STELLANTIS
PARTS & SERVICES

Technical Service Bulletin (TSB)

Rear Selective Thrust Washer Failure

REFERENCE:	**TSB:** 21-054-24 REV. D **GROUP:** 21 - Transmission and Transfer Case	**Date:**	December 3, 2024	**REVISION:**	21-054-24 REV. C

VEHICLES AFFECTED:	**2024 (D2) RAM 3500 Pickup** **2024 (DJ) RAM 2500 Pickup** **This bulletin applies to vehicles equipped with the 6.7L I6 Cummins Turbo Diesel Engine (Sales Code ETL) and a 6-Spd Automatic 68RFE Transmission (Sales Code DG7).**	**MARKET APPLICABILITY:** ☒ NA ☒ MEA ☒ SA ☐ IAP ☐ EE ☐ CH

CUSTOMER SYMPTOM:

NOTE: This is a proactive RSU Repair Procedure to be performed for all Unsold vehicles not exhibiting the Diagnostic Trouble Codes (DTCs) or Customer Symptoms below.

Customers may experience a Malfunction Indicator Lamp (MIL) illumination and the vehicle may exhibit/set one or more of the following DTCs:

- P0218-00 - Transmission High Temperature Operation Activated.
- P0716-00 - Input Speed Sensor 1 Circuit Performance.
- P0729-00 - Gear 6 Shift Incorrect Ratio.
- P0731-00 - Gear 1 Shift Incorrect Ratio.
- P0732-00 - Gear 2 Shift Incorrect Ratio.
- P0733-00 - Gear 3 Shift Incorrect Ratio.
- P0734-00 - Gear 4 Shift Incorrect Ratio.
- P0735-00 - Gear 5 Shift Incorrect Ratio.
- P0841-00 - Transmission Fluid Pressure Sensor/Switch 1 Circuit Performance.
- P0868-00 - Transmission Fluid Pressure Low.
- P0871-00 - Transmission Fluid Pressure Sensor/Switch "C" Circuit Range/Performance.
- P0876-00 - Transmission Fluid Pressure Sensor/Switch "D" Circuit Range/Performance.
- P0944-00 - Loss Of Hydraulic Pump Prime.

Customers may also comment on one or more of the following:

- Hard shifting into gear.
- Vehicle enters into limp home mode.

CAUSE: **Rear selective thrust bearing cracking**

This bulletin supersedes Technical Service Bulletin (TSB) 21-054-24 REV. C, date of issue November 16, 2024, which should be removed from your files. This is a complete revision and no asterisks have been used to highlight revisions.

This Technical Service Bulletin (TSB) has also been released as a Rapid Service Update (RSU) 24-161, date of issue December 03, 2024. All applicable RSU VINs have been loaded. To verify this RSU service action is applicable to the vehicle, use VIP or perform a VIN search in DealerCONNECT/Service Library. All repairs are reimbursable within the provisions of warranty.

REPAIR SUMMARY:

This bulletin involves replacing the transmission rear selective thrust plate located between the Number 6 thrust bearing and the reaction sun gear and replacing the reaction sun gear.

VINs identified as being involved in this campaign are currently live and searchable. **Stop Sale is in effect for the above-identified vehicles.**

NOTE: Some of the involved vehicles may be in dealer new vehicle inventory. Involved vehicles can be determined by using the VIP inquiry process.

CLAIMS DATA:

Labor Operation No:	Labor Description	Skill Category	Labor Time
21-00-19-90	Bearing, Transmission Thrust - Replace (3 - Highly Skilled)	21 - Transmission	4.2 Hrs.
Failure Code	ZZ	Service Action	

RELATED LOPS:

Labor Operation No:	Labor Description	Skill Category	Labor Time
21-00-19-67	4x4 Equipped (3 - Highly Skilled)	21 - Transmission	1.0 Hrs.
21-00-19-68	Skid Plate Equipped (3 - Highly Skilled)	21 - Transmission	0.1 Hrs.

SPARE PARTS:

Qty	Part No.	Description	Notes
1	52119771AB	Gear, Reaction Sun	
1	05013092AB	Plate Package, Planetary Thrust	Rear Selected Thrust Plate/Shim Package
6	06508406AA	Torque Convertor Bolts	
8	06506497AA	Hex Flange Head Locking Bolt	Front and Rear Driveshaft Bolts
1	68433227AB	Front Driveshaft Boot Kit	
18	68218057AC	Fluid, Auto Transmission ATF+4, Quart, Standard MS 9602-F	
1	68425659AA	Gasket, Oil Pan	
15	06102403AA	Bolt, Hex flange Head M6 x 1 x 14	
1	04799964AD	Seal, Sump Filter	
1	52119645AA	Cover, Oil Pump	With Seals and O-ring
1	06504548	Screw, M6 x 1 x 30	Manual Shift Lever Bolt

DIAGNOSIS:

Using a Scan Tool (wiTECH) with the appropriate Diagnostic Procedures available in DealerCONNECT/ Service Library, verify all related systems are functioning as designed. If DTCs or symptom conditions, other than the ones listed above are present, record the issues on the repair order and repair as necessary before proceeding further with this bulletin.

If a customer’s VIN is listed in VIP or your RSU VIN list, and does not exhibit the symptom/conditions above, perform the repair. All other vehicles exhibiting the symptom/conditions above, please follow normal diagnostic and repair procedures.

SPECIAL TOOLS/EQUIPMENT:

Description	Ref. No.	Notes
Support Stand Tool	8257	
End-Play Tool Set	8266-17	
Adapter	8216	
Dial Indicator	C-3339A	
Alignment Plate	10065	
Output Shaft End-Play Socket	8266-20	
End-Play Tool Set Handle	8266B	
wiTECH or Equivalent	-	

REPAIR PROCEDURE:

NOTE: The rear transmission end-play must be set as the 4C clutch hub/reaction sun gear is being replaced in addition to the rear selected thrust plate/shim.

CAUTION!
Tag all snap rings, thrust washer, washers, shims, spacers and thrust bearings, etc. during disassembly for quick identification and assembly. Failure to follow these instructions will cause damage and transmission failure.

NOTE: During assembly, apply trans jell or petroleum jelly to all slide portions, rolling contacts surfaces, thrust surfaces etc. to prevent burnout during initial operation. Lubricate O-rings and O-ring seals with MOPAR® ATF+4. Soak all friction disks in MOPAR® ATF+4 for at least two hours before assembly of clutch packs.

