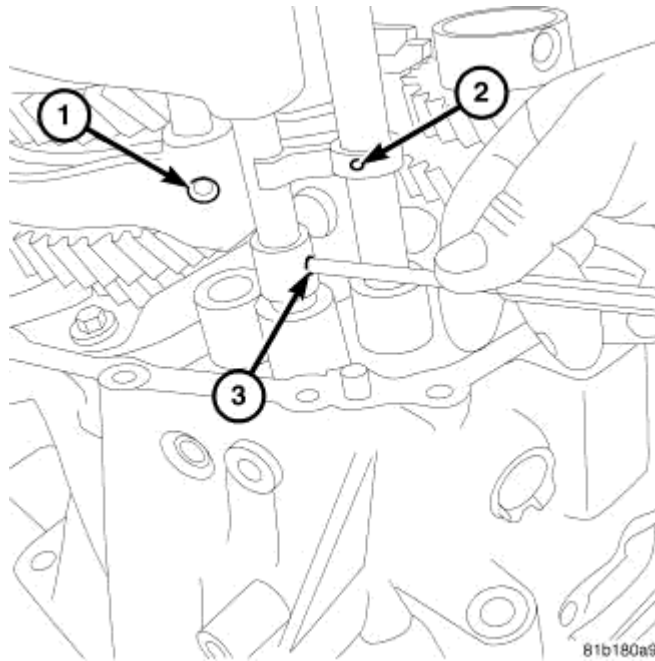


Fig. 47: Roll Pin At Third & Fourth Gear Shift Rail
Courtesy of CHRYSLER LLC

47. Using a hammer and a punch (3) remove the roll pin at the third and fourth gear shift rail.

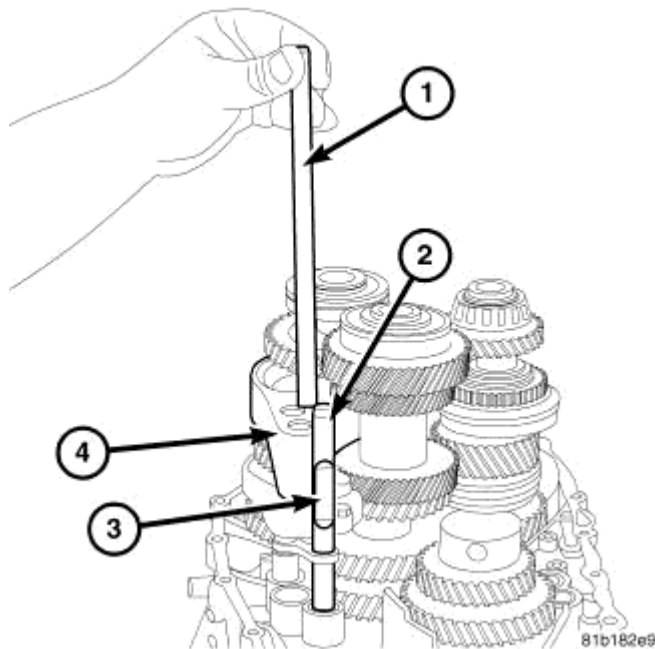


Fig. 48: Third & Fourth Gear Shift Rail
Courtesy of CHRYSLER LLC

48. Remove the third and fourth gear shift rail (1) from case and shift fork (4).

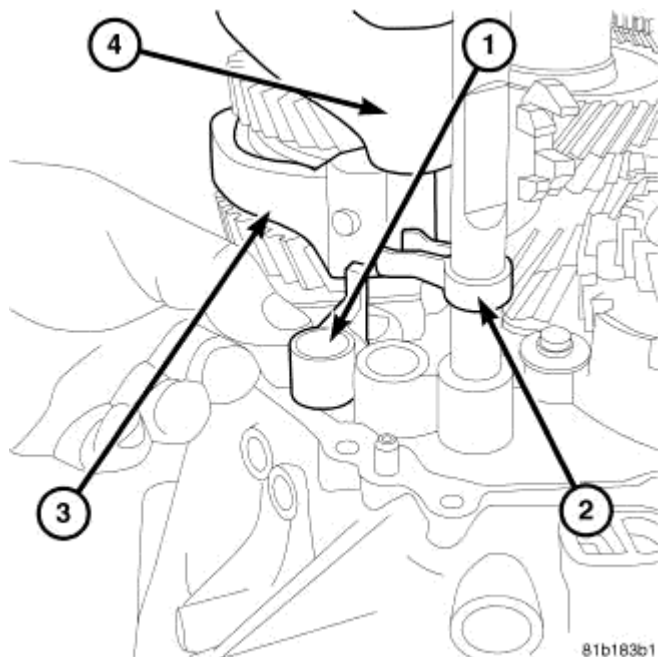


Fig. 49: Third & Fourth Gear Shift Bracket
Courtesy of CHRYSLER LLC

49. Remove the third and fourth gear shift bracket (1).

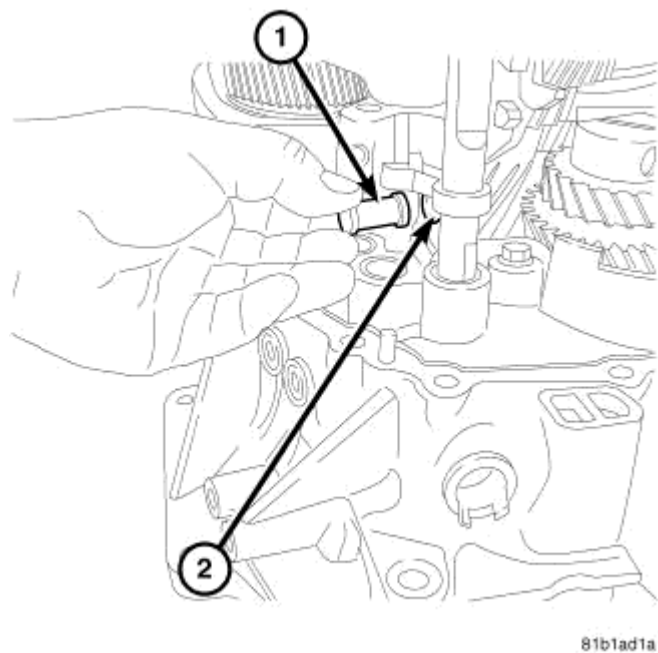


Fig. 50: Shift Rail Pin
Courtesy of CHRYSLER LLC

50. Remove the E-clip and shift rail bracket pivot pin (1).

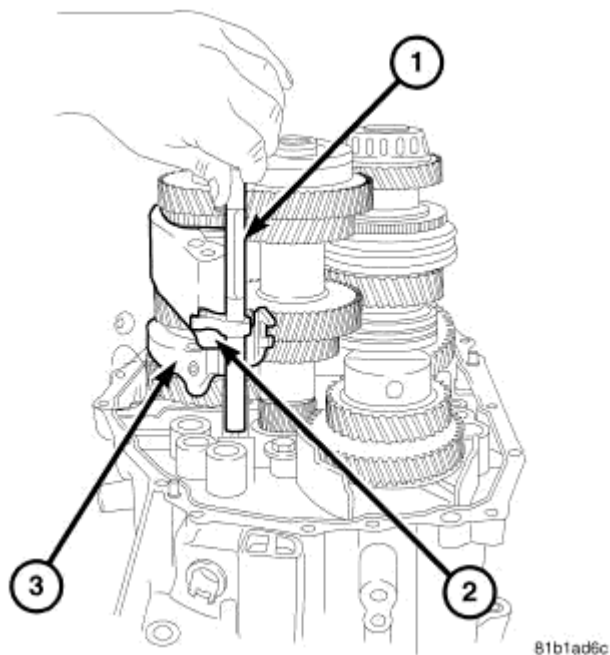


Fig. 51: Pivot Shaft

Courtesy of CHRYSLER LLC

51. Remove the pivot shaft (1) from case.

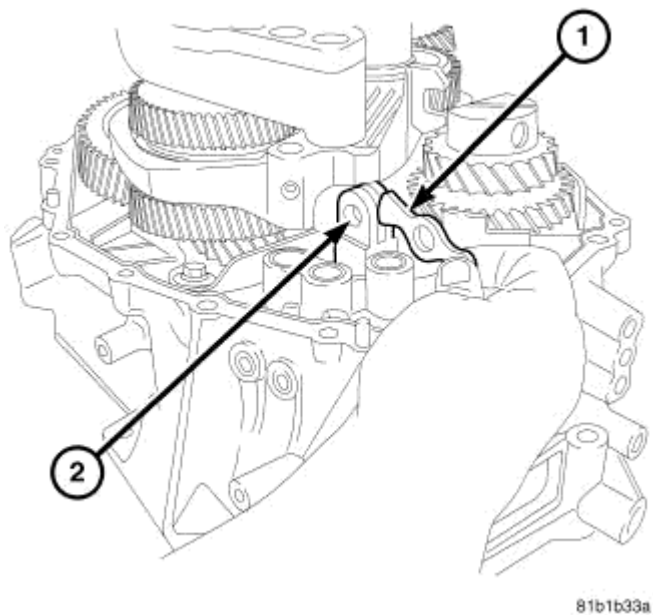


Fig. 52: Shift Rail Pivot Bracket

Courtesy of CHRYSLER LLC

52. Remove the shift rail pivot bracket (1) from the stand (2).

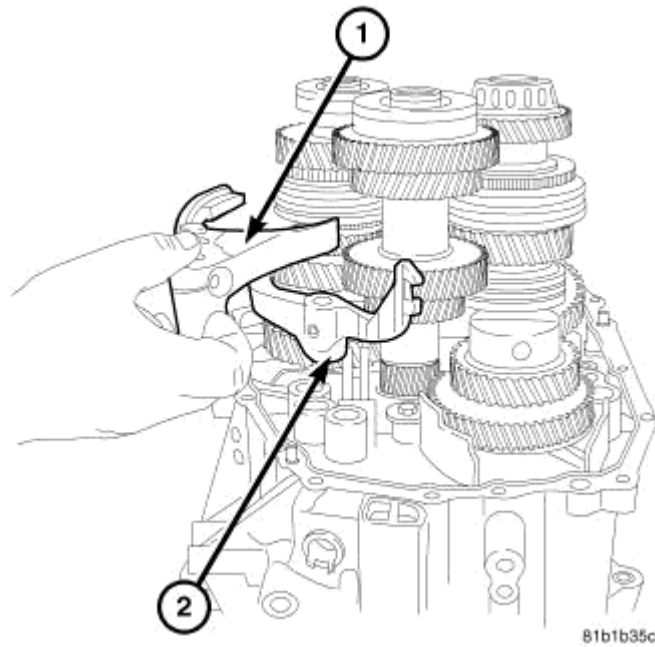


Fig. 53: Third & Fourth Gear Shift Fork & Synchronizer
Courtesy of CHRYSLER LLC

53. Remove the third and fourth gear shift fork (1) from synchronizer.

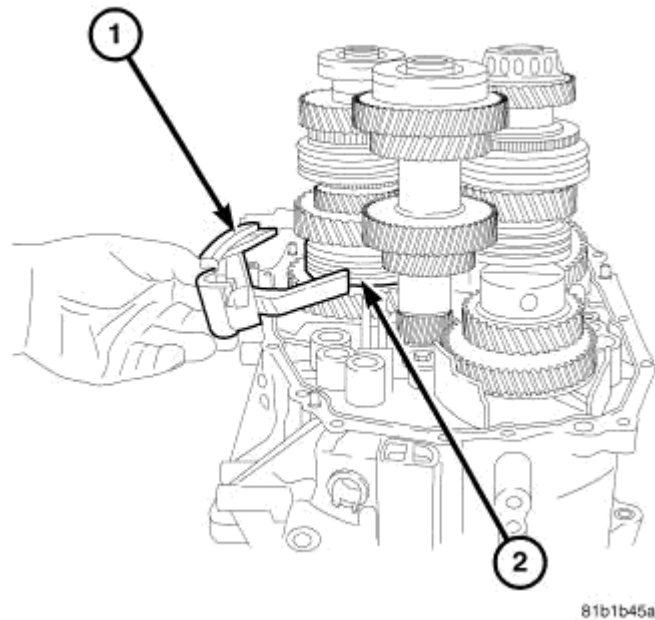
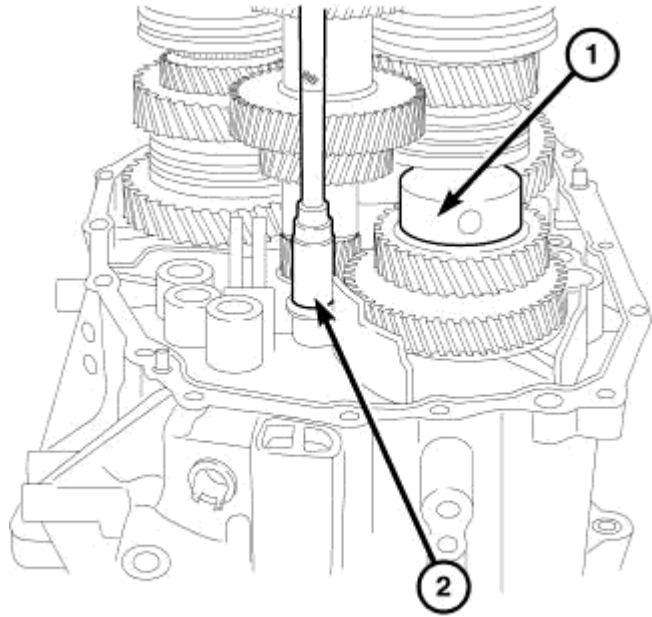


Fig. 54: First & Second Gear Shift Fork & Synchronizer
Courtesy of CHRYSLER LLC

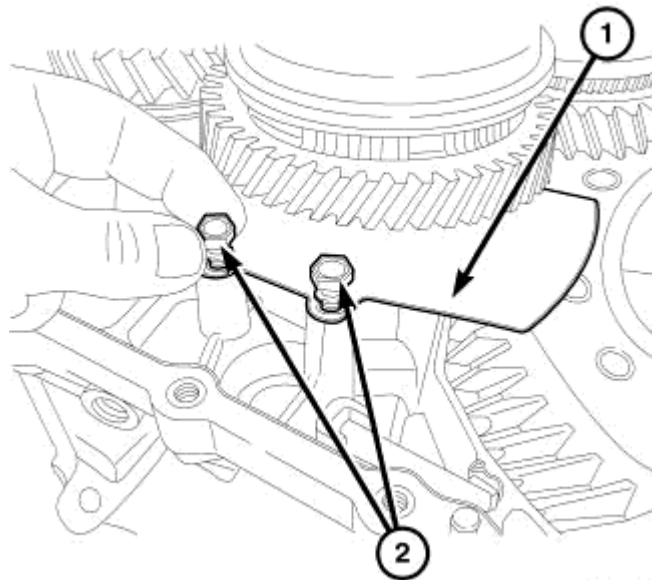
54. Remove the first and second gear shift fork (1) from synchronizer (2).



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Fig. 55: Bolt At Reverse Idler Gear
Courtesy of CHRYSLER LLC

55. Remove the reverse idler gear (1) hold down bolt (2).



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Fig. 56: Oil Slinger
Courtesy of CHRYSLER LLC

56. Remove the bolts (2) at the oil slinger (1) and remove the oil slinger.

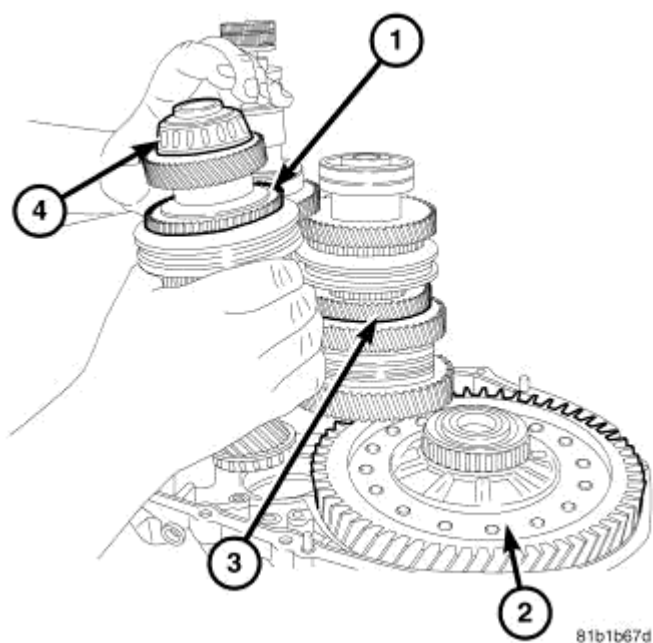


Fig. 57: Output Shaft #2
Courtesy of CHRYSLER LLC

57. Remove the output shaft #2 (1) from case.

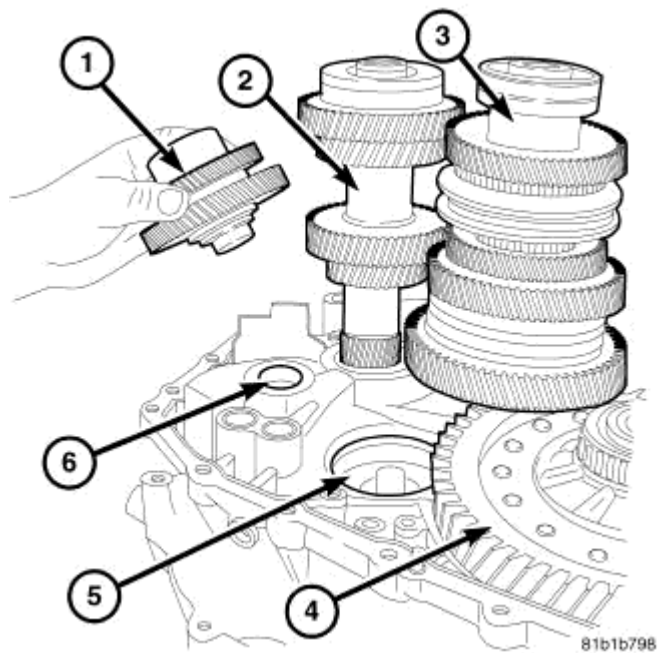


Fig. 58: Reverse Idler Gear
Courtesy of CHRYSLER LLC

58. Remove the reverse idler gear (1), shaft, bearing and thrust washer from the case.

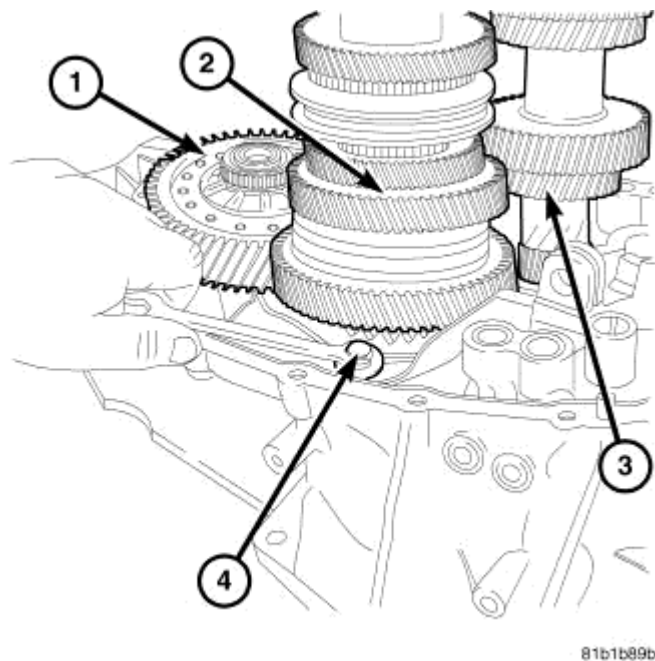


Fig. 59: Bolt At Output Shaft
Courtesy of CHRYSLER LLC

59. Remove the output shaft (2) hold down bolt (4) from the case.

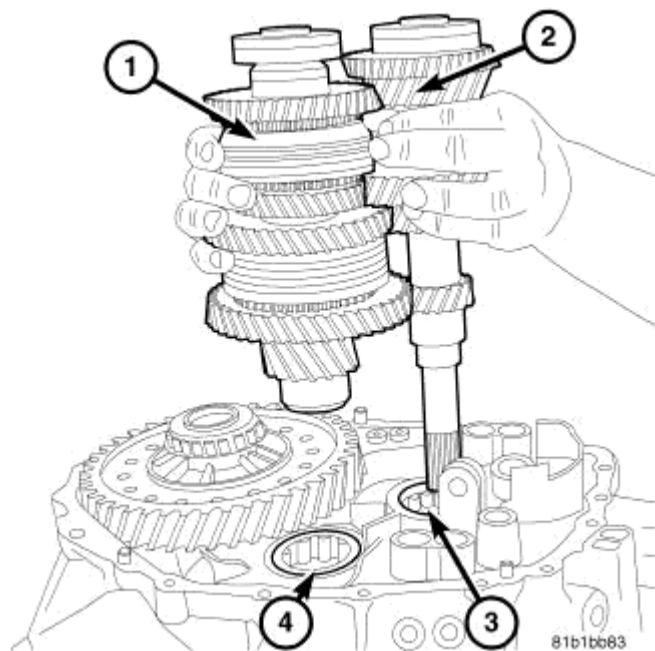


Fig. 60: Output & Input Shafts
Courtesy of CHRYSLER LLC

60. Remove the output (1) and input (2) from case together.

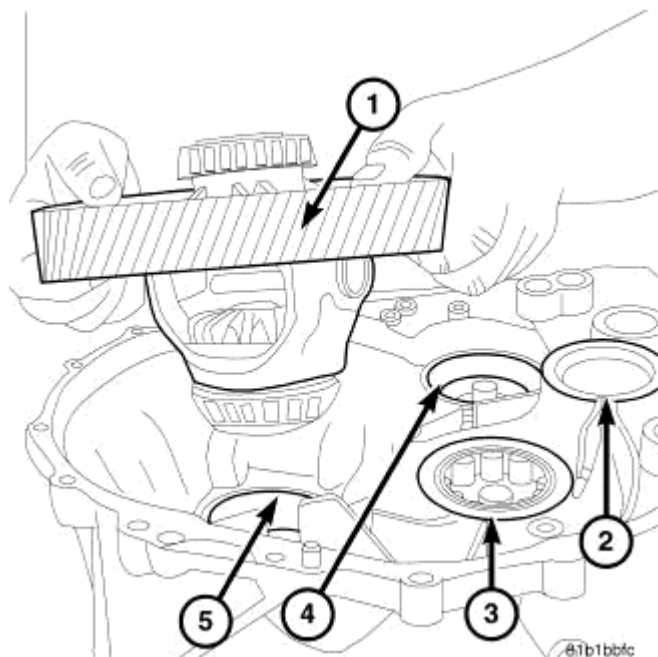


Fig. 61: Differential
Courtesy of CHRYSLER LLC

61. Remove the differential (1) from the case (5).

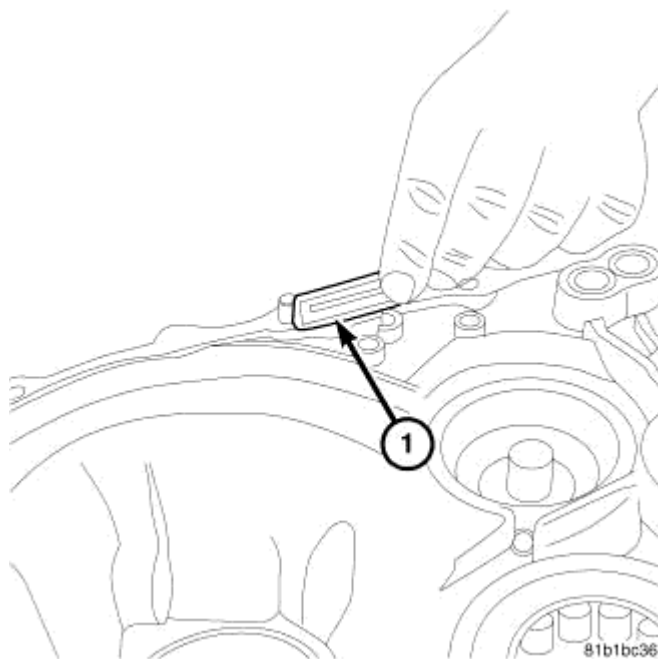


Fig. 62: Magnet
Courtesy of CHRYSLER LLC

62. Remove the magnet (1) from the case.

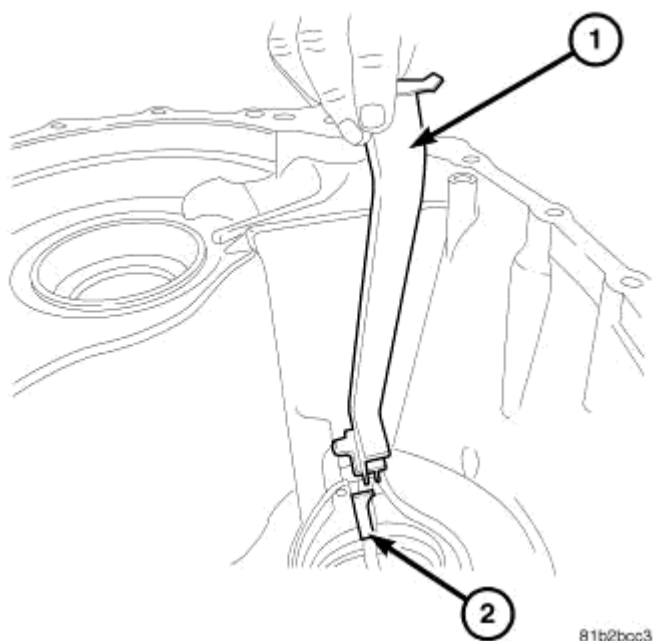


Fig. 63: Oil Feed Trough
Courtesy of CHRYSLER LLC

63. Remove the oil feed trough (1) from the case.

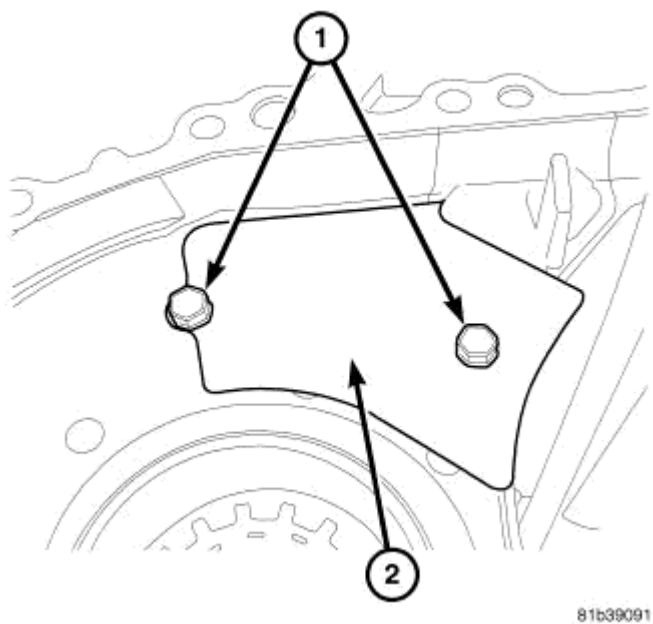


Fig. 64: Oil Baffle
Courtesy of CHRYSLER LLC

64. Remove the bolts (1) holding the oil baffle.
65. Remove the oil baffle (2).

CLEANING

CLEANING

Clean the gears, bearings, shafts, synchronizers, thrust washers, oil feeder, shift mechanism, gear case, and bellhousing. Do not use solvent to clean sealed bearings. Dry all parts except the bearings with compressed air. Allow the bearings to either air dry or wipe them dry with clean shop towels.

INSPECTION

INSPECTION

Inspect the gears, bearings and shafts. Replace the bearings and cups if the rollers are worn, chipped, cracked, flat spotted, brinnelled, or if the bearing cage is damaged or distorted. Replace the gears if the teeth are chipped, cracked or worn thin. Inspect the synchronizers. Replace the sleeve if worn or damaged in any way. Replace the stop rings if the friction material is burned, flaking off, or worn. Check the condition of the synchro keys and springs. Replace these parts if worn, cracked, or distorted.

ASSEMBLY

ASSEMBLY

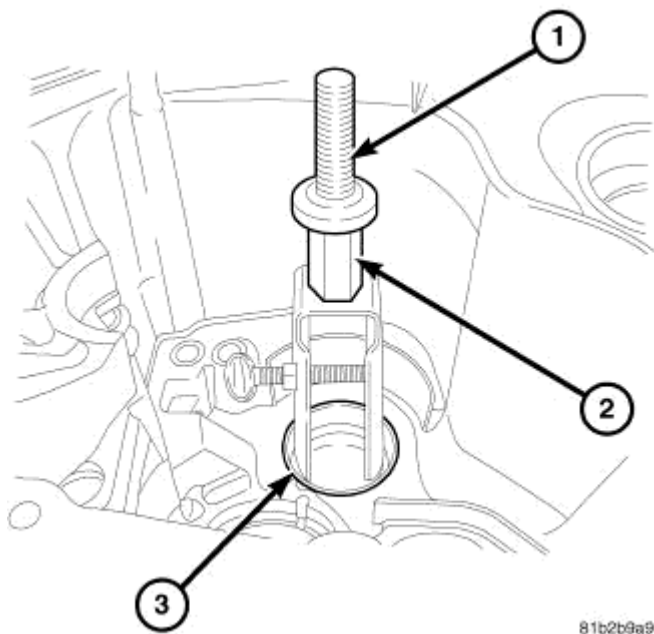


Fig. 65: Remove Input Shaft Bearing Cup

Courtesy of CHRYSLER LLC

NOTE: Always use ATF on all moving parts during this assembly procedure.

1. Use Bearing Cup Remover 9664 (2) and appropriate Slide Hammer (1) to remove the output shaft #2 tapered bearing cup (3) from the transmission rear case.

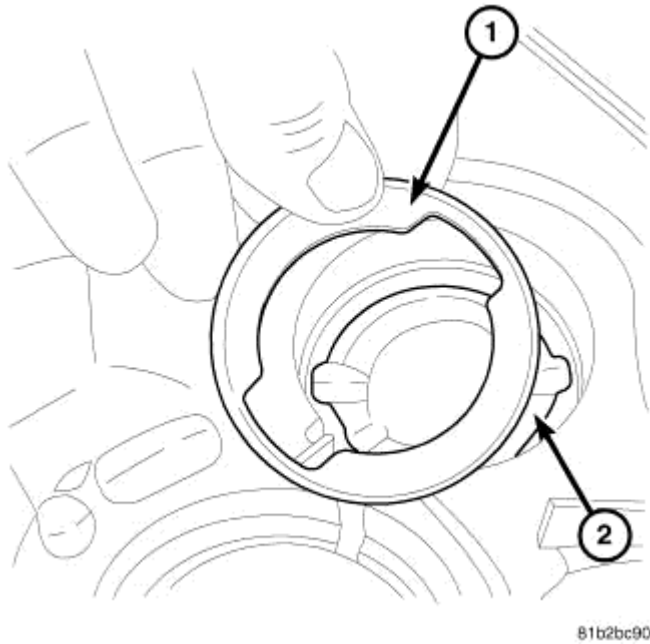


Fig. 66: Compounder Shaft Bearing Cup Shim
Courtesy of CHRYSLER LLC

2. Remove the output shaft #2 bearing cup shim (1) from the transmission rear case (2).

NOTE: A turning torque will determine the correct shim to be installed. This can be found at the end of the assembly procedure.

3. Install the correct output shaft #2 bearing cup shim into the transmission case.

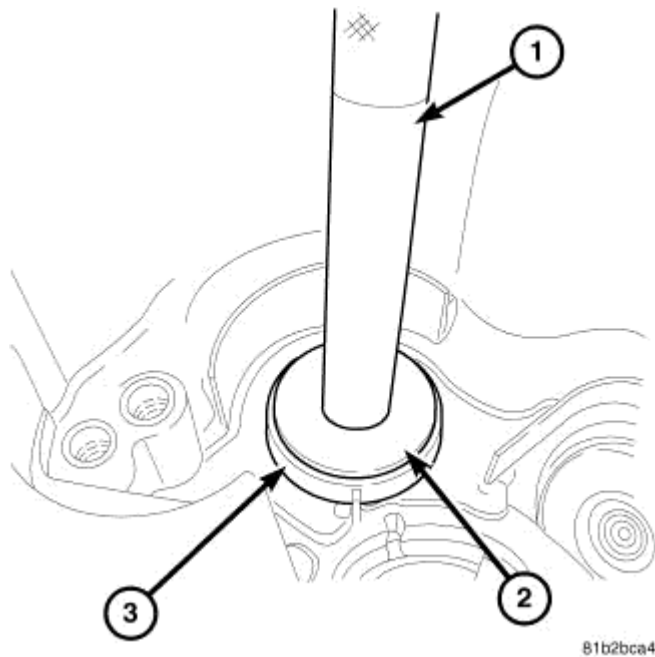


Fig. 67: Installing Output Shaft #2 Bearing Cup
Courtesy of CHRYSLER LLC

4. Install the output shaft #2 bearing cup (3) into the transmission rear case using Handle C-4171 and Seal/Cup Installer L-4520.

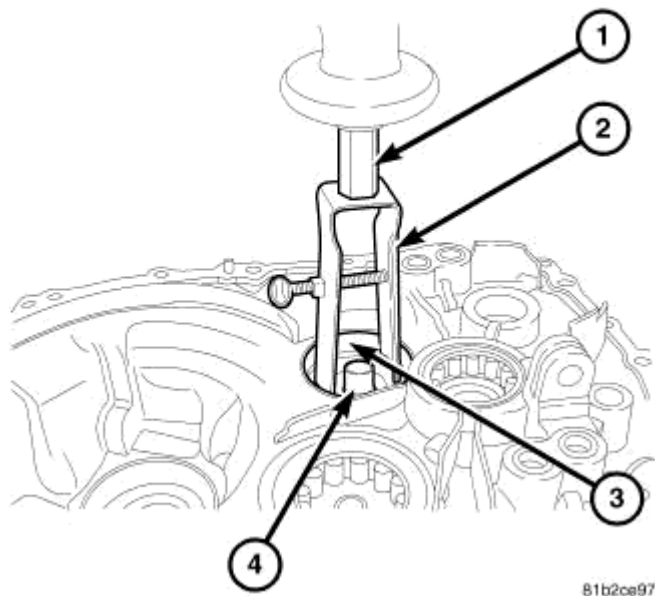


Fig. 68: Bearing Cup Remover & Output Shaft #2 Bearing Cup
Courtesy of CHRYSLER LLC

5. Remove the output shaft #2 bearing cup (3) using Bearing Cup Remover 9664 (2) and appropriate slide

hammer (1).

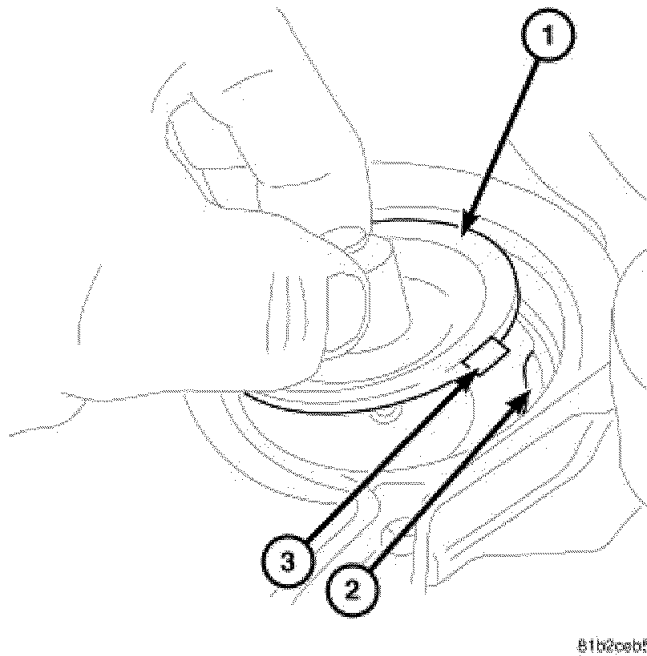


Fig. 69: Input Shaft Oil Slinger
Courtesy of CHRYSLER LLC

6. Remove the oil slinger (1) under the output shaft # 2 cup on the bellhousing side.
7. Install the oil slinger (1) in the case (2) for the compounder shaft bearing cup on the bellhousing side, insure the tab (3) is lined up with cutout in case (2).

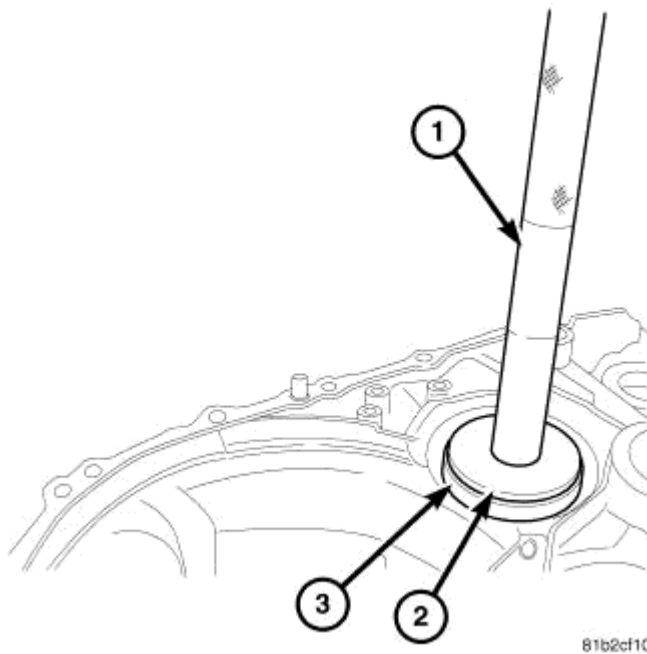


Fig. 70: Compounder Shaft Bearing Cup

Courtesy of CHRYSLER LLC

8. Use Handle C-4171 and Bearing Cup Installer D-144, inverted to install the compounder shaft cup on the bellhousing side case.

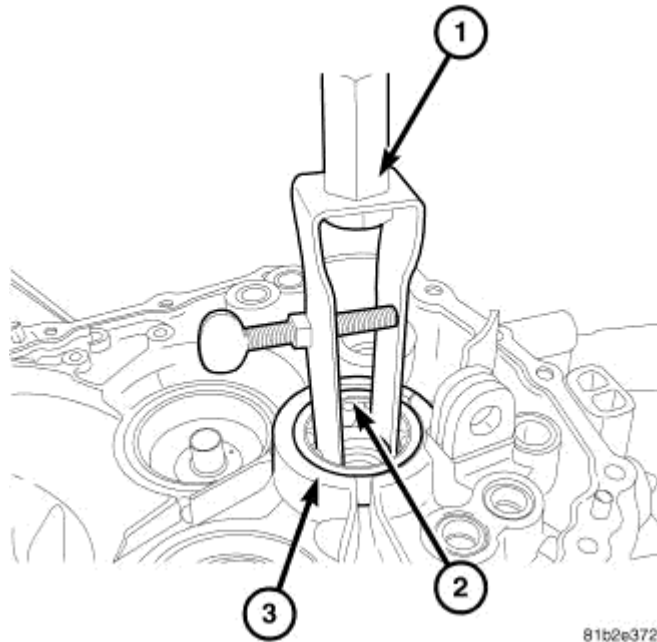


Fig. 71: Input Shaft Case Bearing & Bearing Cup Remover
Courtesy of CHRYSLER LLC

9. Remove the input shaft case bearing (3) (bellhousing side) using Bearing Cup Remover 7794-A (1) and appropriate slide hammer.

