

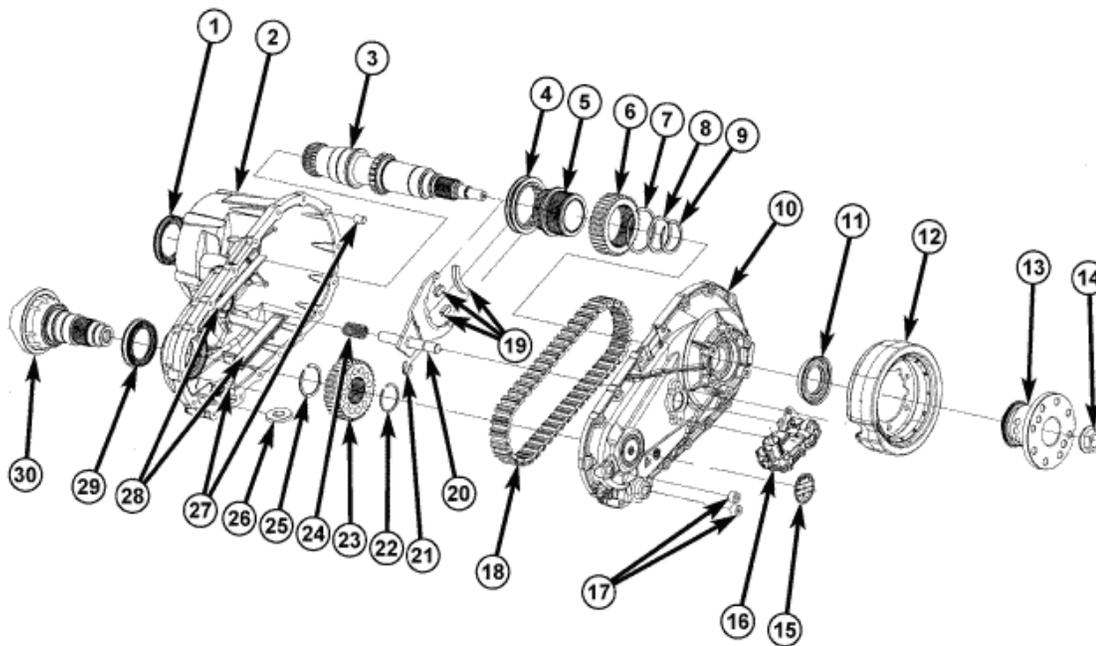
2007 TRANSFER CASE

MP143 - Service Information - Nitro

MP143 - SERVICE INFORMATION

DESCRIPTION

DESCRIPTION-TRANSFER CASE MP143



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**Fig. 1: Exploded View Of MP143**  
 Courtesy of CHRYSLER LLC

- |                        |                                |
|------------------------|--------------------------------|
| 1 - INPUT SHAFT SEAL   | 16 - SHIFT MOTOR               |
| 2 - FRONT CASE         | 17 - DRAIN/FILL PLUGS          |
| 3 - MAINSHAFT          | 18- DRIVE CHAIN                |
| 4 - MODE SLEEVE        | 19 - SHIFT LEVER PAD           |
| 5 - MODE HUB           | 20 - MODE FORK ASSEMBLY        |
| 6 - DRIVE SPROCKET     | 21- RETAINING CLIP             |
| 7 - RETAINING RING     | 22 - RETAINING RING            |
| 8 - THRUST WASHER      | 23 - DRIVE GEAR                |
| 9 - RETAINING RING     | 24 - SHIFT LEVER RETURN SPRING |
| 10 - REAR CASE         | 25 - RETAINING RING            |
| 11 - OUTPUT SHAFT SEAL | 26 - POCKET MAGNET             |

## 2007 Dodge Nitro R/T

2007 TRANSFER CASE MP143 - Service Information - Nitro

12 - DAMPENER	27 - DOWEL PIN
13 - OUTPUT FLANGE	28 - CHAIN GUIDE RAILS
14 - OUTPUT FLANGE NUT	29 - FRONT OUTPUT SHAFT SEAL
15 - ID TAG	30 - FRONT OUTPUT SHAFT FLANGE

Available with both manual and automatic transmissions, the MP143 single-speed, part-time transfer case is used in Nitro's new Part-Time Four-Wheel Drive System. Two-wheel drive and four-wheel drive modes are electronically controlled via a switch in the center console. Either mode can be selected at any time. The MP143 transfer case works with standard-equipment Traction Control and ESP (Electronic Stability Program) features to provide enhanced traction and stability on low-traction surfaces.

Two operating positions: 2WD and 4Lock controlled via a switch in the center console.

For temporary conditions that require extra traction such as snow or mud, the part-time 4Lock mode locks the main shaft and drive sprocket hub, making the front and rear wheels rotate in unison and offering maximum traction.

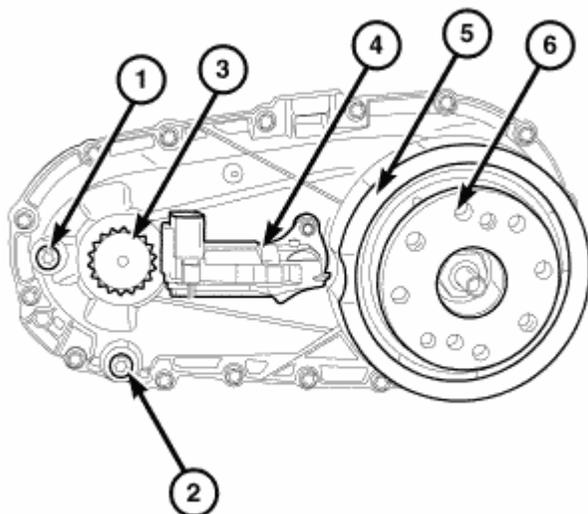
Enhanced traction and stability provided by Traction Control and ESP working in tandem with part-time four-wheel-drive. Traction Control and ESP provide resistance to any wheel that is slipping to allow additional torque transfer to wheels with traction.

Robust design and sealing for reliability.

Maintenance free.

### OPERATION

#### OPERATION-TRANSFER CASE MP143



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**Fig. 2: Transfer Case MP143 Component Locations**  
Courtesy of CHRYSLER LLC

## 2007 Dodge Nitro R/T

2007 TRANSFER CASE MP143 - Service Information - Nitro

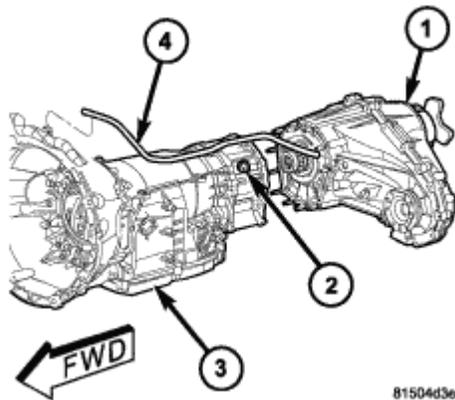
- |                |                              |
|----------------|------------------------------|
| 1 - FILL PLUG  | 4 - SHIFT MOTOR              |
| 2 - DRAIN PLUG | 5 - DAMPENER                 |
| 3 - ID TAG     | 6 - REAR OUTPUT SHAFT FLANGE |

In 2WD mode, the front axle and driveshaft turn freely while power is sent to the rear axle and wheels. In 4Lock mode, the front and rear wheels rotate in unison, resulting in remarkable traction. Because this is a part-time system, it locks the front and rear drive shafts together. Therefore, it can only be used on slippery or loose surfaces like ice, gravel, or rugged terrain. The standard-equipment ESP, which combines ABS, Traction Control, and Electronic Roll Mitigation, enhances traction by modulating torque among all wheels as necessary - providing resistance to any wheel that is slipping while allowing torque to flow to the wheels with traction.

The MP143 transfer case also has an analog shift actuator mounted on the rear of the transfer case that communicates with the switch through the CAN-bus network.