68RFE Clutch Orientation Fig. 1:

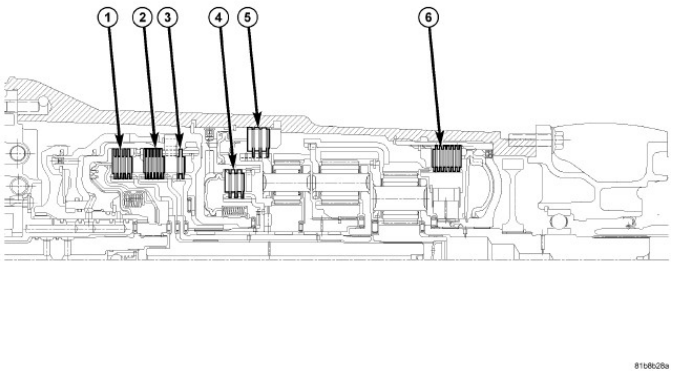

Fig. 1
68RFE Clutch Orientation

1 - U/D Clutch
2 - O/D Clutch
3 - Reverse Clutch
4 - 4C Clutch
5 - 2C Clutch
6 - L/R Clutch

1. Is the vehicle on the RSU VIN list?
   - YES >>> Proceed to Step 2.
   - NO>>> This RSU bulletin does not apply. Normal diagnosis should be performed.
2. Remove the torque converter from the transmission. Refer to the detailed service procedures available in DealerCONNECT/Service Library under: Service Info> 21 - Transmission and Transfer Case / Automatic - 68RFE / Torque Converter / Removal.
3. Remove the manual shift lever from the transmission and **DISCARD** the manual shift lever bolt Fig. 2.

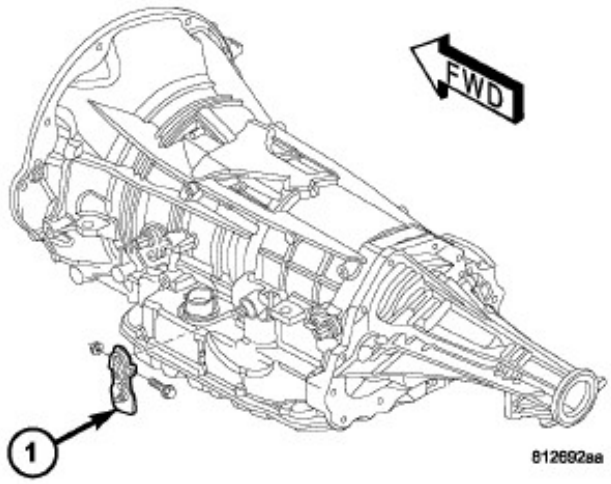

Fig. 2
Manual Shift Lever

1 - Manual Shift Lever

4. Remove the input speed sensor from the transmission case Fig. 3. Refer to the detailed service procedures available in DealerCONNECT/Service Library under: Service Info> 21 - Transmission and Transfer Case / Automatic - 68RFE / Sensor, Speed, Input / Removal.

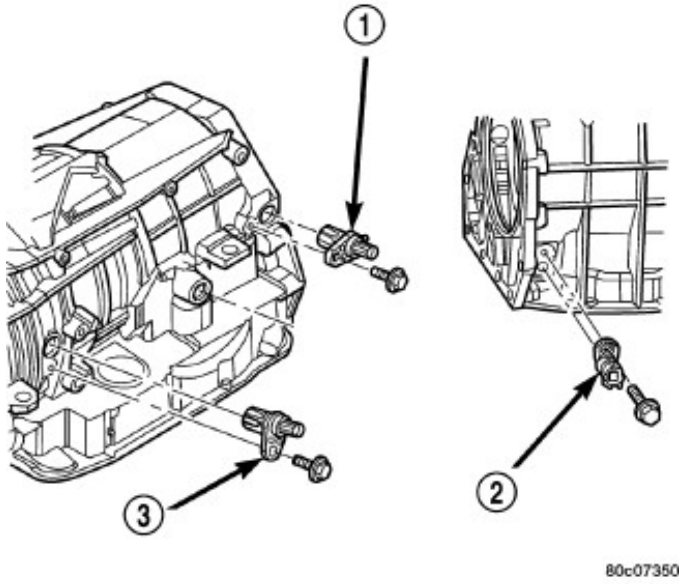

Fig. 3
Removal - Input Sensor

1 - Output Speed Sensor (Do Not Remove)

2 - Line Pressure Sensor

3 - Input Speed Sensor

5. Install Support Stand 8257 onto the transmission case Fig. 4.

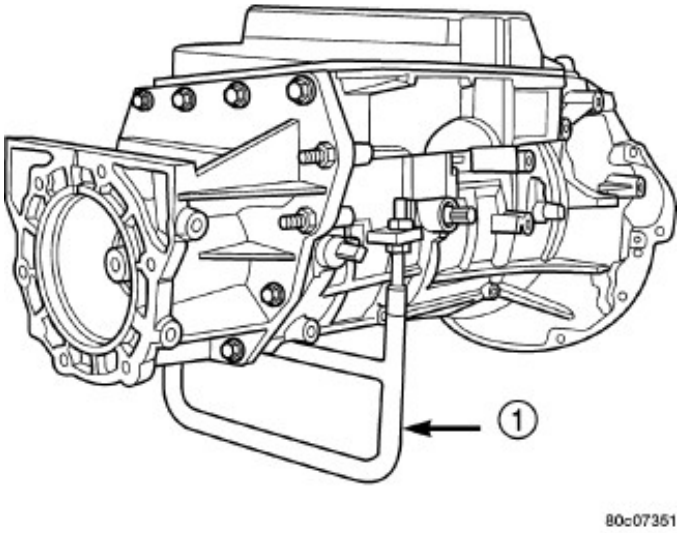

Fig. 4
Support Stand Tool 8257

1 - Support Stand Tool 8257

6. Using Adapter 8266-17 from End-Play Tool set 8266B and Dial Indicator C-339A, measure and record the input shaft end-play Fig. 5.

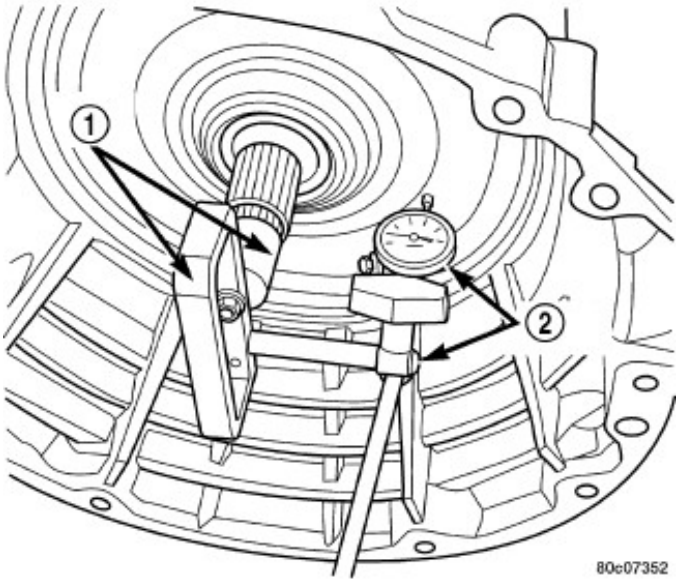

Fig. 5
Measure Input Shaft End Play

1 - End-Play Tool Set 8266-17

2 - Adapter 8216 With Dial Indicator C-3339A

NOTE: When measuring the input shaft end-play, two "stops" will be felt. When the input shaft is pushed inward and the dial indicator zeroed, the first "stop" felt when the input shaft is pulled outward is the movement of the input shaft in the input clutch housing hub. This value should not be included in the end-play measured value and therefore must be recorded and subtracted from the dial indicator reading.