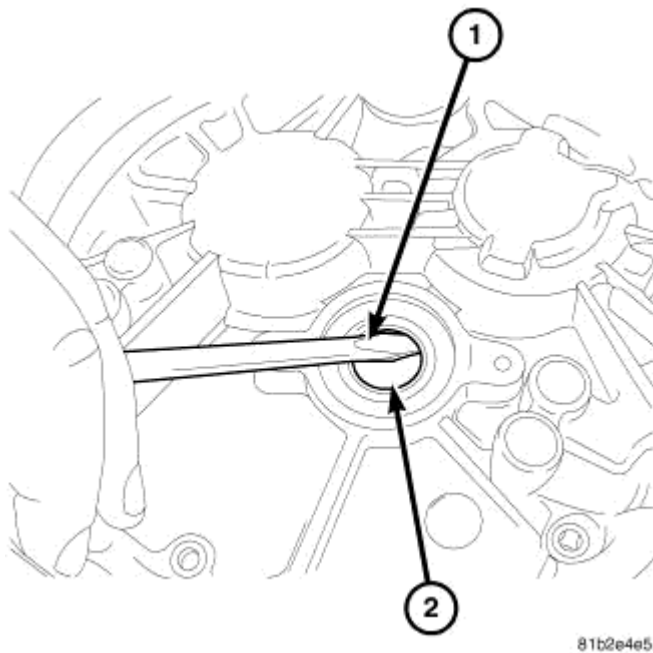


Fig. 72: Remove Input Shaft Seal
Courtesy of CHRYSLER LLC

10. Using a screwdriver (1) remove the input shaft seal (2).

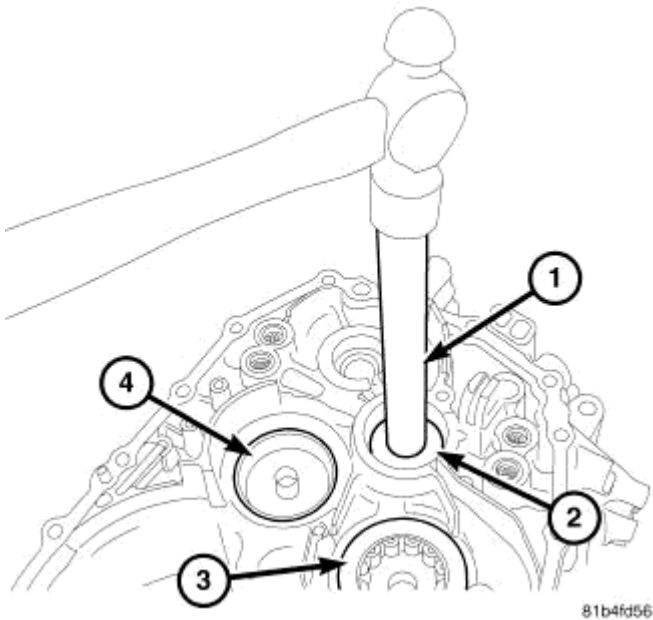


Fig. 73: Install Input Shaft Oil Seal
Courtesy of CHRYSLER LLC

11. Using handle C-4171 and Installer 9935 (2) install the **new** input shaft oil seal.

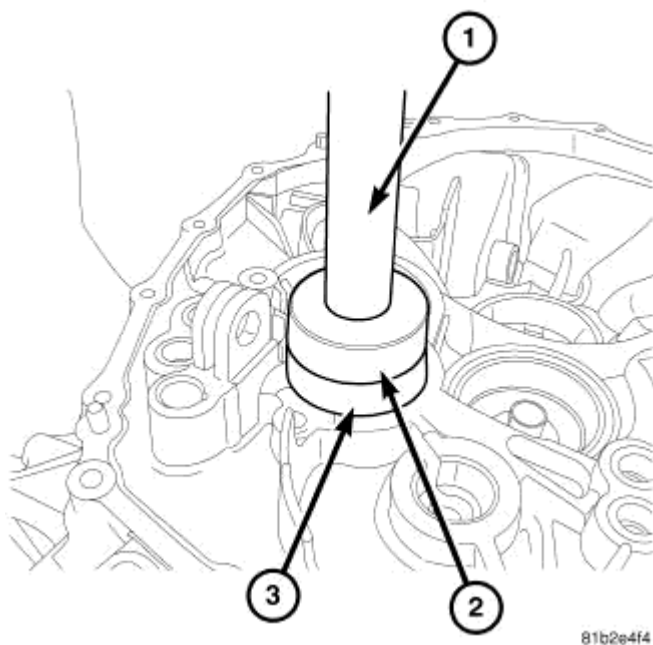


Fig. 74: Install Input Shaft Case Bearing
Courtesy of CHRYSLER LLC

12. Install the input shaft case bearing (2) using Handle C-4171 (1) and Bearing Installer C-4657 (2).

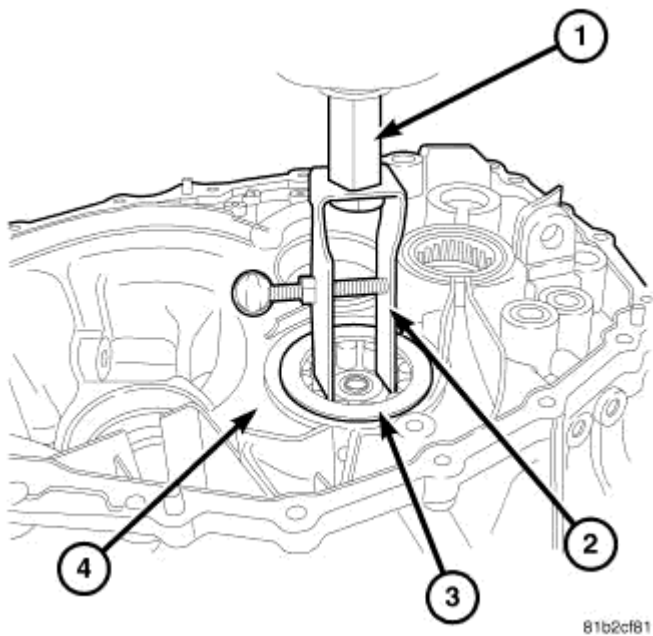
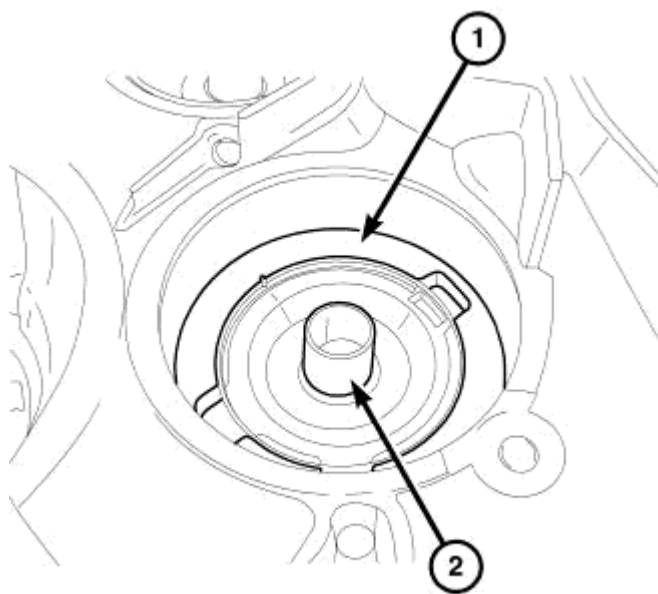


Fig. 75: Remove Output Shaft Bearing From Case
Courtesy of CHRYSLER LLC

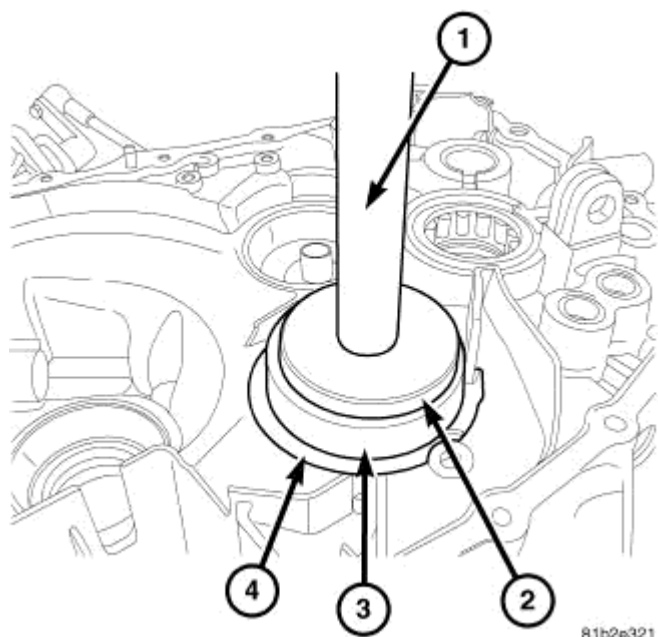
13. Using Bearing Cup Remover 7794-A (2) and appropriate slide hammer (1) remove the output shaft #1 bearing (3) from the case (1).



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Fig. 76: Output Shaft Oil Slinger
Courtesy of CHRYSLER LLC

14. Remove the output shaft oil slinger (2) from case.
15. Install the output shaft oil slinger (2) into the case , insure the tab (3) is lined up with cutout in case (2).



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Fig. 77: Install Output Bearing To Case
Courtesy of CHRYSLER LLC

16. Using Handle C-4171 (1) and Bearing Installer C- 4308 inverted (2) install output bearing (3) to case (4).

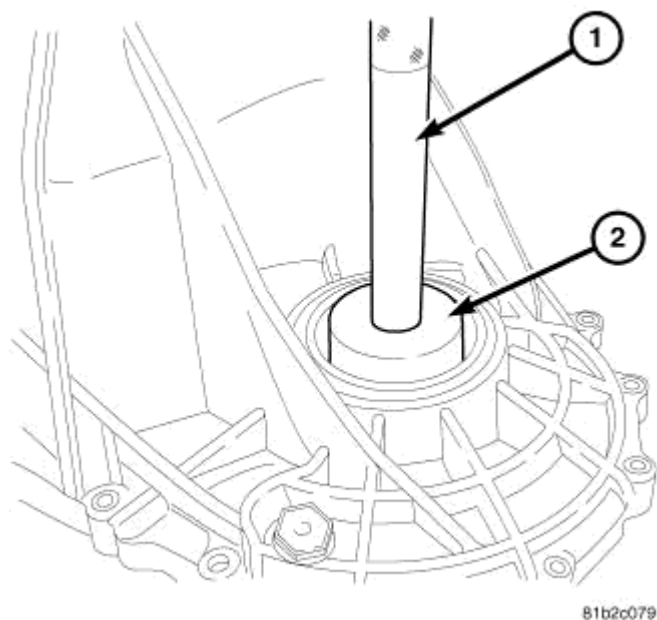


Fig. 78: Handle & Bearing Cup Installer
Courtesy of CHRYSLER LLC

17. Remove the case side differential bearing cup using Handle C-4171 (1) and Bearing Cup Installer 9589 (2), inverted.

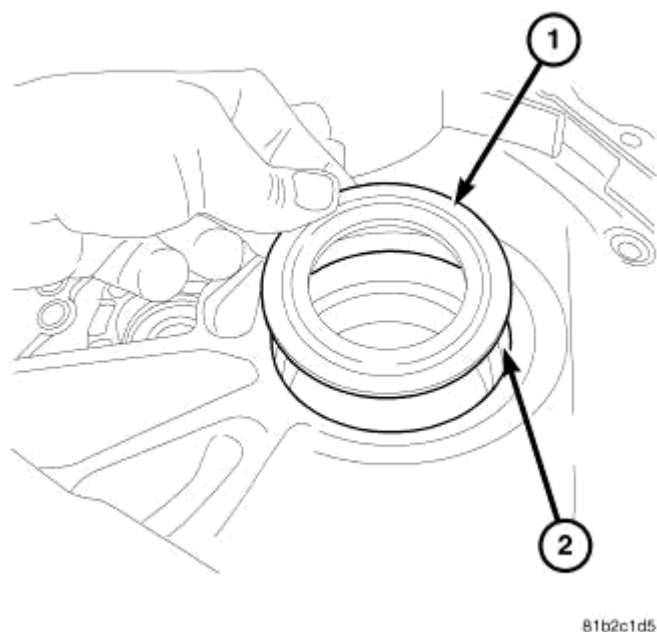


Fig. 79: Differential Bearing Cup Shim
Courtesy of CHRYSLER LLC

18. Remove the case side differential bearing cup shim (1).

NOTE: The case side differential bearing cup shim (1) will be left out to find end play then installed to check turning torque later in the assembly procedure. **DIFFERENTIAL BEARING PRELOAD ADJUSTMENT**

19. Install the correct case side differential bearing cup shim (1).

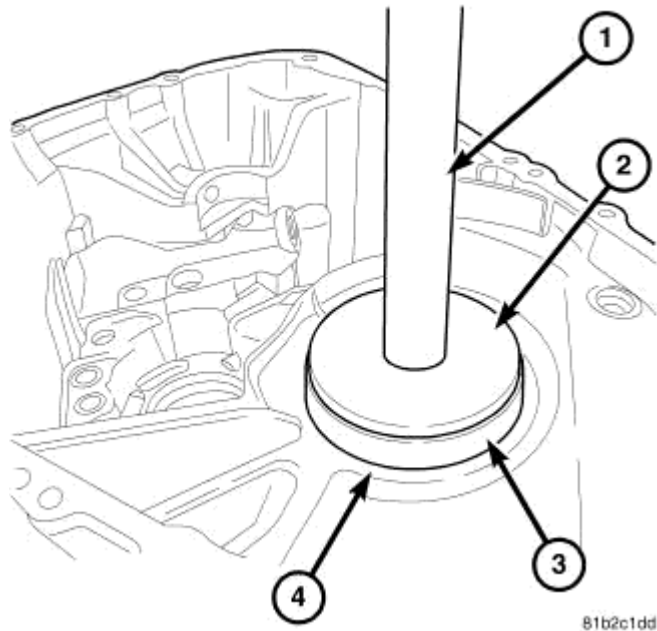


Fig. 80: Install Differential Bearing Cup
Courtesy of CHRYSLER LLC

20. Install the case side differential bearing cup (3) using Handle C-4171 (1) and Bearing Cup Installer D-111 (2).

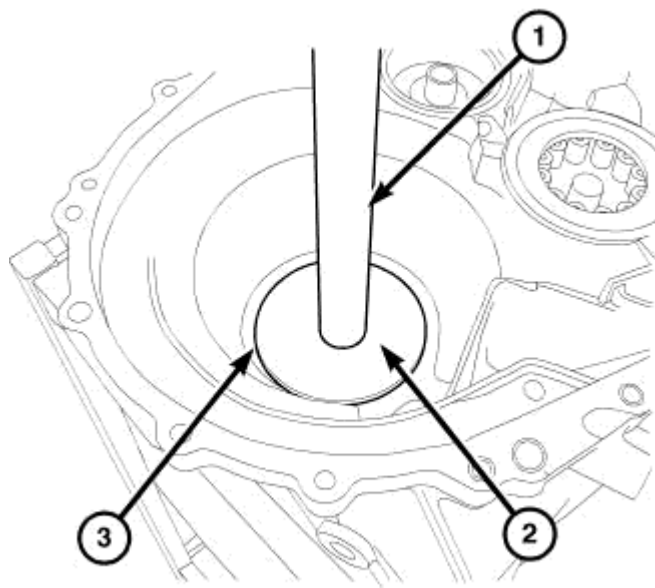


Fig. 81: Bell Housing Side Differential Bearing Cup
Courtesy of CHRYSLER LLC

21. Install the bellhousing side differential bearing cup (3) using Handle C-4171 (1) and Bearing Cup Installer D-111 (2) on FWD transmissions and Bearing Cup Installer 8151 (2) on AWD transmissions.

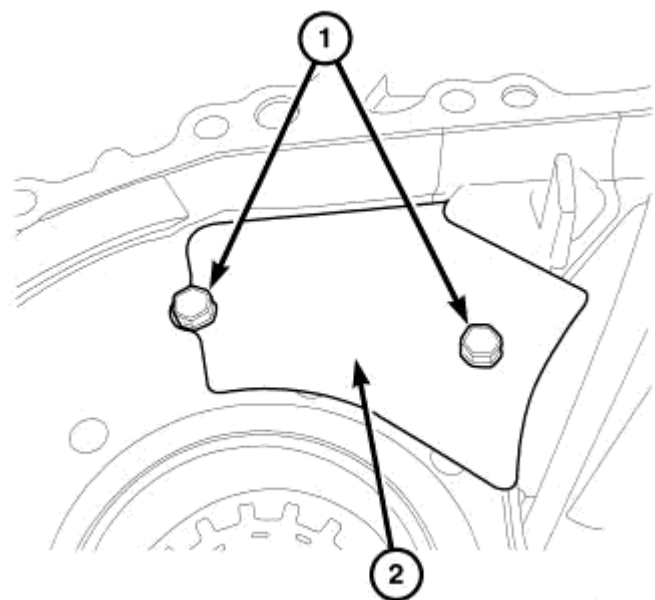


Fig. 82: Oil Baffle
Courtesy of CHRYSLER LLC

22. Install oil baffle (2) and bolts (1), tighten bolts to 9 N.m (80 in. lbs.).

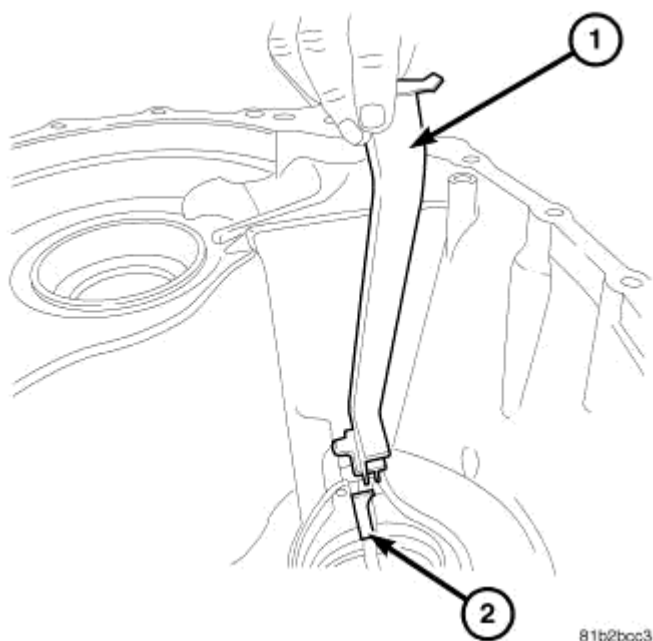


Fig. 83: Oil Feed Trough
Courtesy of CHRYSLER LLC

23. Install the oil feed trough (1) into the case (2).

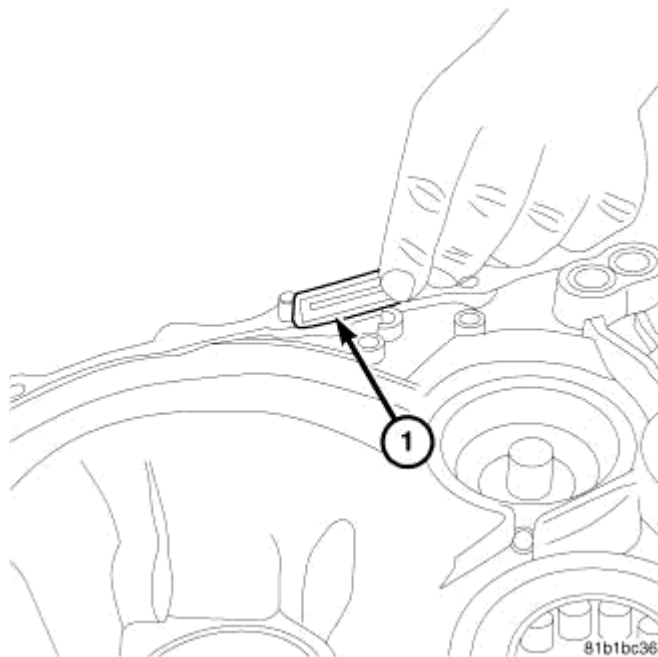


Fig. 84: Magnet
Courtesy of CHRYSLER LLC

24. Install the magnet (1) into the case.

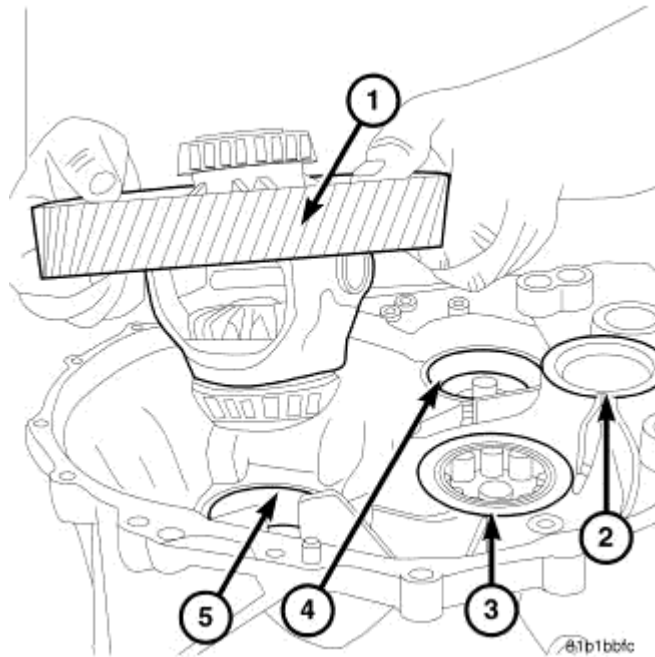


Fig. 85: Differential

Courtesy of CHRYSLER LLC

25. Install the differential (1) into the case (5).
26. Verify differential bearing preload and turning torque. Refer to **DIFFERENTIAL BEARING PRELOAD ADJUSTMENT** procedure 10.

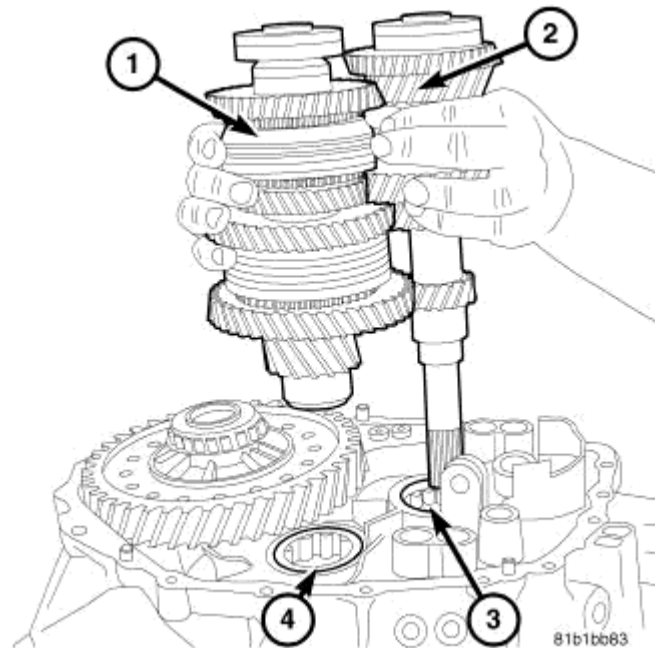


Fig. 86: Output & Input Shafts

Courtesy of CHRYSLER LLC

27. Install the output # 1 (1) and input shaft (2) into case together.

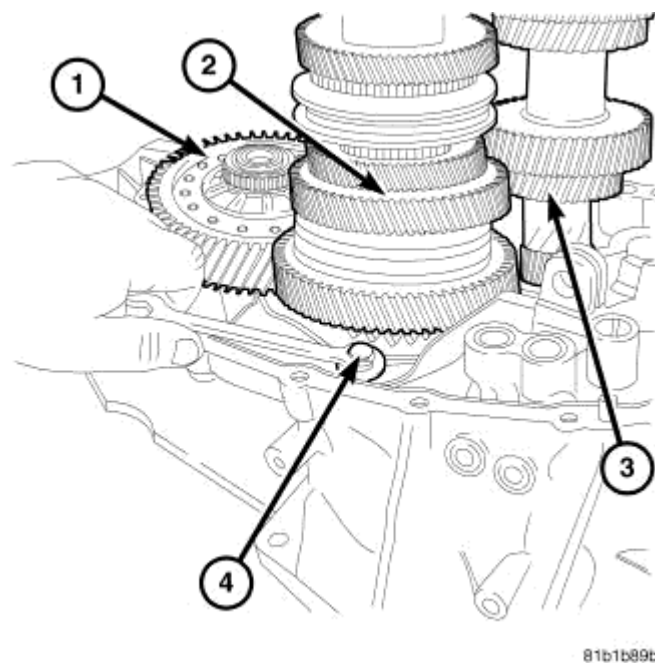


Fig. 87: Bolt At Output Shaft
Courtesy of CHRYSLER LLC

28. Install the output shaft (2) hold down bolt (4) and tighten to 11 N.m (97 in. lbs.).

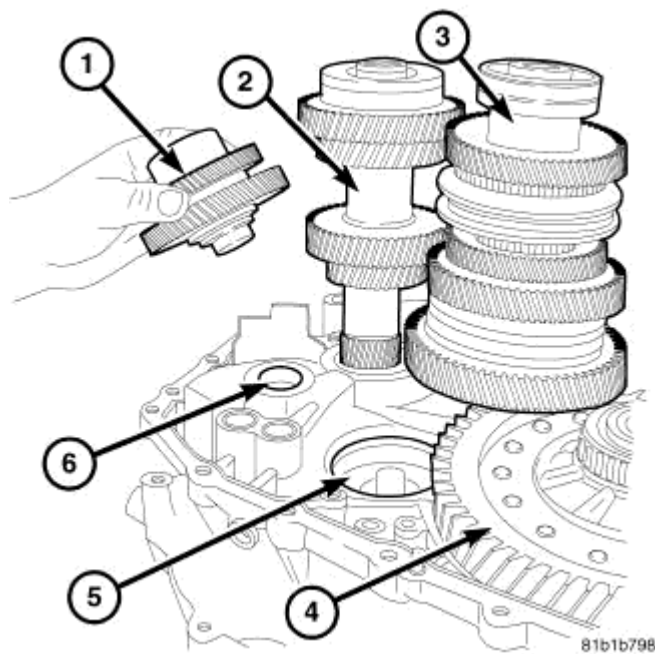


Fig. 88: Reverse Idler Gear
Courtesy of CHRYSLER LLC

29. Install the reverse idler gear assembly (1) into the case (2).

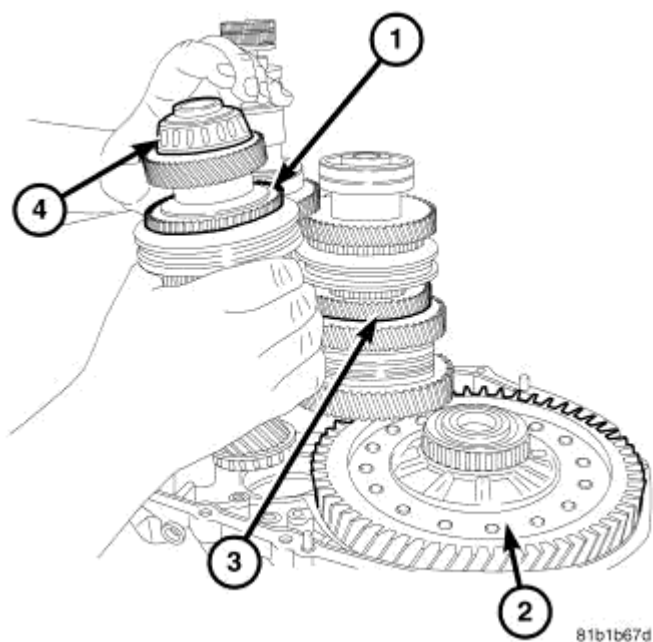


Fig. 89: Output Shaft #2
Courtesy of CHRYSLER LLC

30. Install the output shaft # 2 (4) into case.

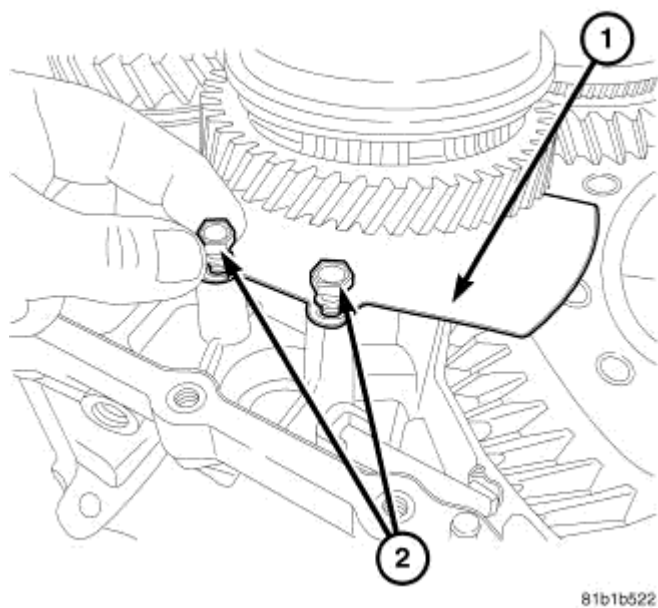
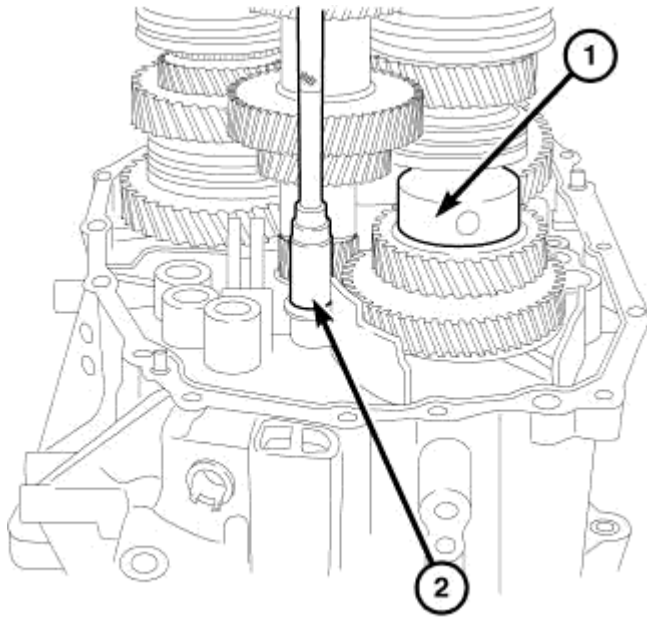


Fig. 90: Oil Slinger
Courtesy of CHRYSLER LLC

31. Install the oil slinger (1) and bolts (2) tighten the bolts to 9 N.m (80 in. lbs.).

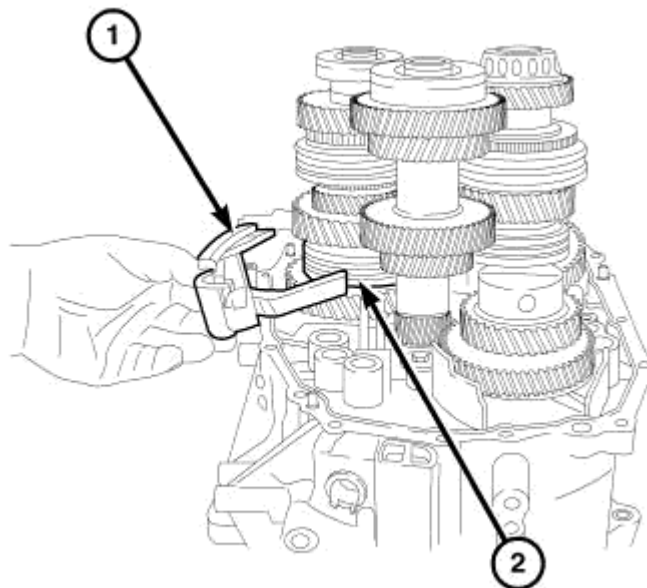


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Fig. 91: Bolt At Reverse Idler Gear
 Courtesy of CHRYSLER LLC

NOTE: Clock the reverse idler (1) with hole as shown in illustration for installation of anti-rotation bolt.

32. Install the reverse idler gear (1) hold down bolt (2) and tighten to 11 N.m (97 in. lbs.).



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Fig. 92: First & Second Gear Shift Fork & Synchronizer
Courtesy of CHRYSLER LLC

33. Install the first and second gear shift fork (1) onto the first and second gear synchronizer (2).

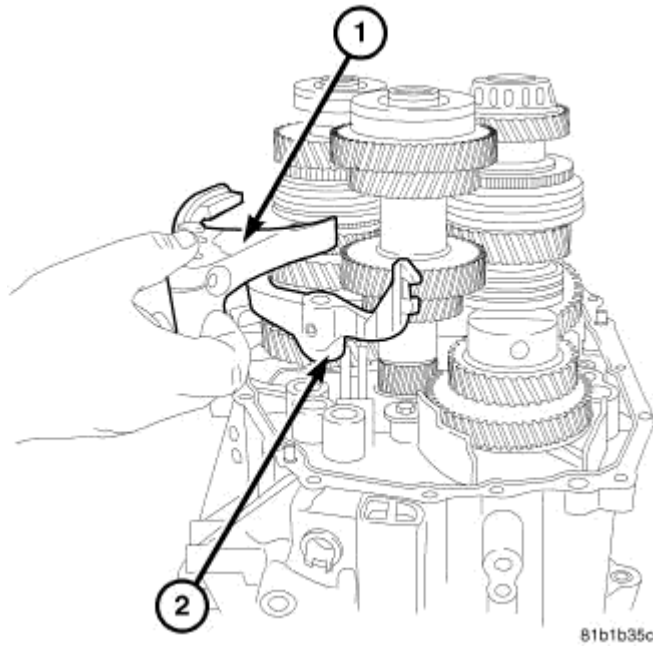


Fig. 93: Third & Fourth Gear Shift Fork & Synchronizer
Courtesy of CHRYSLER LLC

34. Install the third and fourth gear shift fork (1) onto the third and fourth gear synchronizer.

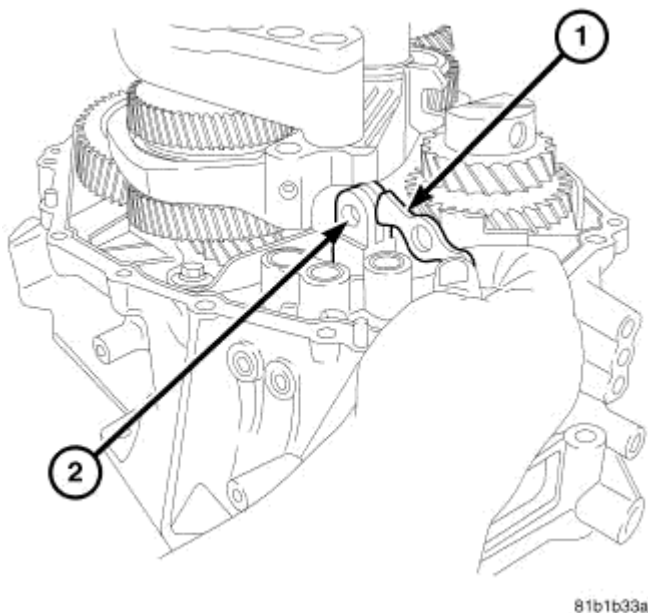


Fig. 94: Shift Rail Pivot Bracket
Courtesy of CHRYSLER LLC

35. Install the shift rail arm (1) onto the stand (2).

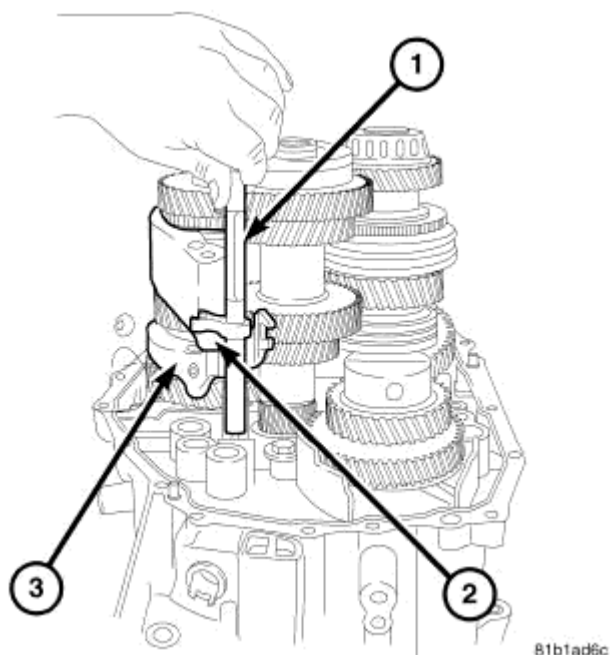


Fig. 95: Pivot Shaft
Courtesy of CHRYSLER LLC

36. Install the pivot shaft (1) into the case.

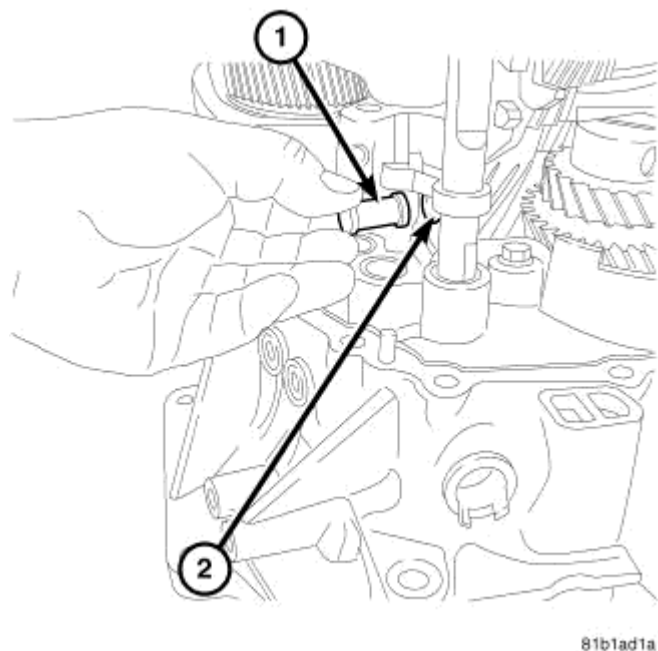
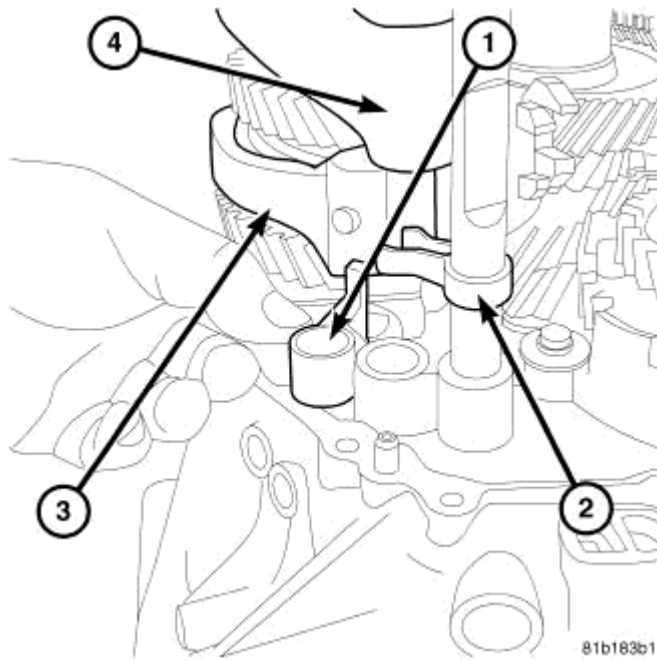