### REMOVAL

#### REMOVAL-TRANSFER CASE MP143



**Fig. 3: Identifying Transfer Case, Nuts, Transmission & Transfer Case Vent Tube**  
Courtesy of CHRYSLER LLC

- |                             |
|-----------------------------|
| 1 - TRANSFER CASE           |
| 2 - NUTS                    |
| 3 - TRANSMISSION            |
| 4 - TRANSFER CASE VENT TUBE |

1. Raise vehicle.

**CAUTION: Do not allow propshafts to hang at attached end. Damage to joint can result.**

2. Remove the front and rear propeller shafts. Refer to **REMOVAL**.
3. Support transmission with jack stand.

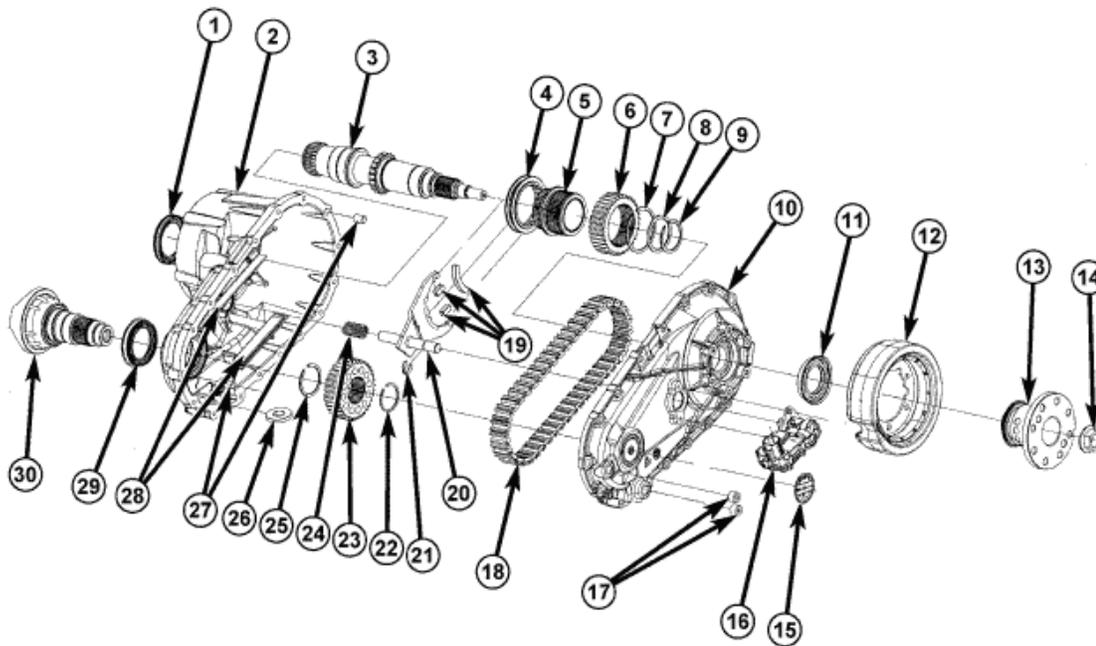
## 2007 Dodge Nitro R/T

2007 TRANSFER CASE MP143 - Service Information - Nitro

4. Remove rear crossmember and skid plate, if equipped.
5. Disconnect transfer case vent hose (4).
6. Disconnect the transfer case shift motor electrical connector and position the harness aside.
7. Disconnect the wiring connector from the shift motor, if necessary.
8. Support transfer case with transmission jack and secure with chains.
9. Remove nuts (2) attaching transfer case (1) to transmission (3).
10. Pull transfer case and jack rearward to disengage transfer case from the transmission case.
11. Remove transfer case from under vehicle.

### DISASSEMBLY

#### DISASSEMBLY-TRANSFER CASE -MP143



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**Fig. 4: Exploded View Of MP143**  
Courtesy of CHRYSLER LLC

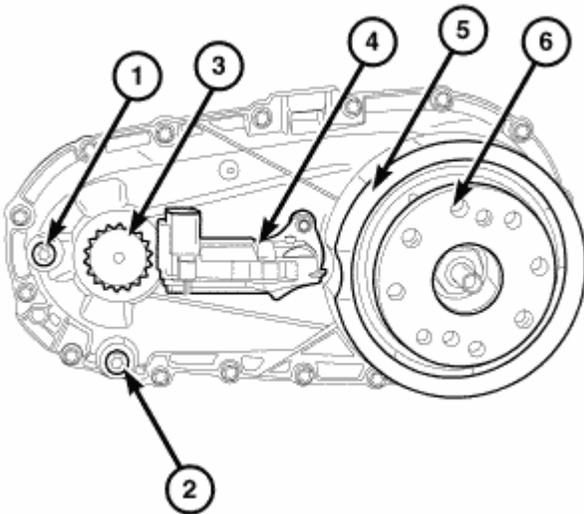
1 - INPUT SHAFT SEAL  
2 - FRONT CASE  
3 - MAINSHAFT  
4 - MODE SLEEVE  
5 - MODE HUB  
6 - DRIVE SPROCKET

16 - SHIFT MOTOR  
17 - DRAIN/FILL PLUGS  
18 - DRIVE CHAIN  
19 - SHIFT LEVER PAD  
20 - MODE FORK ASSEMBLY  
21 - RETAINING CLIP

## 2007 Dodge Nitro R/T

2007 TRANSFER CASE MP143 - Service Information - Nitro

- |                        |                                |
|------------------------|--------------------------------|
| 7 - RETAINING RING     | 22 - RETAINING RING            |
| 8 - THRUST WASHER      | 23 - DRIVE GEAR                |
| 9 - RETAINING RING     | 24 - SHIFT LEVER RETURN SPRING |
| 10 - REAR CASE         | 25 - RETAINING RING            |
| 11 - OUTPUT SHAFT SEAL | 26 - POCKET MAGNET             |
| 12 - DAMPENER          | 27 - DOWEL PIN                 |
| 13 - OUTPUT FLANGE     | 28 - CHAIN GUIDE RAILS         |
| 14 - OUTPUT FLANGE NUT | 29 - FRONT OUTPUT SHAFT SEAL   |
| 15 - ID TAG            | 30 - FRONT OUTPUT SHAFT FLANGE |

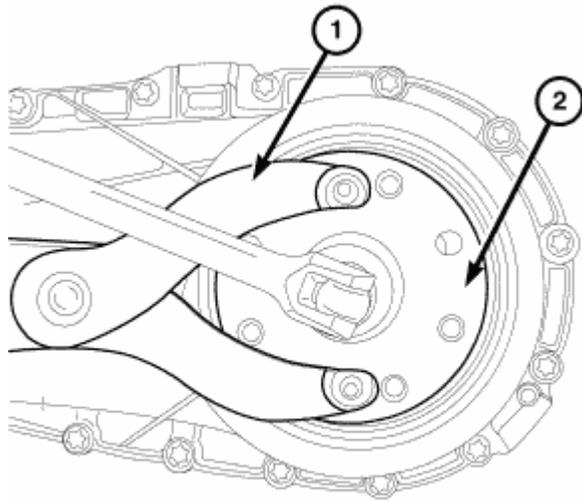


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**Fig. 5: Transfer Case MP143 Component Locations**  
Courtesy of CHRYSLER LLC

- |                |                              |
|----------------|------------------------------|
| 1 - FILL PLUG  | 4 - SHIFT MOTOR              |
| 2 - DRAIN PLUG | 5 - DAMPENER                 |
| 3 - ID TAG     | 6 - REAR OUTPUT SHAFT FLANGE |

1. Position transfer case on shallow drain pan. Remove drain plug (2) and drain lubricant.

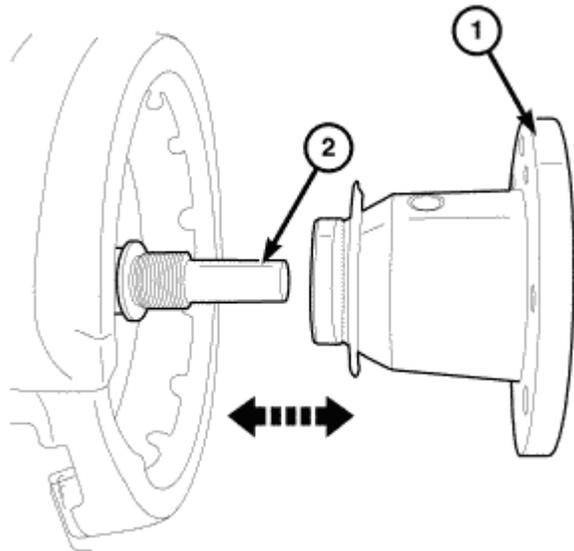


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**Fig. 6: Using Holder C-3281 To Remove/Install Rear Output Flange Nut**  
Courtesy of CHRYSLER LLC

- |                              |
|------------------------------|
| 1 - HOLDER C-3281            |
| 2 - REAR OUTPUT SHAFT FLANGE |

- Using Holder C-3281 (1), remove the rear output flange (2) nut.