NOTE: Adapter 8266-17 will fit loosely onto the input shaft, this should not effect the performance of the adapter.

7. Remove the bolts holding the transmission extension/adapter housing to the transmission case.
8. Remove the extension/adapter housing from the transmission case.
9. Using Alignment Plate 10065, Output Shaft End-Play Socket 8266-20, handle from End-Play Tool Set 8266B and Dial Indicator C-339A, measure and record the output shaft end-play Fig. 6.

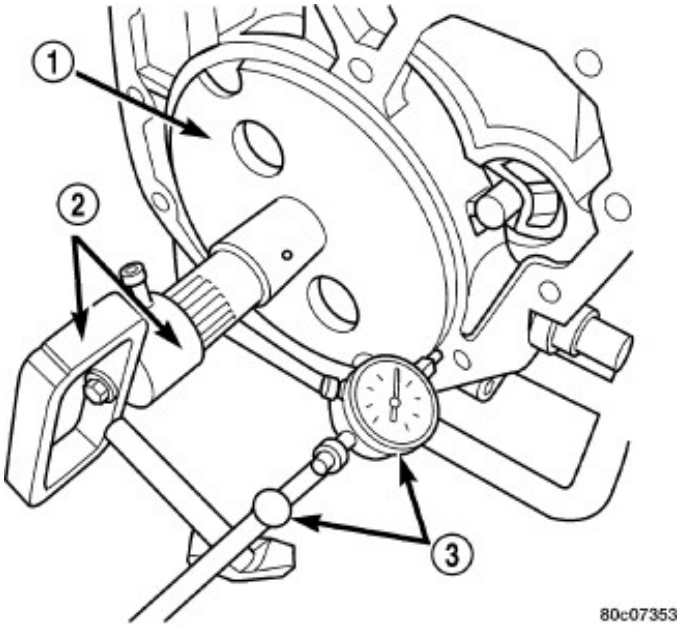

Fig. 6
Measure Output Shaft End Play

1 - Tool 10065
2 - Tool 8266-20
3 - Tool C-3339A

10. Remove the bolts holding the transmission oil pan to the transmission case.
11. Remove the transmission oil pan from the transmission case and **DISCARD** the oil pan gasket.
12. Remove the valve body from the transmission case. Refer to the detailed service procedures available in DealerCONNECT/Service Library under: Service Info> 21 - Transmission and Transfer Case/Automatic/ Valve Body/Removal and Installation.

13. Remove the outer snap-ring securing the transmission front cover into the transmission case Fig. 7.

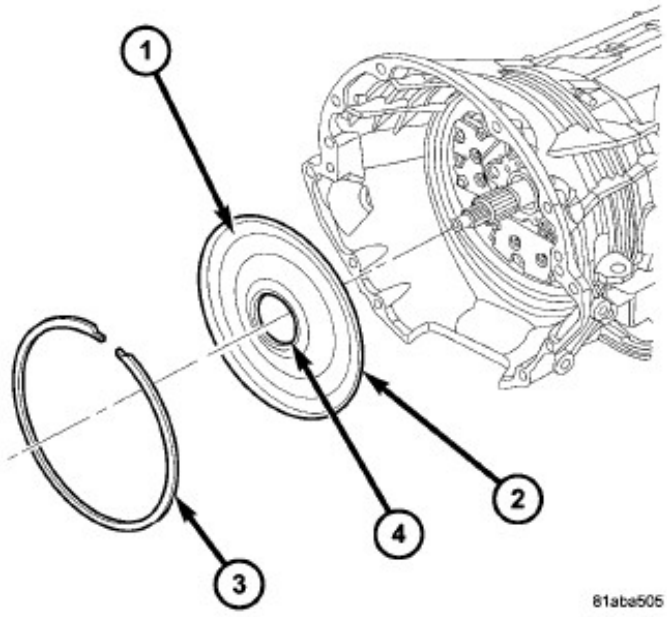

Fig. 7
Front Cover

1 - Front Cover
2 - O-Ring
3 - Snap Ring
4 - Front Cover Seal

14. Reaching through a case opening in the valve body area with a long blunted Tool, remove and **DISCARD** the transmission front cover from the transmission case Fig. 7.

15. Remove the bolts holding the oil pump into the transmission case Fig. 8.

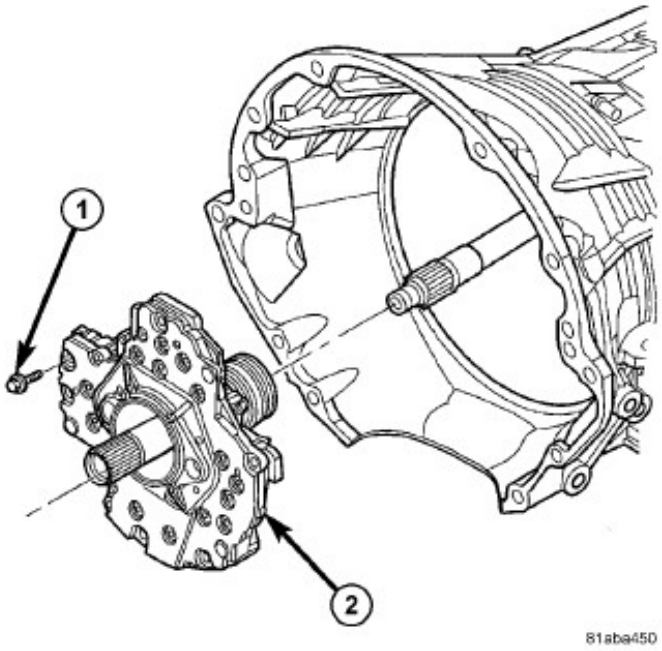

Fig. 8
Remove Oil Pump

1 - Oil Pump To Case Bolt
2 - Oil Pump

16. Remove the oil pump. Hold inward on the input shaft to prevent pulling the input clutch assembly with the oil pump Fig. 8.

CAUTION!
If the input shaft is not held during oil pump removal, the input clutch assembly will attempt to move forward with the oil pump and the numbers 2, 3, or 4 bearings inside the input clutch assembly may become dislodged.