Fig. 96: Shift Rail Pin

Courtesy of CHRYSLER LLC

37. Install the shift rail bracket pivot pin (1) and the **new** pivot pin E-clip (2).

**Fig. 97: Third & Fourth Gear Shift Bracket**

Courtesy of CHRYSLER LLC

38. Install the third and fourth gear shift bracket (1).

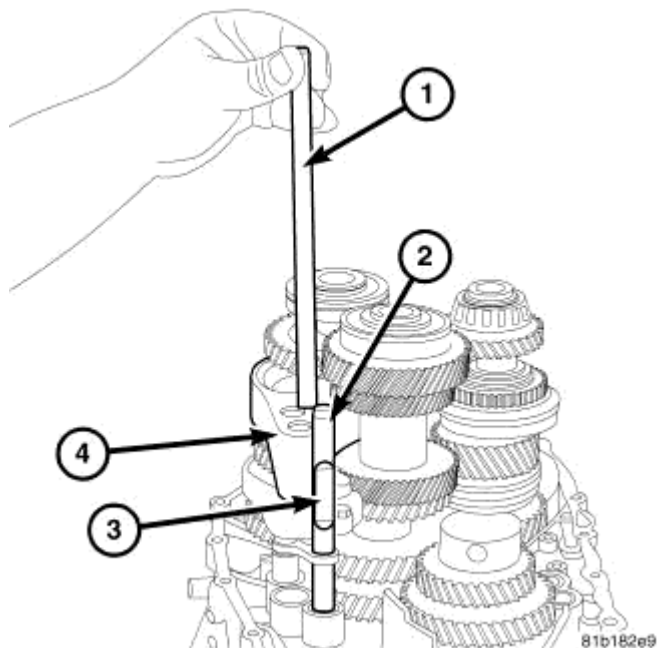


Fig. 98: Third & Fourth Gear Shift Rail
Courtesy of CHRYSLER LLC

39. Install the third and fourth gear shift rail (1) into the case and shift fork (4).

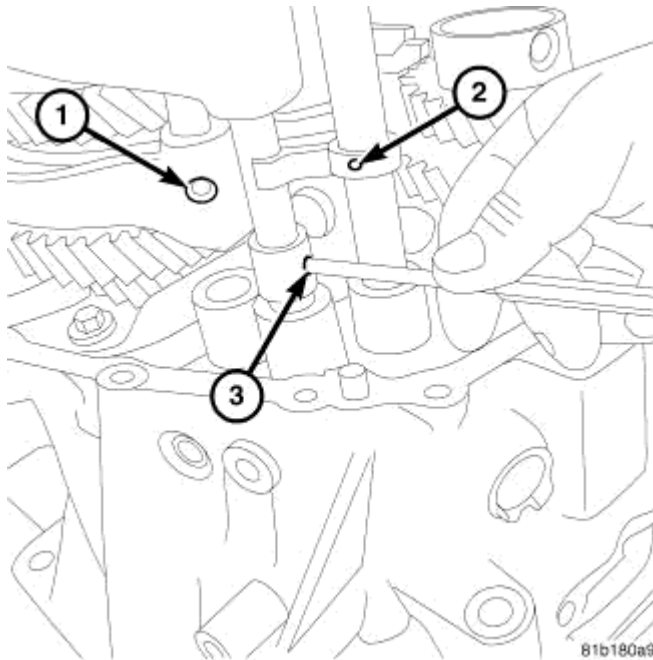


Fig. 99: Roll Pin At Third & Fourth Gear Shift Rail
Courtesy of CHRYSLER LLC

40. Install the **new** roll pin at the third and fourth gear shift rail.

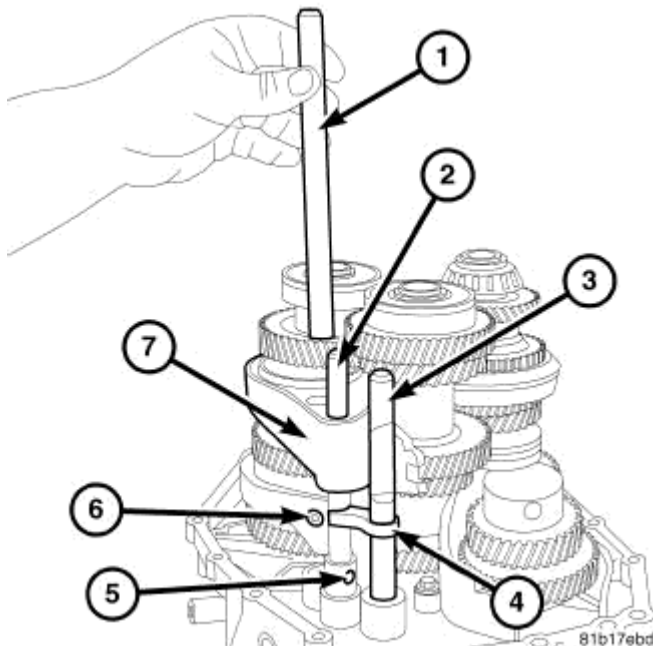


Fig. 100: First & Second Gear Shift Rail
Courtesy of CHRYSLER LLC

41. Install the first and second gear shift rail (1).

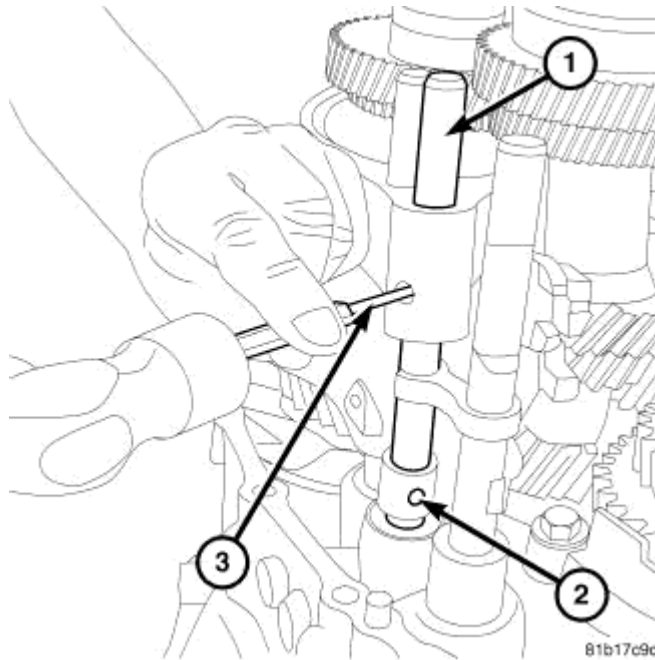


Fig. 101: Roll Pin At Third & Fourth Gear Shift Fork To Rail
Courtesy of CHRYSLER LLC

42. Install the **new** roll pin at the third and fourth gear shift fork to rail (1).

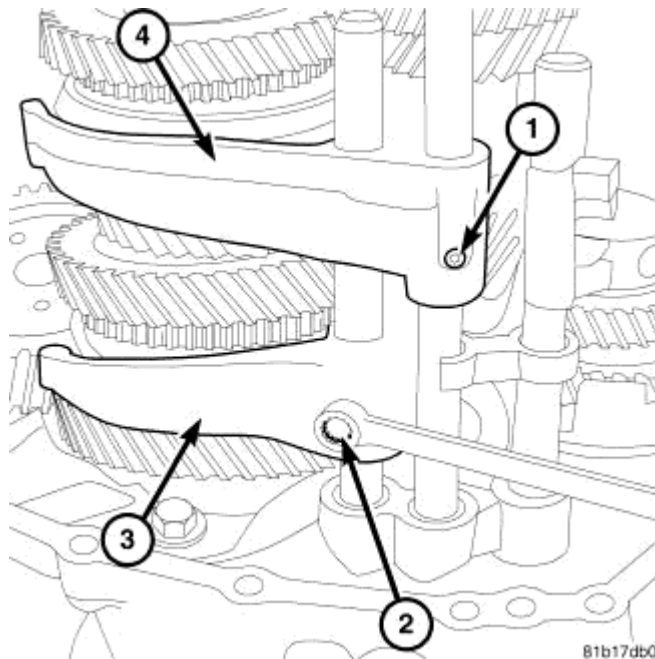


Fig. 102: First & Second Gear Shift Fork To Rail Bolt

Courtesy of CHRYSLER LLC

43. Install the **new** bolt (2) holding the first and second gear shift fork (3) to the rail and tighten to 20 N.m (177 in. lbs.).

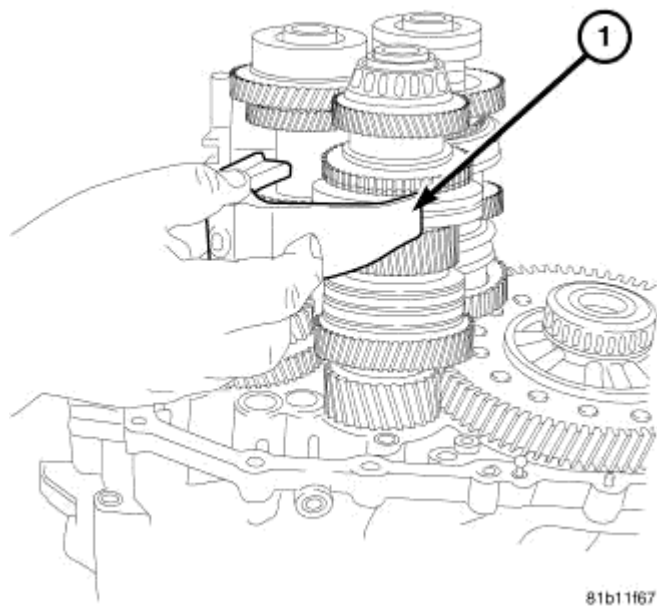


Fig. 103: Fifth & Sixth Gear Shift Fork

Courtesy of CHRYSLER LLC

44. Install the fifth and sixth gear shift fork (2).

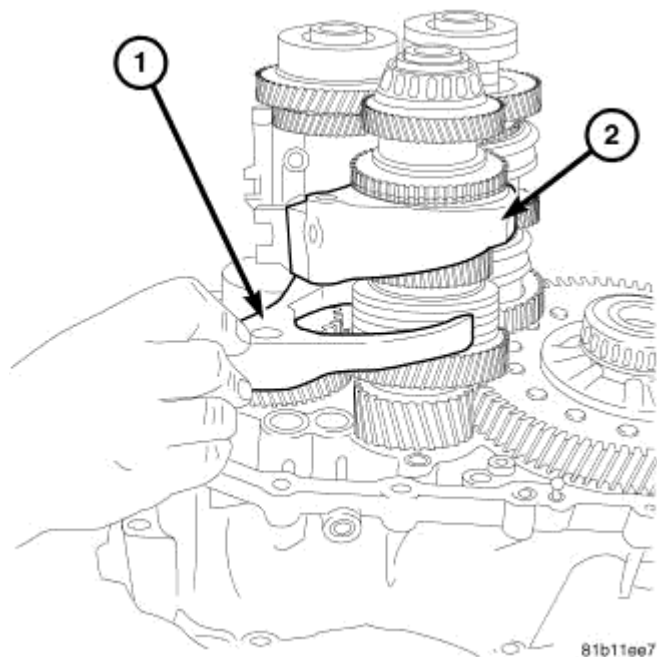


Fig. 104: Reverse Gear Shift Fork
Courtesy of CHRYSLER LLC

45. Install the reverse gear shift fork (1).

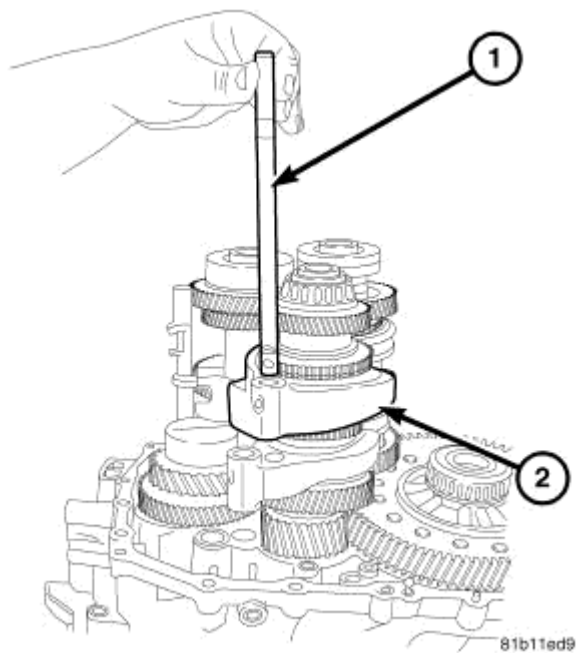


Fig. 105: Fifth & Sixth Gear Shift Rail
Courtesy of CHRYSLER LLC

46. Install the fifth and sixth gear shift rail (1) into the case and shift fork (2).

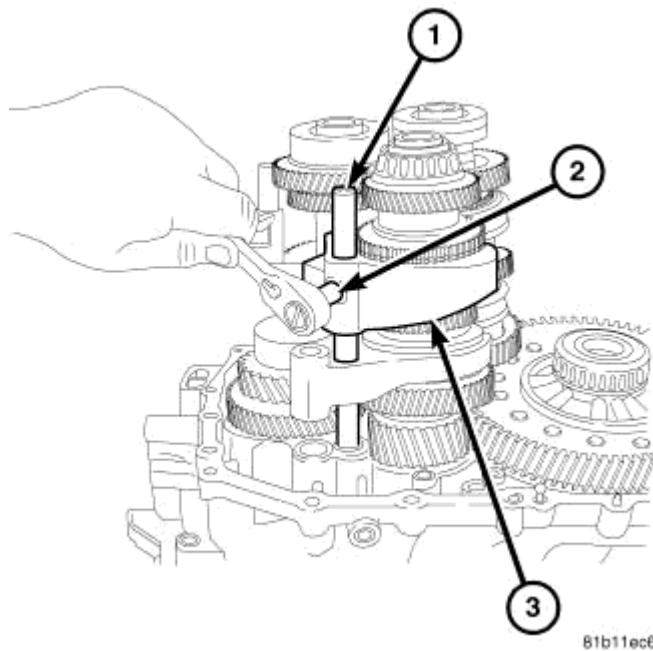


Fig. 106: Fifth & Sixth Gear Shift Fork & Shift Rail Bolt
Courtesy of CHRYSLER LLC

47. Install the **new** bolt (2) holding the fifth and sixth gear shift fork (3) to the fifth and sixth gear shift rail (1) and tighten to 20 N.m (177 in. lbs.).

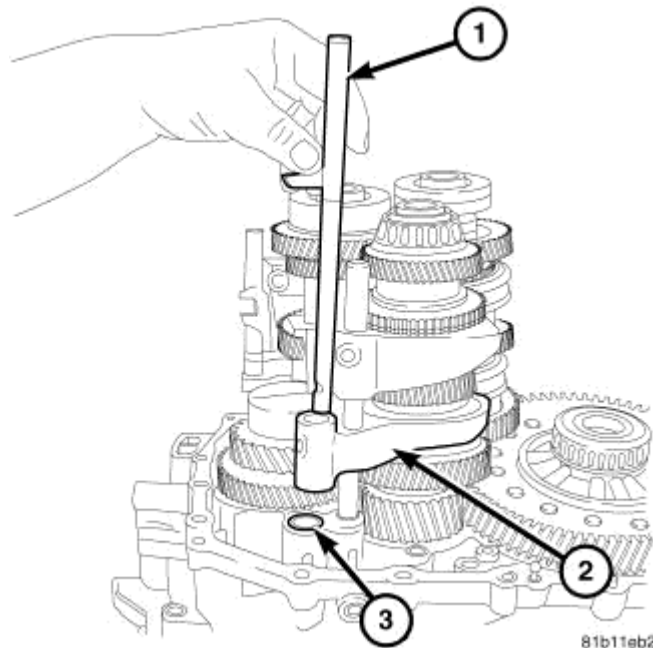


Fig. 107: Reverse Shift Rail
Courtesy of CHRYSLER LLC

48. Install the reverse shift rail (1) into the case (3) and shift fork (2).

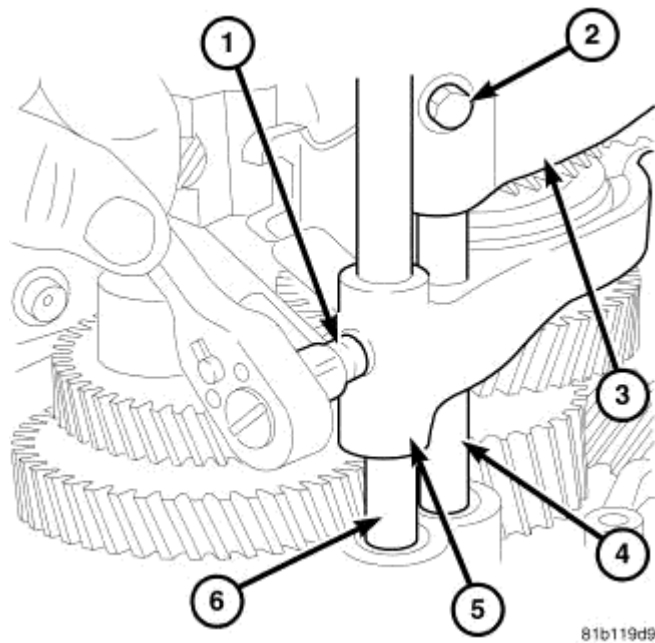


Fig. 108: Reverse Shift Fork To Shift Rail Bolt
Courtesy of CHRYSLER LLC

49. Install the **new** bolt (1) holding the reverse shift fork (5) to the reverse shift rail (6) and tighten to 20 N.m (177 in. lbs.).

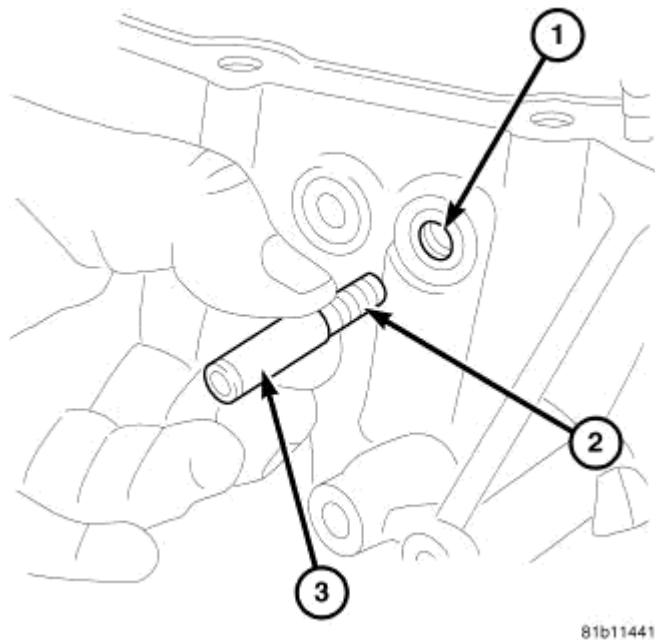
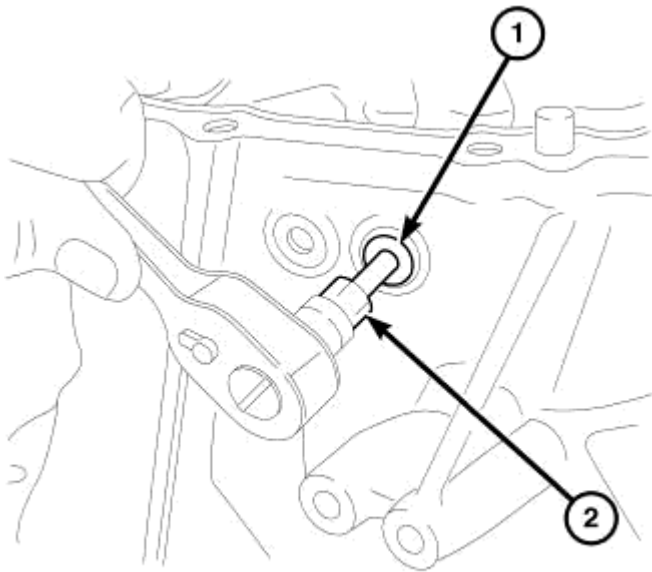


Fig. 109: Third & Fourth Gear Shift Rail Detent Spacer & Spring
Courtesy of CHRYSLER LLC

50. Install third and fourth gear shift rail detent ball.

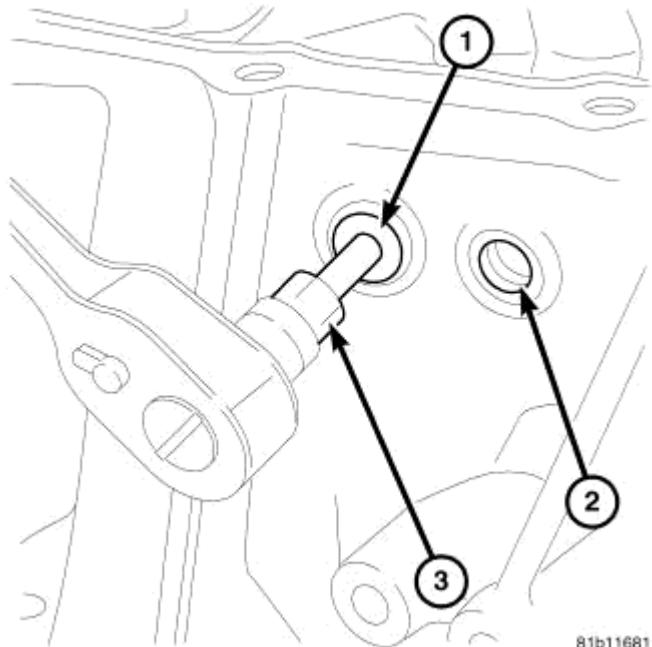
51. Install third and fourth gear shift rail detent spacer (3) and spring (2).



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Fig. 110: Third & Fourth Gear Shift Rail Detent Plug
Courtesy of CHRYSLER LLC

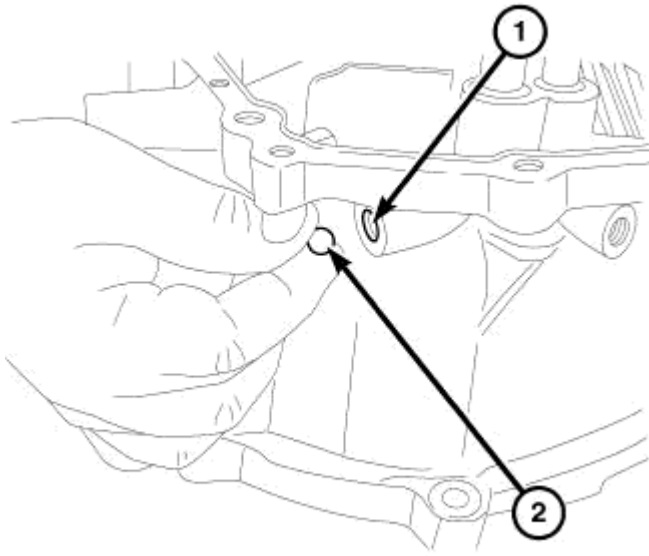
52. Install a **new** third and fourth gear shift rail detent plug (1) and tighten to 22 N.m (195 in. lbs.).



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Fig. 111: First & Second Gear Shift Rail Detent Spacer & Spring
Courtesy of CHRYSLER LLC

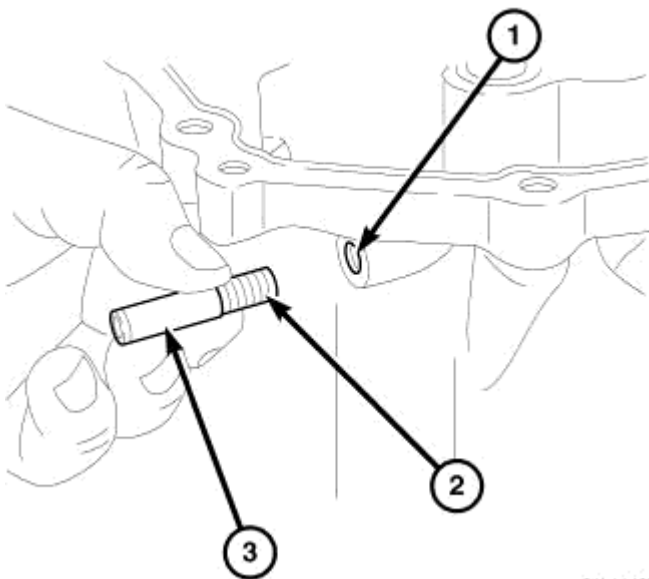
53. Install first and second gear shift rail detent ball.
54. Install first and second gear shift rail detent spacer and spring.
55. Install a **new** first and second gear shift rail detent plug (1) and tighten to 22 N.m (195 in. lbs.).



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Fig. 112: Reverse Shift Rail Detent Ball
Courtesy of CHRYSLER LLC

56. Install the reverse shift rail detent ball (2).



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Fig. 113: Reverse Shift Rail Detent Spacer & Spring
Courtesy of CHRYSLER LLC

57. Install the reverse shift rail detent spacer (3) and spring (2).

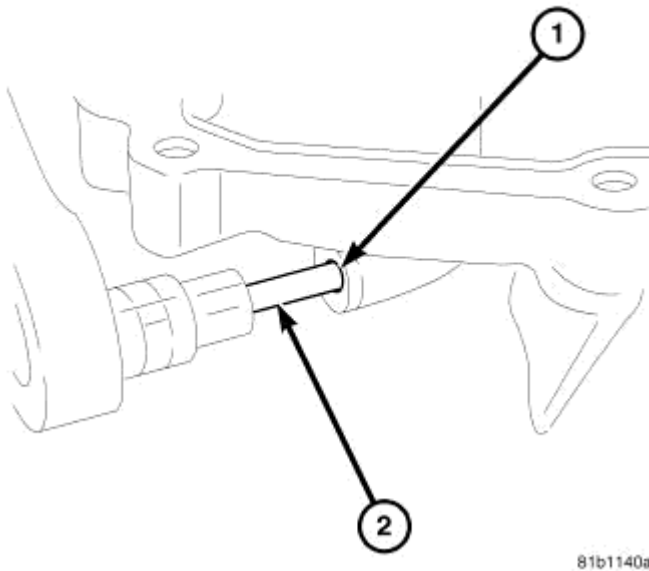


Fig. 114: Reverse Shift Rail Detent Plug
Courtesy of CHRYSLER LLC

58. Install a **new** reverse shift rail detent plug (1) and tighten to 22 N.m (195 in. lbs.).

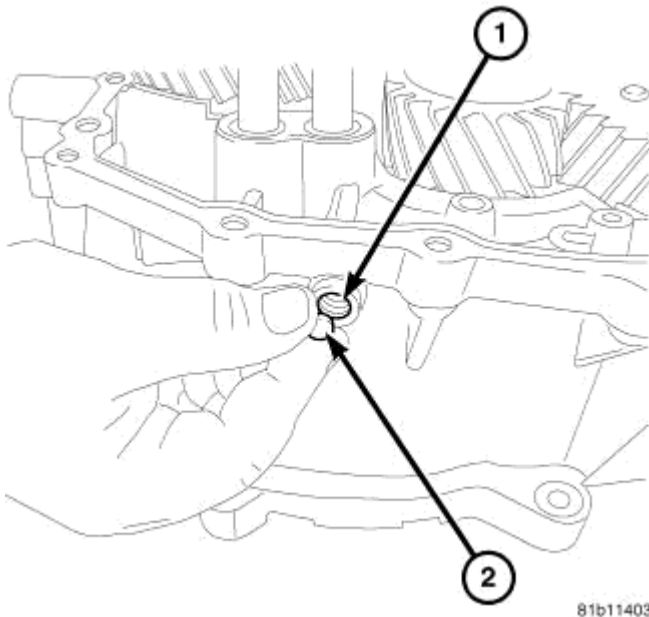


Fig. 115: Fifth & Sixth Gear Shift Rail Detent Ball
Courtesy of CHRYSLER LLC

59. Install fifth and sixth gear shift rail detent ball (2).

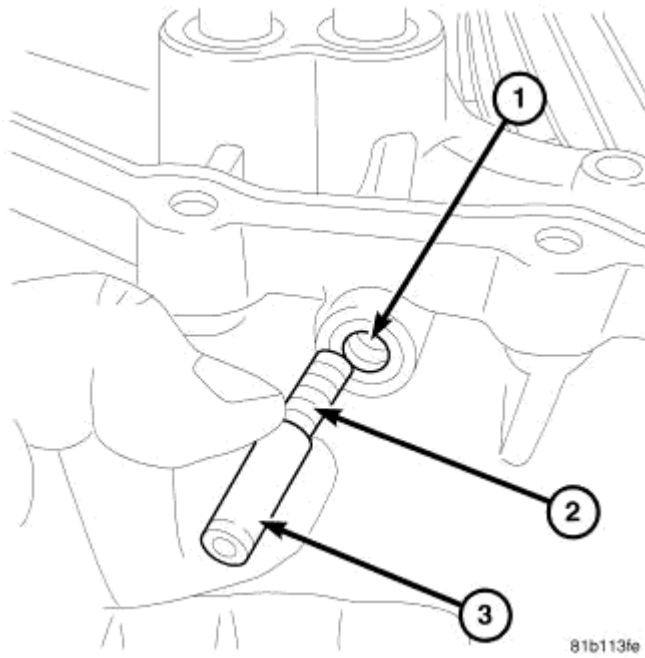


Fig. 116: Fifth & Sixth Gear Shift Rail Detent Spacer & Spring
Courtesy of CHRYSLER LLC

60. Install fifth and sixth gear shift rail detent spacer (3) and spring (2).

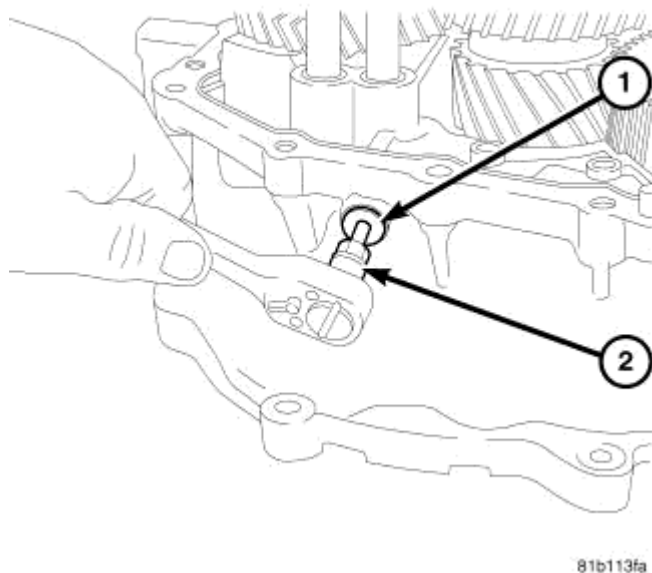
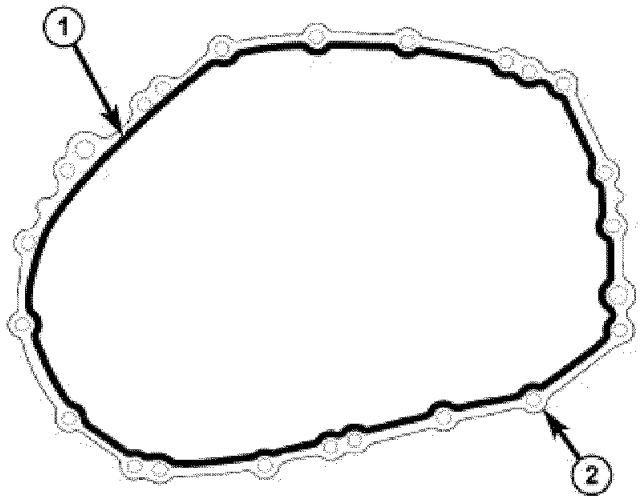


Fig. 117: Fifth & Sixth Gear Shift Rail Detent Plug
Courtesy of CHRYSLER LLC

61. Install a **new** fifth and sixth gear shift rail detent plug (1) and tighten to 22 N.m (195 in. lbs.).



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Fig. 118: Flat Surface Of Case Mating Flange
Courtesy of CHRYSLER LLC

62. If this is the final assembly draw a bead (1) of MOPAR® Gasket Maker, Loctite® 518, or equivalent, on the flat surface of the case mating flange (2).

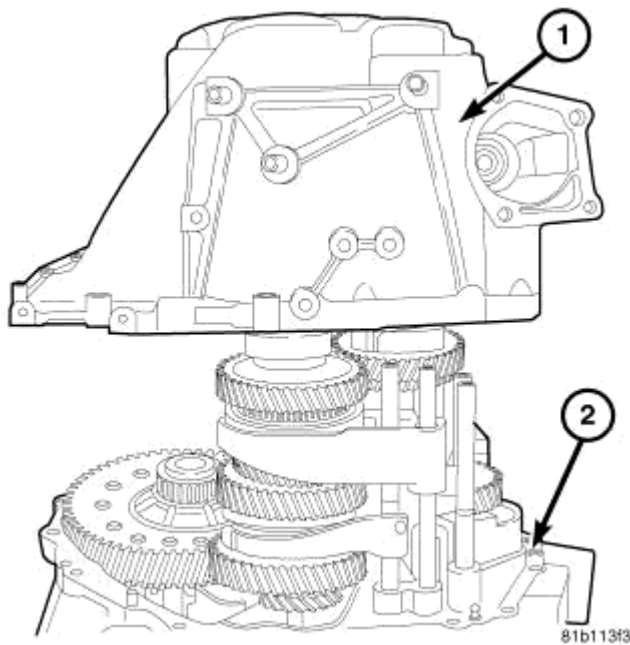


Fig. 119: Transmission Case Half & Clutch Housing
Courtesy of CHRYSLER LLC

63. Install the transmission case half (1) onto the clutch housing (2).

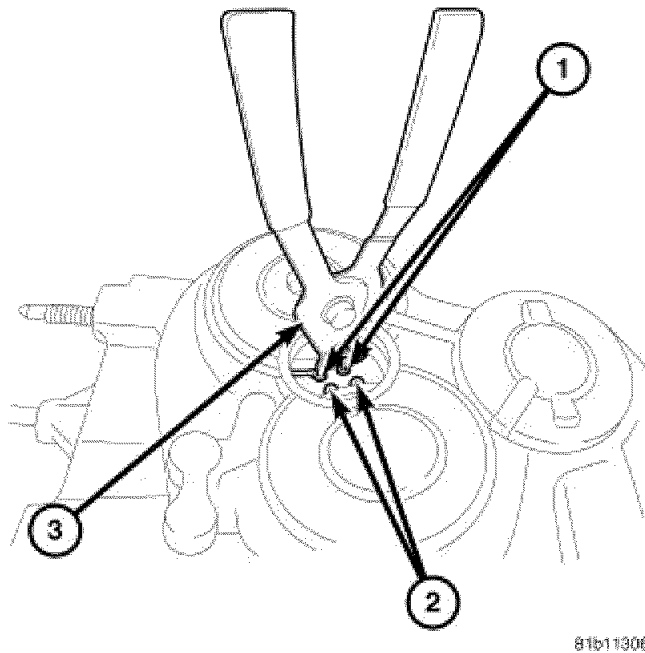
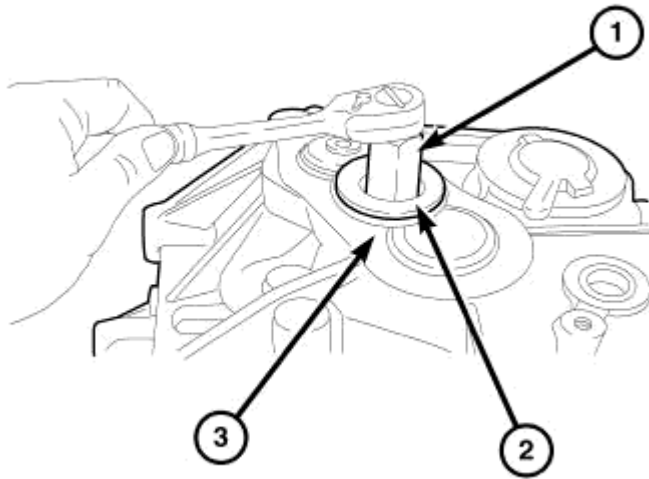


Fig. 120: Snap Rings At Rear Of Transmission Case
Courtesy of CHRYSLER LLC

CAUTION: Insure snap rings are fully seated in bearings before installing case bolts.

64. Using suitable snap-ring pliers (3), expand the transmission shaft bearing snap-rings (1, 2) at the rear of the transmission case to allow the bearings fall into place.



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Fig. 121: 27 MM Hex Adapter For Shaft Plug
Courtesy of CHRYSLER LLC

NOTE: Always use a new washer anti-rotation bolt.

NOTE: Add MOPAR® Gasket Maker, Loctite® 518, or equivalent around inside flat of plug.

65. Install the **new** 27 mm the shaft plug (2) into the rear of the case.
66. Install a 27 mm (1 1/16 in.) hex adapter (1) into the shaft plug (2) at the rear of the transmission case (3) and tighten to 55 N.m (41 ft. lbs.).

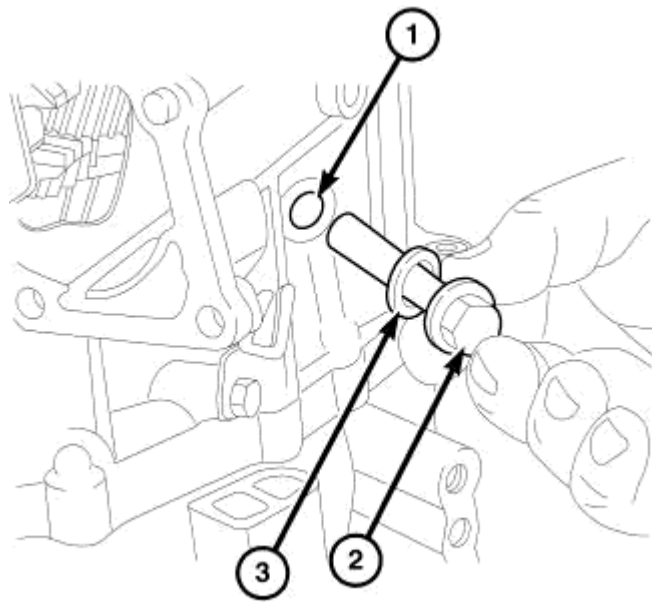


Fig. 122: Idler Shaft Anti-Rotation Bolt
 Courtesy of CHRYSLER LLC

NOTE: Always use a new washer anti-rotation bolt.

NOTE: Next step only to be used on final assembly.