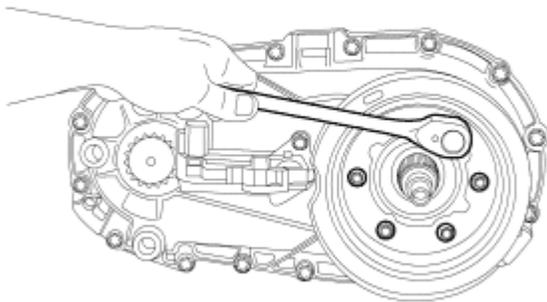
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**Fig. 7: Removing/Installing Rear Output Flange**  
Courtesy of CHRYSLER LLC

- |                              |
|------------------------------|
| 1 - REAR OUTPUT SHAFT FLANGE |
|------------------------------|

2 - MAINSHAFT

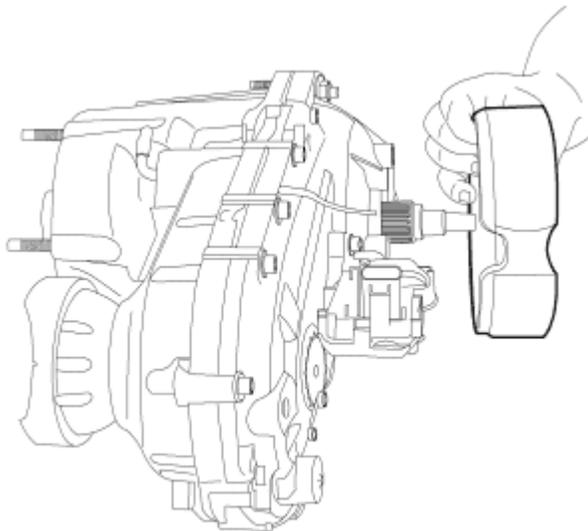
3. Remove the rear output shaft flange (1) from the main shaft. If flange is difficult to remove by hand, remove it with bearing splitter, or with standard two jaw puller. Be sure puller tool is positioned securely on flange.



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**Fig. 8: Removing/Installing Dampener Bolts**  
Courtesy of CHRYSLER LLC

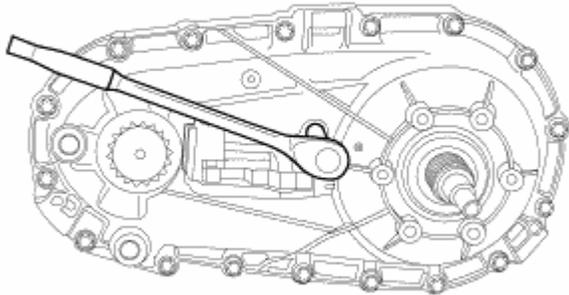
4. Remove the dampener bolts from the transfer case.



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**Fig. 9: Removing/Installing Dampener**  
Courtesy of CHRYSLER LLC

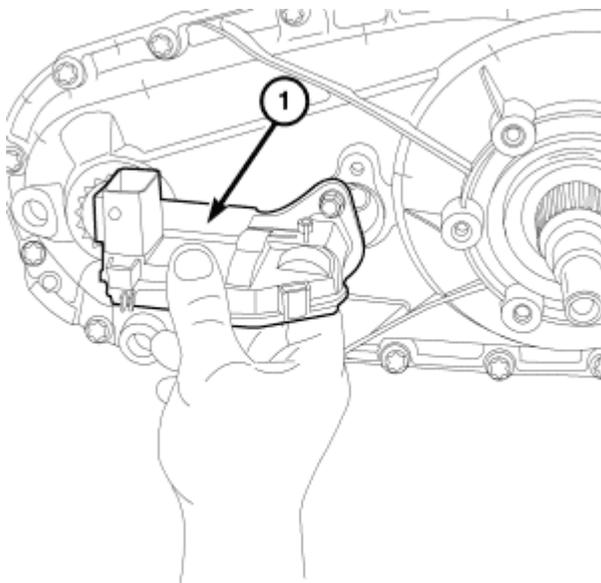
5. Remove the dampener from the transfer case.



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**Fig. 10: Removing/Installing Shift Motor Bolts**  
Courtesy of CHRYSLER LLC

6. Remove the shift motor bolts from the transfer case.

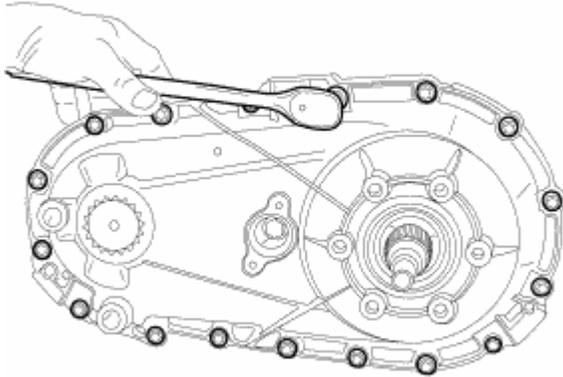


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**Fig. 11: Removing/Installing Shift Motor**  
Courtesy of CHRYSLER LLC

1 - SHIFT MOTOR

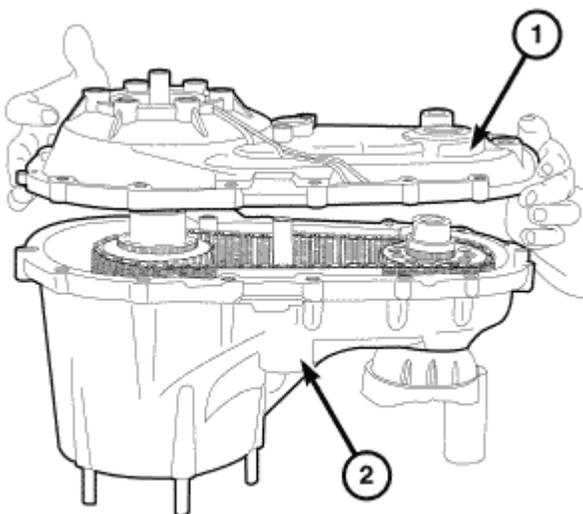
7. Remove the shift motor (1) from the transfer case.



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**Fig. 12: Removing/Installing Transfer Case Bolts**  
Courtesy of CHRYSLER LLC

8. Support transfer case so rear case is facing upward and the input gear is not contacting the work surface.
9. Remove bolts holding front case to rear case.



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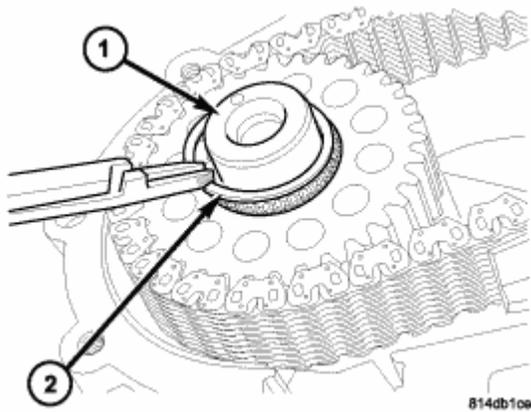
**Fig. 13: Removing/Installing Rear Case From Front Case**  
Courtesy of CHRYSLER LLC

1 - REAR HOUSING

**2 - FRONT HOUSING**

**NOTE:** Be careful not to damage the front and rear case sealing surfaces.

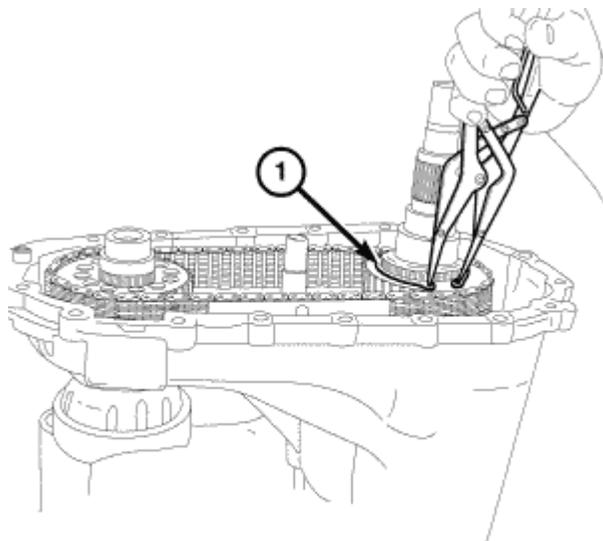
10. Loosen rear case with a case splitter or suitable tool to break sealer bead. Insert case splitter or suitable tool only into notches provided at each end of case.
11. Remove rear case (1) from front case (2).



**Fig. 14: Remove Front Drive Sprocket Retaining Ring**  
Courtesy of CHRYSLER LLC

- 1 - FRONT OUTPUT SHAFT**  
**2 - RETAINING RING**

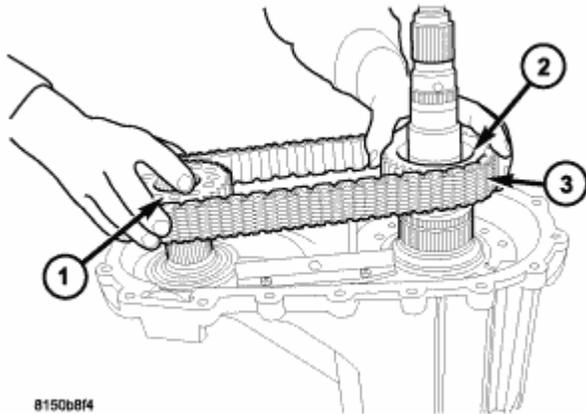
12. Remove front output shaft drive sprocket retaining ring (2) from the front output shaft (1).