17. Remove the number one thrust bearing from the input clutch assembly Fig. 9.

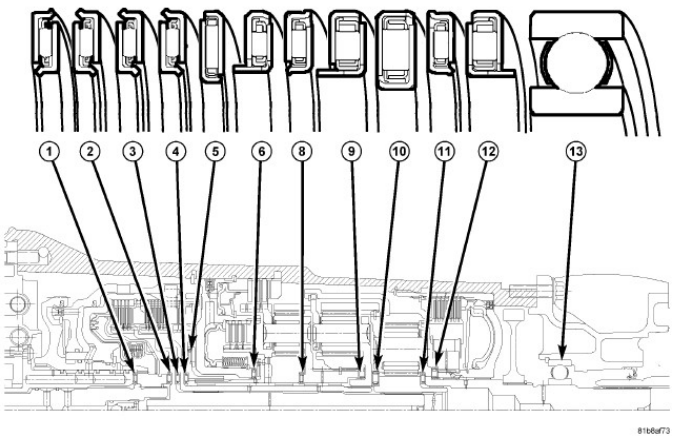

Fig. 9
68RFE Cross Sectional

1 - Thrust Bearing No. 1
2 - Thrust Bearing No. 2
3 - Thrust Bearing No. 3
4 - Thrust Bearing No. 4
5 - Thrust Bearing No. 5
6 - Thrust Bearing No. 6
8 - Thrust Bearing No. 8
9 - Thrust Bearing No. 9
10 - Thrust Bearing No. 10
11 - Thrust Bearing No. 11
12 - Thrust Bearing No. 12
13 - Output Shaft Bearing

18. Remove the input clutch assembly from the transmission case Fig. 10.

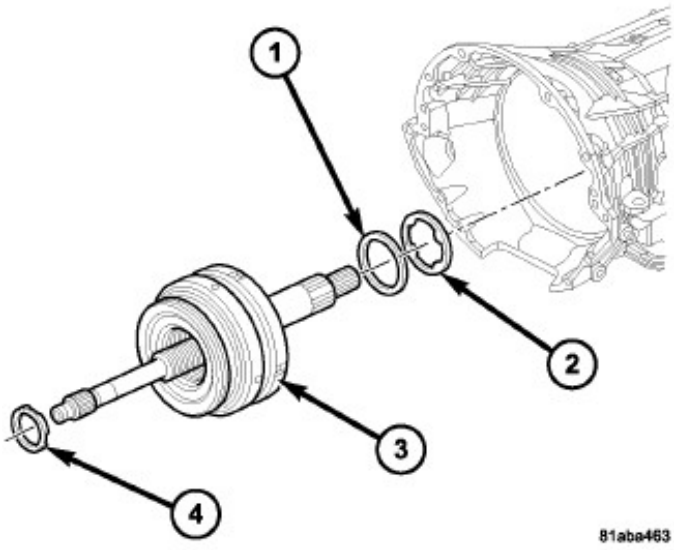

Fig. 10
Input Clutch Assembly

1 - Thrust Bearing Number 5
2 - Rear Selected Thrust Plate/Shim
3 - Input Clutch Assembly
4 - Thrust Bearing Number 1

19. Remove the number 5 thrust bearing and rear selected thrust plate/shim from the input clutch assembly, or the 4C clutch retainer/bulkhead Fig. 10.

20. Remove the 2C/4C clutch retainer/bulkhead tapered snap-ring from the transmission case Fig. 11.

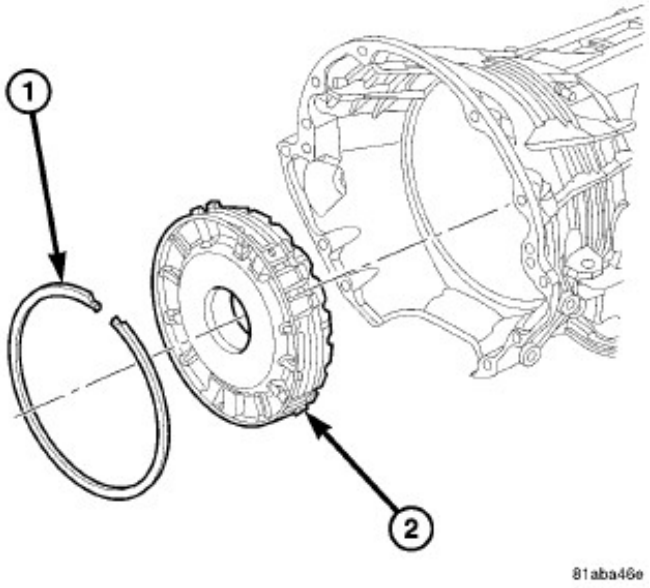

Fig. 11
2C/4C Clutch Retainer/Bulkhead

1 - Snap-Ring
2 - 2C/4C Clutch Retainer/Bulkhead

21. Remove the 2C/4C clutch retainer/bulkhead from the transmission case Fig. 11.
22. Remove the front 2C clutch pack snap-ring from the transmission case Fig. 12.

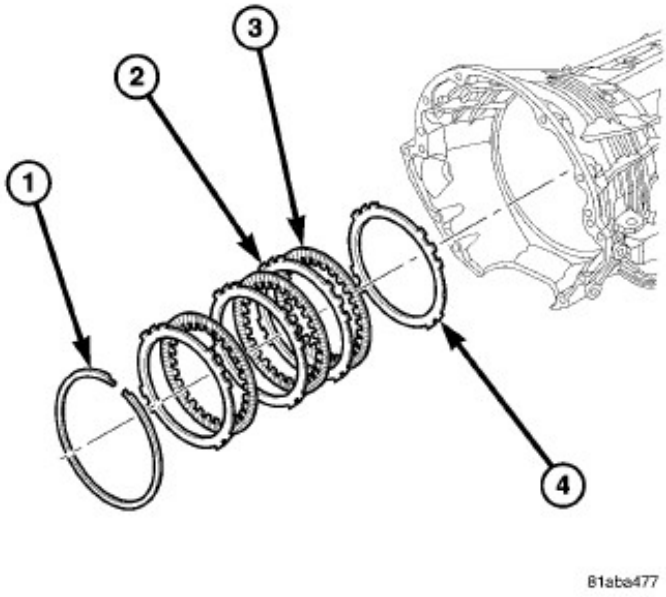

Fig. 12
2C Clutch Pack

1 - Snap-Ring
2 - Plate
3 - Disc
4 - Reaction Plate

23. Remove the 2C clutch pack from the transmission case Fig. 12.
24. Remove and **DISCARD** the rear selective thrust plate/shim from the 4C clutch hub/reaction sun gear assembly Fig. 13.

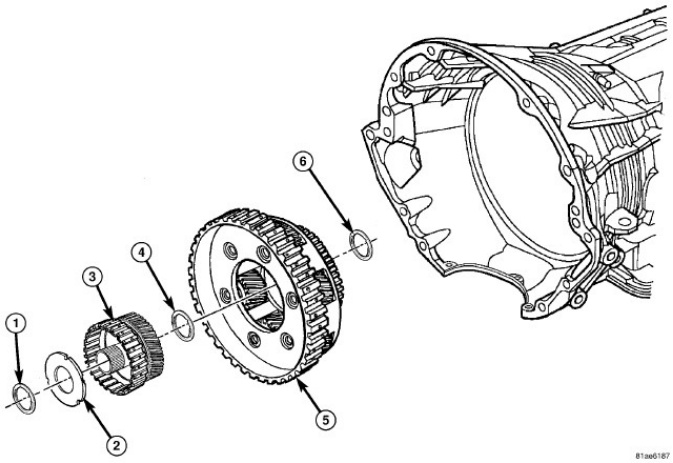

Fig. 13
Reaction Annulus And Carrier

1 - Thrust Bearing Number 6
2 - Output End Play Rear Selected Thrust Plate/Shim
3 - 4c Clutch Hub / Reaction Sun Gear Assembly
4 - Thrust Bearing Number 8
5 - Reaction Planetary Carrier
6 - Thrust Bearing Number 9

25. Remove and **DISCARD** the 4C clutch hub reaction sun gear assembly Fig. 13.
26. Install the 2C reaction plate Fig. 14.