67. Install anti-rotation bolt (2) and washer (3) tighten to 80 N.m (59 ft. lbs.).

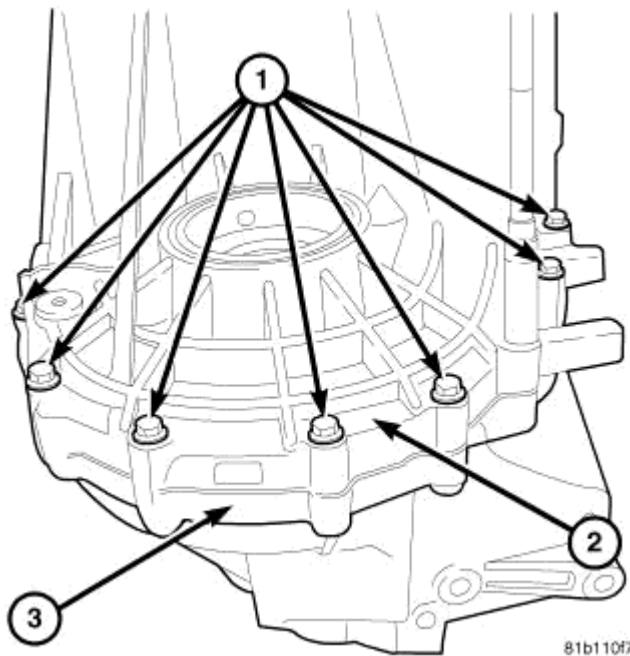
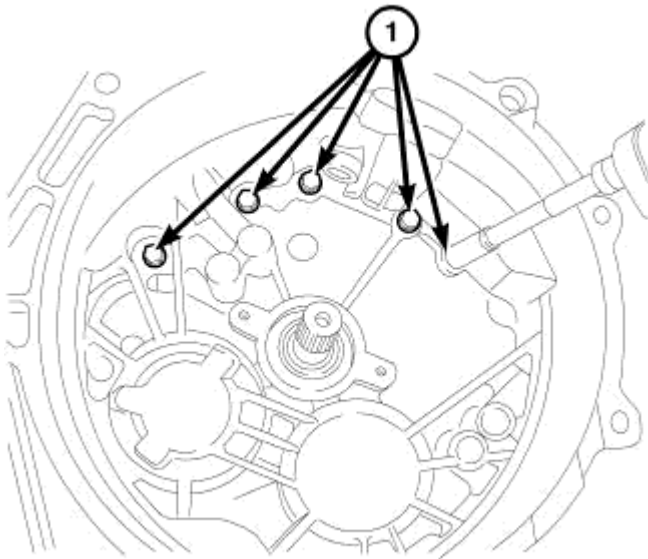


Fig. 123: Transmission Case To Clutch Housing Bolts (Transmission Case Side)

Courtesy of CHRYSLER LLC

68. Install the bolts (1) holding the transmission case (2) to the clutch housing (3) on the transmission case side and tighten to 29 N.m (257 in. lbs.).



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Fig. 124: Transmission Case To Clutch Housing Bolts (Inside Clutch Housing)
Courtesy of CHRYSLER LLC

69. Install the bolts (1) holding the transmission case to the clutch housing on the inside of the clutch housing and tighten to 29 N.m (257 in. lbs.).

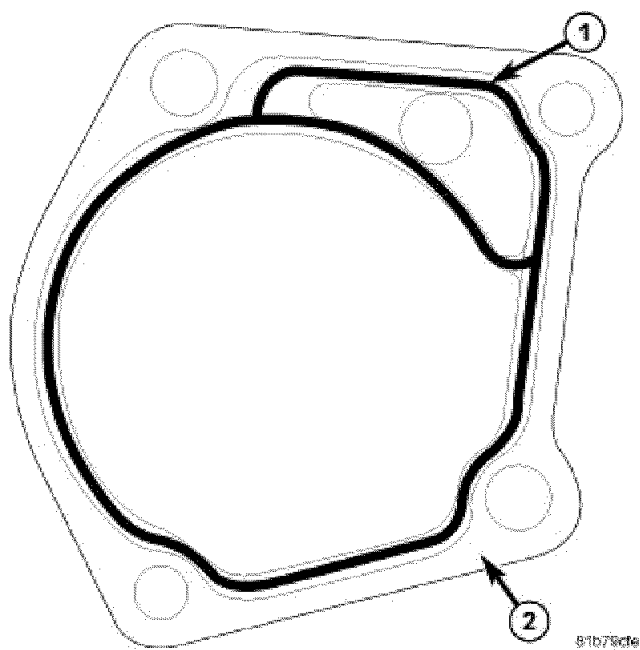


Fig. 125: Sealer

Courtesy of CHRYSLER LLC

70. Add MOPAR® Gasket Maker, Loctite® 518, or equivalent around inside of all holes and on mating flange.

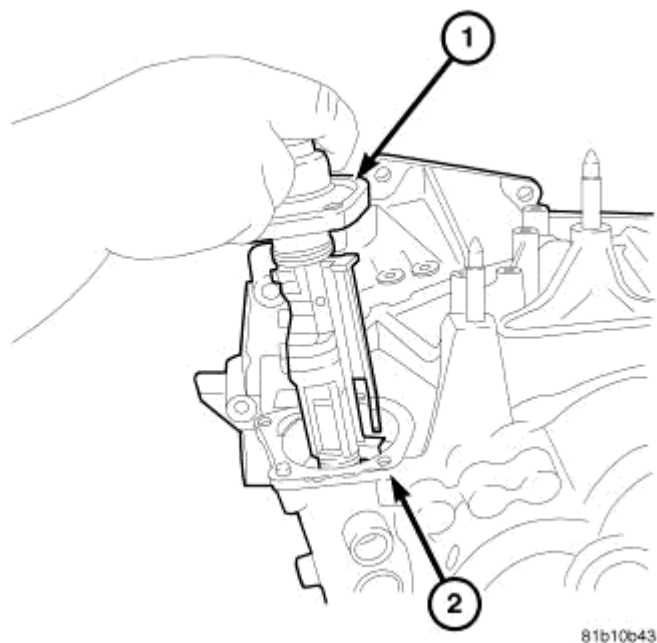


Fig. 126: Shift Lever Assembly

Courtesy of CHRYSLER LLC

71. Install the shift lever assembly (1) into the transmission case (2).

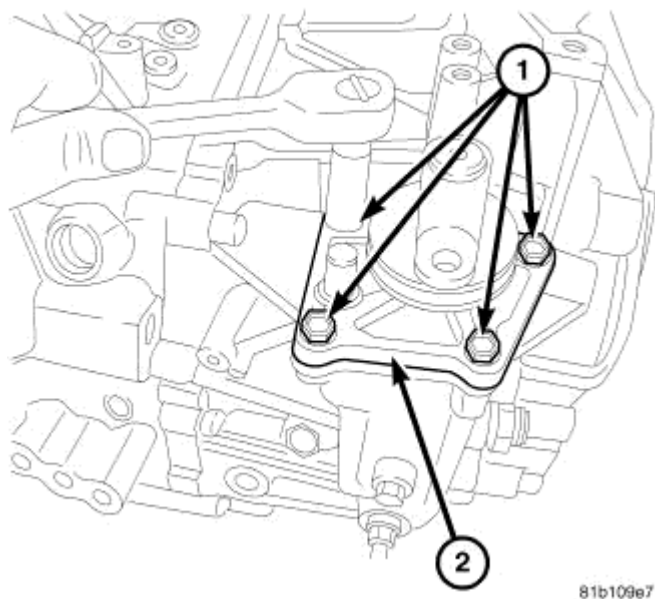


Fig. 127: Shift Lever Assembly Bolts
Courtesy of CHRYSLER LLC

72. Install the **new** bolts (1) holding the shift lever assembly (2) to the transmission and tighten to 19 N.m (168 in. lbs.)

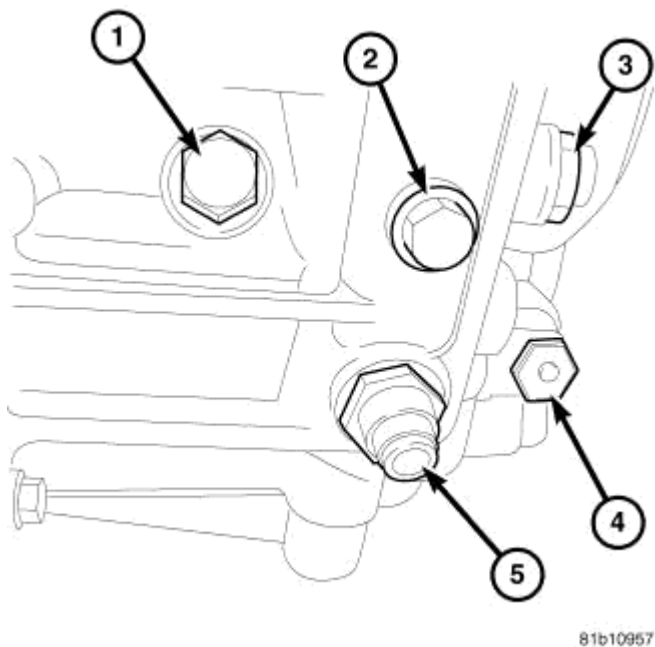


Fig. 128: Anti-Rotation Bolt
Courtesy of CHRYSLER LLC

- 73. Install **new** shift tower lock ball for shift detent (5) and tighten to 29 N.m (277 in. lbs.).
- 74. Install **new** shift lock ball for the select detent (3) and tighten to 39 N.m (29 ft. lbs.).
- 75. Install **new** shift tower shift guide pin (2) and tighten to 30 N.m (257 in. lbs.).

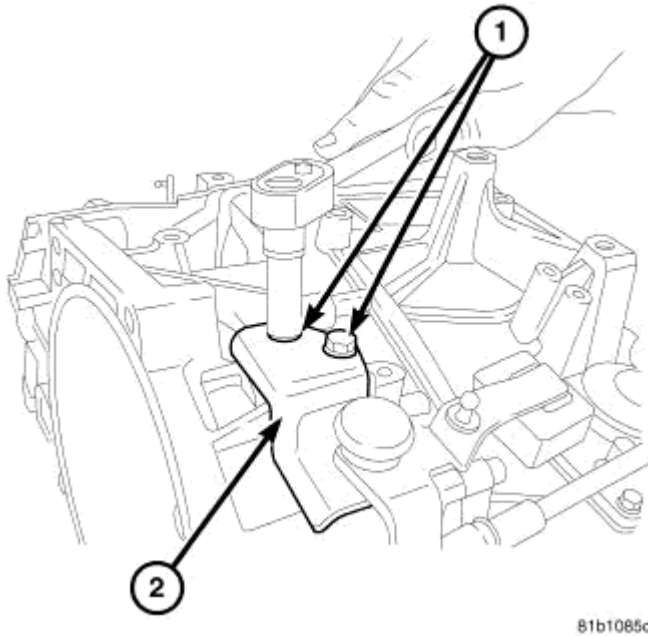
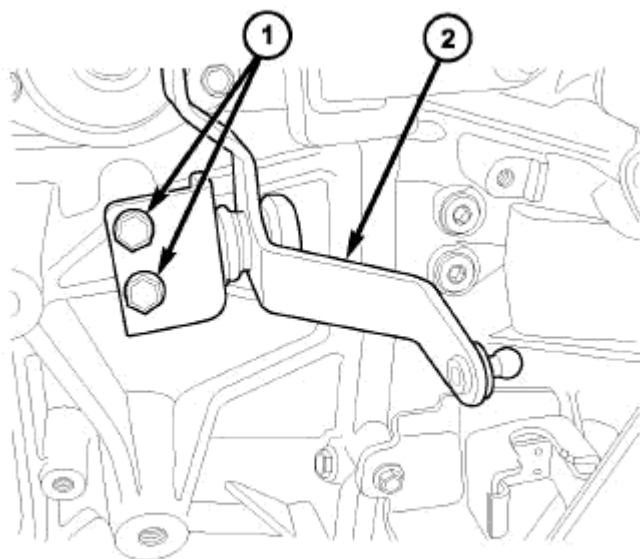


Fig. 129: Crossover Bracket
Courtesy of CHRYSLER LLC

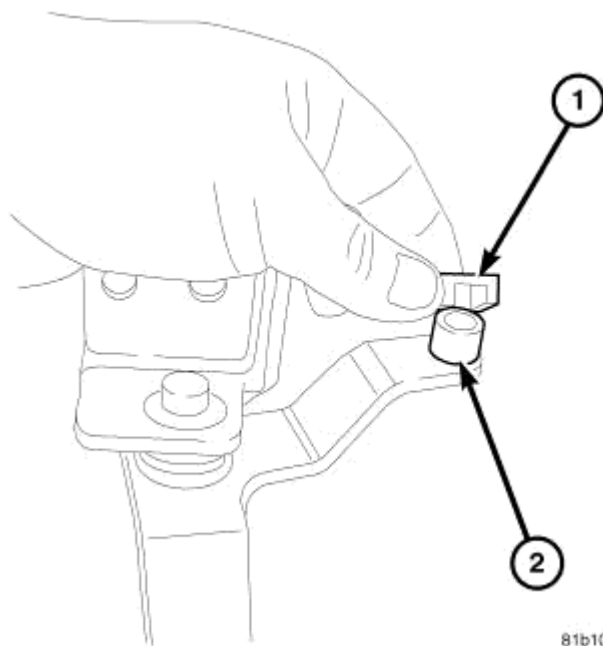
- 76. Install the shift bracket (2) and bolts, tighten to 19 N.m (168 in. lbs.)



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Fig. 130: Crossover Bellcrank
Courtesy of CHRYSLER LLC

77. Install the crossover (1) onto the transmission.
78. Install the crossover bolts (1) and tighten to 19 N.m (168 in. lbs.)



81b10661

Fig. 131: Bell Crank Bushing
Courtesy of CHRYSLER LLC

79. Apply a light coating of white grease on crossover bushing (1).
80. Install the crossover bushing (1) onto the crossover shaft (2).

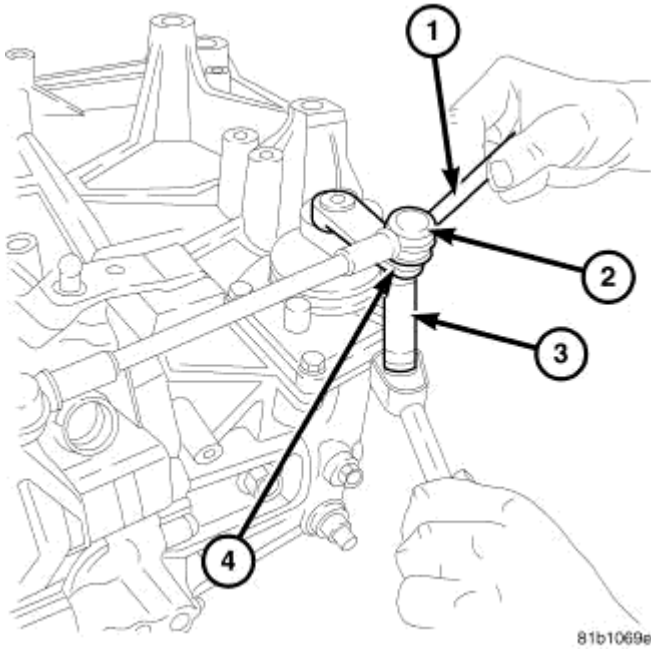


Fig. 132: Nut Crossover Rod To Shift Lever
Courtesy of CHRYSLER LLC

81. Install the nut (4) holding the crossover rod (2) to the shift lever. Be sure to use a wrench (1) to hold the ball stud to prevent it from rotating in the shift lever tighten to 12 N.m (106 in. lbs.).

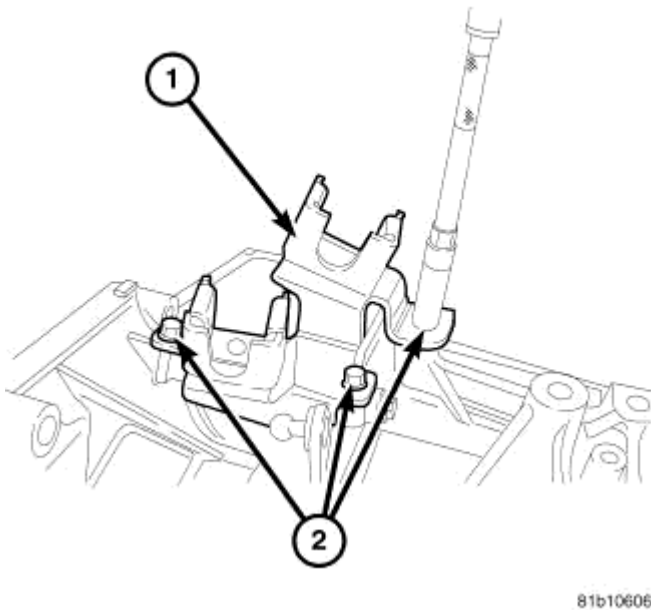
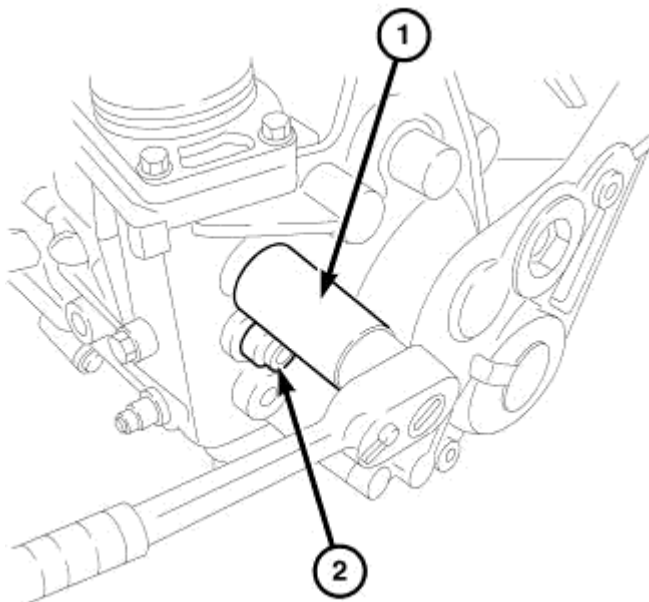


Fig. 133: Shift Cable Bracket

Courtesy of CHRYSLER LLC

CAUTION: Be sure to verify bracket position after installation. See Adjustments .

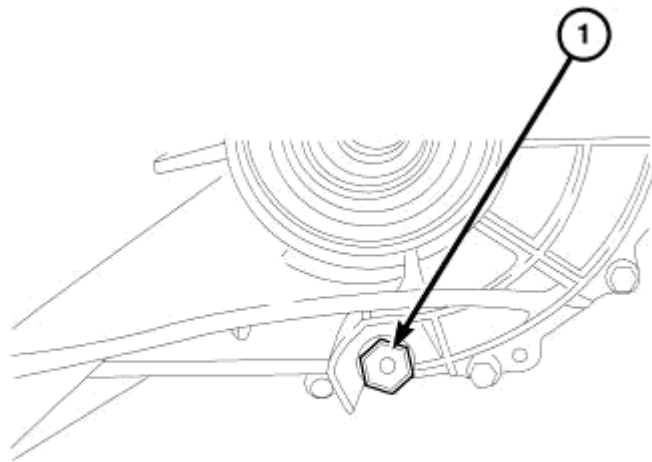
82. Install the shift cable bracket (1) to the transmission case.
83. Install the bolts (2) holding the shift cable bracket (1) to the transmission case and tighten to 19 N.m (168 in. lbs.).



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Fig. 134: Back-Up Lamp Switch
Courtesy of CHRYSLER LLC

84. Install the backup lamp switch (1) with a **new** washer and tighten to 40 N.m (29 ft. lbs.).



81b10326

Fig. 135: Drain Plug
Courtesy of CHRYSLER LLC

85. Install the drain plug (1) with a **new** gasket and tighten to 39 N.m (29 ft. lbs.).

BEARING ADJUSTMENT PROCEDURE

1. Use extreme care when removing and installing bearing cups and cones. Use only an arbor press for installation, as a hammer may not properly align the bearing cup or cone. Burrs or nicks on the bearing seat gives a false end-play reading while gauging for proper shims. Improperly seated bearing cups and cones are subject to low mileage failures.
2. Bearing cups and cones should be replaced if they show signs of pitting or heat distress. If distress is seen on either the cup or bearing rollers, both cup and cone must be replaced.
3. Bearing preload and drag torque specifications must be maintained to avoid premature bearing failures. Used (original) bearings may lose up to 50% of the original drag torque after break-in. All bearing adjustments must be made with no other component interference or gear intermesh.
4. Replace bearings as a pair: If one differential bearing is defective, replace both differential bearings, if one input shaft bearing is defective, replace both input shaft bearings.
5. Bearing cones must not be reused if removed.
6. Turning torque readings should be obtained while smoothly rotating in either direction.

DIFFERENTIAL BEARING PRELOAD ADJUSTMENT

NOTE: True bearing turning torque readings can be obtained only with the geartrain removed from the case.

1. Remove bearing cup and existing shim from clutch bellhousing case.

2. Press in new bearing cup into bellhousing case (or use a cup that has been ground down on the outer edge for ease of measurement).
3. Press in new bearing cup into gear case side.
4. Oil differential bearings with transmission fluid. Install differential assembly in transaxle gear case. Install clutch bellhousing over gear case. Install and tighten case bolts to 29 N.m (257 in. lbs.).
5. Position transaxle with bellhousing facing down on workbench with C-clamps. Position dial indicator.

NOTE: **The dial indicator should be parallel to T-Handle to obtain the most accurate reading.**

6. Apply a medium load to differential with Torque Tool C-4995A (3) and a T-handle, in the downward direction. Roll differential assembly back and forth a number of times. This will settle the bearings. Zero the dial indicator (2). To obtain end play readings, apply a medium load in an upward direction while rolling differential assembly back and forth. Record end play.
7. The shim required for proper bearing preload is the **total of end play, plus (constant) preload of 0.18 mm (0.007 in.)**. Never combine shims to obtain the required preload.
8. Remove case bolts. Remove clutch bellhousing differential bearing cup. Install shim(s) selected, then press the bearing cup into clutch bellhousing.
9. Install clutch bellhousing. Install and tighten case bolts to 29 N.m (257 in. lbs.).
10. Using Torque Tool C-4995A (2) and an inch-pound torque wrench (1), check turning torque of the differential assembly. **The turning torque should be 1 to 3 N.m (9 to 22 in. lbs.) If the turning torque is too high, install a 0.05 mm (0.002 inch) thinner shim. If the turning torque is too low, install a 0.05 mm (0.002 inch) thicker shim.**
11. Recheck turning torque (1). Repeat until the proper turning torque is obtained.
12. Once proper turning torque has been established for the differential separate case halves, install output shaft # 2 assembly into case with the differential and recheck differential turning torque. **The turning torque should be 4 to 6 N.m (37 to 52 in. lbs.) If the turning torque is too high, install a 0.05 mm (0.002 inch) thinner shim. If the turning torque is too low, install a 0.05 mm (0.002 inch) thicker shim.**
13. Recheck total turning torque (1). Repeat until the proper turning torque is obtained.

Once proper turning torque has been established, place gear case on the end plate. Draw a bead of MOPAR® Gasket Maker, Loctite® 518, or equivalent, on the flat surface of the case mating flange. Install clutch bellhousing onto gear case. Install and tighten case bolts to 29 N.m (257 in. lbs.).

14. Install axle seal (case side) on Seal Installer 9928 and Handle C-4171 and insert into axle shaft seal bore.
15. Tap seal into position until seated against transaxle case.

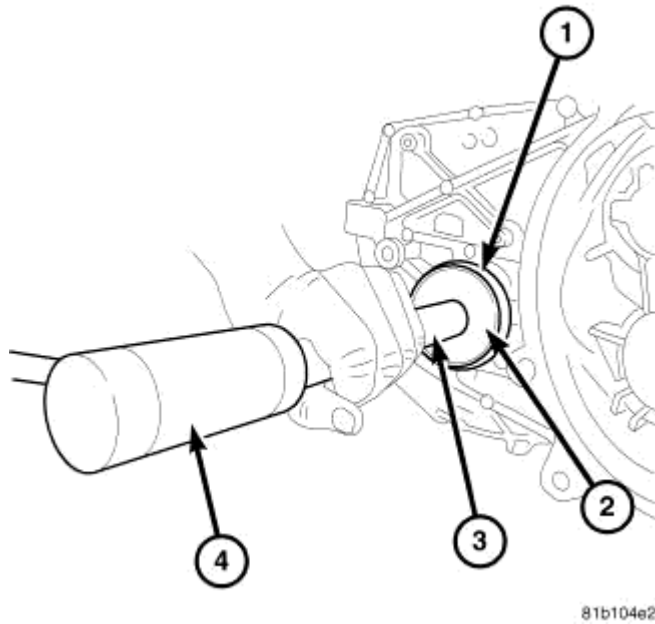
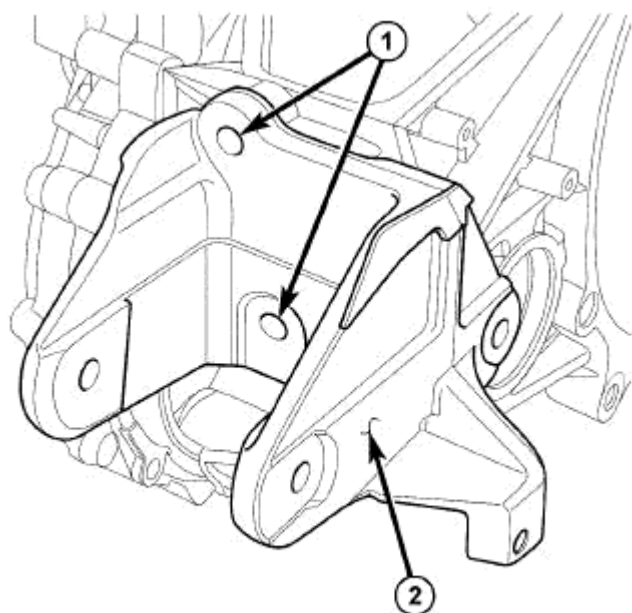


Fig. 136: Aligning Axle Shaft Seal With Axle Shaft Seal Bore
Courtesy of CHRYSLER LLC

16. Install axle seal (bellhousing side) on Seal Installer 9928 and Handle C-4171 and insert into axle shaft seal bore.
17. Tap seal into position until seated against transaxle case.

INSTALLATION

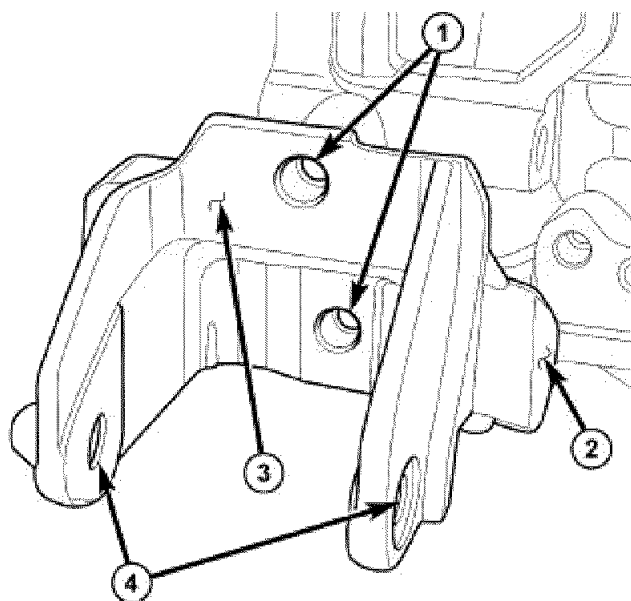
INSTALLATION



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Fig. 137: Rear Mount Bracket
Courtesy of CHRYSLER LLC

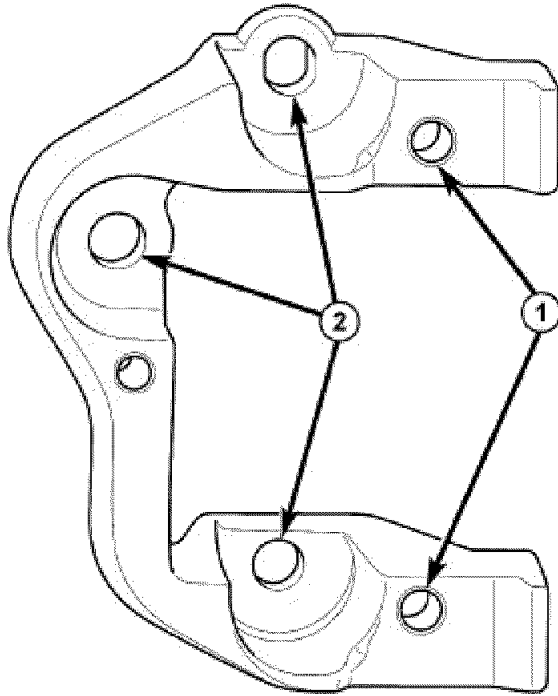
1. If transmission brackets were removed or transmission was replaced install the rear mount bracket and tighten (1) to 100 N.m (74 ft. lbs.).



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Fig. 138: Front Mount Bracket
Courtesy of CHRYSLER LLC

2. If transmission brackets were removed or transmission was replaced install the front mount bracket and tighten (1) to 100 N.m (74 ft. lbs.) and (2) to 133 N.m (98 ft. lbs.).



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Fig. 139: Left Mount Bracket
Courtesy of CHRYSLER LLC

3. If transmission brackets were removed or transmission was replaced install the left mount bracket and tighten (1) to 100 N.m (74 ft. lbs.).

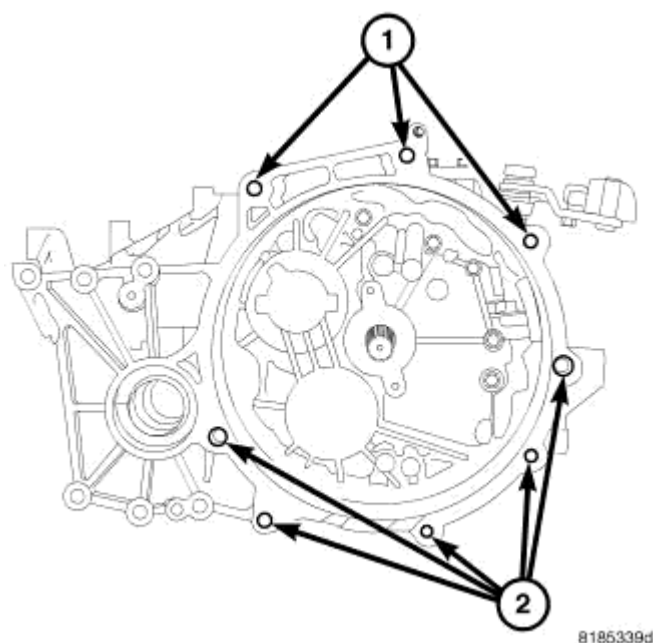


Fig. 140: Bellhousing Bolts
Courtesy of CHRYSLER LLC

4. Lift transmission into position.
5. Install the lower transmission bolts (2) and tighten to 58 N.m (43 ft. lbs.) torque.

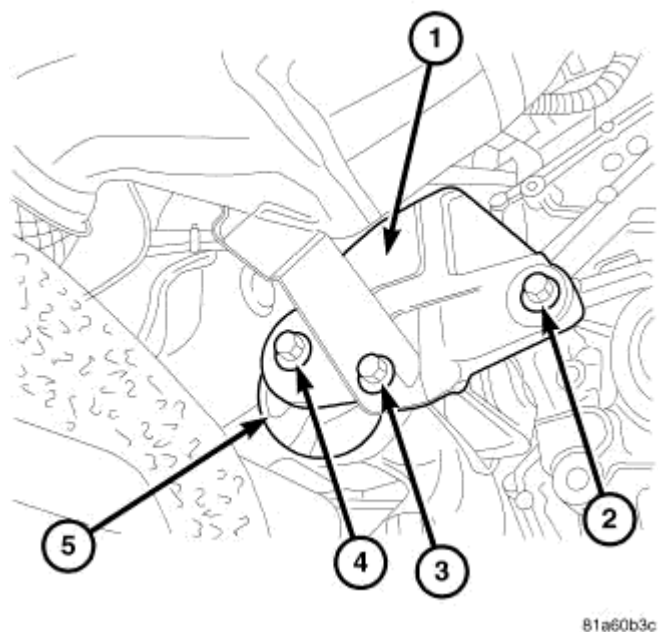


Fig. 141: Rear Mount
Courtesy of CHRYSLER LLC

6. Install the rear transmission mount (5) to cradle.

7. Install rear transmission mount bolts and tighten to 68 N.m (50 ft. lbs.).
8. Install the rear mount bracket to transmission bolts (2, 3) and tighten to 68 N.m (50 ft. lbs.).
9. Roll engine and transmission back into place.
10. Install rear mount through bolt (4) and tighten to 68 N.m (50 ft. lbs.).
11. Install the starter. Refer to **Electrical - Engine Systems/Starting/STARTER - Installation** .
12. Install the transmission cross member and tighten to 68 N.m (50 ft. lbs.).
13. Install the front transmission mount through bolt (4) at this time and tighten to 50 N.m (37 ft. lbs.). Refer to **Frame and Bumpers/Frame/CROSSMEMBER - Installation** .
14. Remove the jacks.
15. Lower the vehicle.

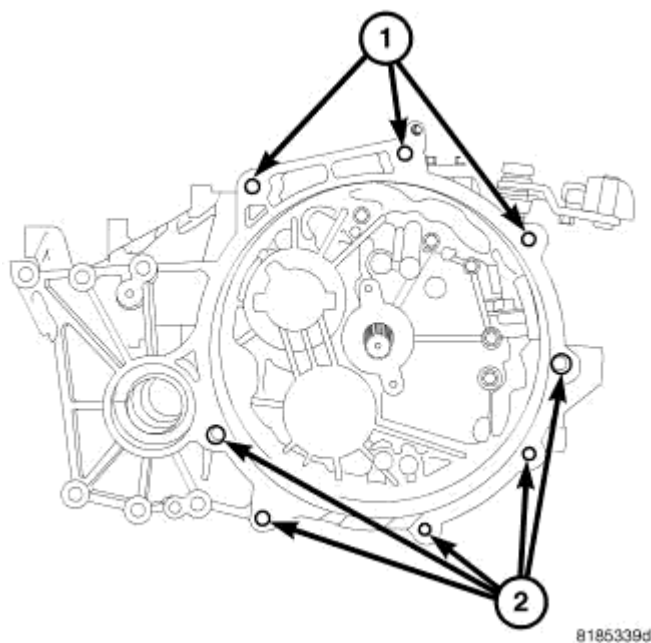


Fig. 142: Bellhousing Bolts
Courtesy of CHRYSLER LLC

16. Use a floor jack to raise transmission into position.
17. Install the upper transmission mount and tighten to 100 N.m (74 ft. lbs.).
18. Raise the vehicle on the hoist.
19. Install halfshafts. Refer to **Differential and Driveline/Half Shaft - Installation** .
20. Fill transmission fluid to proper level. See **Standard Procedure** .
21. Lower hoist.
22. Connect all wiring harness connectors and insure correct wiring harness is routed correctly.

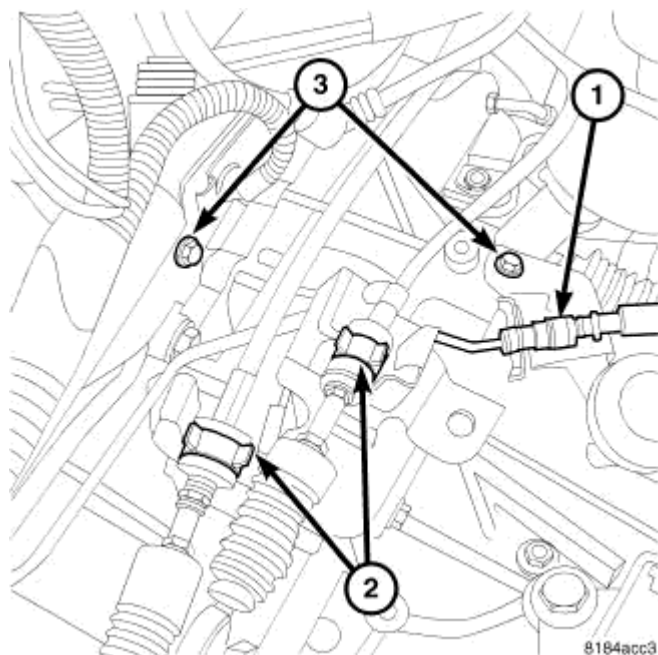


Fig. 143: Hydraulic Line
Courtesy of CHRYSLER LLC

23. Install shift cables (2) into bracket until a click is heard.
24. Snap the ball-socket end fittings onto the shift lever ball-studs.
25. Install the bolt for clutch hydraulic line (3) and tighten to 11 N.m (105 in. lbs.).
26. Install the clutch hydraulic line (1) to slave cylinder.

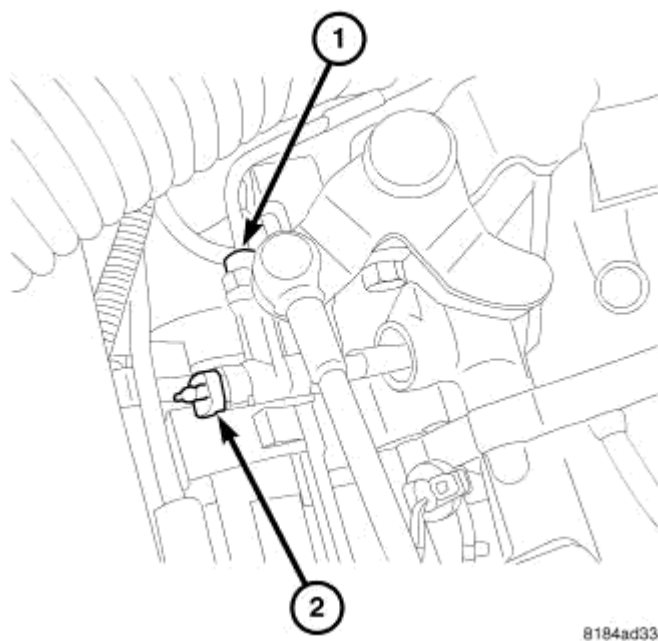


Fig. 144: Bleeder At Slave Cylinder
Courtesy of CHRYSLER LLC

27. Install hydraulic line (1), bleed adaptor (2) and clip at the slave cylinder.
28. Bleed the slave cylinder. Refer to **Clutch - Standard Procedure** .
29. Install the negative battery cable.
30. Install air cleaner assembly. Refer to **Engine/Air Intake System/BODY, Air Cleaner - Installation** .

SPECIFICATIONS

SPECIFICATIONS

GENERAL SPECIFICATIONS

DESCRIPTION	SPECIFICATION
Transaxle Type	Constant-mesh, fully synchronized six speed with integral differential
Lubrication Method	Splash oil collected in oil troughs and distributed to mainshafts via gravity
Turning Torque for Differential	9 to 22 in. lbs.
Turning Torque for Differential and Counter shaft	37 to 52 in. lbs.

GEAR RATIOS

GEAR	RATIO
1ST	3.538
2ND	2.045
3RD	1.367
4TH	0.974
5TH	0.897
6TH	0.791
REVERSE	3.831
Final Drive Ratio (FDR)	4.059 or 3.450*
Overall Top Gear	2.728
*Gears 1-4 use the 4.059 final drive; gears 5th, 6th and Reverse use the 3.450 ratio.	