**Fig. 15: Removing/Installing Retaining Ring**  
Courtesy of CHRYSLER LLC

1 - RETAINING RING

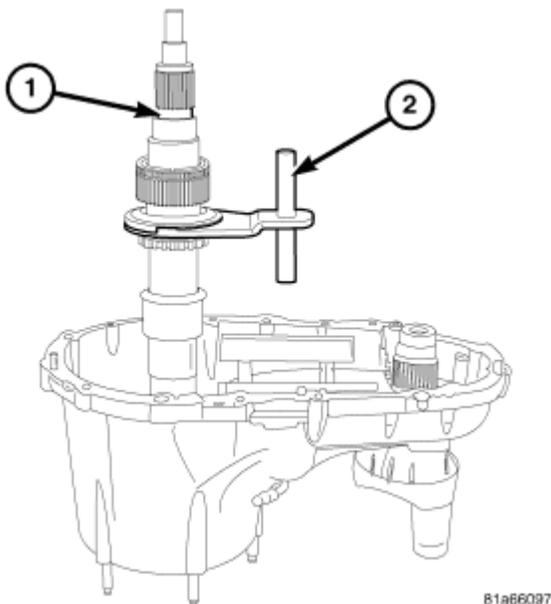
13. Remove mainshaft drive sprocket retaining ring (1).



**Fig. 16: Removing Drive Sprockets And Drive Chain**  
Courtesy of CHRYSLER LLC

1 - FRONT DRIVE SPROCKET  
2 - MAINSHAFT DRIVE SPROCKET  
3 - DRIVE CHAIN

14. Remove the drive sprockets (1, 2) and the drive chain (3) as one.

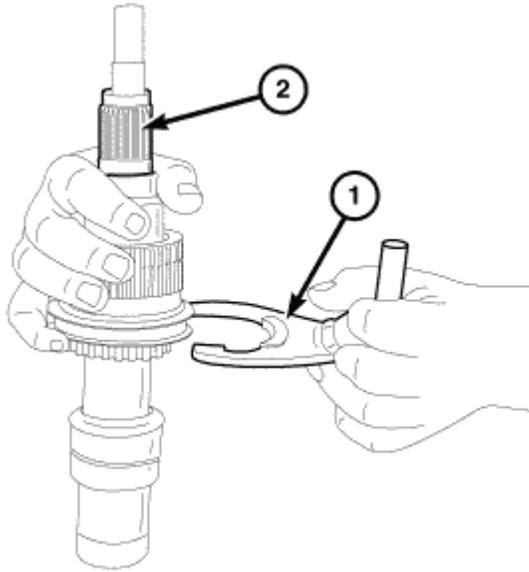


**Fig. 17: Removing Mainshaft And Mode Fork Assembly From Front Case**

Courtesy of CHRYSLER LLC

1 - MAINSHAFT  
2 - MODE FORK ASSEMBLY

15. Remove the mainshaft (1) and mode fork assembly (2) from the front case.

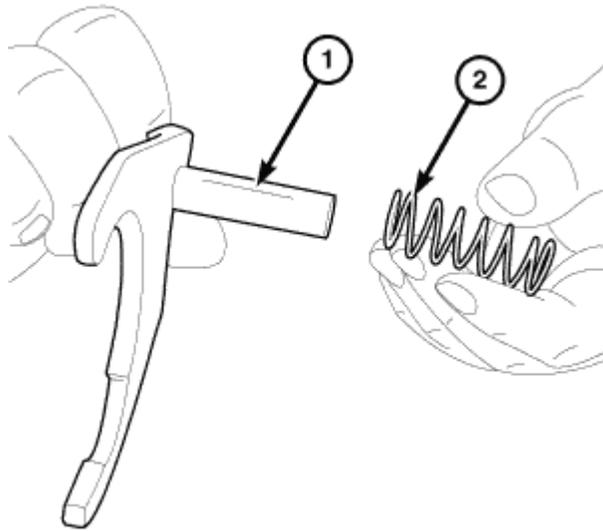


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**Fig. 18: Removing/Installing Mode Fork Assembly Onto Mainshaft**  
Courtesy of CHRYSLER LLC

1 - MODE FORK ASSEMBLY  
2 - MAINSHAFT

16. Remove the mode fork assembly (1) from the mainshaft (2).



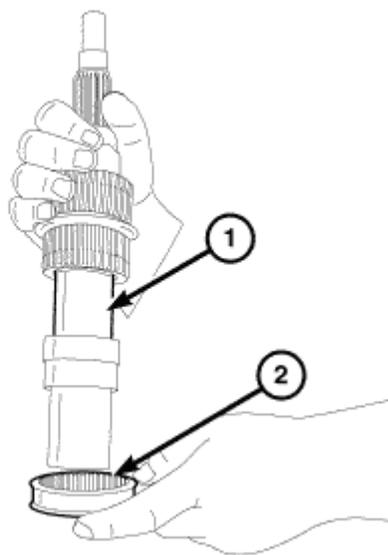
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**Fig. 19: Removing/Installing Mode Fork Spring**  
Courtesy of CHRYSLER LLC

1 - MODE FORK

2 - MODE FORK RETURN SPRING

17. Remove the mode fork spring (2) from the mode fork rod (1).



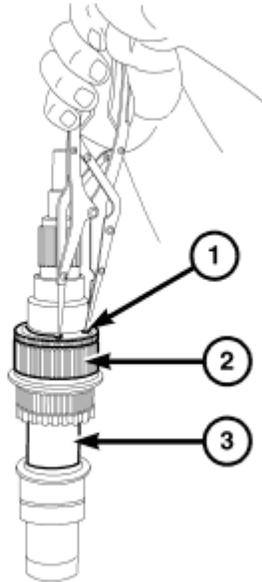
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**Fig. 20: Removing/Installing Mode Sleeve**  
Courtesy of CHRYSLER LLC

1 - MAINSHAFT

**2 - MODE SLEEVE**

18. Remove the mode sleeve (2) from the mainshaft (1).

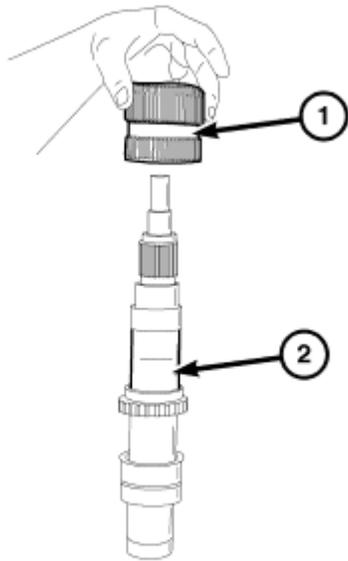


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**Fig. 21: Removing/Installing Mode Hub Snap Ring**  
Courtesy of CHRYSLER LLC

- 1 - MODE HUB SNAP RING  
2 - MODE HUB  
3 - MAINSHAFT

19. Remove the mode hub snap ring (1) from the mainshaft (3).

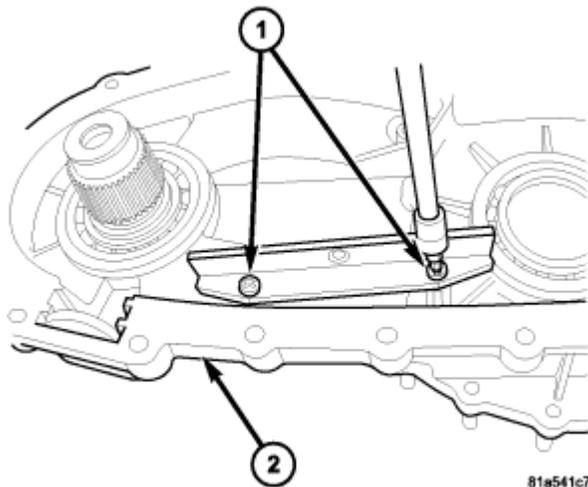


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**Fig. 22: Removing/Installing Mode Hub**  
Courtesy of CHRYSLER LLC

- |               |
|---------------|
| 1 - MODE HUB  |
| 2 - MAINSHAFT |

20. Remove the mode hub (1) from the mainshaft (2).



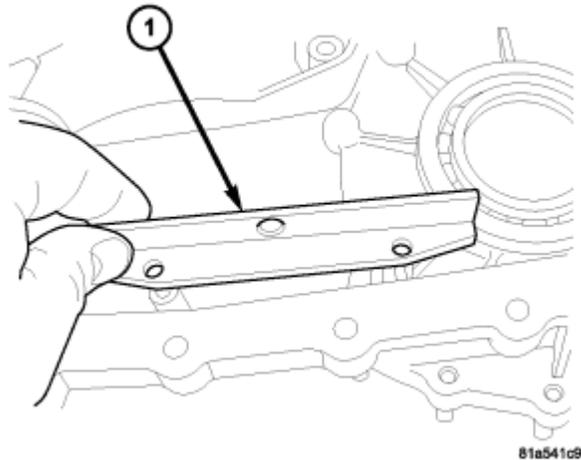
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**Fig. 23: Removing Screws Holding Both Chain Guide Rails To Front Case**  
Courtesy of CHRYSLER LLC

- |            |
|------------|
| 1 - SCREWS |
|------------|

2 - FRONT CASE

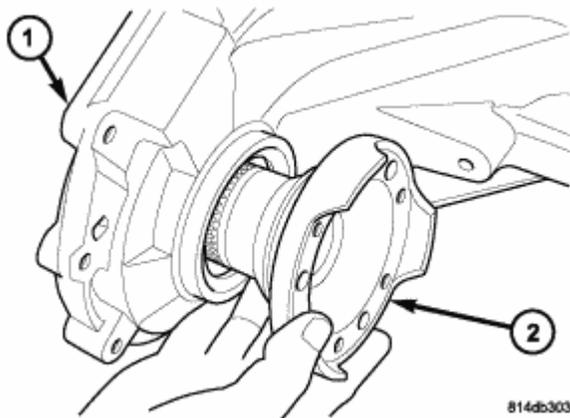
21. Remove the screws (1) holding both chain guide rails to the front case (2).