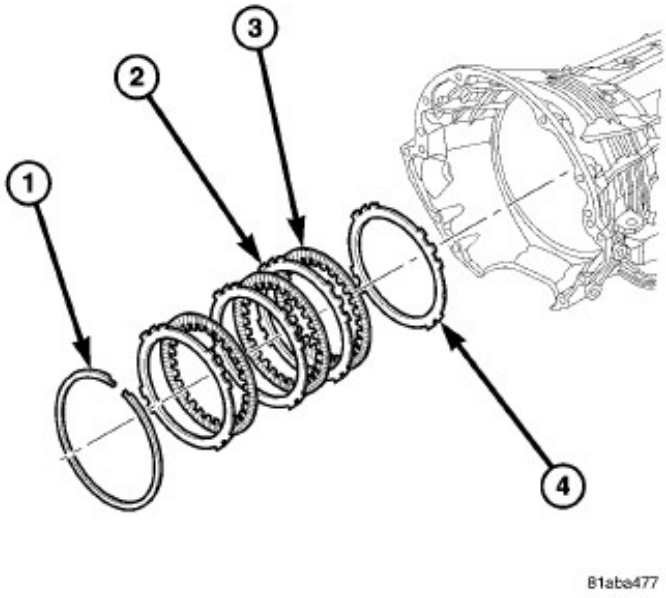

Fig. 14
2C Clutch Pack

1 - Snap-Ring
2 - Plate
3 - Disc
4 - Reaction Plate

27. Install the 2C clutch pack into the transmission case Fig. 14.
28. Install the flat 2C/4C clutch snap-ring into the transmission case Fig. 14.
29. Install the reaction planetary gear set.
30. Install the number 8 thrust bearing into the 4C clutch hub reaction sun gear assembly with the blue ink stripe against the sun gear with the inner race facing up Fig. 15.

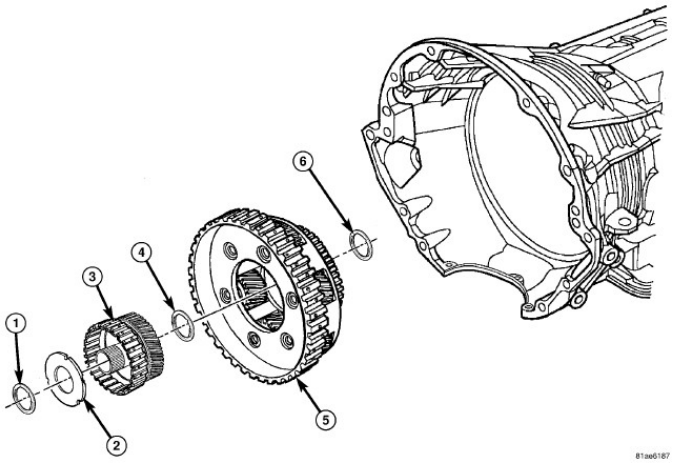

Fig. 15
Reaction Annulus And Carrier

1 - Thrust Bearing Number 6
2 - Output End Play Rear Selected Thrust Plate/Shim
3 - 4C Clutch Hub / Reaction Sun Gear Assembly
4 - Thrust Bearing Number 8
5 - Reaction Planetary Carrier
6 - Thrust Bearing Number 9

31. Install **NEW** output shaft rear selected thrust plate/shim onto the **NEW** 4C clutch hub/reaction sun gear assembly with the oil grooves facing the hub and the lugs and notches aligned as shown Fig. 16.

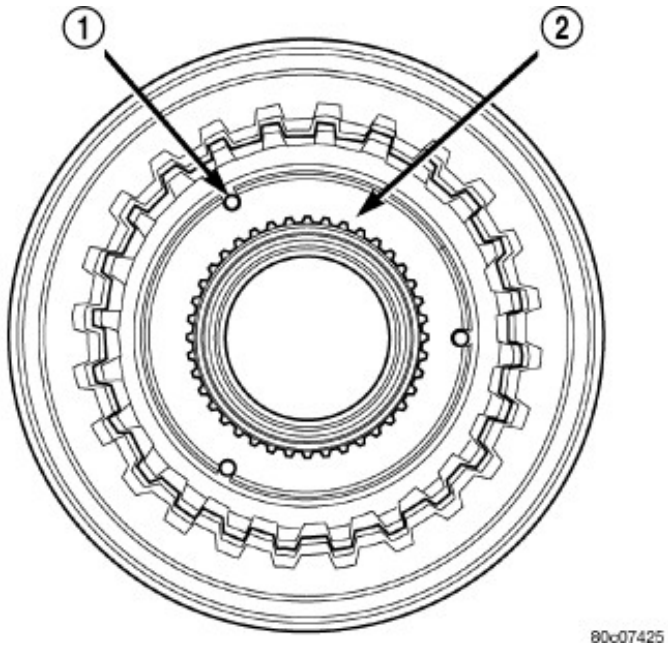

Fig. 16
Thrust Plate Alignment

1 - Locating Lugs
2 - Rear Selected Thrust Plate/Shim

NOTE: The angular spacing between the lugs/notches is not uniform.

32. Install the number 6 thrust bearing against the **NEW** output shaft rear selected thrust plate/shim with the flat side against the thrust plate/shim and the raised tabs on the inner race facing the front of the transmission Fig. 17.

NOTE: Use the thinnest rear selected thrust plate/shim initially to avoid part damage. The correct and final sized end-play shim is determined in Step 37.

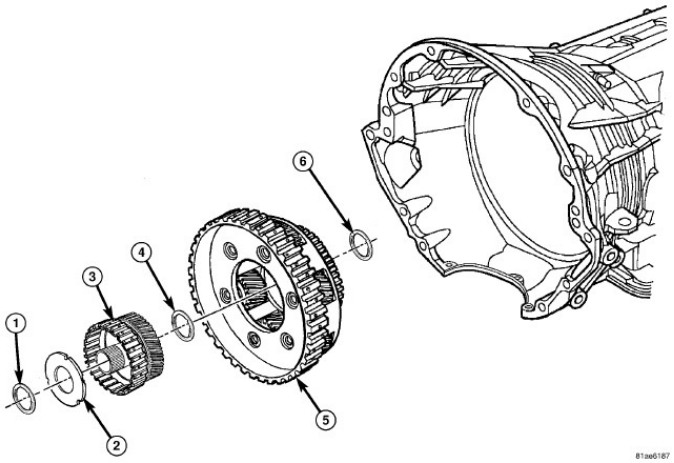

Fig. 17
Reaction Annulus And Carrier

1 - Thrust Bearing Number 6
2 - Output End Play Rear Selected Thrust Plate/Shim
3 - 4C Clutch Hub / Reaction Sun Gear Assembly
4 - Thrust Bearing Number 8
5 - Reaction Planetary Carrier
6 - Thrust Bearing Number 9

NOTE: The rear transmission end-play must be set as the 4C clutch hub/reaction sun gear assembly is being replaced in addition to the rear selected thrust plate/shim.