TORQUE SPECIFICATIONS

DESCRIPTION	N.m	Ft. Lbs.	In. Lbs.
Bolts, Concentric Slave Cylinder (CSC)-to-Bellhousing Halve	Step 1 - 2 N.m	-	Step 1 - 18 In. Lbs.
	Step 2 - 5 N.m	-	Step 2 - 44 In. Lbs.
	Step 3 - 8.4 N.m	-	Step 3 - 74 In. Lbs.
Bolt, Differential Ring Gear-to-Carrier	106	78	-
Bolt, Transmission Case - to - Clutch Housing	29	21	257
Plug, Detent	22	-	195
Plug, Transaxle			

2009 Dodge Journey R/T

2009 MANUAL TRANSMISSION BG6 - Service Information - Journey

Drain/Fill	39	29	-
Switch, Back-up Lamp	40	29	-
Bolts, Flywheel- to - Crankshaft	60 + 90*	44 + 90*	-
Bolts, Clutch cover-to- Flywheel	22	16	195
Bolts, Transaxle-to- engine	58	43	-
Bolt, Rear Mount through	50	37	-
Bolt, Front Mount through	50	37	-
Bolts, Upper Transmission Mount	100	74	-
Bolts, left Mount Bracket -to- Transmission	100	74	-
Bolts, Rear Mount Bracket -to- Transmission	100	74	-
Bolts, Front Mount Bracket -to- Transmission	100	74	-
Bolts, Front Mount Bracket -to- Transmission one side bolt	133	98	-
Bolts, Bellhousing Case halves	29	-	257
Bolts, Oil Baffle - to - Case	9	-	80
Bolt, Output Shaft Hold Down	11	-	97
Bolts, Oil slinger - to - Case	9	-	80
Bolt, Reverse Idler Gear Hold Down	11	-	97
Bolts, Shift Rail - to - Shift shaft	20	-	177
Plug, 27mm Rear Of Transmission Case	55	41	-
Bolt, Reverse Idler Gear Anti-Rotation	80	59	-
Bolt, Speed Sensor - to - transmission case	11	-	97
Bolts, Shift Lever Assembly, to Case	19	-	168
Detent, Shift	29	-	277
Detent, Select	39	-	345

2009 Dodge Journey R/T

2009 MANUAL TRANSMISSION BG6 - Service Information - Journey

Guide Pin, Shift Tower	30	-	277
Bolts, Crossover Bracket - to - Case	19	-	168
Bolts, Bellcrank - to - Case	19	-	168
Nut, Crossover Rod - to - shift lever	12	-	106
Bolts, Shift Cable Bracket - to - case	19	-	168

SPECIAL TOOLS

SPECIAL TOOLS

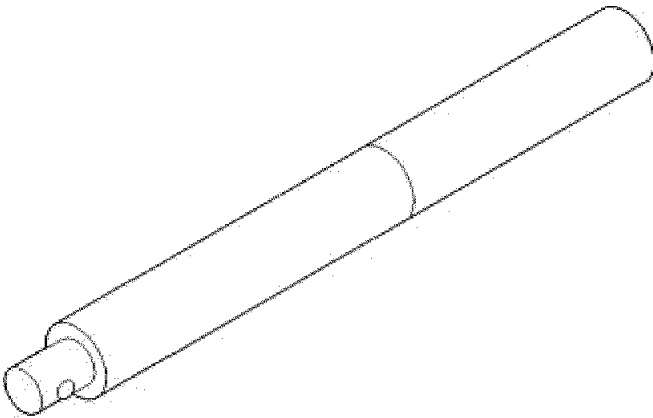


Fig. 145: Universal Handle C-4171
Courtesy of CHRYSLER LLC

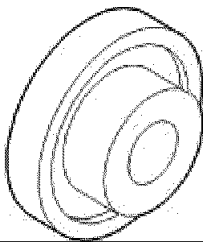


Fig. 146: Seal Installer 6709
Courtesy of CHRYSLER LLC

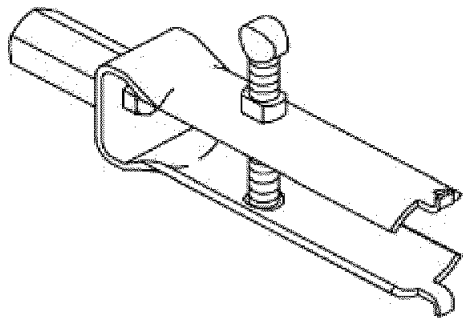


Fig. 147: Remover, 9664
Courtesy of CHRYSLER LLC

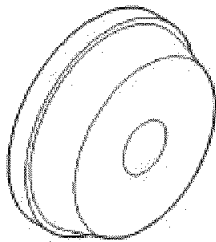


Fig. 148: Installer L-4520
Courtesy of CHRYSLER LLC



Fig. 149: Installer 9935
Courtesy of CHRYSLER LLC

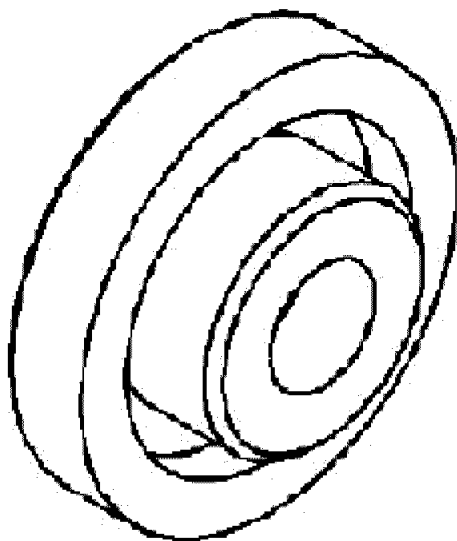


Fig. 150: Installer 9928

Courtesy of CHRYSLER LLC

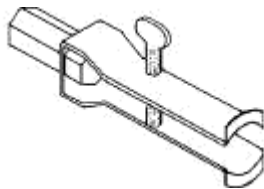


Fig. 151: Puller 7794-A

Courtesy of CHRYSLER LLC

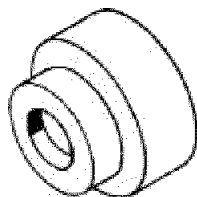


Fig. 152: C-4657 Seal Installer

Courtesy of CHRYSLER LLC

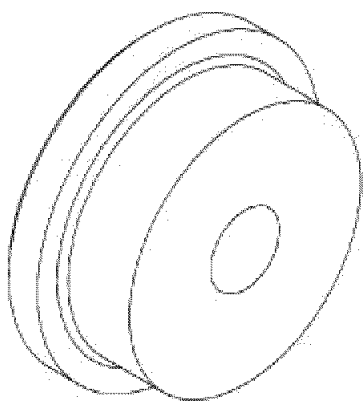


Fig. 153: Installer 9589

Courtesy of CHRYSLER LLC



Fig. 154: Installer D-111

Courtesy of CHRYSLER LLC

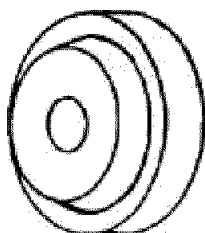


Fig. 155: Installer, Cup - D-144

Courtesy of CHRYSLER LLC

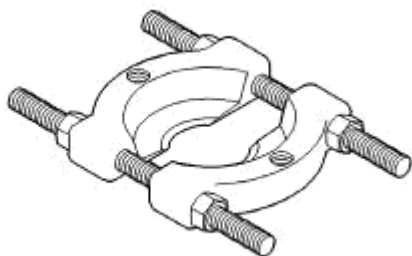


Fig. 156: Bearing Splitter, P-334

Courtesy of CHRYSLER LLC

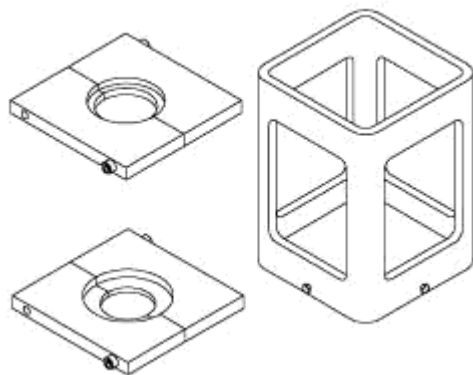


Fig. 157: Fixture, 8925

Courtesy of CHRYSLER LLC

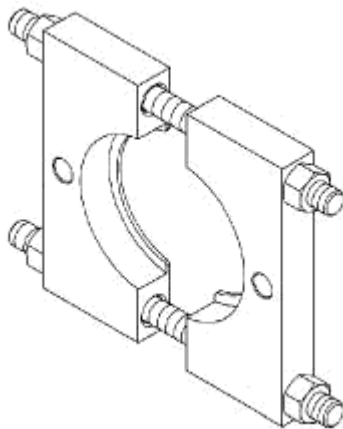


Fig. 158: Puller 9647

Courtesy of CHRYSLER LLC

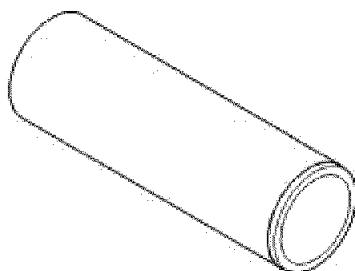


Fig. 159: Sleeve C-3717

Courtesy of CHRYSLER LLC

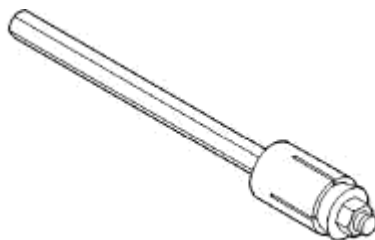


Fig. 160: Torque Tool C-4995
Courtesy of CHRYSLER LLC

CABLE, GEARSHIFT CONTROL

REMOVAL

REMOVAL

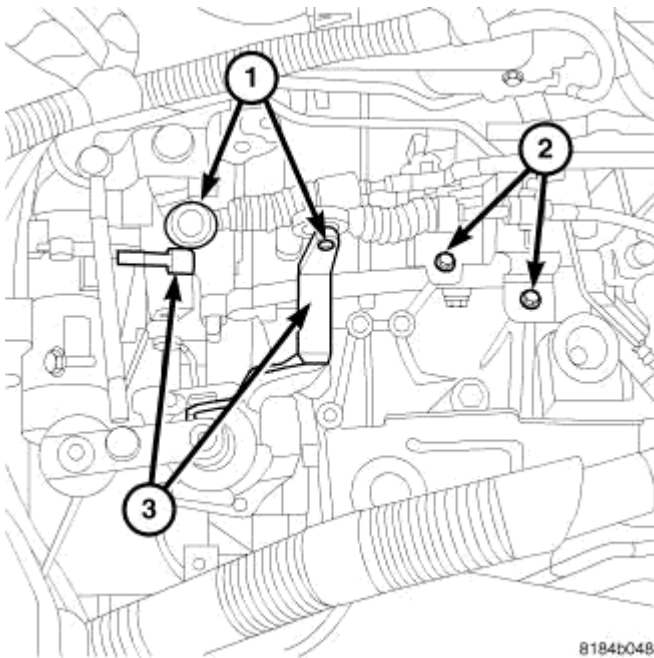


Fig. 161: Shift Cables & Bracket
Courtesy of CHRYSLER LLC

1. Remove the shifter. See **Removal** .
2. Raise hood.
3. Remove the resonator.
4. Remove engine cover.
5. Remove air cleaner assembly.
6. Disconnect negative battery cable.
7. Disconnect cables (1) from the shift levers at the transaxle.

CAUTION: Pry up with equal force on both sides of shifter cable isolator bushings to avoid damaging cable isolator bushings or damaging levers.

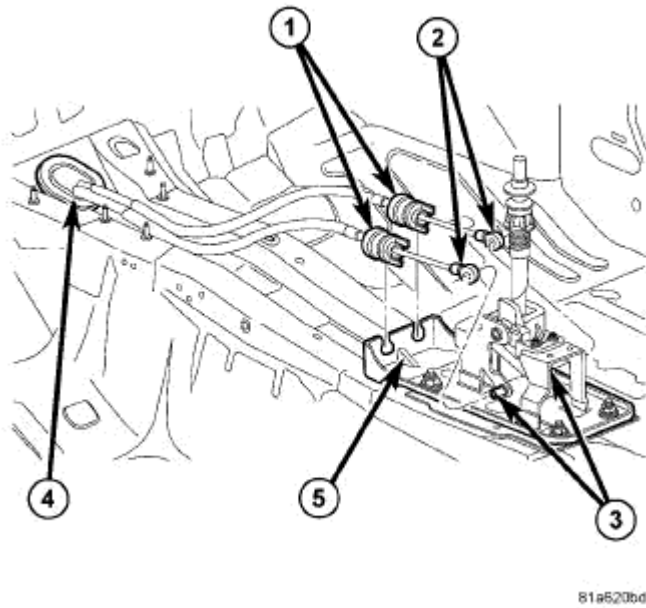


Fig. 162: Shift Cables To Shifter
Courtesy of CHRYSLER LLC

8. Remove cable retaining clips and remove cables (1) from bracket (5).
9. Remove cables at shifter.
10. Remove the Occupant Restraint Controller (ORC). Refer to **Restraints/MODULE, Occupant Restraint Controller - Installation**.
11. Remove rubber grommet (4) at floor pan.
12. Remove cable assembly (1) from vehicle.

INSTALLATION

INSTALLATION

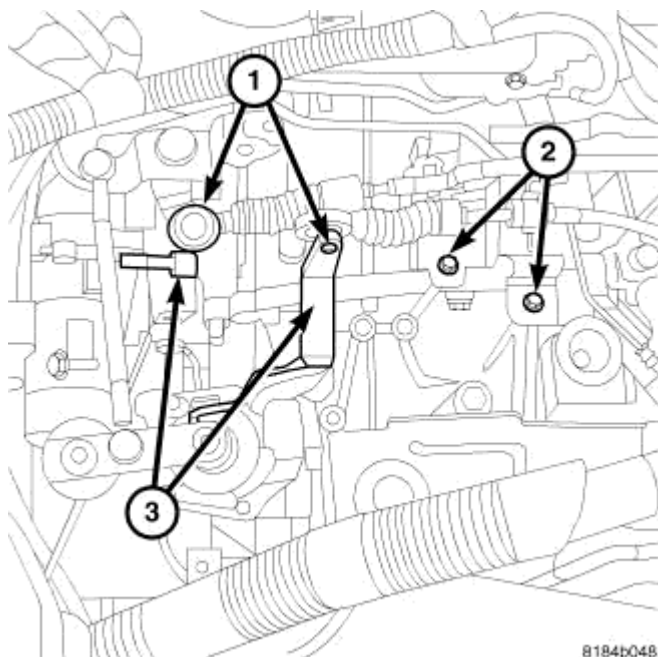


Fig. 163: Shift Cables & Bracket
Courtesy of CHRYSLER LLC

CAUTION: Gearshift cable bushings must not be lubricated or the bushings will swell and split.

1. Install cable assembly through floor pan opening until grommet is seated.
2. Route transaxle end of cable assembly into engine compartment and over transaxle assembly.
3. Connect cables (1) to the shift levers (3) at the transaxle.

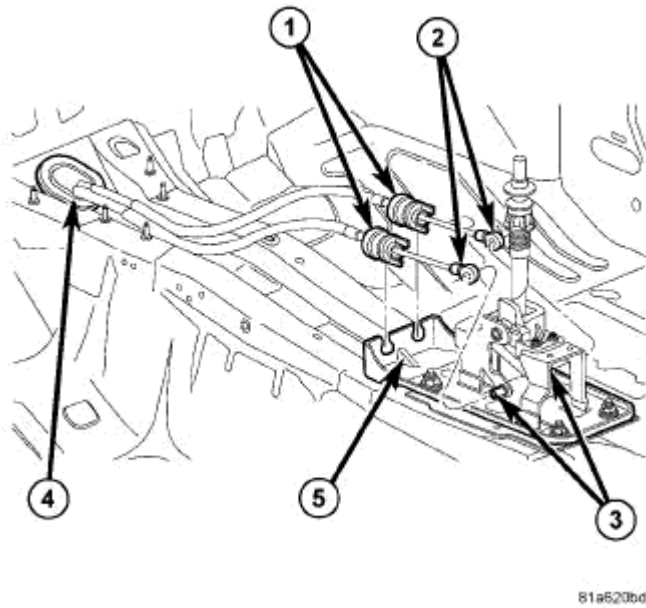


Fig. 164: Shift Cables To Shifter
Courtesy of CHRYSLER LLC

4. Install gearshift cables to mounting bracket (5) and fasten with NEW clips (2). Make sure clips are installed flush to bracket.
5. Install cables (2) to shifter levers (3).
6. Install ORC. Refer to **Restraints/MODULE, Occupant Restraint Controller - Installation** .
7. Install the air cleaner assembly.
8. Connect battery cables.

ADJUSTMENTS

ADJUSTMENT

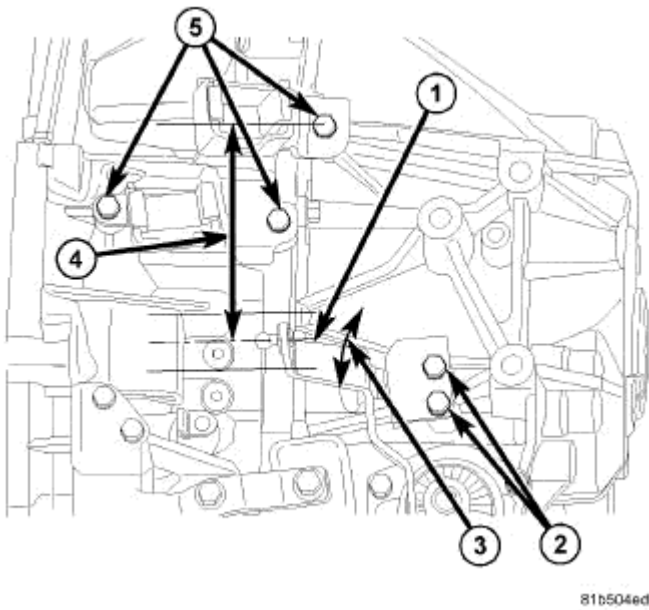


Fig. 165: Shift Adjustment
Courtesy of CHRYSLER LLC

Increase the (4) distance to eliminate 2nd gear downshift blocking condition (3-2, or 4-2 blocking).

NOTE: Must verify reverse shift after adjusting.

Decrease the distance if shifter can not engage reverse.

1. Loosen select lever bracket bolts (2).
2. Adjust gage length fore/aft by pivoting bracket and securing. Torque to 21.4 +/- 5.2 N.m.

DIFFERENTIAL, TRANSAXLE

DESCRIPTION

DESCRIPTION

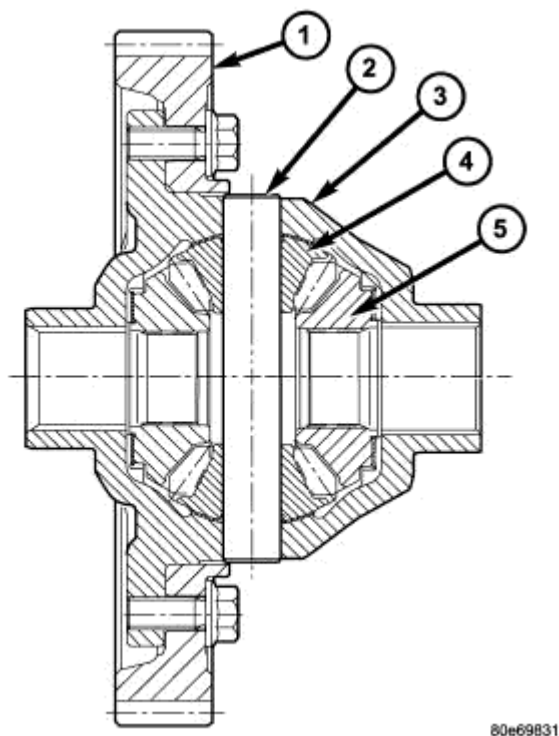


Fig. 166: Differential Assembly
Courtesy of CHRYSLER LLC

- 1 - RING GEAR
- 2 - PINION SHAFT
- 3 - DIFFERENTIAL CASE
- 4 - PINION GEAR
- 5 - SIDE GEAR

The BG6 differential is a conventional open design, and is integral to the transaxle. It consists of a single-piece case (3), which houses pinion (4) and side gears (5). A pinion shaft (2) is retained by the differential ring gear (1) and roll pin. The differential case is supported in the transaxle by tapered roller bearings.

OPERATION

OPERATION

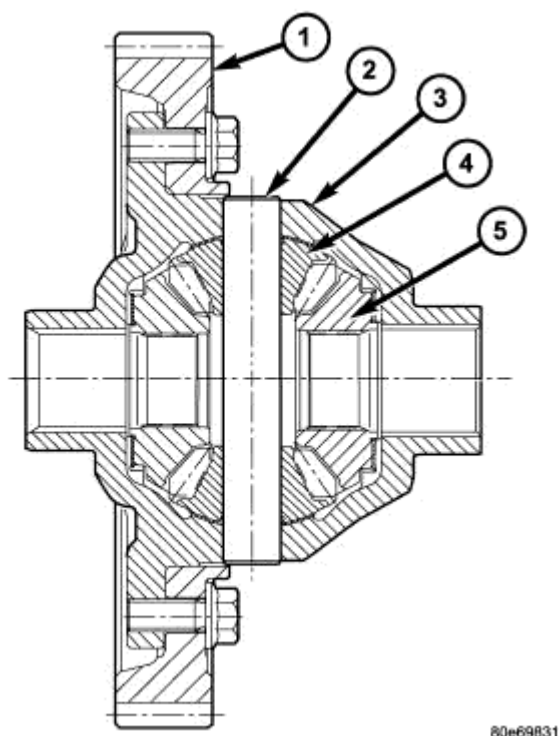


Fig. 167: Differential Assembly
Courtesy of CHRYSLER LLC

- | |
|--|
| 1 - RING GEAR
2 - PINION SHAFT
3 - DIFFERENTIAL CASE
4 - PINION GEAR
5 - SIDE GEAR |
|--|

The differential assembly is driven by the intermediate shaft via the ring gear (1). The ring gear drives the differential case (3), and the case drives the halfshafts through the differential gears. The differential pinion (4) and side gears (5) are supported in the case by pinion shafts and thrust washers. Differential pinion (4) and side gears (5) make it possible for front wheels to rotate at different speeds while cornering.

REMOVAL

REMOVAL

1. The transaxle must be removed to gain access to and service the differential assembly. See **Removal**.
2. Disassemble transaxle and remove differential. See **Disassembly**.

DISASSEMBLY

DISASSEMBLY

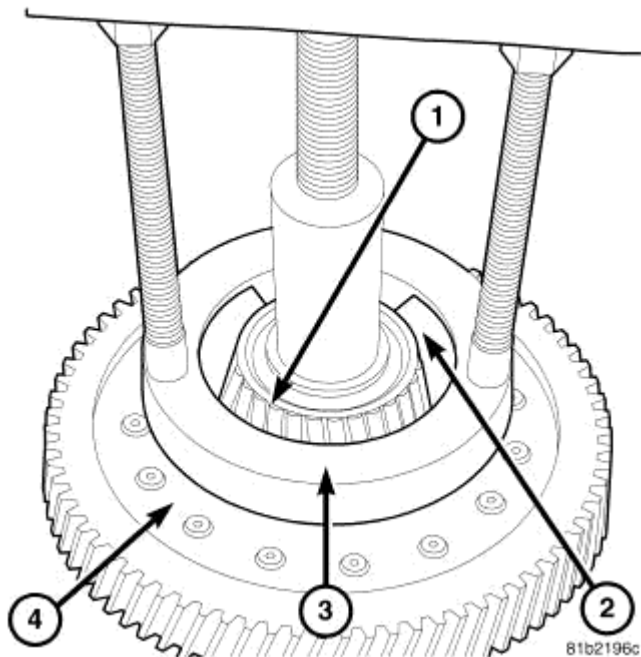


Fig. 168: Remove Differential Bearings
Courtesy of CHRYSLER LLC

1. Use Plug C-293-3, Puller/Press C-293-PA (3), and Puller Adapters 9613 (2) on ring gear side (4) to remove the pinion side bearing (1).

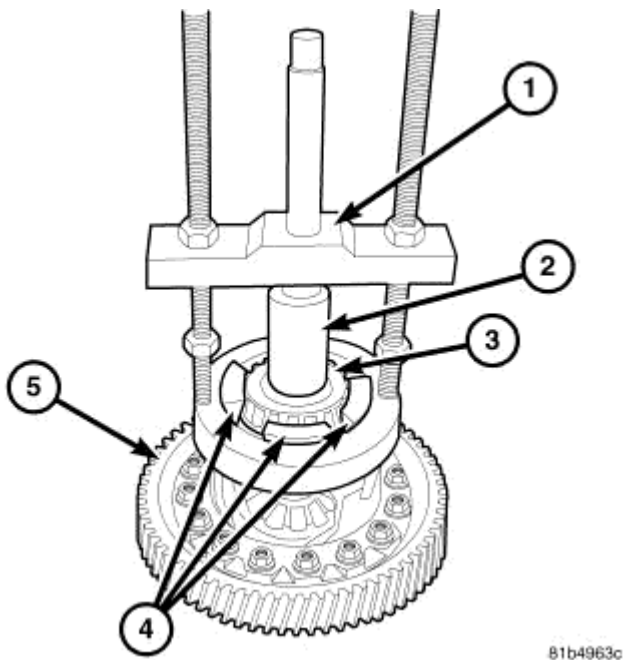


Fig. 169: Remove Differential Bearing Pinion Side
Courtesy of CHRYSLER LLC

2. Use Plug C-293-3, Puller/Press C-293-PA (1) and Adapters C-293-37 (4) on pinion side with 2WD. Use

Puller Adapters 9614 (4), Puller/Press C-293-PA (1) and Remover C-4656 as a plug on pinion side with a AWD to remove pinion side bearing (1).

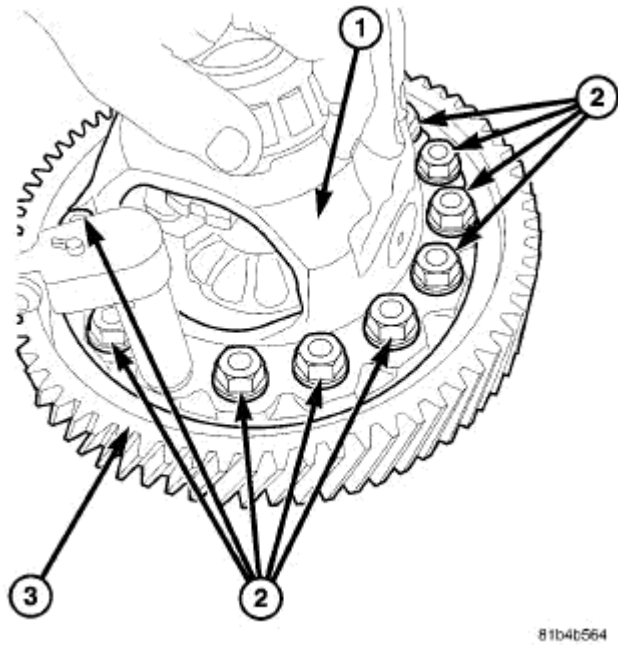
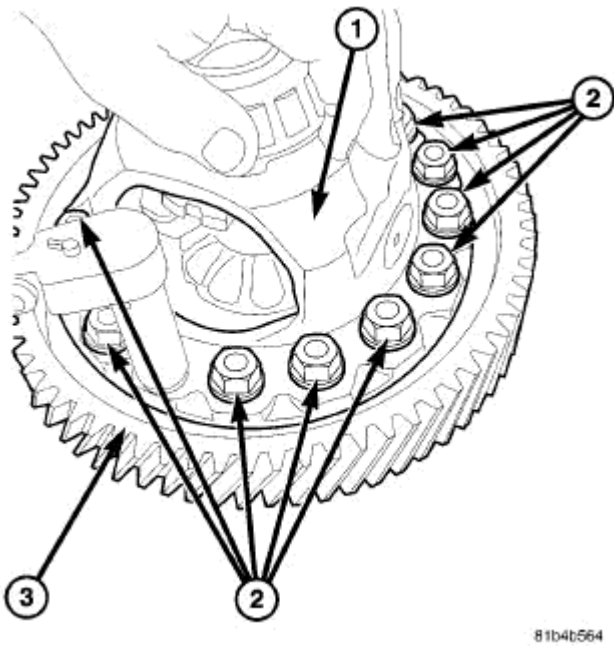


Fig. 170: Bolts At Ring Gear
Courtesy of CHRYSLER LLC

3. Remove the bolts at the ring gear.
4. Remove the ring gear by tapping with a soft face hammer.

ASSEMBLY

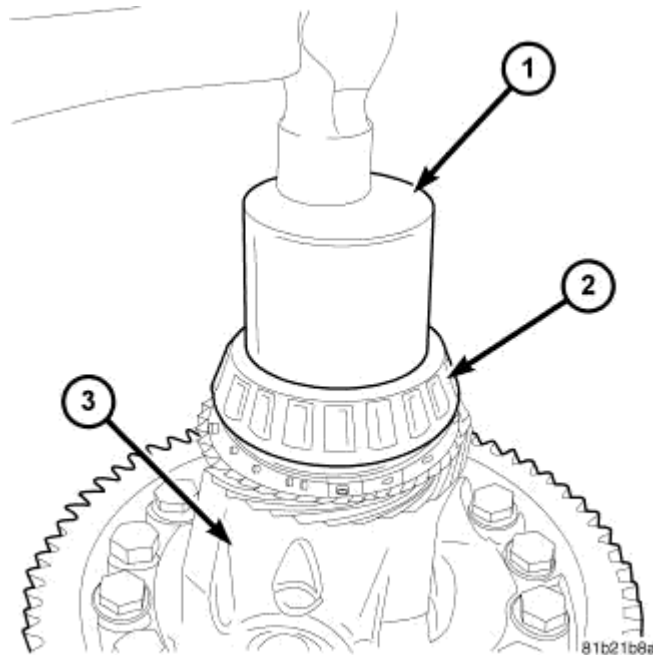
ASSEMBLY



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Fig. 171: Bolts At Ring Gear
Courtesy of CHRYSLER LLC

1. Install differential ring gear. Install and torque ring gear-to-case bolts to 106 N.m (78 ft. lbs.).



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Fig. 172: Pinion Side Differential Bearing
Courtesy of CHRYSLER LLC

2. Use Compressor Field Coil Remover 9354 (1) to install the pinion side differential bearing (2).

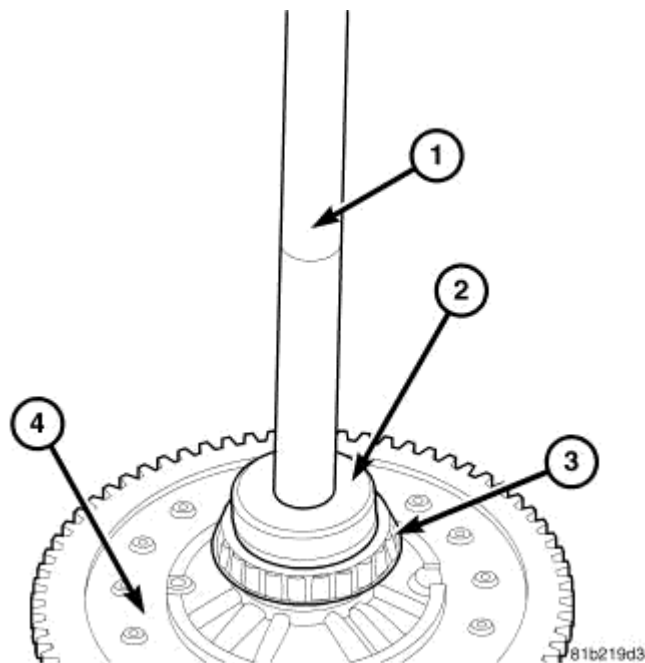


Fig. 173: Install Ring Gear Side Differential Bearing
Courtesy of CHRYSLER LLC

3. Use Universal Handle C-4171 (1) and Bearing Installer 9523 (2) to install the ring gear side differential bearing (3).

INSTALLATION

INSTALLATION

1. Differential installation is part of the transaxle assembly process. Be sure to use the same differential shim that was removed upon disassembly. See **Assembly**.

ADJUSTMENTS

ADJUSTMENT

BEARING ADJUSTMENT PROCEDURE

1. Use extreme care when removing and installing bearing cups and cones. Use only an arbor press for installation, as a hammer may not properly align the bearing cup or cone. Burrs or nicks on the bearing seat gives a false end-play reading while gauging for proper shims. Improperly seated bearing cups and cones are subject to low-mileage failure.
2. Bearing cups and cones should be replaced if they show signs of pitting or heat distress. If distress is seen on either the cup or bearing rollers, both cup and cone must be replaced.
3. Bearing preload and drag torque specifications must be maintained to avoid premature bearing failures. Used (original) bearings may lose up to 50% of the original drag torque after break-in. All bearing adjustments must be made with no other component interference or gear intermesh.

4. Replace bearings as a pair: If one differential bearing is defective, replace both differential bearings, if one input shaft bearing is defective, replace both input shaft bearings.
5. Bearing cones must not be reused if removed.
6. Turning-torque readings should be obtained while smoothly rotating in either direction.

DIFFERENTIAL BEARING PRELOAD ADJUSTMENT

NOTE: True bearing turning-torque readings can be obtained only with the geartrain removed from the case.

1. Remove bearing cup and existing shim from clutch bellhousing case.
2. Press in new bearing cup into bellhousing case (or use a cup that has been ground down on the outer edge for ease of measurement).
3. Press in new bearing cup into gear case side.
4. Oil differential bearings with transmission fluid. Install differential assembly in transaxle gear case. Install clutch bellhousing over gear case. Install and tighten case bolts to 29 N.m (257 in. lbs.).
5. Position transaxle with bellhousing facing down on workbench with C-clamps. Position dial indicator.

NOTE: The dial indicator should be parallel to T-Handle to obtain the most accurate reading.

6. Apply a medium load to differential with Torque Tool C-4995A (3) and a T-handle, in the downward direction. Roll differential assembly back and forth a number of times. This will settle the bearings. Zero the dial indicator (2). To obtain end play readings, apply a medium load in an upward direction while rolling differential assembly back and forth. Record end play.
7. The shim required for proper bearing preload is the **total of end play, plus (constant) preload of 0.18 mm (0.007 in.)**. Never combine shims to obtain the required preload.
8. Remove case bolts. Remove clutch bellhousing differential bearing cup. Install shim(s) selected, then press the bearing cup into clutch bellhousing.
9. Install clutch bellhousing. Install and tighten case bolts to 29 N.m (257 in. lbs.).
10. Using Torque Tool C-4995A (2) and an inch-pound torque wrench (1), check turning torque of the differential assembly. **The turning torque should be 9 to 22 in. lbs. If the turning torque is too high, install a 0.05 mm (0.002 inch) thinner shim. If the turning torque is too low, install a 0.05 mm (0.002 inch) thicker shim.**
11. Recheck turning torque (1). Repeat until the proper turning torque is obtained.
12. Once proper turning torque has been established for the differential separate case halves, install counter shaft assembly into case with the differential and recheck differential turning torque. **The turning torque should be 37 to 52 in. lbs. If the turning torque is too high, install a 0.05 mm (0.002 inch) thinner shim. If the turning torque is too low, install a 0.05 mm (0.002 inch) thicker shim.**
13. Recheck total turning torque (1). Repeat until the proper turning torque is obtained.

Once proper turning torque has been established, place gear case on the end plate. Draw a bead of MOPAR® Gasket Maker, Loctite® 518, or equivalent, on the flat surface of the case mating flange. Install clutch

bellhousing onto gear case. Install and tighten case bolts to 29 N.m (257 in. lbs.).

FLUID

STANDARD PROCEDURE

FLUID LEVEL CHECKING

The fluid required for this transaxle is Mopar® ATF+4 (Automatic Transmission Fluid). Use of improper or substitute fluids can cause shift problems and/or transaxle failure.

1. Insure the vehicle is level, remove the fill plug and add fluid until the fluid just starts to trickle out.

FLUID DRAIN AND FILL

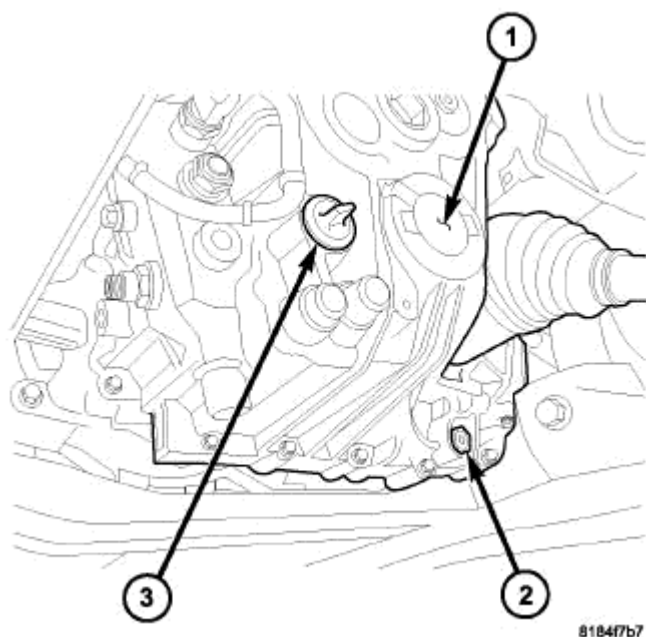


Fig. 174: Drain Plug

Courtesy of CHRYSLER LLC

NOTE: The fluid required for this transaxle is Mopar® ATF+4 (Automatic Transmission Fluid). Use of improper or substitute fluids can cause shift problems and/or transaxle failure.

1. Raise vehicle on hoist.
2. Obtain suitable fluid collection container and place under transaxle.
3. Remove transaxle drain plug (2). Allow fluid to drain into container until empty.
4. Install the drain plug (2) with a **new** gasket and tighten to 39 N.m (29 ft. lbs.).

5. Remove transaxle rubber fill plug (3).
6. Add the appropriate amount of transaxle fluid to the transaxle. Refer to **Vehicle Quick Reference/Capacities and Recommended Fluids - Specifications** .
7. Install the transaxle rubber fill plug (3).