**Fig. 24: Removing Both Chain Guide Rails From Transfer Case**  
Courtesy of CHRYSLER LLC

1 - DRIVE CHAIN GUIDE

22. Remove both chain guide rails (1) from the transfer case.
23. Remove the magnet from the magnet pocket.



**Fig. 25: Removing Front Output Shaft Assembly From Front Case And Front Output Shaft Front Bearing**  
Courtesy of CHRYSLER LLC

1 - FRONT HOUSING

## 2 - FRONT OUTPUT SHAFT

24. Remove the front output shaft assembly (2) from the front case (1) and the front output shaft front bearing.
25. Remove the front output shaft seal with a suitable pry tool or a screw mounted in a slide hammer.
26. Remove the input shaft seal with a suitable pry tool or a screw mounted in a slide hammer.

## CLEANING

### CLEANING-TRANSFER CASE MP143

The use of crocus cloth is permissible where necessary, providing it is used carefully. When used on shafts, or valves, use extreme care to avoid rounding off sharp edges. Sharp edges are vital as they prevent foreign matter from getting between the valve and valve bore.

Do not reuse oil seals, gaskets, seal rings, or O-rings during overhaul. Replace these parts as a matter of course. Also do not reuse snap rings or E-clips that are bent or distorted. Replace these parts as well.

Lubricate transfer case parts with Mopar® ATF+4 ATF, Automatic Transmission Fluid, during overhaul and assembly. Use petroleum jelly to prelubricate seals, O-rings, and thrust washers. Petroleum jelly can also be used to hold parts in place during reassembly.

Clean the case in a solvent tank. Flush the case bores and fluid passages thoroughly with solvent. Dry the case and all fluid passages with compressed air. Be sure all solvent is removed from the case and that all fluid passages are clear.

**NOTE: Do not use shop towels or rags to dry the case (or any other transmission component) unless they are made from lint-free materials. Lint will stick to case surfaces and transmission components and circulate throughout the transmission after assembly. A sufficient quantity of lint can block fluid passages and interfere with valve body operation.**

## INSPECTION

### INSPECTION-TRANSFER CASE MP143

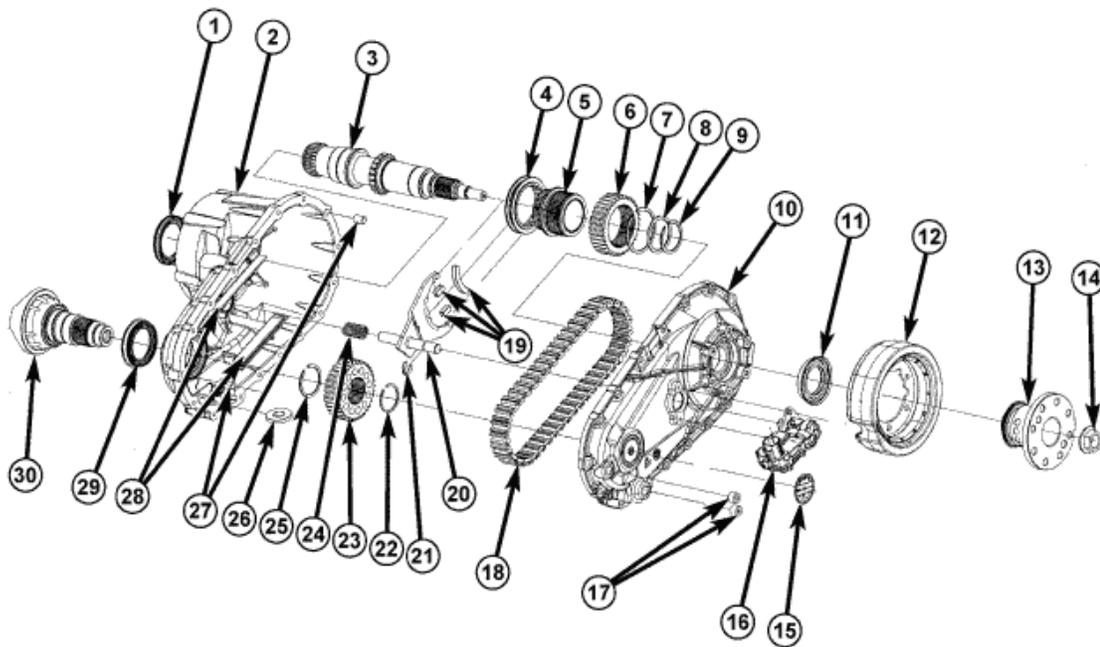
Inspect the case for cracks, porous spots, worn bores, or damaged threads. Damaged threads can be repaired with Helicoil® thread inserts. However, the case will have to be replaced if it exhibits any type of damage or wear.

## ASSEMBLY

### TRANSFER CASE - MP143

## 2007 Dodge Nitro R/T

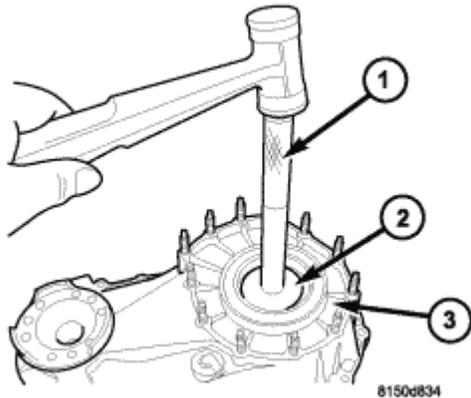
2007 TRANSFER CASE MP143 - Service Information - Nitro



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**Fig. 26: Exploded View Of MP143**  
Courtesy of CHRYSLER LLC

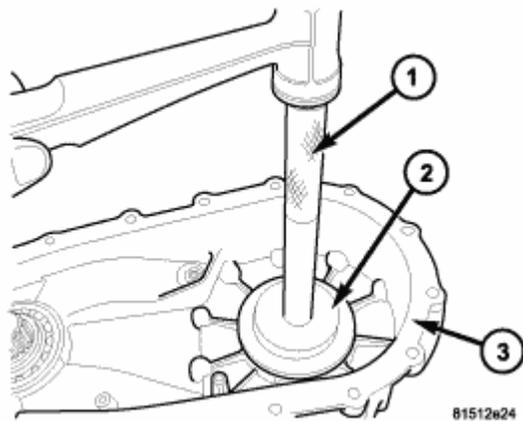
- |                        |                                |
|------------------------|--------------------------------|
| 1 - INPUT SHAFT SEAL   | 16 - SHIFT MOTOR               |
| 2 - FRONT CASE         | 17 - DRAIN/FILL PLUGS          |
| 3 - MAINSHAFT          | 18- DRIVE CHAIN                |
| 4 - MODE SLEEVE        | 19 - SHIFT LEVER PAD           |
| 5 - MODE HUB           | 20 - MODE FORK ASSEMBLY        |
| 6 - DRIVE SPROCKET     | 21- RETAINING CLIP             |
| 7 - RETAINING RING     | 22 - RETAINING RING            |
| 8 - THRUST WASHER      | 23 - DRIVE GEAR                |
| 9 - RETAINING RING     | 24 - SHIFT LEVER RETURN SPRING |
| 10 - REAR CASE         | 25 - RETAINING RING            |
| 11 - OUTPUT SHAFT SEAL | 26 - POCKET MAGNET             |
| 12 - DAMPENER          | 27 - DOWEL PIN                 |
| 13 - OUTPUT FLANGE     | 28 - CHAIN GUIDE RAILS         |
| 14 - OUTPUT FLANGE NUT | 29 - FRONT OUTPUT SHAFT SEAL   |
| 15 - ID TAG            | 30 - FRONT OUTPUT SHAFT FLANGE |