33. Install the **NEW** 4C clutch hub/reaction sun gear assembly into the reaction planetary gear set Fig. 17.
34. Install the 2C/4C retainer/bulkhead into the transmission case Fig. 18. Make sure that the oil feed holes are pointing toward the valve body area. Rotate the 4C clutch hub/reaction sun gear assembly during the installation of the 4C retainer/bulkhead to ease installation.

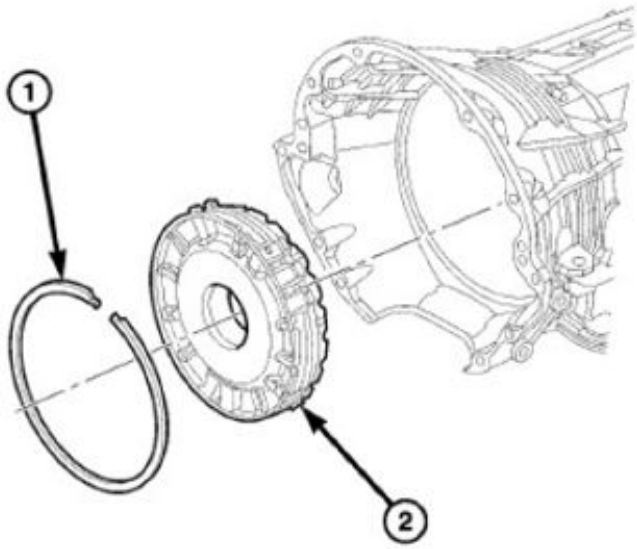

Fig. 18
4C Clutch Retainer/Bulkhead

1 - Snap-Ring
2 - 2C/4C Clutch Retainer/Bulkhead

35. Install the 2C/4C retainer/bulkhead tapered snap-ring into the transmission case with the taper toward the front of the case. Make sure that the open ends of the snap-ring are located in the case opening toward the valve body area Fig. 19.

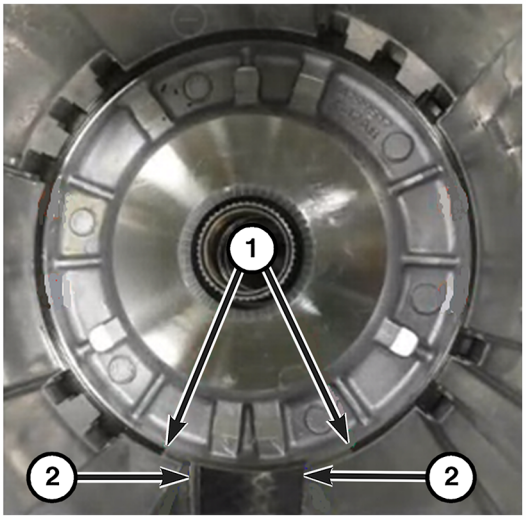

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Fig. 19
Case Opening Snap Ring Location

1 - Snap-Ring
2 - Case Opening

36. Air check the 2C and 4C clutch operation. Refer to the detailed service procedures available in DealerCONNECT/Service Library under: Service Info> 21 - Transmission and Transfer Case/Automatic - 68RFE - Diagnosis and Testing.
37. Using Alignment Plate 10065, Output Shaft End-Play Socket 8266-20, handle from End-Play Tool Set 8266B and Dial Indicator C-3339A, measure and record the output shaft end-play. The correct output shaft end-play is 0.25-0.52 mm (0.010-0.020 in.). Adjust as necessary by installing the chosen output shaft selective rear selected thrust plate/shim and re-measure the end-play to verify selection Fig. 20.

Output Shaft End Play Rear Selected Thrust Plate/Shim Thickness:

- 09 = 2.18 mm (0.086 in.)
- 10 = 2.33 mm (0.092 in.)
- 11 = 2.48 mm (0.098 in.)
- 12 = 2.63 mm (0.103 in.)
- 13 = 2.78 mm (0.109 in.)
- 14 = 2.69 mm (0.115 in.)
- 43 = 3.08 mm (0.121 in.)
- 16 = 3.23 mm (0.127 in.)
- 17 = 3.38 mm (0.133 in.)
- 18 = 3.53 mm (0.139 in.)
- 19 = 3.68 mm (0.145 in.)

NOTE: The output shaft end play is adjusted by means of a selectable rear selected thrust plate/shim in front of the 4C clutch hub/reaction sun gear assembly. The selectable rear selected thrust plate/shim thickness is identified by a numeric numeral molded or stamped into the spacer.

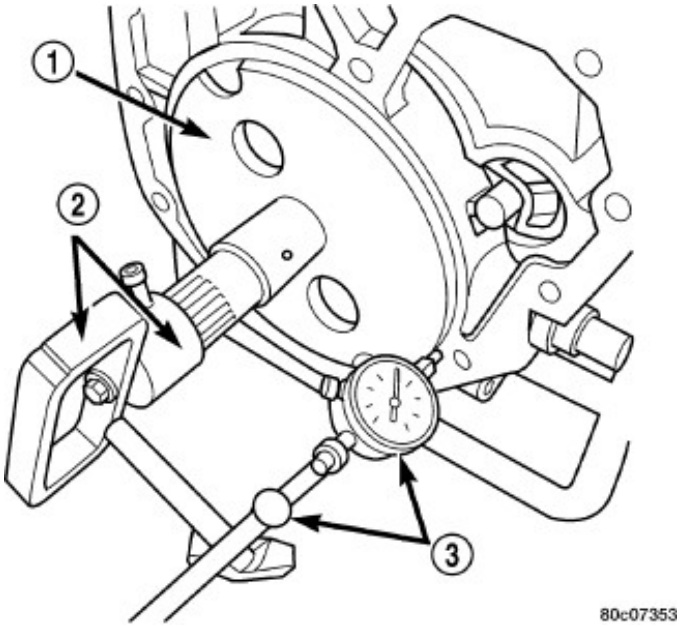

Fig. 20
Measure Output Shaft End Play

1 - Tool 10065
2 - Tool 8266-20
3 - Tool C-3339A

38. Install a **NEW** transmission pan gasket and install the extension/adapter housing onto the transmission case.
39. Install and torque the bolts to 54 N·m (40 ft. lbs.) in order to hold the extension/adapter housing onto the transmission case.