INPUT SHAFT, TRANSMISSION

DISASSEMBLY

DISASSEMBLY

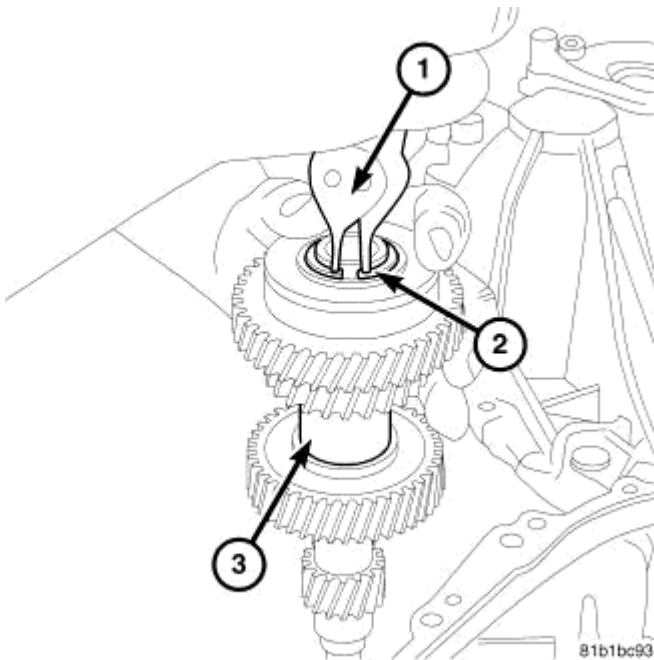


Fig. 175: Snap Ring At Input Shaft
Courtesy of CHRYSLER LLC

1. Remove the snap ring (2) that retains the input shaft bearing and sixth gear to the shaft.

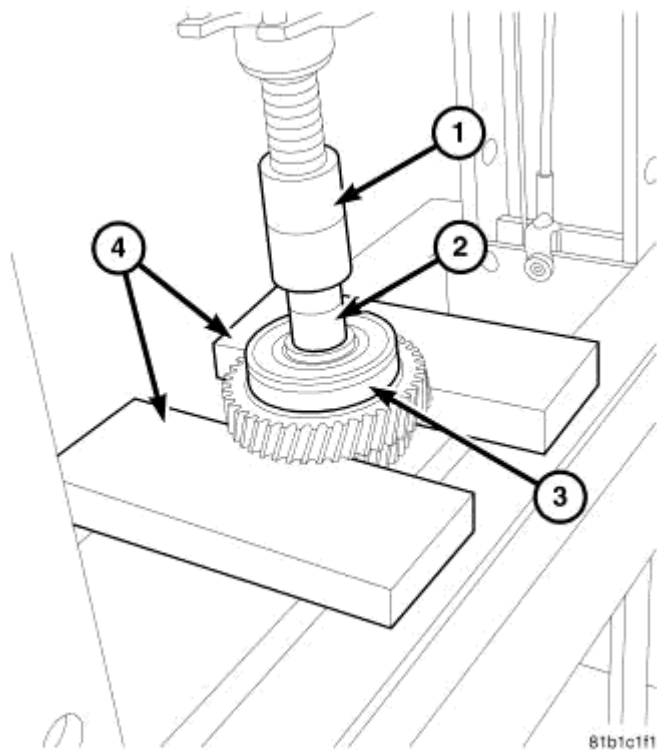


Fig. 176: Press Bearing From Input Shaft
 Courtesy of CHRYSLER LLC

2. Using a press (1) and steel blocks (4) remove sixth gear and the bearing (3) from the shaft.

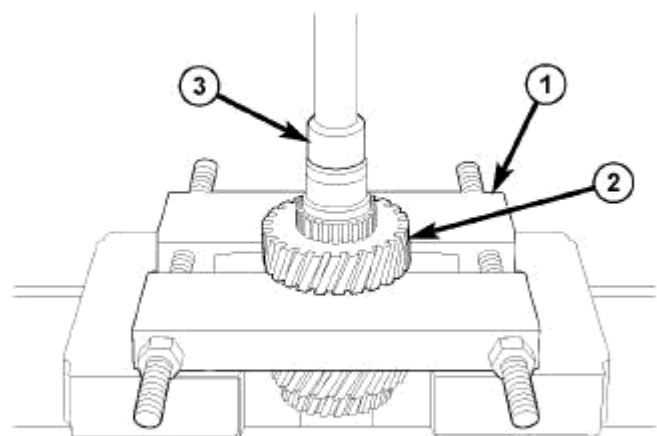


Fig. 177: Input 3rd Gear

Courtesy of CHRYSLER LLC

3. Using a Press (3) and the Bearing Splitter 1130 (1) remove third gear (2) from shaft.
4. Remove the spacer.

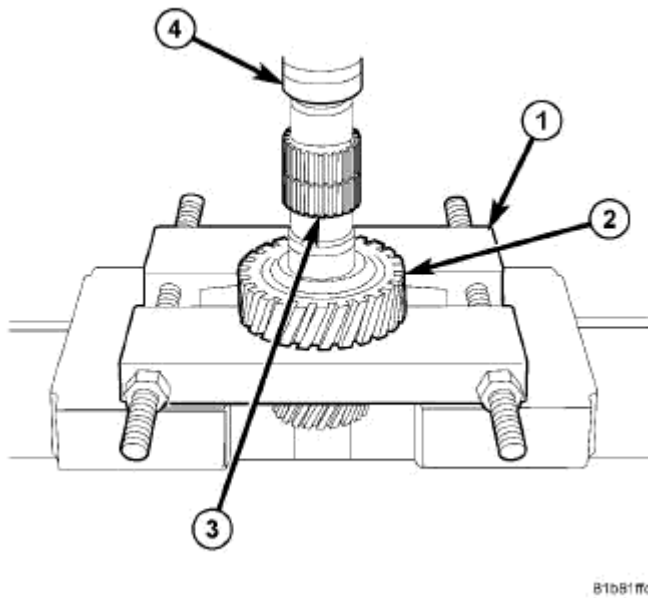


Fig. 178: Fourth Gear Off Input Shaft
Courtesy of CHRYSLER LLC

5. Using a Press (3) and the Bearing Splitter 1130 (1) remove forth gear (2) from shaft.

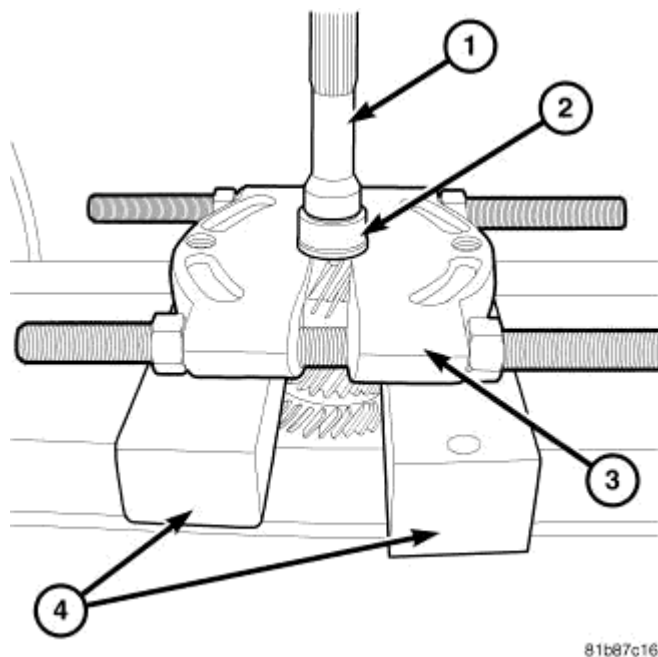


Fig. 179: Input Shaft Bearing Race
Courtesy of CHRYSLER LLC

6. Using a Press and the Bearing Splitter 1130 (3) remove the input shaft bearing race (2).

ASSEMBLY

ASSEMBLY

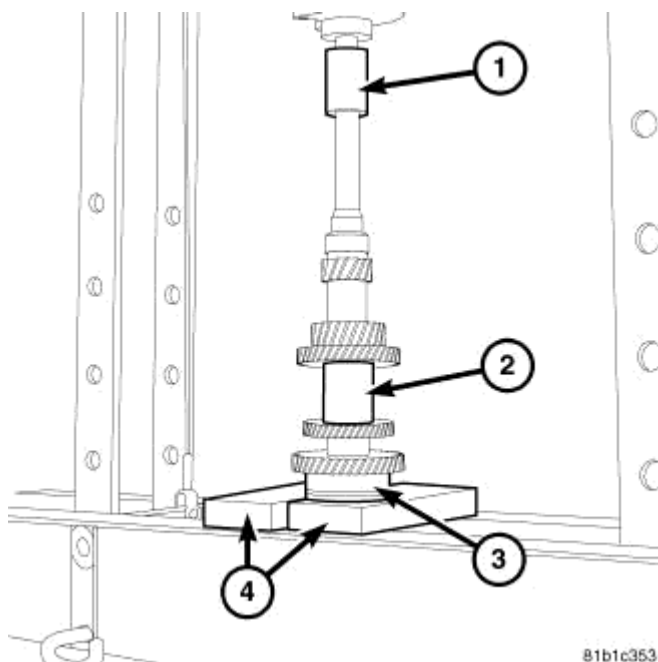


Fig. 180: Bearing On Input Shaft

Courtesy of CHRYSLER LLC

1. Using a press (1) and steel blocks (4) install third gear and the bearing (3) onto the shaft.

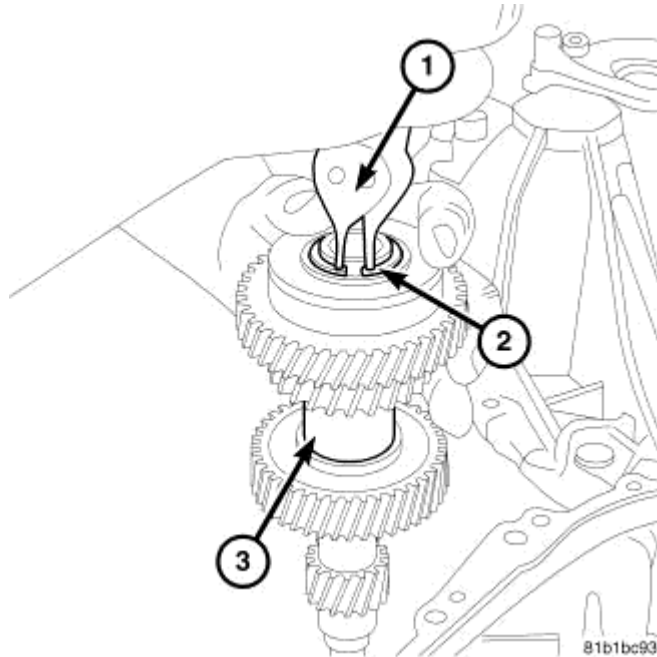


Fig. 181: Snap Ring At Input Shaft
Courtesy of CHRYSLER LLC

2. Install the **new** snap ring (2) that retains the input shaft bearing and third gear to the shaft.

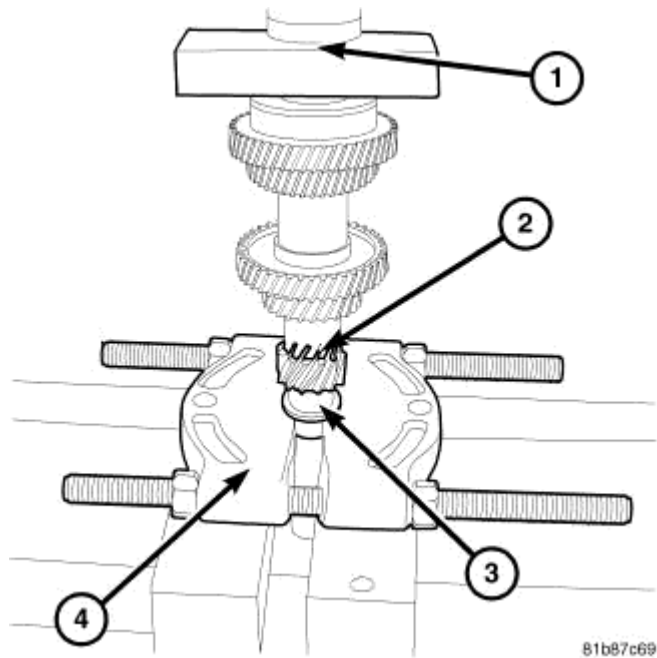


Fig. 182: Install Input Shaft Bearing Race

Courtesy of CHRYSLER LLC

3. Using Bearing Splitter 1130 (4) and a Press (1) install the input shaft bearing race (3) onto the input shaft (2).

LEVER, SHIFT

REMOVAL

REMOVAL

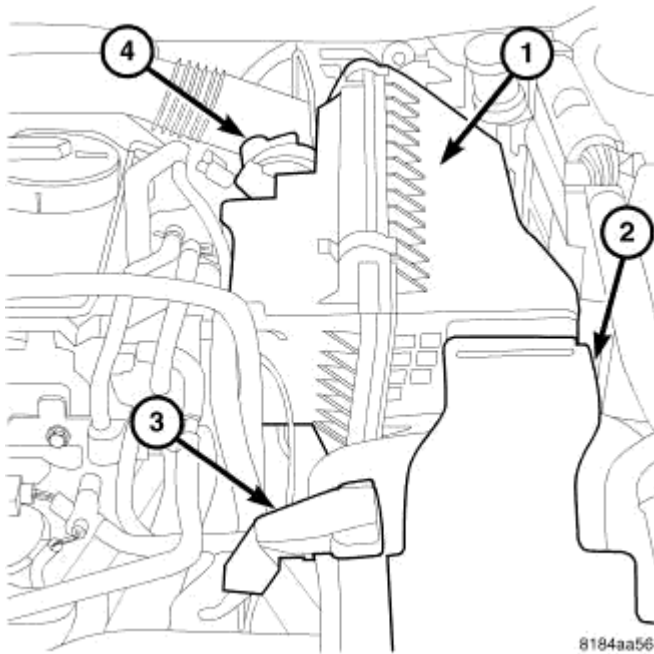


Fig. 183: Air Cleaner And Inlet Tube
Courtesy of CHRYSLER LLC

Remove the engine cover.

1. Disconnect battery negative cable.
2. Remove air inlet tube (2) and air cleaner assembly (4).

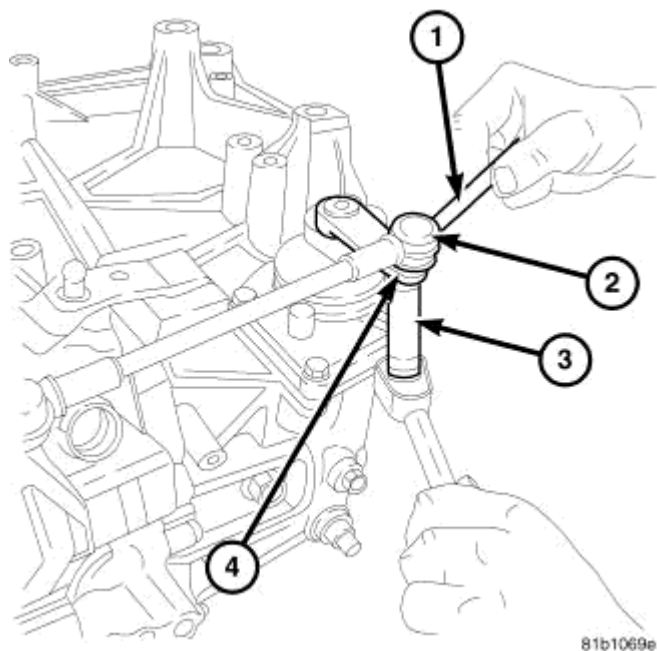


Fig. 184: Nut Crossover Rod To Shift Lever
Courtesy of CHRYSLER LLC

3. Remove the nut (4) holding the crossover rod (2) to the shift lever. Be sure to use a wrench (1) to hold the ball stud to prevent it from rotating in the shift lever.

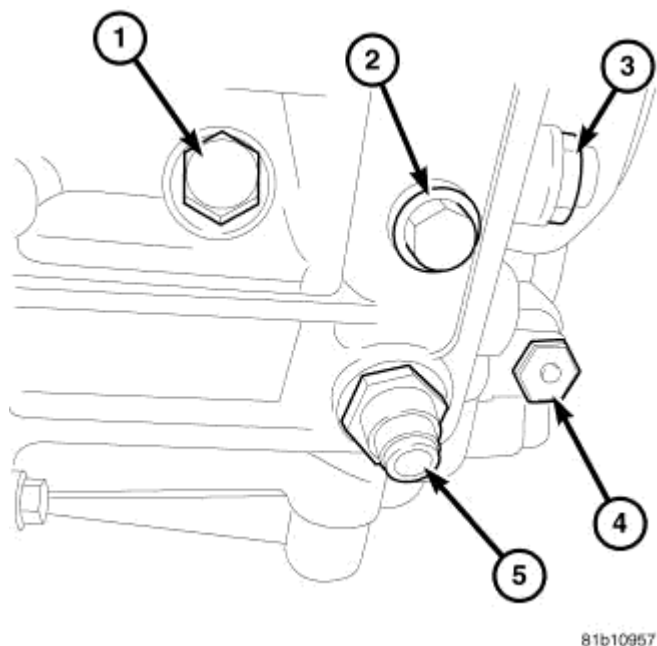


Fig. 185: Anti-Rotation Bolt
Courtesy of CHRYSLER LLC

4. Loosen and remove shift tower ball for the shift detent (5).

5. Loosen and remove shift lock ball for the select detent (3).
6. Loosen and remove shift guide pin (2).

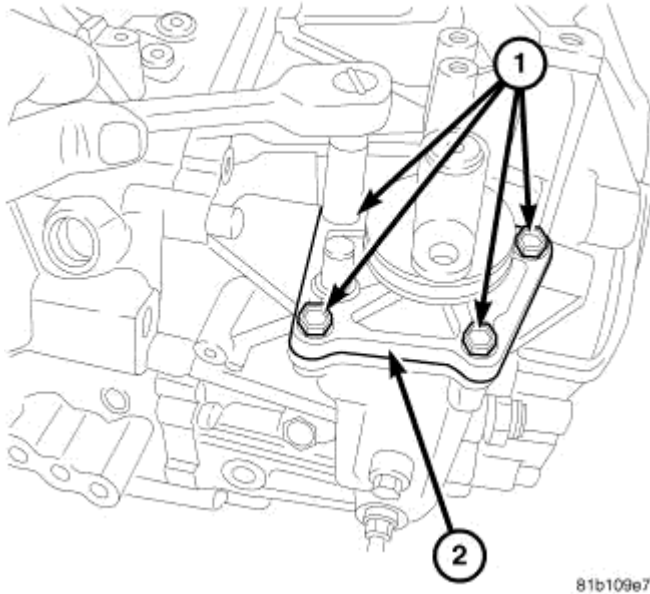


Fig. 186: Shift Lever Assembly Bolts
Courtesy of CHRYSLER LLC

7. Remove the bolts holding the shift lever assembly to the transmission.

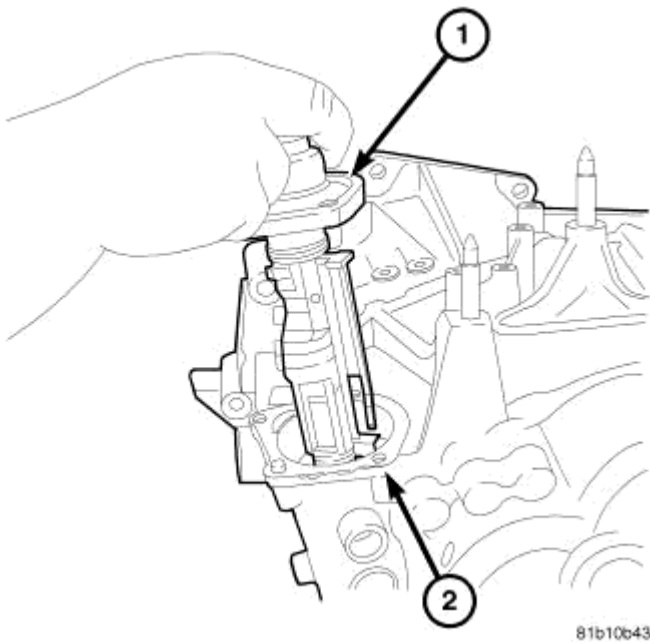


Fig. 187: Shift Lever Assembly
Courtesy of CHRYSLER LLC

8. Remove the shift lever assembly from the transmission case.

INSTALLATION

INSTALLATION

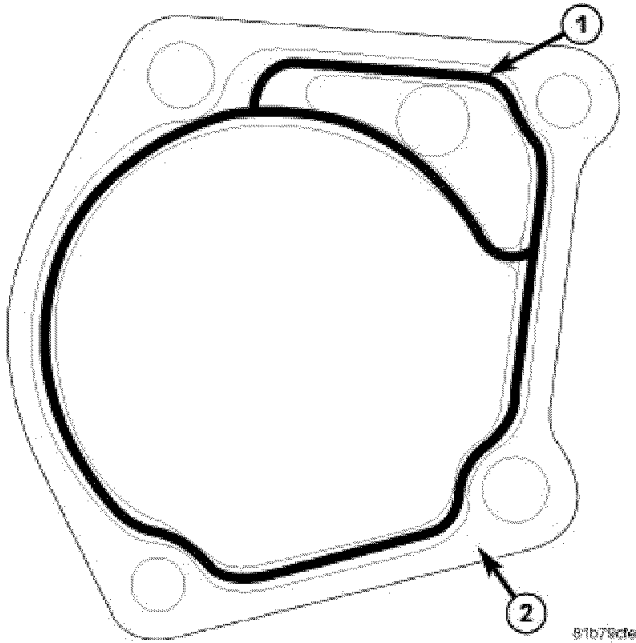


Fig. 188: Sealer

Courtesy of CHRYSLER LLC

1. Add MOPAR® Gasket Maker, Loctite® 518, or equivalent around inside of all holes and on mating flange.

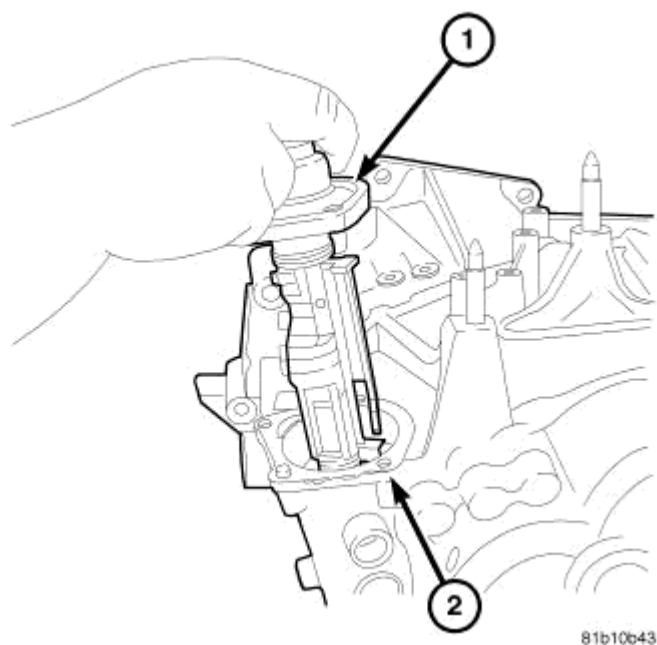


Fig. 189: Shift Lever Assembly
Courtesy of CHRYSLER LLC

2. Install the shift lever assembly (1) into the transmission case (2).

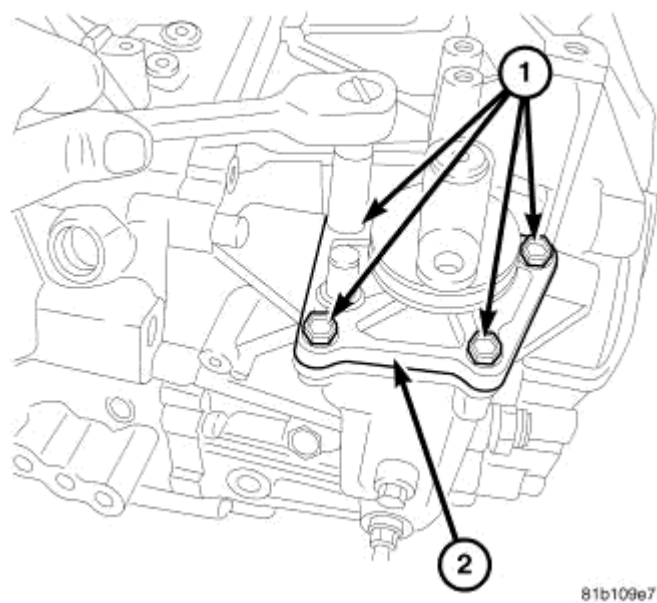


Fig. 190: Shift Lever Assembly Bolts
Courtesy of CHRYSLER LLC

3. Install the **new** bolts (1) holding the shift lever assembly (2) to the transmission and tighten to 19 N.m (168 in. lbs.)

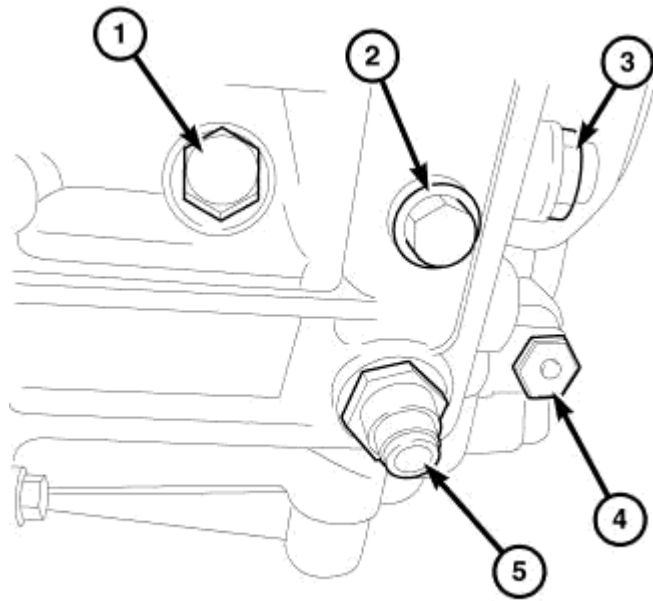


Fig. 191: Anti-Rotation Bolt
Courtesy of CHRYSLER LLC

4. Install **new** shift tower lock ball for shift detent (5) and tighten to 29 N.m (277 in. lbs.).
5. Install **new** shift lock ball for the select detent (3) and tighten to 39 N.m (345 in. lbs.).
6. Install **new** shift tower shift guide pin (2) and tighten to 30 N.m (277 in. lbs.).

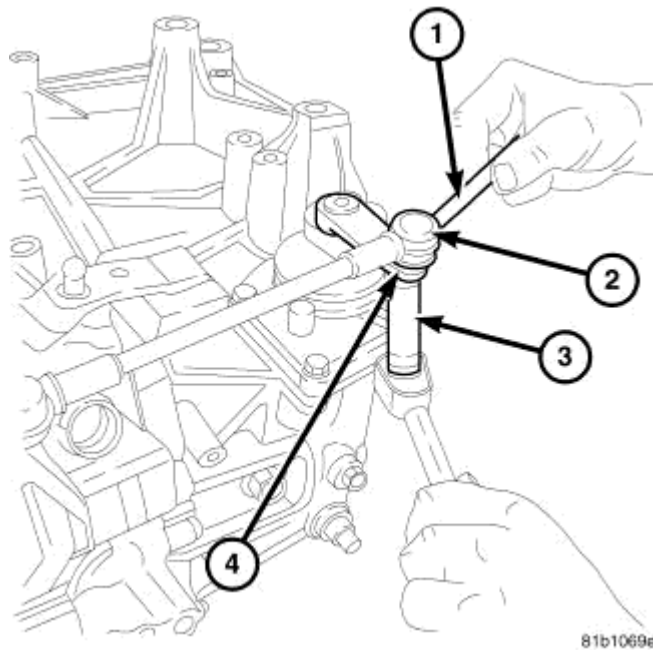


Fig. 192: Nut Crossover Rod To Shift Lever
Courtesy of CHRYSLER LLC

CAUTION: Be sure to verify bracket position after installation. See Adjustments .

7. Install the nut (4) holding the crossover rod (2) to the shift lever. Be sure to use a wrench (1) to hold the ball stud to prevent it from rotating in the shift lever tighten to 12 N.m (106 in. lbs.).

MECHANISM, GEARSHIFT

REMOVAL

REMOVAL

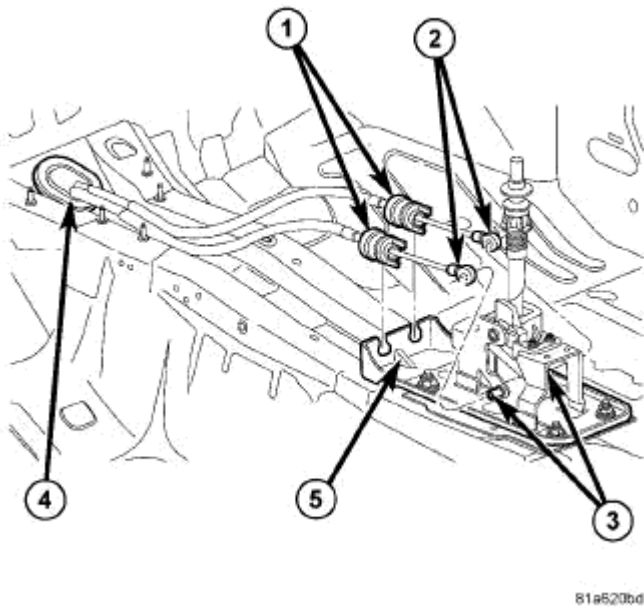


Fig. 193: Shift Cables To Shifter
Courtesy of CHRYSLER LLC

1. Detach gear shift boot from console.
2. Remove the center console assembly. Refer to Body/Interior/HOUSING, Shifter - Removal .
3. Remove rear power window switch (if equipped) and disconnect harness from console.
4. Remove cables (2) from shift levers (3).
5. Remove the cables (1) from the bracket (5).

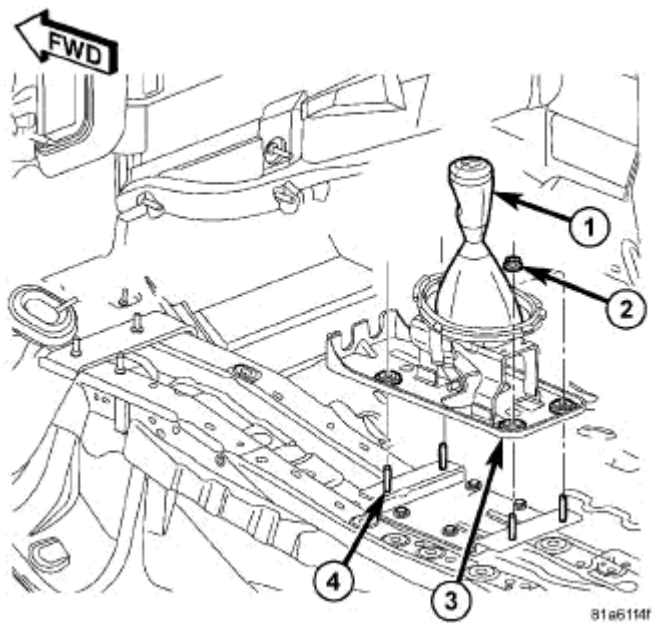


Fig. 194: Manual Transaxle Shifter
Courtesy of CHRYSLER LLC

6. Remove the shifter assembly nuts (2) and remove shifter (3) from vehicle.

INSTALLATION

INSTALLATION

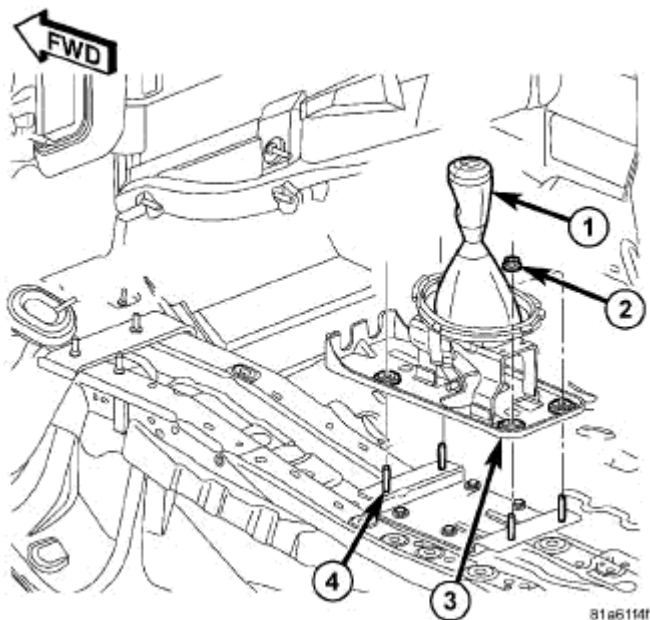


Fig. 195: Manual Transaxle Shifter
Courtesy of CHRYSLER LLC

1. Install shifter assembly (3), Install and tighten nuts (2) to 7 N.m (61 in. lbs.).

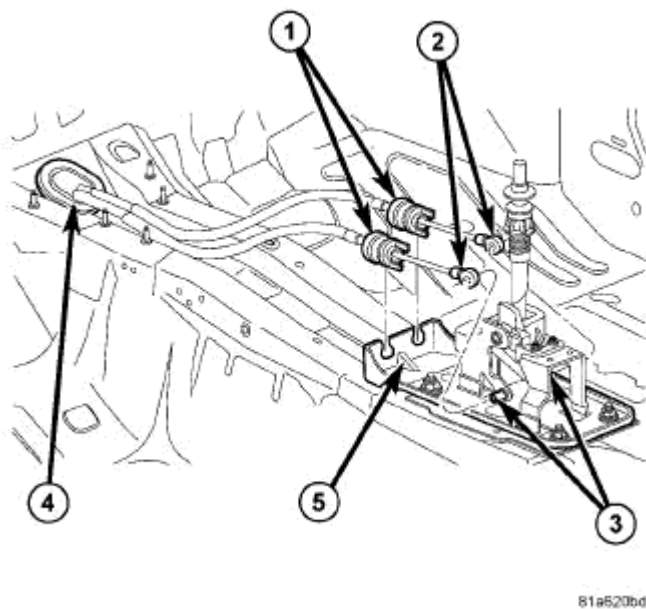


Fig. 196: Shift Cables To Shifter
Courtesy of CHRYSLER LLC

2. Install cables (2) to shifter levers (3) and secure cable to shifter bracket (5).
3. Install center console assembly. Refer to **Body/Interior/HOUSING, Shifter - Installation**.
4. Install rear power window switch (if equipped) and fasten harness to console
5. Attach gearshift boot to center console assembly.
6. Verify that shift pattern is aligned properly.

SEAL, AXLE DRIVE SHAFT

REMOVAL

REMOVAL

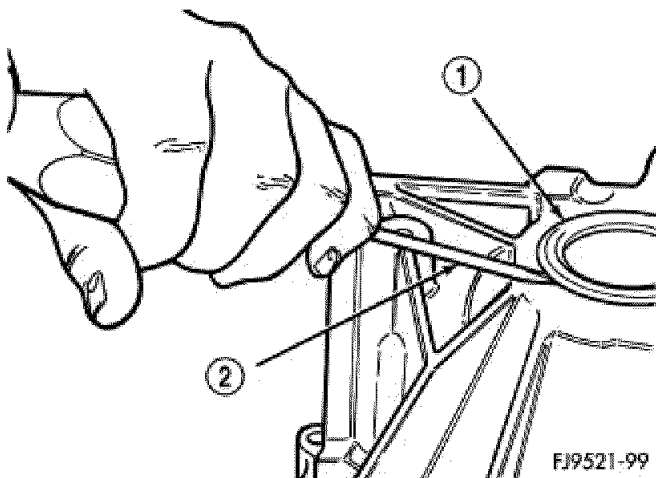


Fig. 197: Axle Shaft Seal Removal

Courtesy of CHRYSLER LLC

1. Remove axle shaft. Refer to **Differential and Driveline/Half Shaft - Removal**.
2. Insert a flat-blade pry tool (2) at outer edge of axle shaft seal (1).
3. Tap on the pry tool (2) with a small hammer and remove axle shaft seal (1).

INSTALLATION

INSTALLATION

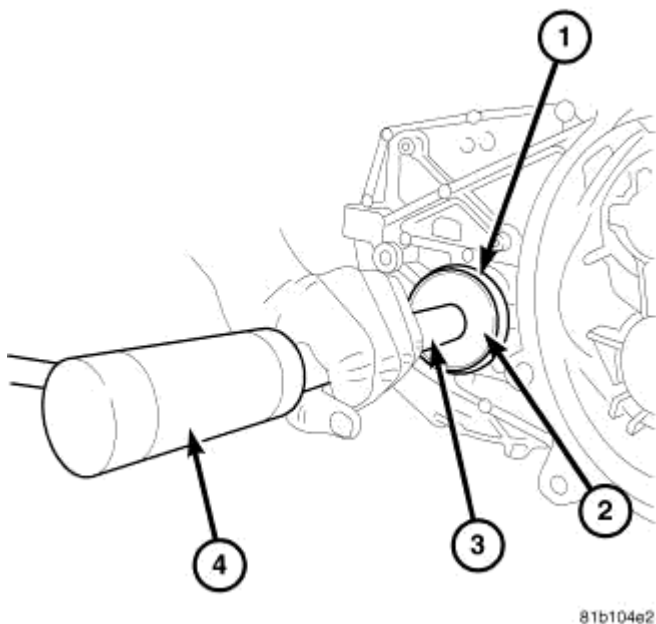


Fig. 198: Aligning Axle Shaft Seal With Axle Shaft Seal Bore
Courtesy of CHRYSLER LLC

1. Clean axle shaft seal bore of any excess sealant.
2. Align (bellhousing side) axle shaft seal with axle shaft seal bore.
3. Install axle seal on Seal Installer 9928 and Handle C-4171 and insert into axle shaft seal bore.
4. Tap seal into position until seated against transaxle case.

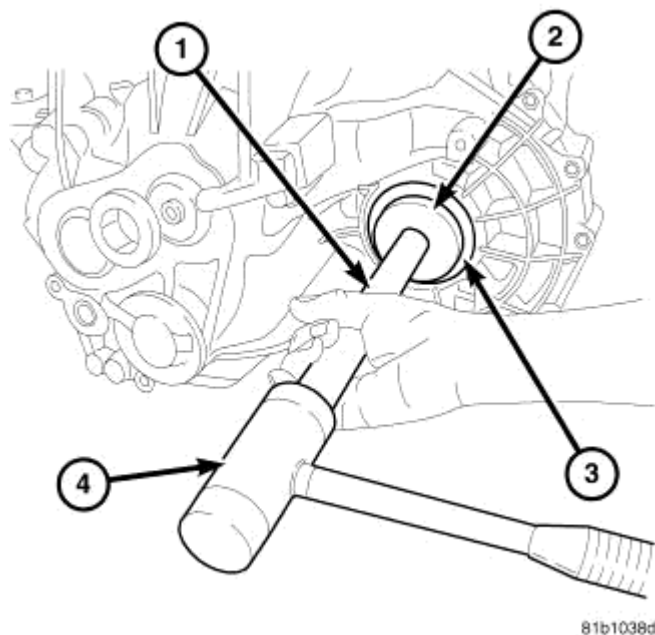


Fig. 199: Differential Side Seal
Courtesy of CHRYSLER LLC

5. Align axle shaft seal with axle shaft seal bore.
6. Install (case side) axle seal on Seal Installer 9934 and Handle C-4171 and insert into axle shaft seal bore.
7. Tap seal into position until seated against transaxle case.
8. Install axle shaft. Refer to **Differential and Driveline/Half Shaft - Installation** .
9. Check transaxle fluid level and adjust as necessary.