**Fig. 27: Removing Input Shaft Bearing From Front Case With Handle C-4171 And Installer 8693A**  
Courtesy of CHRYSLER LLC

- 1 - HANDLE C-4171
- 2 - INSTALLER 8693A
- 3 - FRONT HOUSING

1. Remove the input shaft bearing from the front case (3) with Handle C-4171 (1) and Installer 8693A (2).

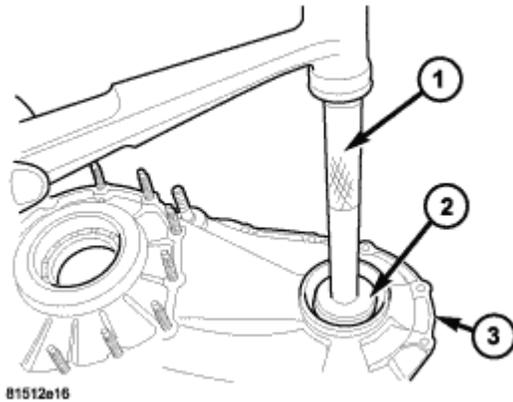


**Fig. 28: Installing New Input Gear Bearing Into Front Case Using Installer 8152, Inverted, And Handle C-4171**

Courtesy of CHRYSLER LLC

- 1 - INPUT GEAR BEARING
- 2 - FRONT CASE

2. Install the new input gear bearing into the front case (3) using Installer 8152(2), inverted, and Handle C-4171 (1).

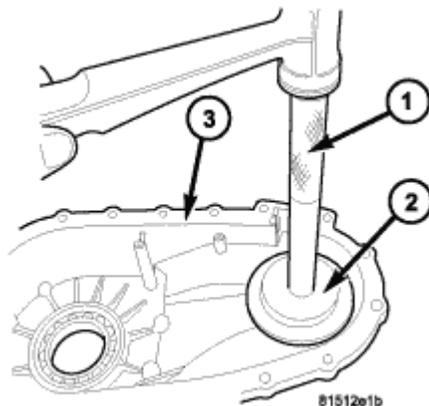


**Fig. 29: Using Installer 7829A And Handle C-4171 To Remove Front Output Shaft Bearing From Front Case**

Courtesy of CHRYSLER LLC

- 1 - HANDLE C-4171
- 2 - INSTALLER 7829A
- 3 - FRONT HOUSING

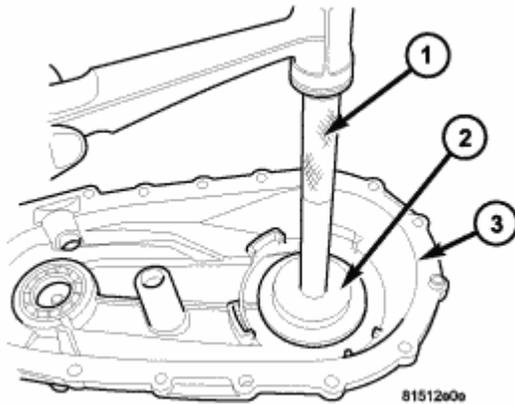
3. Using Installer 7829A (2) and Handle C-4171 (1), remove front output shaft bearing from the front case (3).



**Fig. 30: Using Installer 8152, Inverted, And Handle C-4171 To Seat Bearing In Front Case**

- 1 - HANDLE C-4171
- 2 - INSTALLER 8152
- 3 - FRONT HOUSING

4. Start front output shaft bearing in the front case. Using Installer 8152 (2), inverted, and Handle C-4171 (1), seat the bearing in the front case (3).

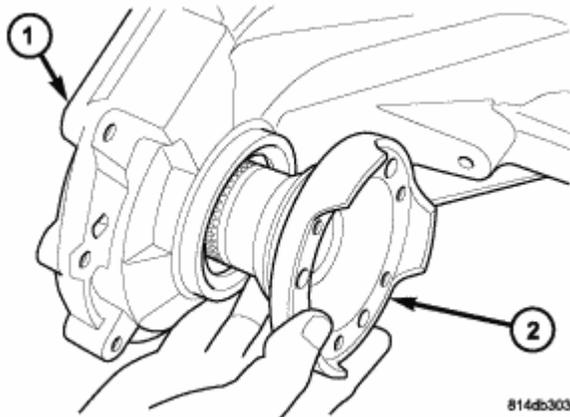


**Fig. 31: Installing New Main Shaft Rear Bearing Into Rear Case Using Installer 8245, And Handle C-4171**

Courtesy of CHRYSLER LLC

- |   |
|---|
| 1 - HANDLE C-4171<br>2 - INSTALLER 8152<br>3 - REAR HOUSING |
|---|

5. Remove the main shaft rear bearing from the rear case using Installer 5066 and Handle C-4171.
6. Install the new main shaft rear bearing into the rear case (3) using Installer 8245 (2), and Handle C-4171 (1).

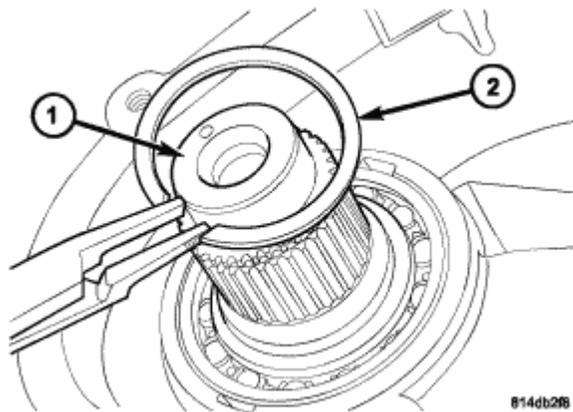


**Fig. 32: Installing Front Output Shaft Assembly Into Front Case And Front Output Shaft Front Bearing**

Courtesy of CHRYSLER LLC

- |   |
|---|
| 1 - FRONT HOUSING<br>2 - FRONT OUTPUT SHAFT |
|---|

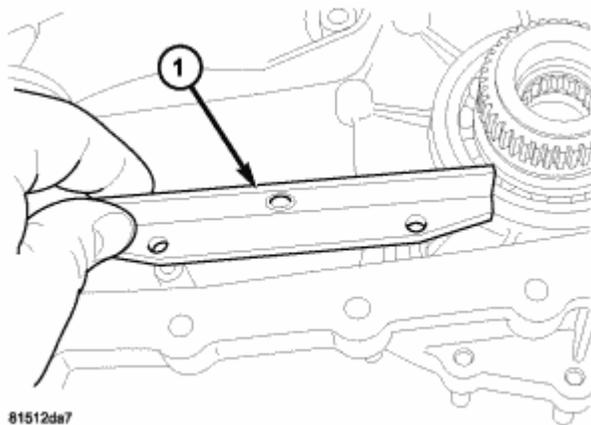
7. Install a new front output shaft seal with Installer 6560.
8. Install the front output shaft assembly (2) into the front case (1) and the front output shaft front bearing.



**Fig. 33: Installing Retaining Ring Onto Front Output Shaft**  
Courtesy of CHRYSLER LLC

1 - FRONT OUTPUT SHAFT  
2 - RETAINING RING

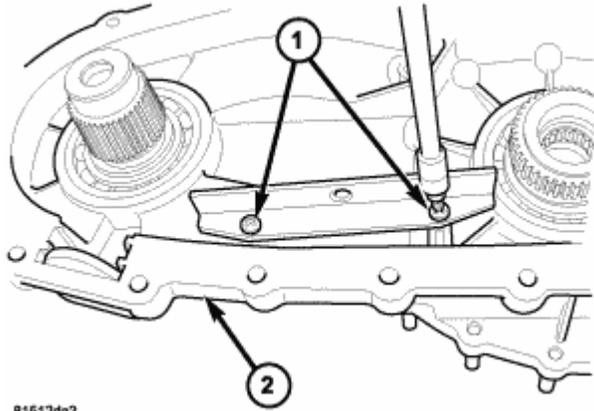
9. Install the retaining ring (2) onto the front output shaft (1).
10. Install the new input shaft seal with Installer 9672 and Handle C-4171.



**Fig. 34: Installing Both Drive Chain Guide Rails Onto Transfer Case**  
Courtesy of CHRYSLER LLC

1 - DRIVE CHAIN GUIDE

11. Install the both drive chain guide rails (1) onto the transfer case.

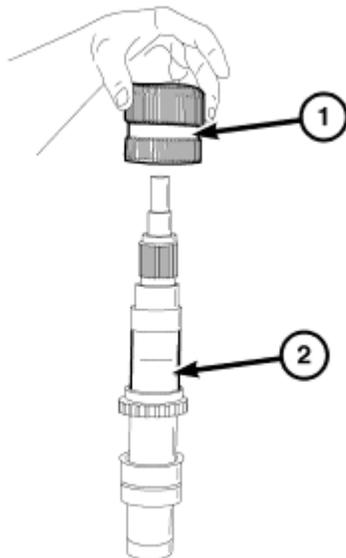


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**Fig. 35: Installing Screws To Hold Both Chain Guide Rails To Front Case**  
Courtesy of CHRYSLER LLC

1 - SCREWS  
2 - FRONT CASE

12. Install the screws (1) to hold the both chain guide rails to the front case (2). Tighten the screws to 5-8 N.m (44-71 in.lbs.).