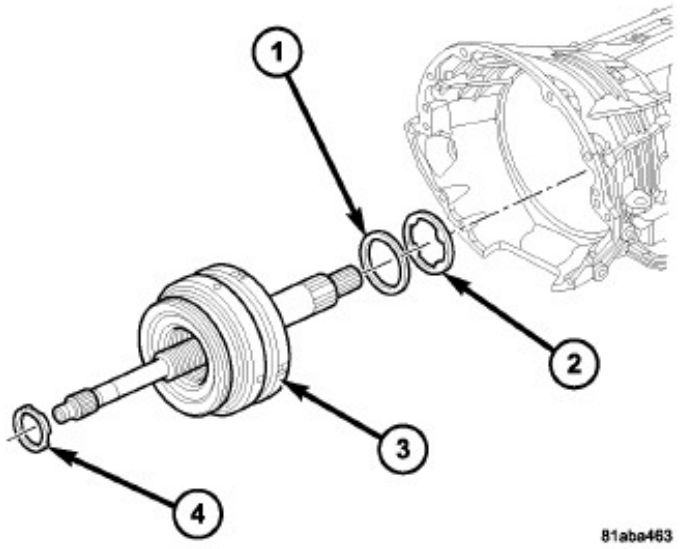

Fig. 21
Input Clutch Assembly

1 - Thrust Bearing Number 5
2 - Rear Selected Thrust Plate/Shim
3 - Input Clutch Assembly
4 - Thrust Bearing Number 1

40. Install the number 5 thrust bearing and the rear selected thrust plate/shim onto the input clutch assembly. Be sure that the outer race of the bearing is against the thrust plate/shim Fig. 21.
41. Install the input clutch assembly into the transmission case. Make sure that the input clutch assembly is fully installed by performing a visual inspection through the input speed sensor hole. If the tone wheel teeth on the input clutch assembly are centered in the hole, the assembly is fully installed Fig. 21.
42. Install the number 1 thrust bearing with the outer race up in the pocket of the input clutch assembly Fig. 21.
43. Install the oil pump into the transmission case making certain the oil pump is flush with the transmission case Fig. 22.

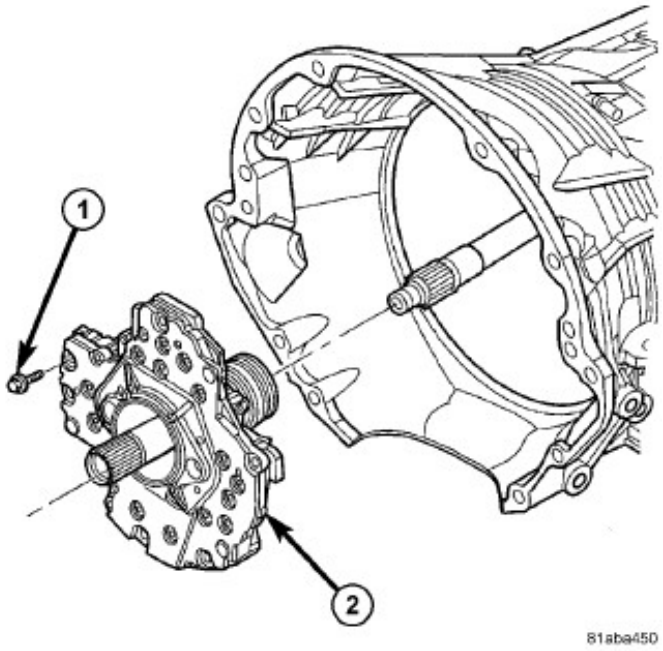

Fig. 22
Remove Oil Pump

1 - Oil Pump To Case Bolt
2 - Oil Pump

44. Install the bolts to hold the oil pump into the transmission case. Tighten the oil pump bolts to 28 N·m (250 in. lbs.) Fig. 22.
45. Using Adapter 8266-17 from End-play Tool set 8266B and Dial Indicator C-339A, measure and record the input shaft end-play. The correct end-play is 0.52-0.74 mm (0.020-0.029 in.). Adjust as necessary. Install the chosen selectable rear selected thrust plate/shim on the number 5 thrust bearing and re-measure the end-play to verify selection Fig. 23.

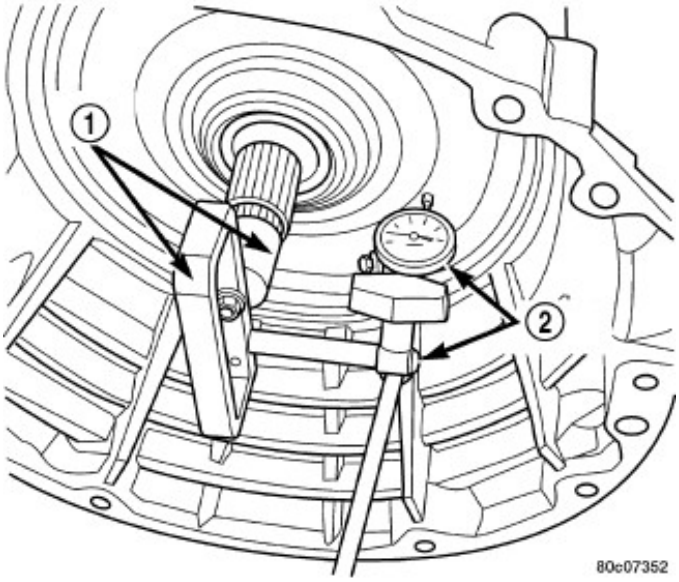

Fig. 23
Measure Input Shaft End Play

1 - Tool 8266-17

2 - Tool C-3339A

Input Shaft End Play Selectable Thrust Plate/Shim Thicknesses:

- 30 = 1.99 mm (0.078 in.)
- 31 = 2.13 mm (0.084 in.)
- 32 = 2.27 mm (0.089 in.)
- 33 = 2.41 mm (0.095 in.)
- 34 = 2.55 mm (0.100 in.)
- 35 = 2.69 mm (0.106 in.)
- 36 = 2.83 mm (0.111 in.)
- 37 = 2.97 mm (0.117 in.)

NOTE: Adapter 8266-17 will fit loosely onto the input shaft, this should not effect the performance of the adapter.

NOTE: If no input shaft end play is noted, disassemble the input clutch assembly and check for the #2, #3, or #4 thrust bearing fallen out of position or cracked. Replace any cracked thrust bearing and reassemble using trans jell or petroleum jelly to retain the thrust bearings. The selectable thrust plate/shim thickness is identified by a numeric numeral molded or stamped into the spacer.

NOTE: When measuring the input shaft end-play, two "stops" will be felt. When the input shaft is pushed inward and the dial indicator zeroed, the first "stop" felt when the input shaft is pulled outward is the movement of the input shaft in the input clutch housing hub. This value should not be included in the end-play measured value and therefore must be recorded and subtracted from the dial indicator reading.

46. Position the **NEW** front cover onto transmission case Fig. 24.

NOTE: To avoid contamination and garter spring dislodgement, do not handle the front cover seal when installing the front cover into the transmission case.