SHAFT, OUTPUT, NUMBER 1

DISASSEMBLY

DISASSEMBLY

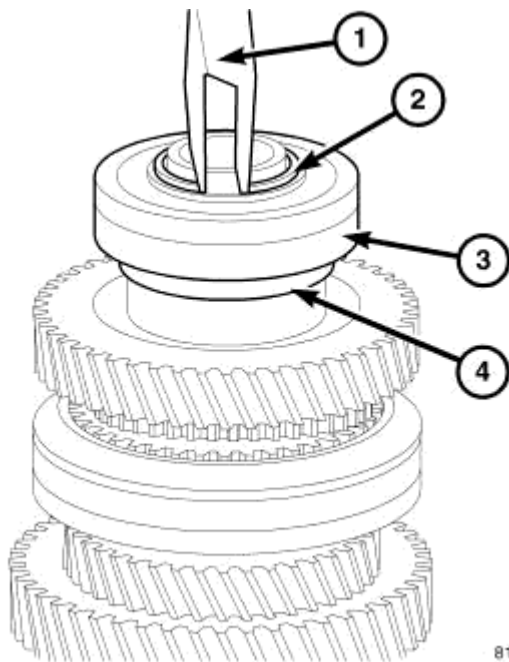


Fig. 200: Snap Ring At Output Shaft Case Bearing
Courtesy of CHRYSLER LLC

1. Remove the snap ring (2) from the output shaft.

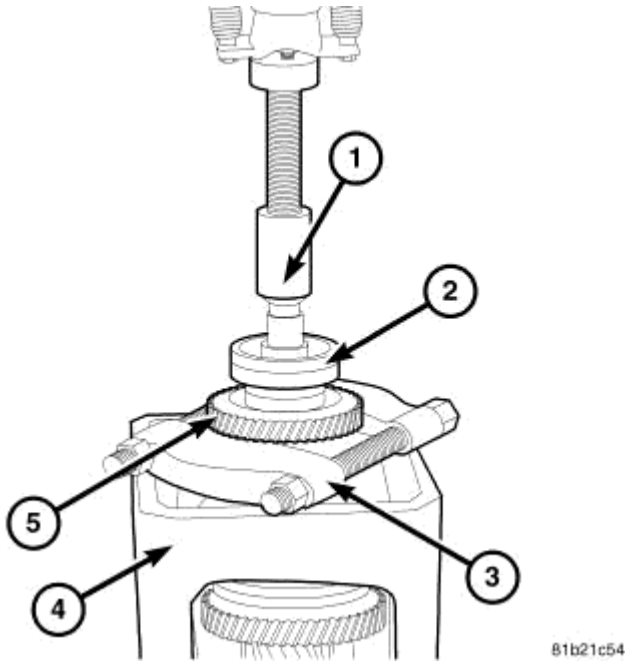


Fig. 201: Output Shaft Case Bearing And Gear
Courtesy of CHRYSLER LLC

2. Use Bearing Splitter P-334 (3), Cage 8925-3 (4) and a press (1) to remove bearing (2) and third gear (5) from output shaft.

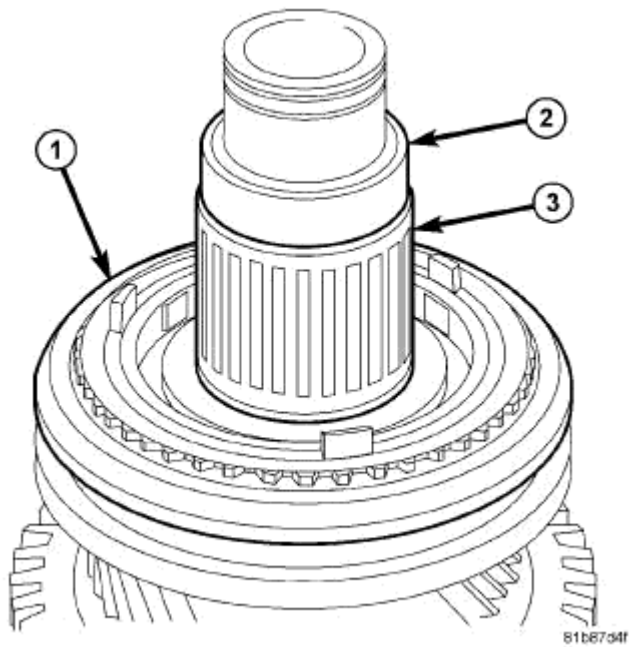


Fig. 202: Input Spacer & Bearing
Courtesy of CHRYSLER LLC

3. Remove the spacer (2), ball, needle roller bearing (3) and synchronizer ring set (1).

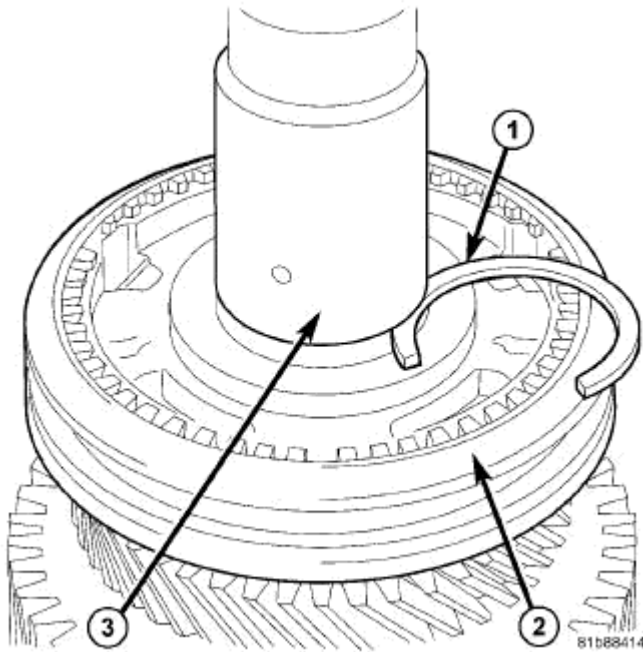


Fig. 203: Input Upper Snap Ring
Courtesy of CHRYSLER LLC

4. Remove the shaft snap ring (1).

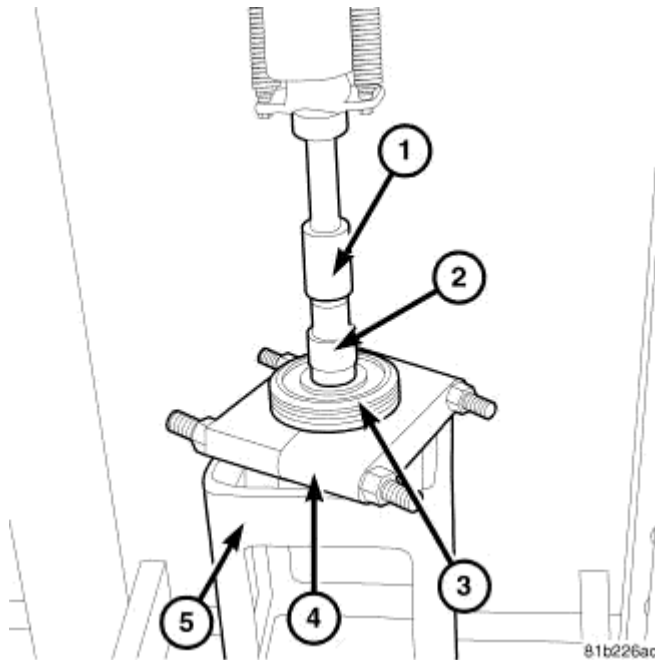


Fig. 204: Third/Fourth Gear Synchronizer & Output Shaft
Courtesy of CHRYSLER LLC

5. Use Press Plate 9647 (4) and Cage 8925-3 (5) to remove third/forth gear synchronizer (3) from output shaft (2).

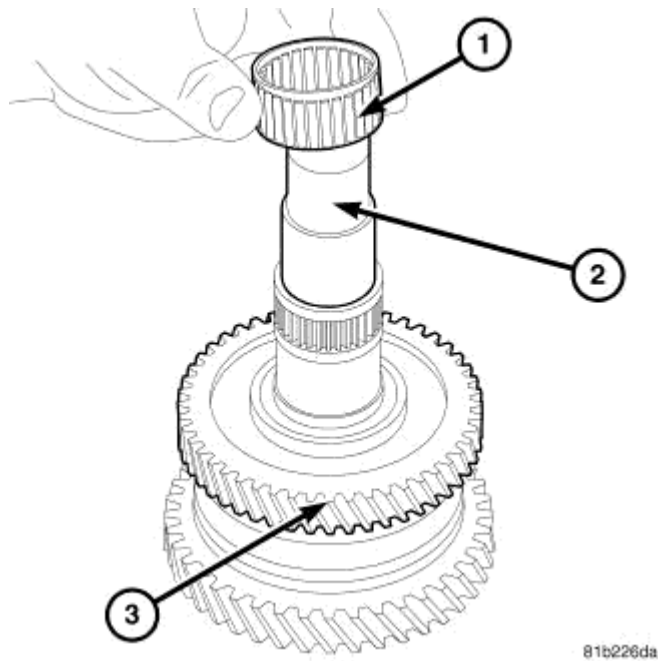


Fig. 205: Bearing & Output Shaft
Courtesy of CHRYSLER LLC

6. Remove the bearing (1) from the output shaft (2).

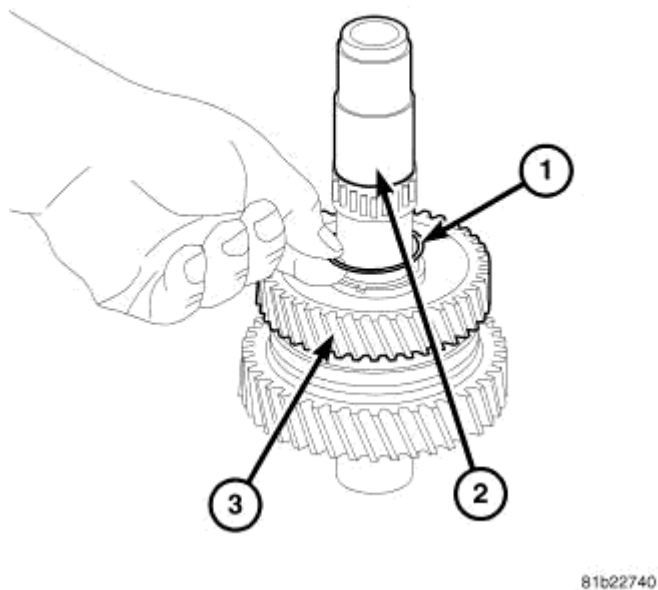


Fig. 206: Snap Ring From Output Shaft
Courtesy of CHRYSLER LLC

7. Remove the spacer and snap ring (1) from output shaft (2).

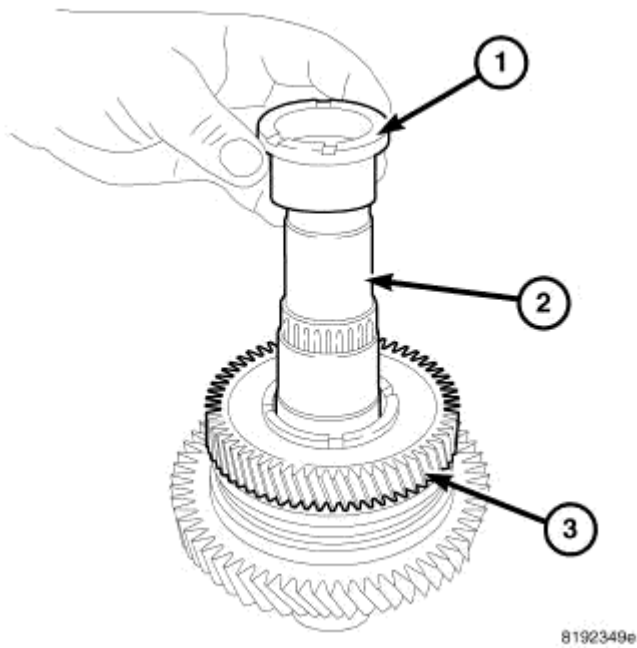


Fig. 207: Output Shaft Spacer
Courtesy of CHRYSLER LLC

8. Remove the second gear inner race (1) from the output shaft (2).

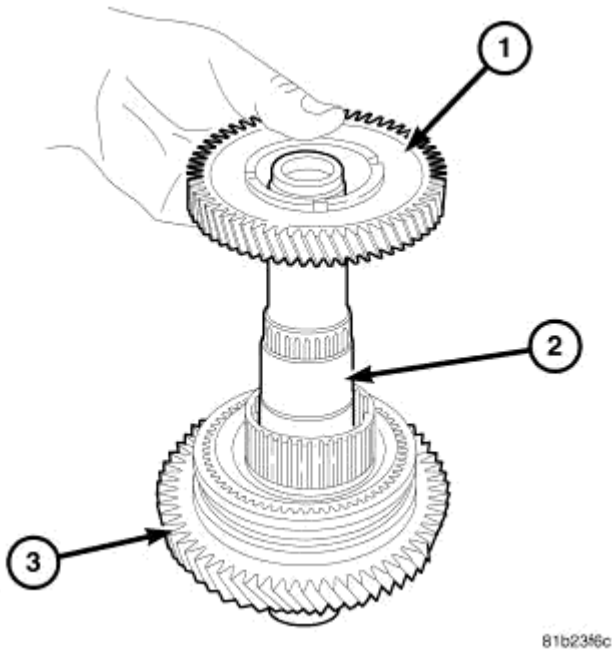
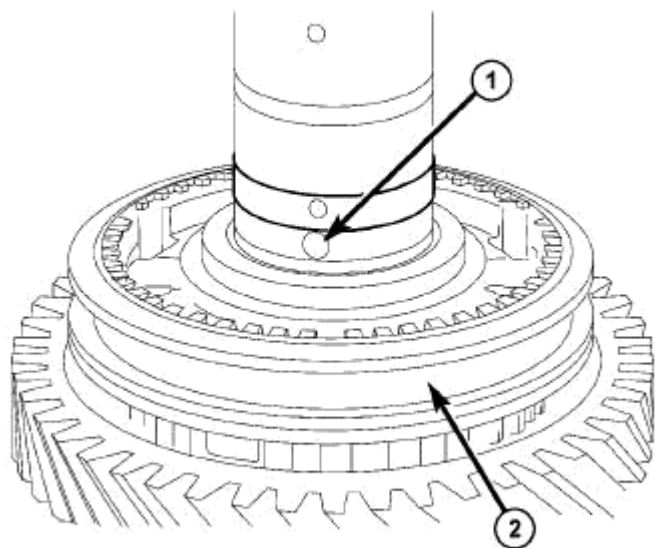


Fig. 208: Output Shaft 2nd Gear
Courtesy of CHRYSLER LLC

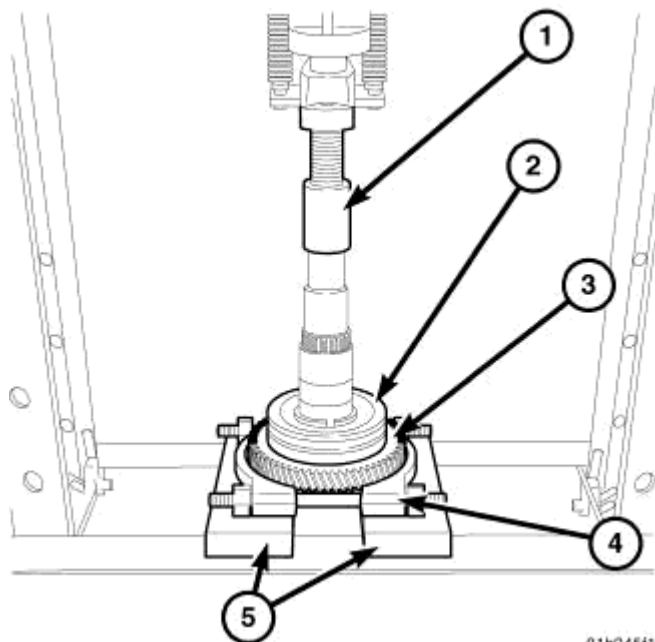
9. Remove second gear (1) from output shaft (2).
10. Remove the needle bearing.



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Fig. 209: Ball
Courtesy of CHRYSLER LLC

11. Remove the ball (1).

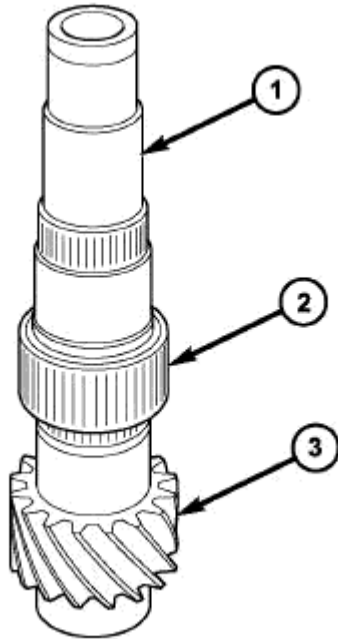


81b24511

Fig. 210: First/Second Gear Synchronizer & First Gear

Courtesy of CHRYSLER LLC

12. Use Bearing Splitter P-334 (4) press off the first/second gear synchronizer (3) and first gear (3).



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Fig. 211: First Gear Needle Bearing & Output Shaft
Courtesy of CHRYSLER LLC

13. Remove the Needle bearing (2) from the output shaft (1).

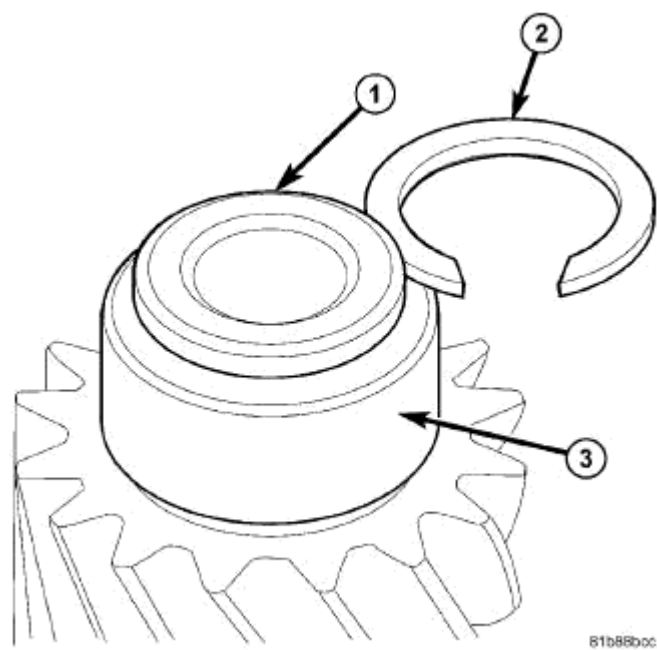


Fig. 212: Input Lower Snap Ring
Courtesy of CHRYSLER LLC

14. Remove the shaft snap ring (2).

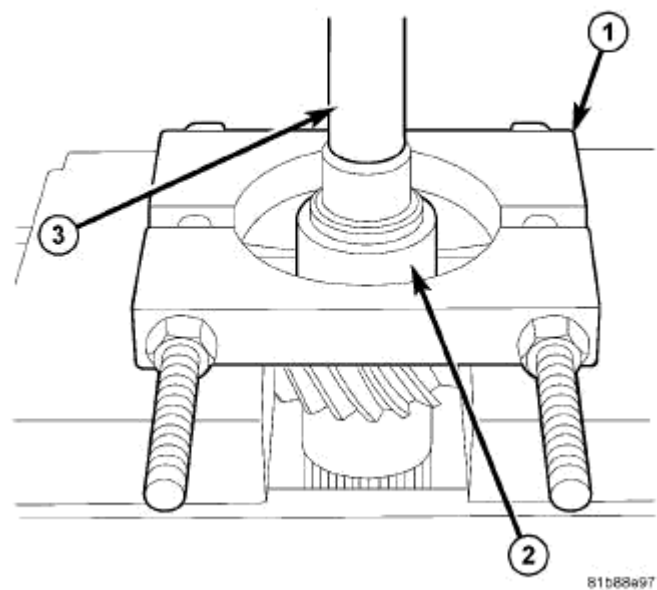
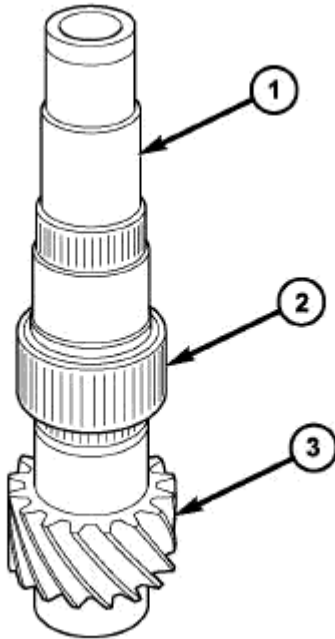


Fig. 213: Cylindrical Roller Bearing
Courtesy of CHRYSLER LLC

15. Remove the cylindrical roller bearing (2) using Bearing Splitter 1130 (1) and a Press.

ASSEMBLY**ASSEMBLY**

81b2888b

Fig. 214: First Gear Needle Bearing & Output Shaft
Courtesy of CHRYSLER LLC

NOTE: Use ATF on all parts that are to be assembled in this procedure.

1. Install the first and first gear needle bearing (2) on the output shaft (1).

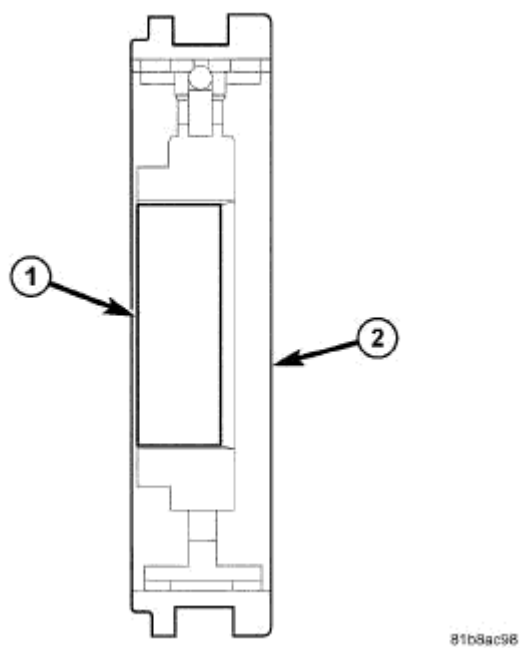


Fig. 215: Synchronizer

Courtesy of CHRYSLER LLC

NOTE: Pay attention to the direction when inserting the 1st-2nd hub sleeve.

2. Install the 1st-2nd synchronizer onto the output shaft with (2) towards first gear.

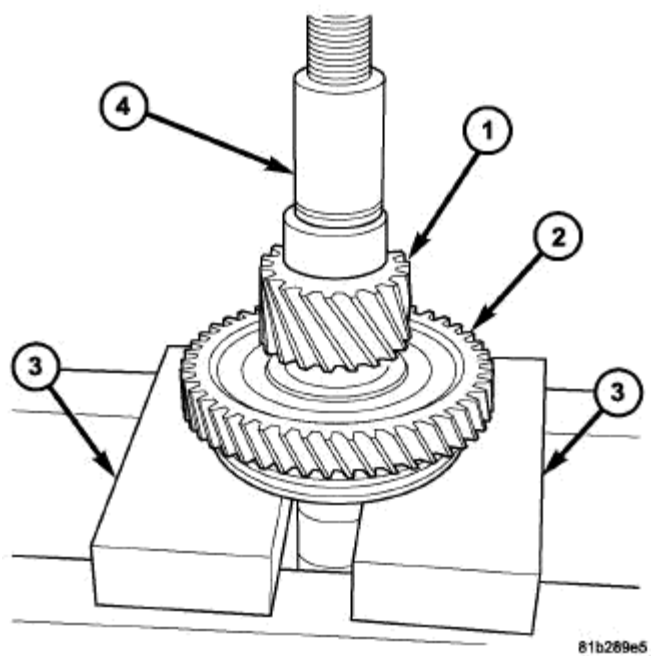


Fig. 216: First Gear & First/Second Gear Synchronizer
Courtesy of CHRYSLER LLC

3. Using a press (4), install first gear (3) and first/second gear synchronizer onto output shaft.

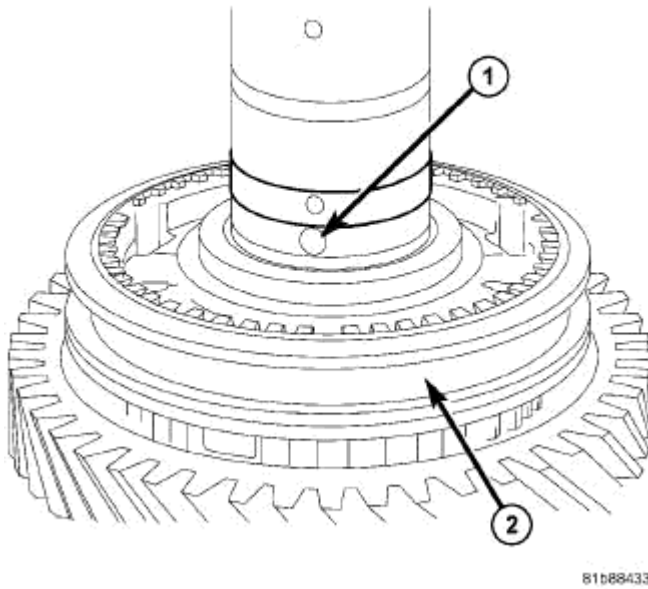


Fig. 217: Ball
Courtesy of CHRYSLER LLC

4. Install the second ball (1).

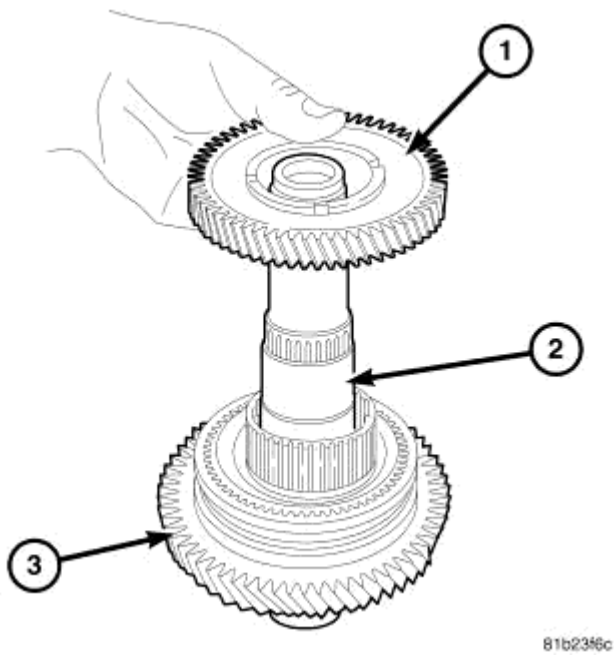


Fig. 218: Output Shaft 2nd Gear
Courtesy of CHRYSLER LLC

5. Install the needle bearing on the output shaft.
6. Install second gear (1) onto output shaft (2).

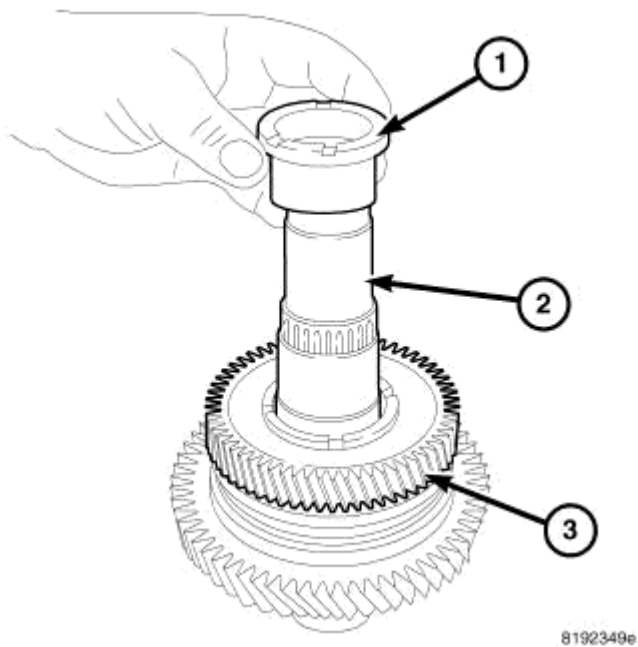
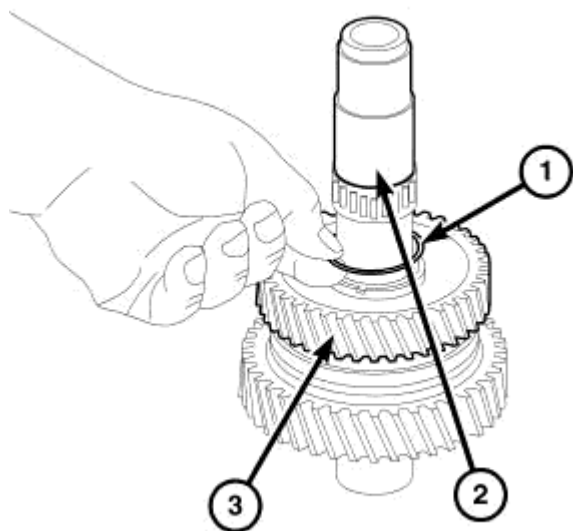


Fig. 219: Output Shaft Spacer
Courtesy of CHRYSLER LLC

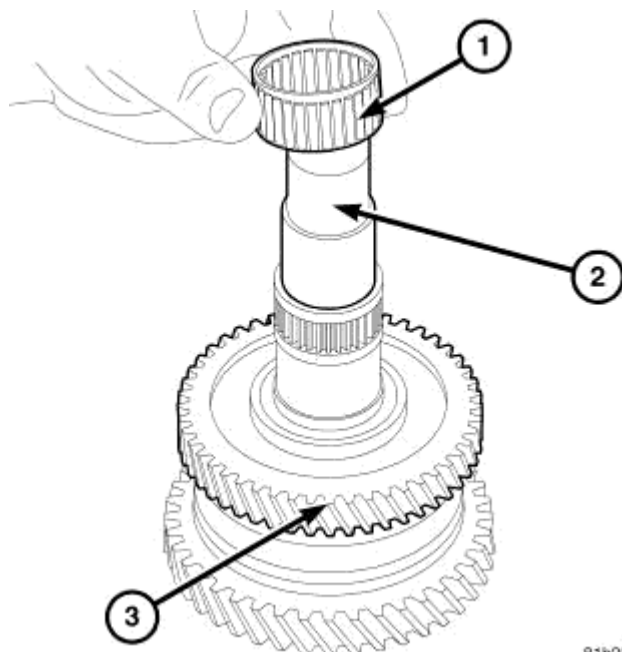
7. Install the inner race (1) onto the output shaft (2).



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Fig. 220: Snap Ring From Output Shaft
Courtesy of CHRYSLER LLC

8. Install the **new** C- clip (1) onto output shaft (2).
9. Install the spacer.

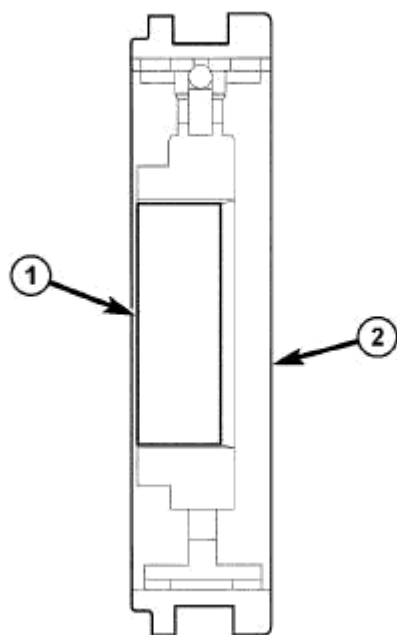


81b226da

Fig. 221: Bearing & Output Shaft
Courtesy of CHRYSLER LLC

10. Install the forth bearing (1) onto the output shaft (2).

11. Install forth gear onto output shaft.

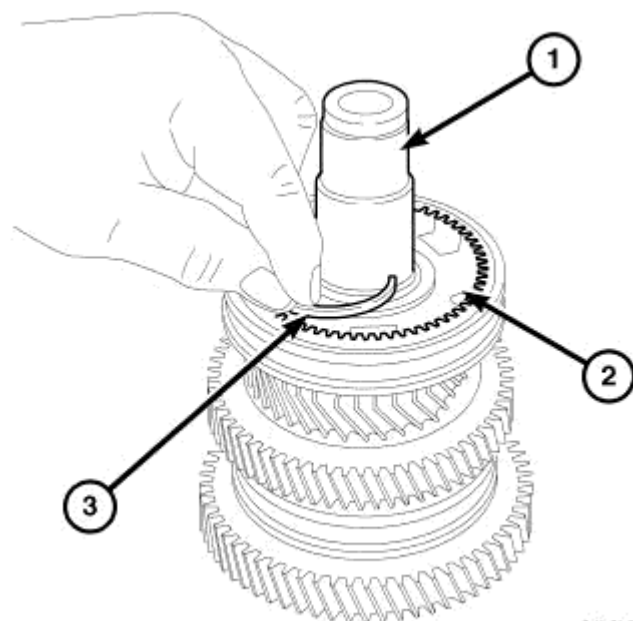


81b8ac98

Fig. 222: Synchronizer
Courtesy of CHRYSLER LLC

NOTE: Pay attention to the direction when inserting the 1st-2nd hub sleeve.

12. Install the third/forth gear synchronizer onto the output shaft with (2) towards forth gear.



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Fig. 223: Third/Fourth Gear Synchronizer
Courtesy of CHRYSLER LLC

13. Using a press install third/forth gear synchronizer (2) onto output shaft (1).

NOTE: Always use the largest snap that will fit into the groove.

14. Install a **new** snap ring (3) to hold third/forth gear synchronizer (2) onto output shaft (1).

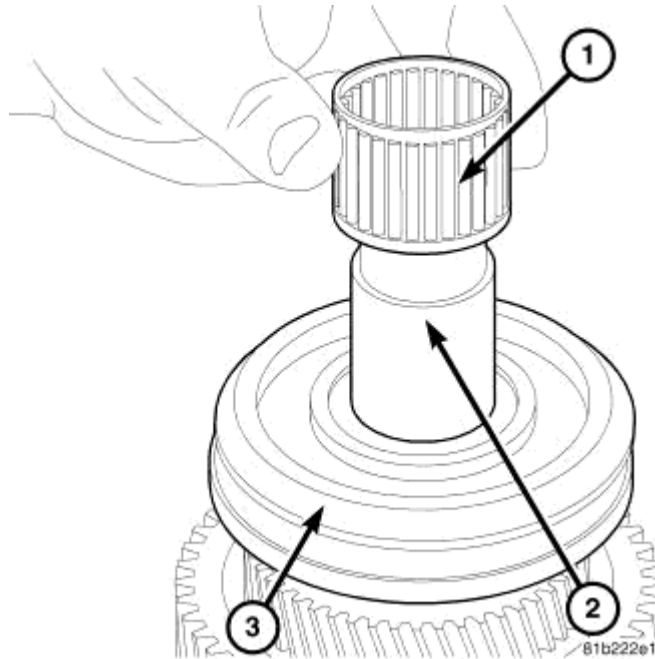


Fig. 224: Output Shaft Needle Bearing
Courtesy of CHRYSLER LLC

15. Install the third needle bearing (1) onto output shaft (2).

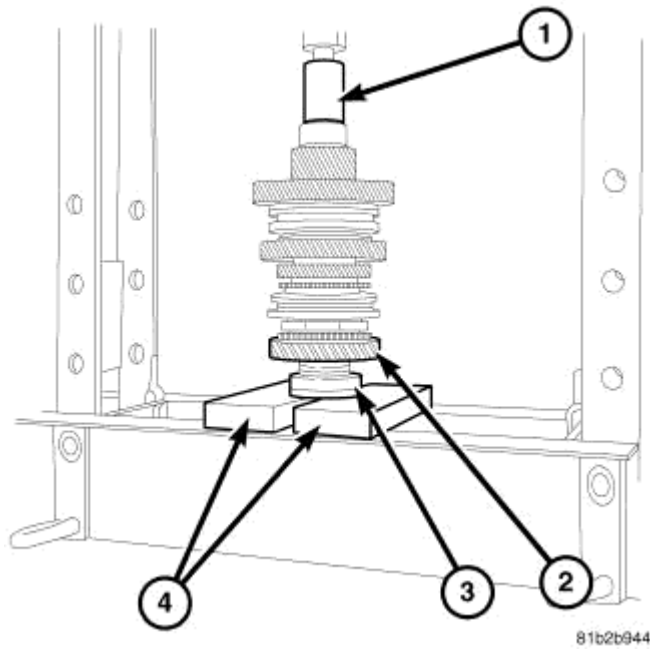


Fig. 225: 3rd Gear, Bearing & Press
Courtesy of CHRYSLER LLC

16. Install third gear (2) onto output shaft.
17. Install the ball, spacer and bearing (3) using a Press (1).

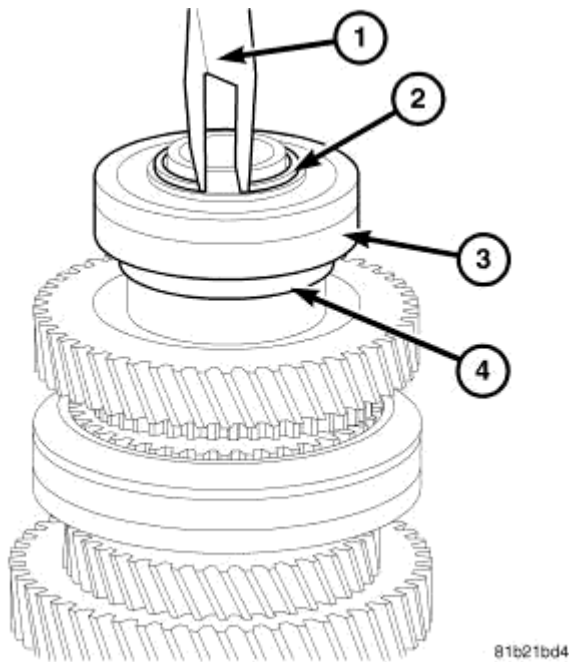


Fig. 226: Snap Ring At Output Shaft Case Bearing
Courtesy of CHRYSLER LLC

NOTE: Always use the largest snap that will fit into the groove.