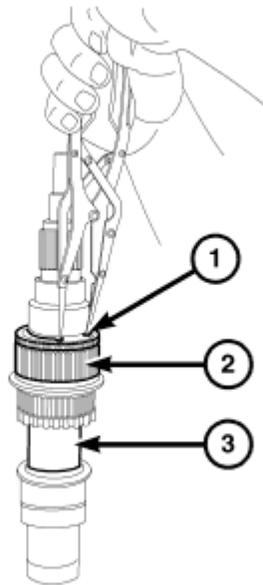


81a68b43

**Fig. 36: Removing/Installing Mode Hub**  
Courtesy of CHRYSLER LLC

1 - MODE HUB  
2 - MAINSHAFT

13. Install the mode hub (1) onto the mainshaft (2).

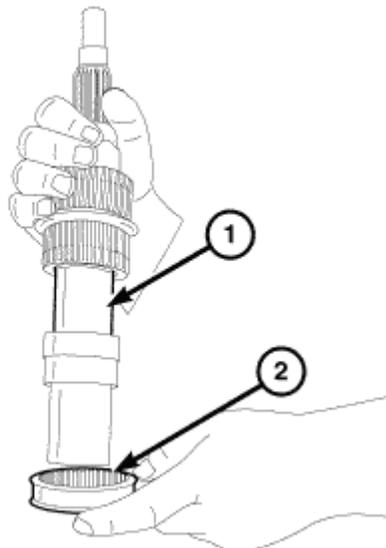


81a66485

**Fig. 37: Removing/Installing Mode Hub Snap Ring**  
Courtesy of CHRYSLER LLC

- |                        |
|------------------------|
| 1 - MODE HUB SNAP RING |
| 2 - MODE HUB           |
| 3 - MAINSHAFT          |

14. Install the mode hub snap ring (1) onto the mainshaft (3).



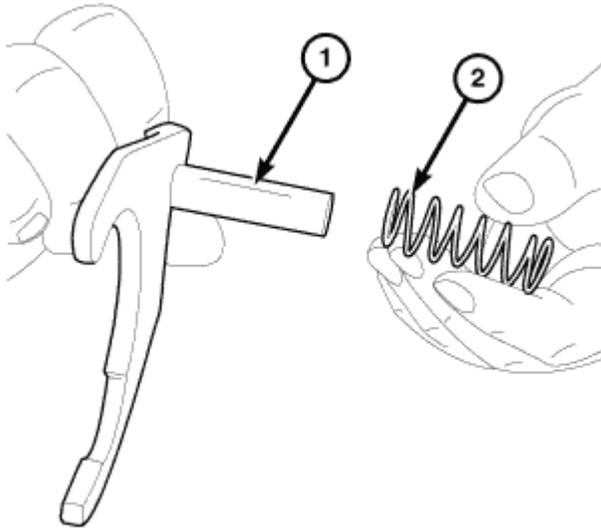
81a66485

**Fig. 38: Removing/Installing Mode Sleeve**  
Courtesy of CHRYSLER LLC



- 1 - MAINSHAFT
- 2 - MODE SLEEVE

15. Install the mode sleeve (2) onto the mainshaft (1).

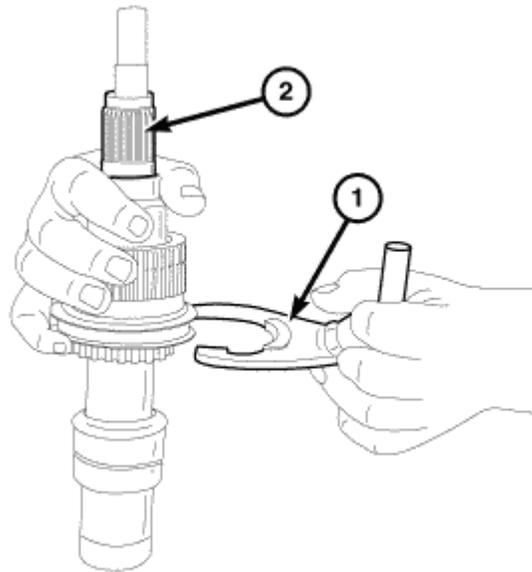


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**Fig. 39: Removing/Installing Mode Fork Spring**  
Courtesy of CHRYSLER LLC

- 1 - MODE FORK
- 2 - MODE FORK RETURN SPRING

16. Install the mode fork return spring (2) onto the mode fork (1).

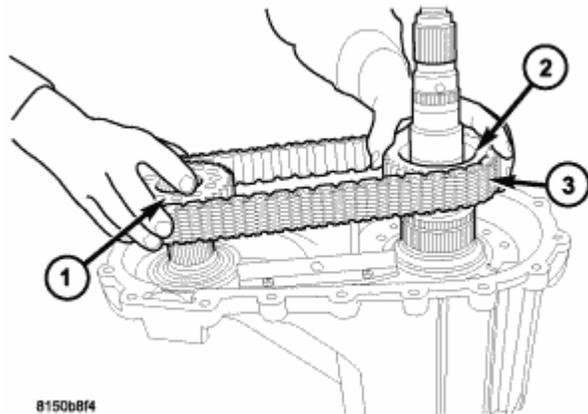


81a66576

**Fig. 40: Removing/Installing Mode Fork Assembly Onto Mainshaft**  
Courtesy of CHRYSLER LLC

1 - MODE FORK ASSEMBLY  
2 - MAINSHAFT

17. Install the mode fork assembly (1) onto the mainshaft (2).

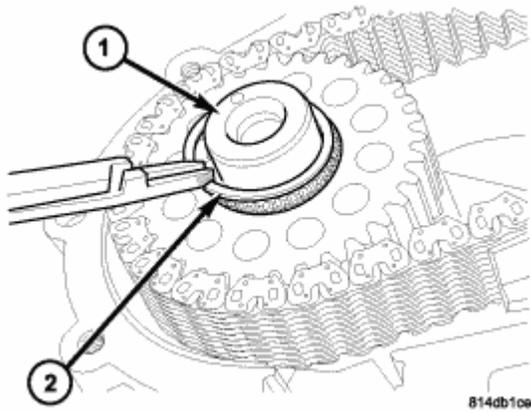


8150b8f4

**Fig. 41: Installing Drive Sprockets And Drive Chain And Shift Lever**  
Courtesy of CHRYSLER LLC

1 - FRONT DRIVE SPROCKET  
2 - MAINSHAFT DRIVE SPROCKET  
3 - DRIVE CHAIN

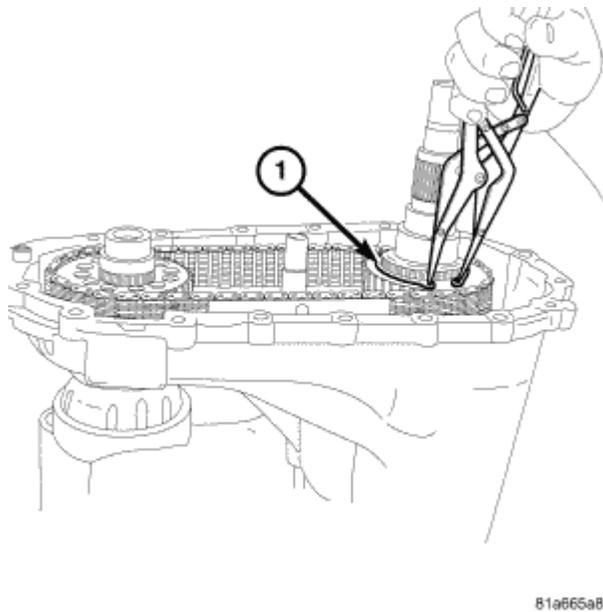
18. Install the drive sprockets (1, 2) and drive chain (3) and shift lever as one.



**Fig. 42: Installing Front Output Shaft Drive Sprocket Retaining Ring**  
Courtesy of CHRYSLER LLC

1 - FRONT OUTPUT SHAFT  
2 - RETAINING RING

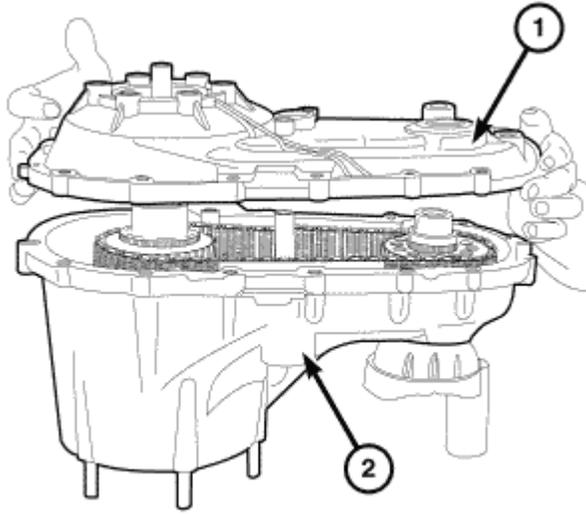
19. Install the front output shaft (1) drive sprocket retaining ring (2).