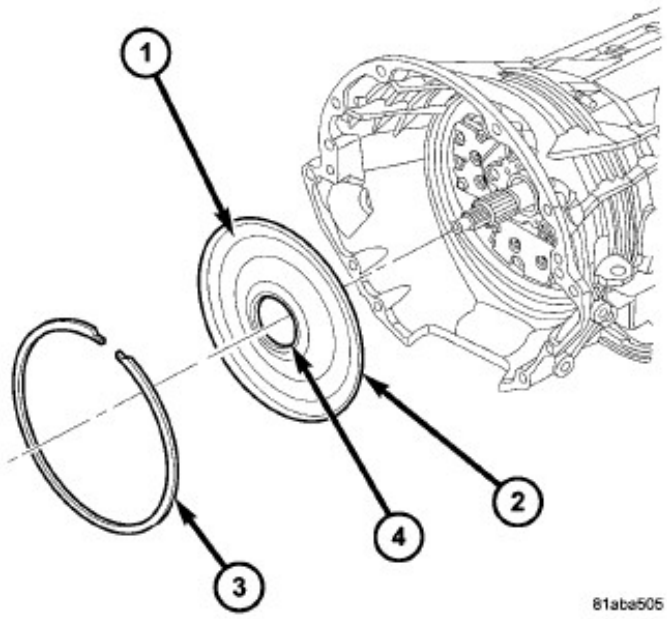

Fig. 24
Front Cover

1 - Front Cover
2 - O-Ring
3 - Snap Ring
4 - Front Cover Seal

47. Using a dead-blow mallet and the front cover installation Tool 9555, install the front cover into the transmission case Fig. 24.
48. Install the snap ring into the transmission case Fig. 24.
49. Install the valve body. Refer to the detailed service procedures available in DealerCONNECT/Service Library under: Service Info> 21 - Transmission and Transfer Case/Automatic/Valve Body/ Installation.

50. Install the primary oil filter and the oil cooler return filter Fig. 25. Tighten the screw to hold the primary oil filter to the valve body to 4.5 N·m (40 in. lbs.). Using Filter Wrench 8321, tighten the cooler return oil filter to the transmission case to 9.5 N·m (84 in. lbs.).

CAUTION!
The NEW primary oil filter seal MUST be fully installed flush against the oil pump body. DO NOT install the seal onto the filter neck and attempt to install the filter and seal as an assembly. Damage to the transmission will result.

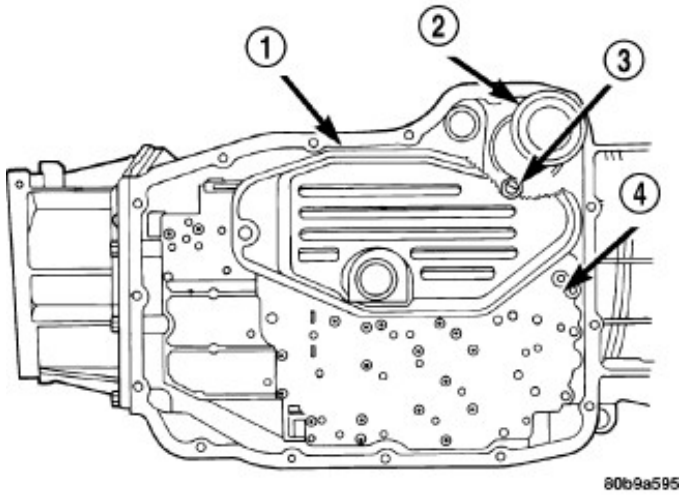

Fig. 25
Remove Primary Oil And Cooler Filters

1 - Primary Oil Filter
2 - Cooler Return Filter
3 - Cooler Return Filter Bypass Valve
4 - Valve Body

51. Install a **NEW** rubber gasket on the transmission pan and install the transmission oil pan. Tighten the bolts to 12 N·m (105 in. lbs.).

52. Install the input speed sensor to the transmission case Fig. 26. Refer to the detailed service procedures available in DealerCONNECT/Service Library under: Service Info> 21 - Transmission and Transfer Case / Automatic - 68RFE / Sensor, Speed, Input / Installation.

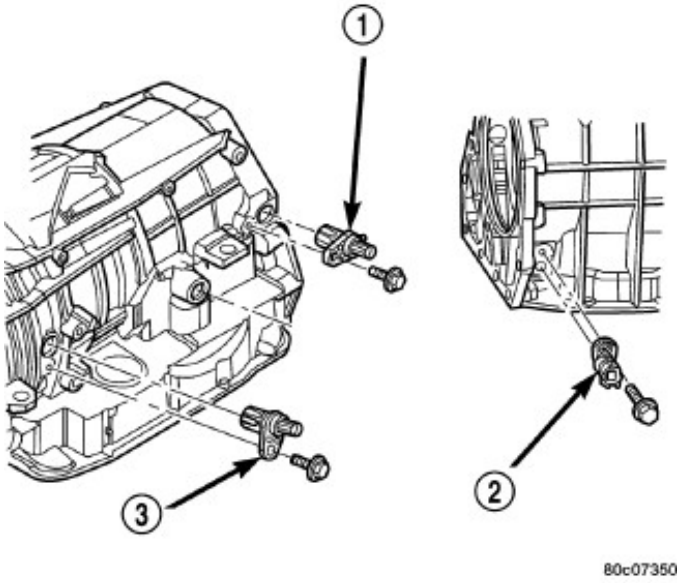

Fig. 26
Installation - Input Speed Sensor

1 - Output Speed Sensor (Not Removed)
2 - Line Pressure Sensor
3 - Input Speed Sensor

53. Install the manual shift lever to the transmission using a **NEW** manual shift lever bolt Fig. 27. Tighten the bolt to 12 N·m (9 lbs. ft. lbs.).

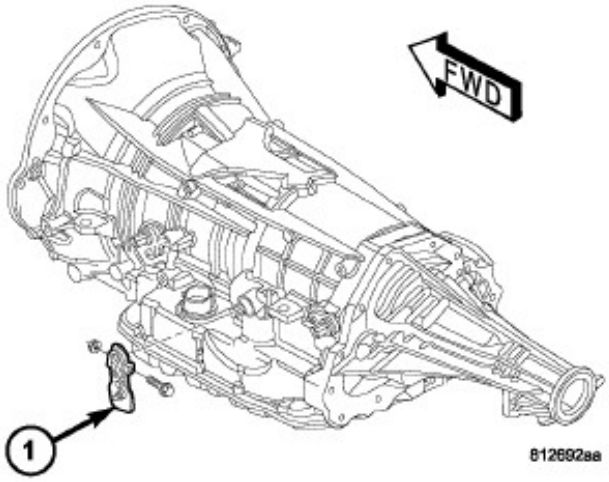

Fig. 27
Manual Shift Lever

1 - Manual Shift Lever

54. Install the torque converter to the transmission. Refer to the detailed service procedures available in DealerCONNECT/Service Library under: Service Info> 21 - Transmission and Transfer Case / Automatic - 68RFE / Torque Converter / Installation.
55. Using wiTECH, perform a Quick Learn Procedure.
56. Clear DTCs.

POLICY:

Reimbursable within the provisions of the warranty.