18. Install the **new** snap ring (2) from the output shaft.

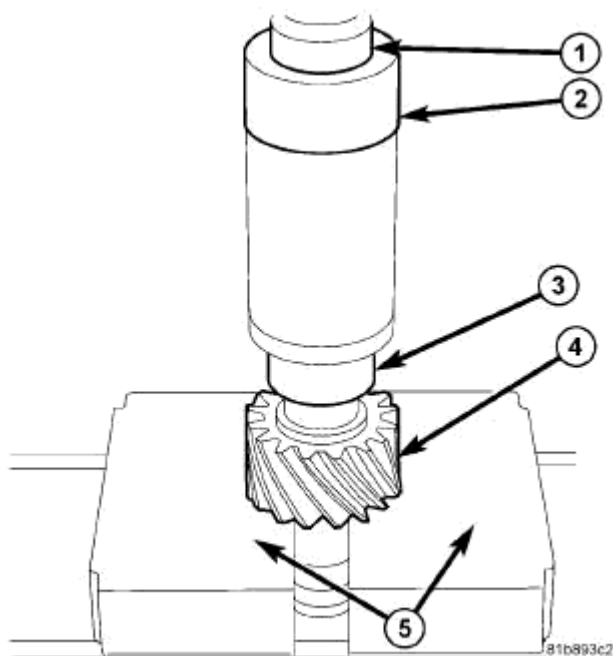


Fig. 227: Installing Cylindrical Roller Bearing Race
Courtesy of CHRYSLER LLC

19. Using installer 6052 (2) and a Press (1) install the cylindrical roller bearing race (3) on the input shaft.

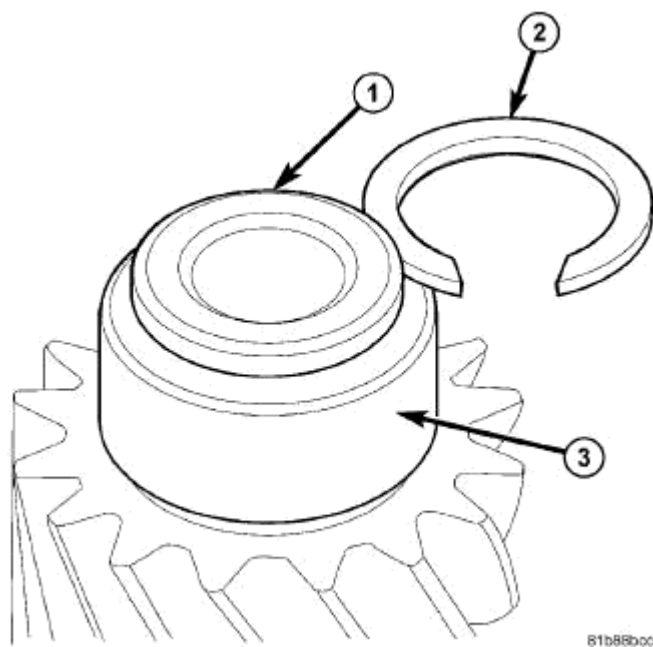


Fig. 228: Input Lower Snap Ring

Courtesy of CHRYSLER LLC

20. Install the shaft snap ring (2).

SHAFT, OUTPUT, NUMBER 2

DISASSEMBLY

DISASSEMBLY

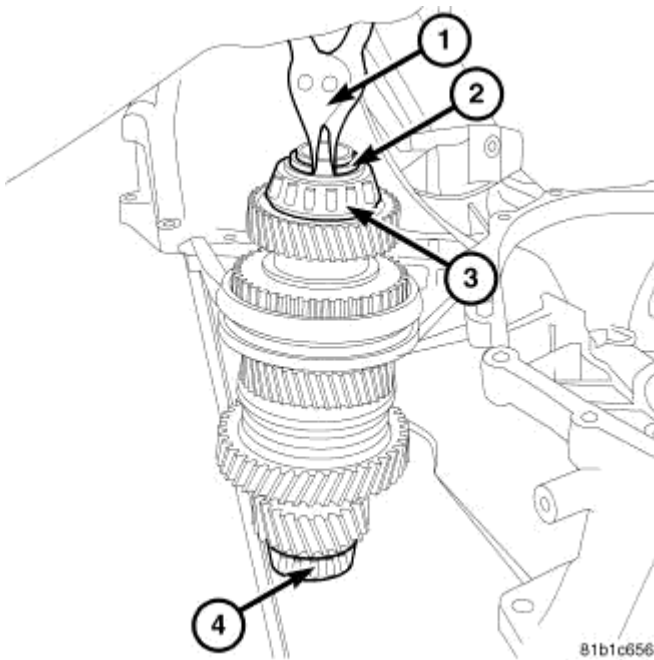


Fig. 229: Snap Ring At Output Shaft
Courtesy of CHRYSLER LLC

1. Using Snap Ring Pliers (1) remove the snap ring (2) from the output shaft # 2.

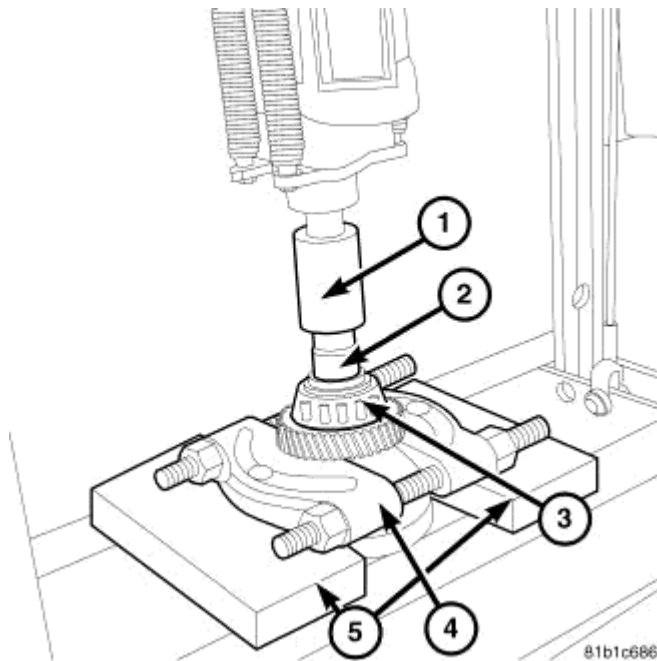


Fig. 230: Bearing From Cluster Shaft
Courtesy of CHRYSLER LLC

2. Using a press, blocks, Bearing Splitter P-334 and an appropriate spacer (2) press sixth gear and case side bearing (3) from shaft.

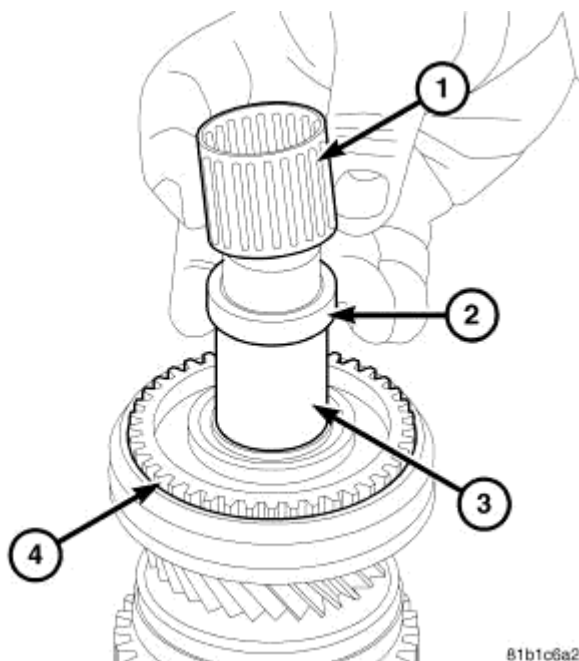


Fig. 231: Bearing Cage & Spacer Cluster
Courtesy of CHRYSLER LLC

3. Remove sixth needle bearing cage (1) and spacer (2) from output shaft # 2 (3).

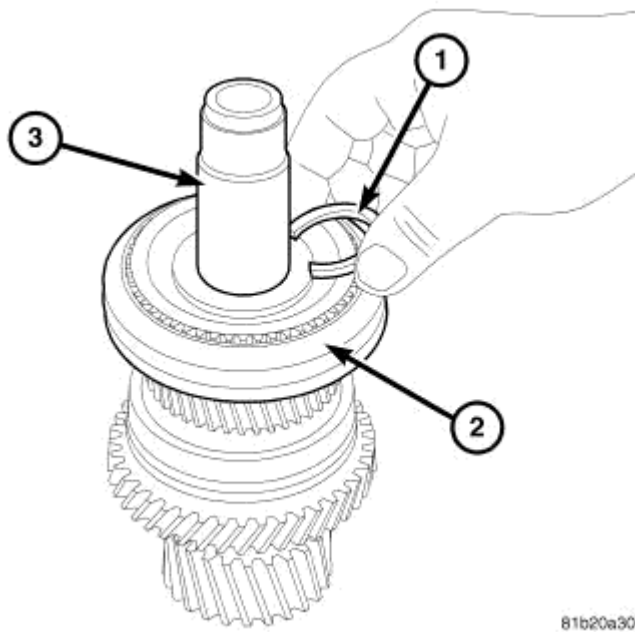


Fig. 232: Snap Ring At Output Shaft #2
Courtesy of CHRYSLER LLC

4. Remove the snap ring (1) from the output shaft # 2 (3).

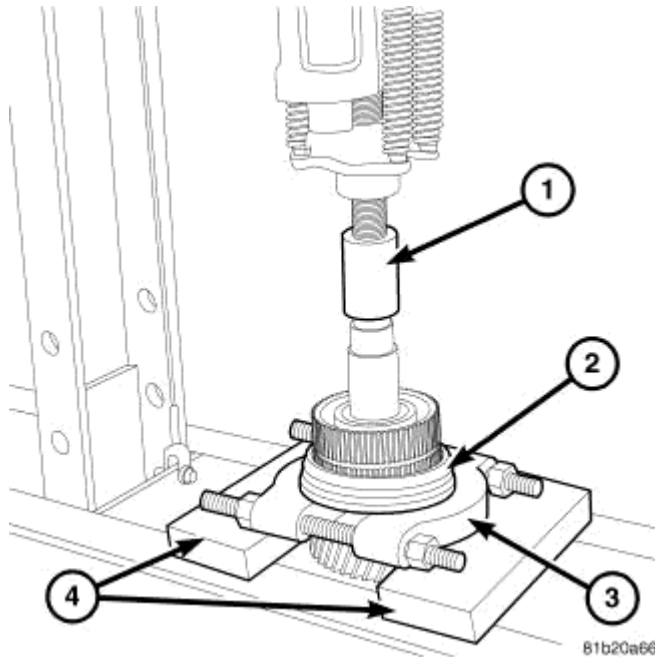


Fig. 233: Fifth Gear & Five/Six Synchronizer
Courtesy of CHRYSLER LLC

5. Use Bearing Splitter P-334 (3), Blocks (4) and a press remove fifth gear and five/six synchronizer (2).

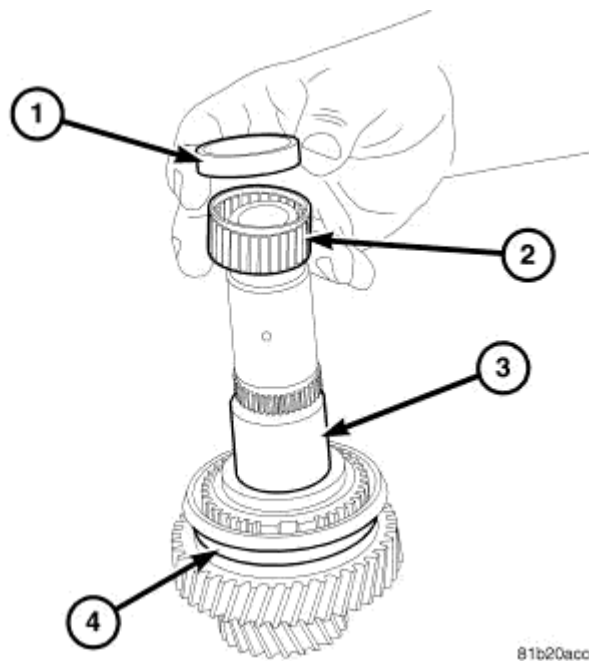


Fig. 234: #2 Bearing & Spacer
 Courtesy of CHRYSLER LLC

6. Remove fifth needle bearing cage (2) and spacer (1) from output shaft (3).

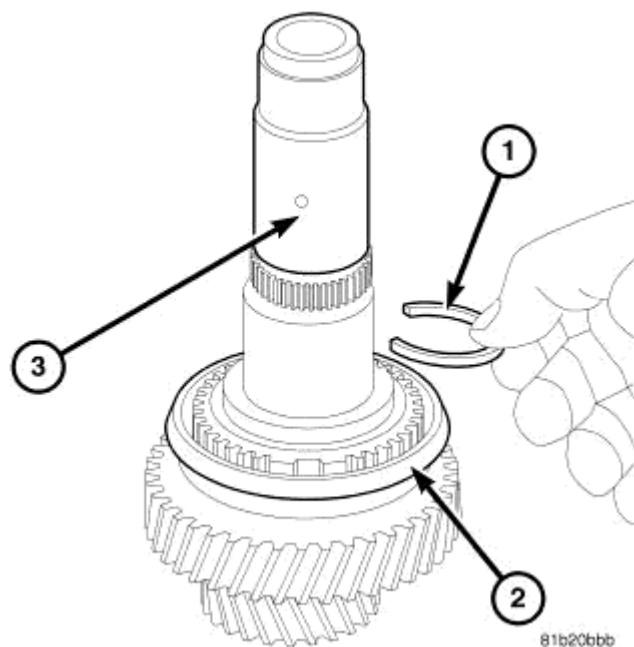


Fig. 235: Output Shaft & C-Clip
 Courtesy of CHRYSLER LLC

7. Remove the C-clip (1) from the output shaft (3).

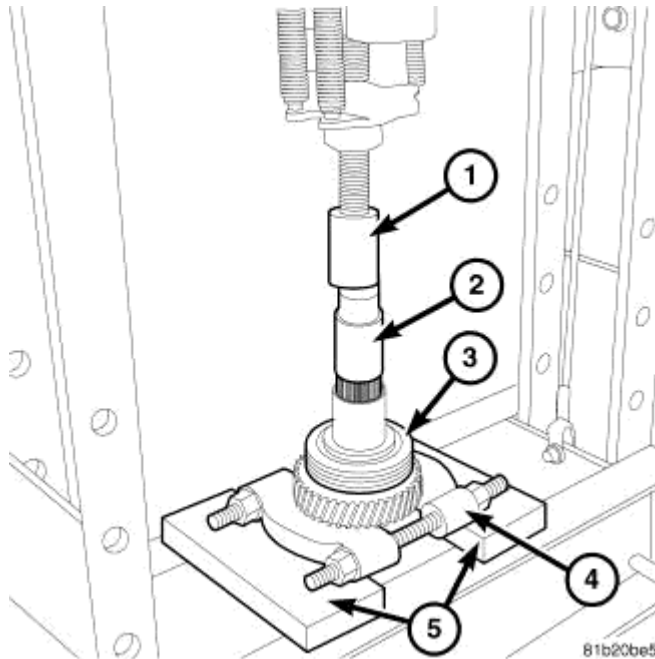


Fig. 236: Output Shaft #2 & Reverse Synchronizer
Courtesy of CHRYSLER LLC

8. Use Bearing Splitter P-334 (4), Blocks (5) and a press to remove reverse gear and reverse synchronizer (3) from the output shaft # 2.

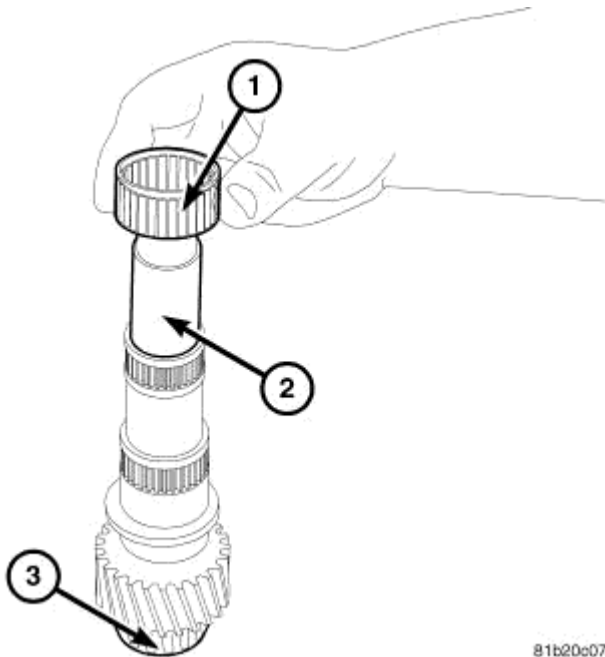
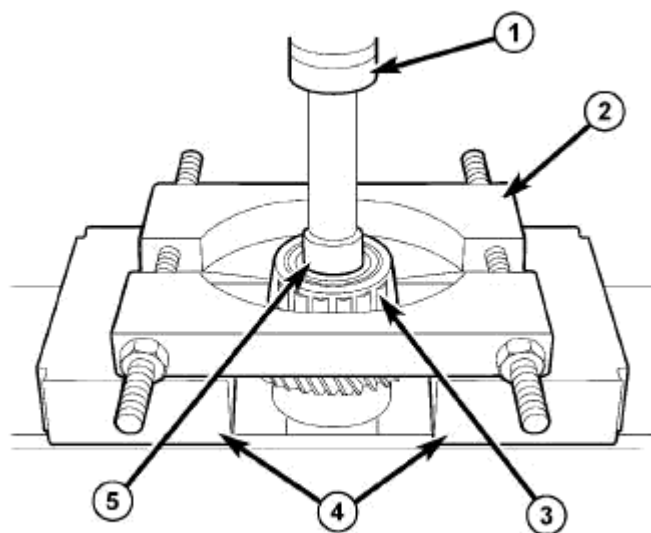


Fig. 237: Output Shaft #2 & Needle Bearing
Courtesy of CHRYSLER LLC

9. Remove the reverse needle bearing (1) from the output shaft # 2 (2).



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Fig. 238: Output Shaft & Bellhousing Side Bearing
Courtesy of CHRYSLER LLC

10. Using a Press (1) and Splitter 1130 (2) to remove the bellhousing side bearing (3) from the output shaft # 2(5).

ASSEMBLY

ASSEMBLY

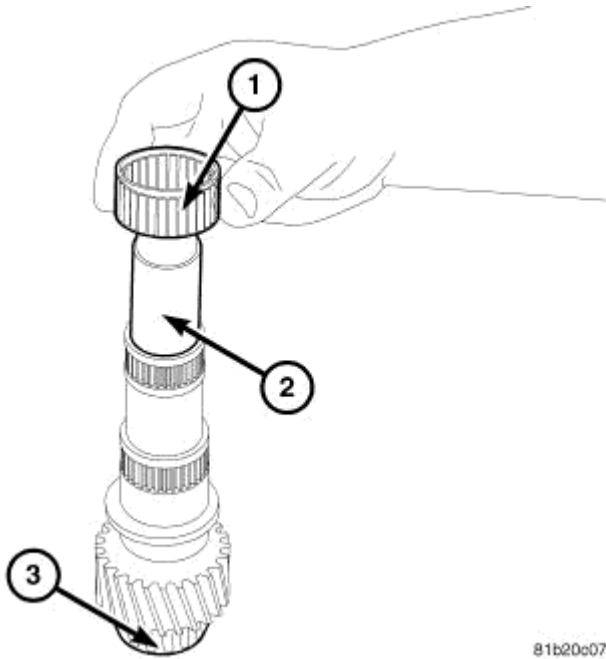


Fig. 239: Output Shaft #2 & Needle Bearing
Courtesy of CHRYSLER LLC

1. Install the reverse needle bearing (1) onto the output shaft # 2 (2).

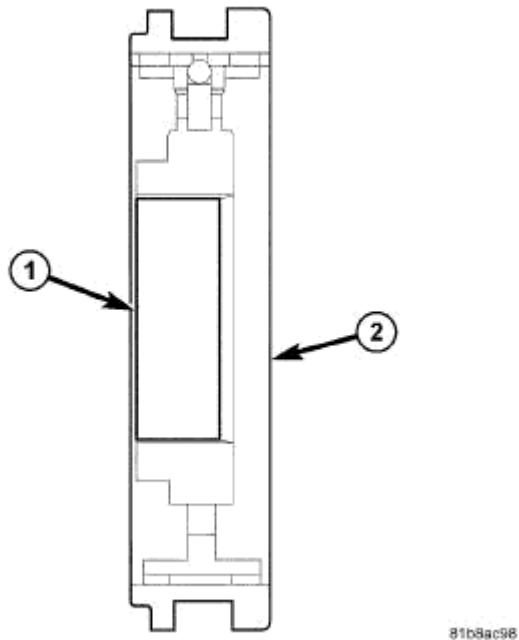


Fig. 240: Synchronizer
Courtesy of CHRYSLER LLC

NOTE: Pay attention to the direction when inserting the reverse hub sleeve.

2. Install the reverse gear synchronizer onto the output shaft with (2) towards reverse gear.

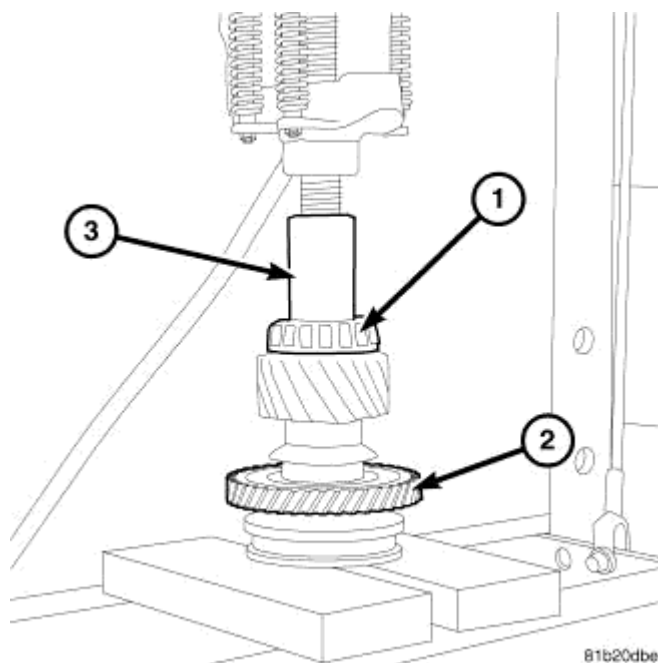


Fig. 241: Install Reverse Gear Onto Output Shaft #2
Courtesy of CHRYSLER LLC

3. Install reverse gear (2) onto output shaft # 2.
4. Install reverse gear synchronizer onto output shaft using a Press (3).

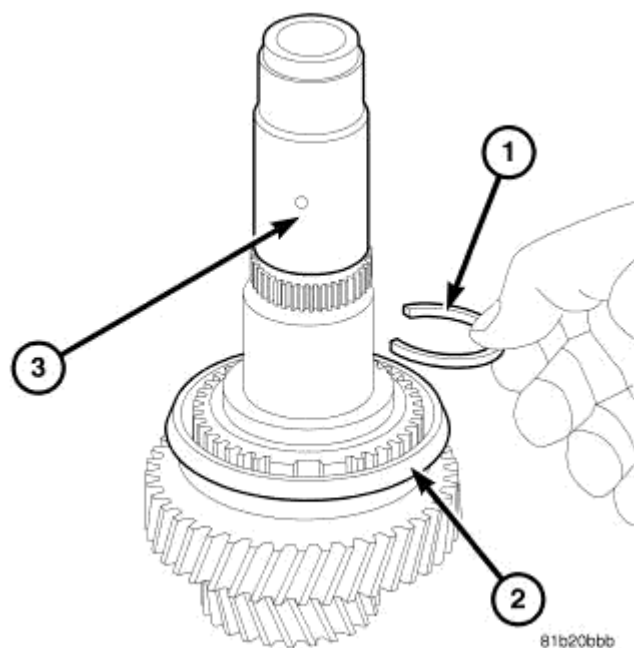


Fig. 242: Output Shaft & C-Clip
Courtesy of CHRYSLER LLC

NOTE: Always use the largest snap that will fit into the groove.

5. Install the **new** snap ring (2) from the output shaft # 2.

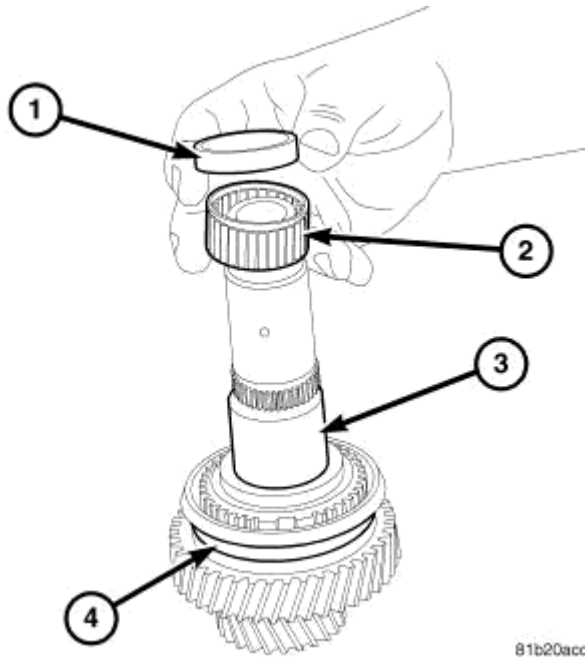


Fig. 243: #2 Bearing & Spacer
Courtesy of CHRYSLER LLC

6. Install fifth needle bearing (2) and spacer (1) onto output shaft # 2 (3).

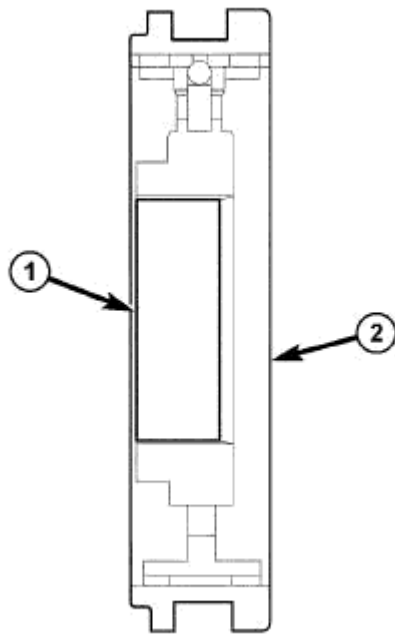
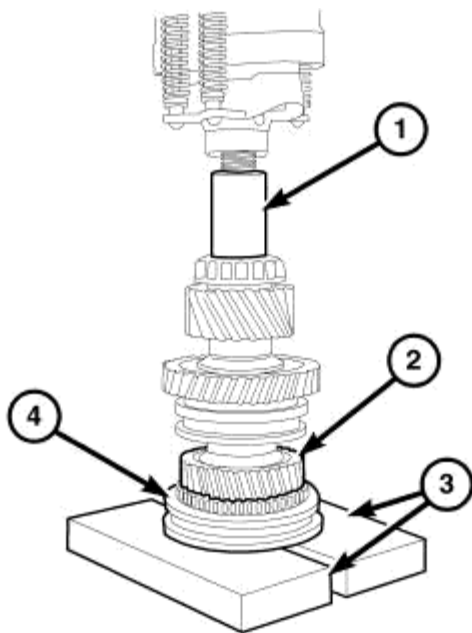


Fig. 244: Synchronizer

Courtesy of CHRYSLER LLC

NOTE: Pay attention to the direction when inserting the 5th-6th hub sleeve.

7. Install the fifth gear and fifth/sixth gear synchronizer onto the output shaft with (2) towards fifth gear.

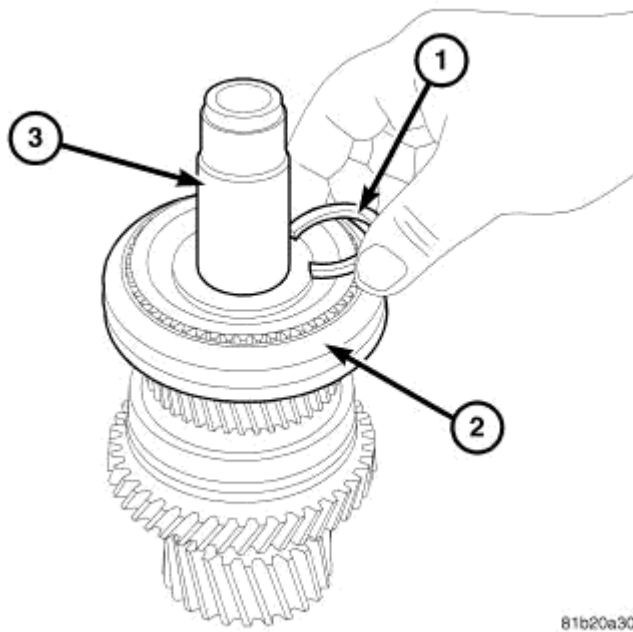


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Fig. 245: 5th Gear & Synchronizer

Courtesy of CHRYSLER LLC

8. Use a press to install fifth gear and fifth/sixth gear synchronizer (2).

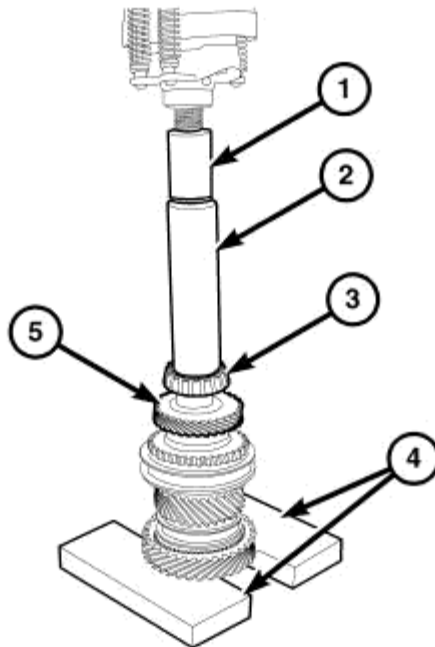


81b20a30

Fig. 246: Snap Ring At Output Shaft #2
Courtesy of CHRYSLER LLC

NOTE: Always use the largest snap that will fit into the groove.

9. Install the **new** snap ring (1) from the output shaft.



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Fig. 247: Sixth Gear & Bearing
Courtesy of CHRYSLER LLC

10. Install spacer sixth needle bearing and sixth gear onto shaft
11. Use Sleeve C-3717 to press sixth gear and bearing (3) onto shaft.

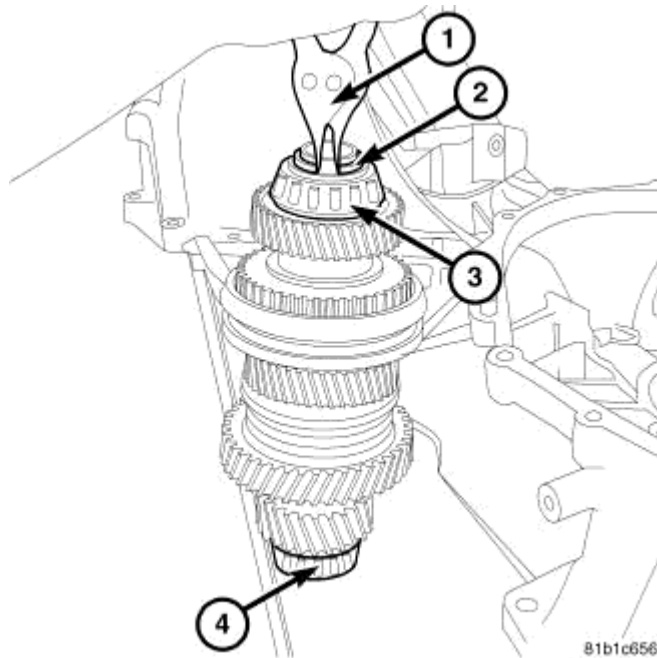


Fig. 248: Snap Ring At Output Shaft
Courtesy of CHRYSLER LLC

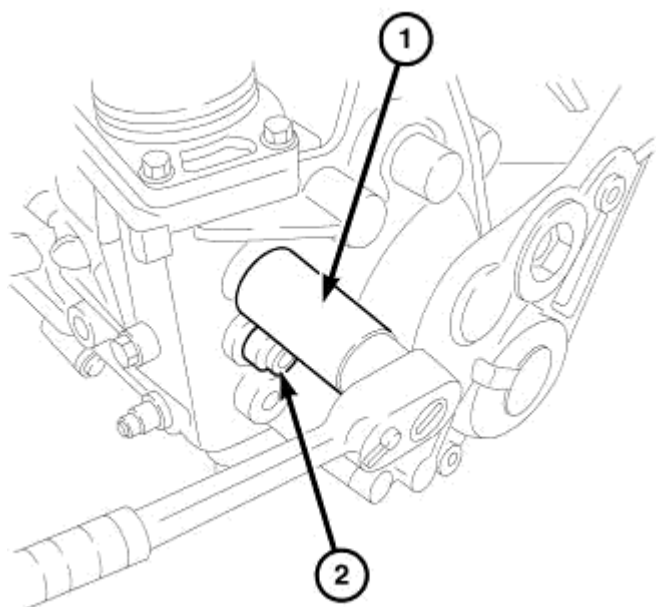
NOTE: Always use the largest snap that will fit into the groove.

12. Install the **new** snap ring (2) from the output shaft.

SWITCH, BACKUP LAMP

REMOVAL

REMOVAL



81b10385

Fig. 249: Back-Up Lamp Switch
Courtesy of CHRYSLER LLC

1. Disconnect battery negative cable.
2. Raise vehicle on hoist.
3. Disconnect backup lamp switch connector.
4. Remove backup lamp switch (1).

INSTALLATION

INSTALLATION

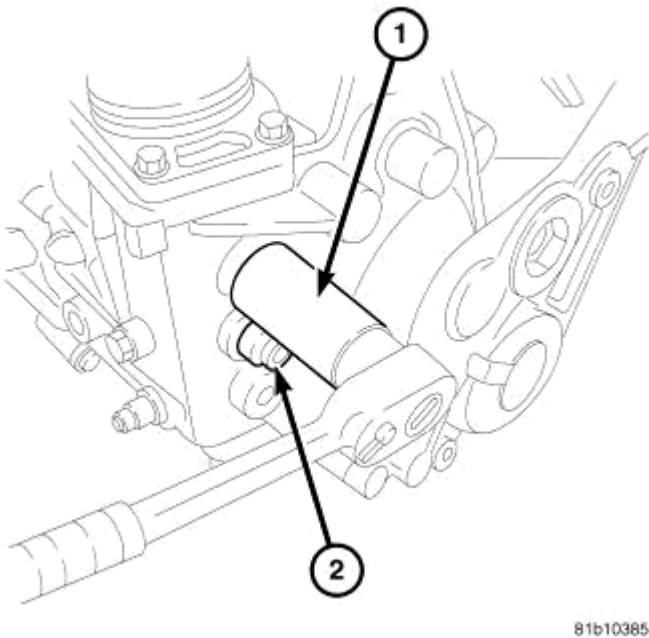


Fig. 250: Back-Up Lamp Switch
Courtesy of CHRYSLER LLC

1. Install the backup lamp switch (1) with a **new** washer and tighten to 40 N.m (29 ft. lbs.).
2. Connect backup lamp switch connector.
3. Lower vehicle.
4. Connect battery negative cable.

SYNCHRONIZER

DISASSEMBLY

DISASSEMBLY

Place synchronizer in a clean shop towel and wrap. Press on inner hub. Carefully open up shop towel and remove springs, balls, keys, hub, and sleeve.

CLEANING

CLEANING

Do not attempt to clean the blocking rings in solvent. The friction material will become contaminated. Place synchronizer components in a suitable holder and clean and air dry.

INSPECTION

INSPECTION

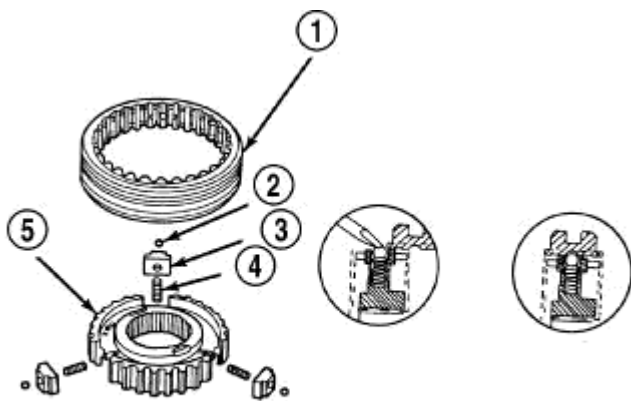
Proper inspection of components involve:

- Teeth, for wear, scuffed, nicked, burred, or broken teeth
- Keys, for wear or distortion
- Balls and springs, for distortion, cracks, or wear

If any of these conditions exist in these components, replace as necessary.

ASSEMBLY

ASSEMBLY



9521-69

Fig. 251: Synchronizer Assembly
Courtesy of CHRYSLER LLC

1 - SLEEVE

2 - BALL

3 - KEY

4 - SPRING

5 - HUB

1. Position synchronizer hub (5) onto a suitable holding fixture (input shaft). The synchronizer hubs (5) are directional. The hubs must be installed with the **U** facing upward.
2. Install springs (4) into hub slot.

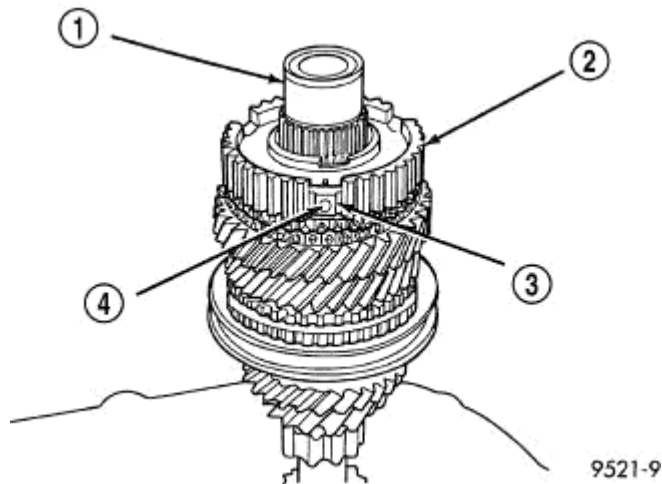


Fig. 252: Inserting Synchronizer Balls Into Keys
Courtesy of CHRYSLER LLC

1 -
INPUT
SHAFT
2 -
HUB
3 -
KEY
4 -
BALL

3. Insert key (3) into hub (2) and spring.
4. Apply petroleum jelly to the hole in the key. Insert balls (4) into each key.

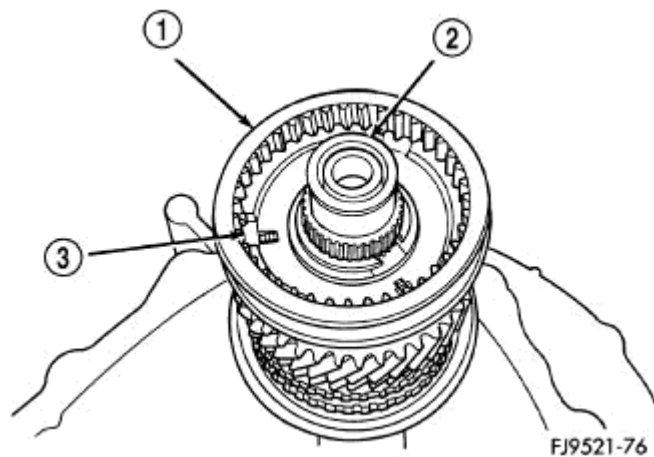


Fig. 253: Identifying Synchronizer Sleeve, Input Shaft, & Key
Courtesy of CHRYSLER LLC

1 -
SLEEVE
2 -
INPUT
SHAFT
3 - KEY

5. Slide sleeve (1) over the hub and depress balls as you carefully slip the sleeve into position .

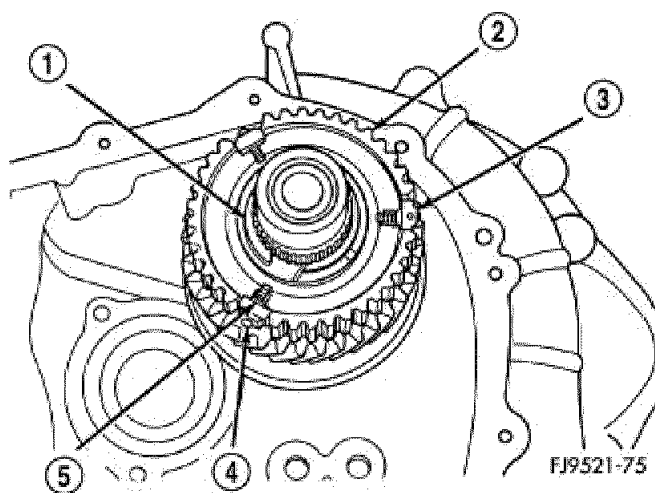


Fig. 254: Centering Synchronizer Keys & Balls By Pushing On Both Stop Rings
Courtesy of CHRYSLER LLC

1 - SNAP
RING
2 -
CLUTCH
3 - KEY
4 - BALL
5 -
SPRING

6. Line up stop ring tang over the keys in the hub, install stop rings, center the keys (3) and balls (4) by pushing on both stop rings.