**Fig. 43: Removing/Installing Retaining Ring**  
Courtesy of CHRYSLER LLC

1 - RETAINING RING

20. Install the mainshaft retaining ring (1).

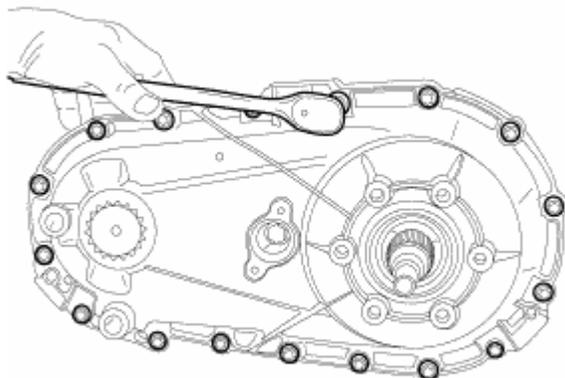


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**Fig. 44: Removing/Installing Rear Case From Front Case**  
Courtesy of CHRYSLER LLC

1 - REAR HOUSING  
2 - FRONT HOUSING

21. Install the transfer case magnet into the magnet pocket.
22. Apply bead of Mopar® Gasket Maker, or equivalent, to mating surface of front case. Keep sealer bead width to maximum of 3 mm (0.125 inch). Do not use excessive amount of sealer as excess will be displaced into case interior.
23. Install the rear case (1) onto the front case (2).



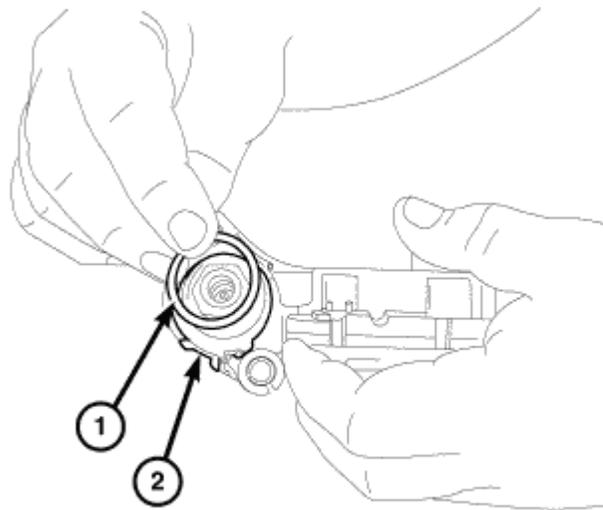
81a6737d

**Fig. 45: Removing/Installing Transfer Case Bolts**

Courtesy of CHRYSLER LLC

**NOTE:** Tighten the bolts at the alignment dowel locations first.

24. Apply MOPAR® lock and seal onto the transfer case bolts and install the transfer case bolts. Tighten the bolts to 27 N.m (20 ft.lbs.).



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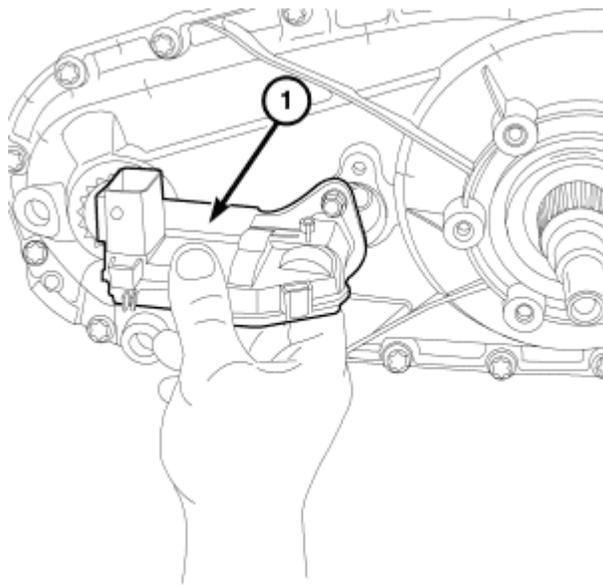
**Fig. 46: Removing/Installing Shift Motor O-Ring**

Courtesy of CHRYSLER LLC

- |                        |
|------------------------|
| 1 - SHIFT MOTOR O-RING |
| 2 - SHIFT MOTOR        |

**NOTE:** If reusing the original shift motor be certain to replace the O-ring.

25. Lubricate the shift motor O-ring with trans jell or petroleum jelly.

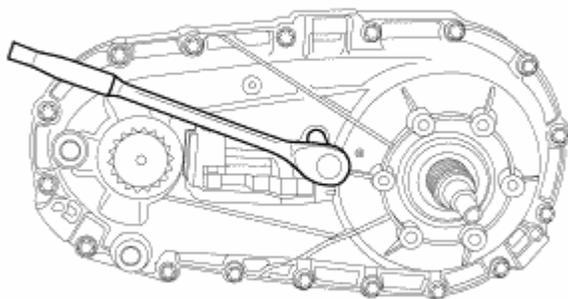


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**Fig. 47: Removing/Installing Shift Motor**  
Courtesy of CHRYSLER LLC

1 - SHIFT MOTOR

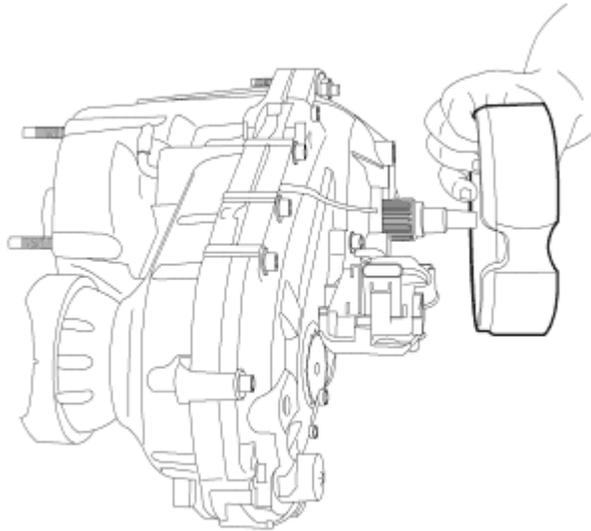
26. Install the shift motor (1) into the transfer case.



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**Fig. 48: Removing/Installing Shift Motor Bolts**  
Courtesy of CHRYSLER LLC

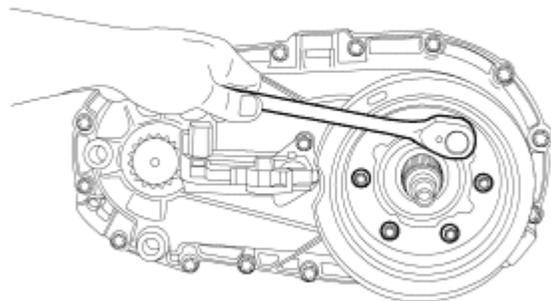
27. Apply MOPAR® lock and seal onto the shift motor bolts and install the shift motor bolts into the transfer case. Tighten the shift motor bolts to 12 N.m (9 ft.lbs.).



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**Fig. 49: Removing/Installing Dampener**  
Courtesy of CHRYSLER LLC

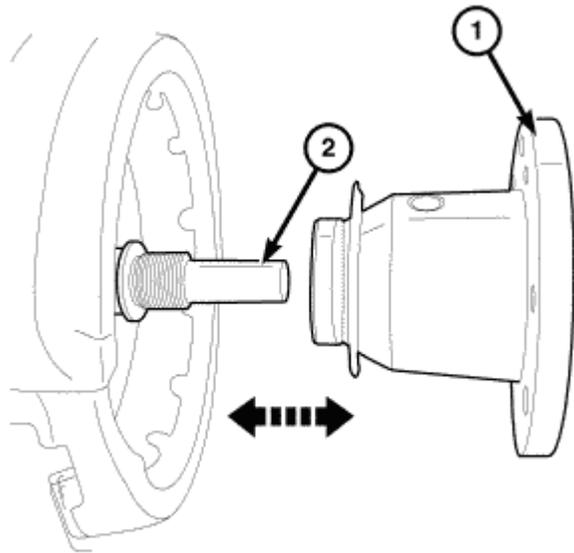
28. Install a new rear output seal into the rear case with Installer C-3972A.
29. Install the dampener onto the transfer case.



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**Fig. 50: Removing/Installing Dampener Bolts**  
Courtesy of CHRYSLER LLC

30. Apply MOPAR® lock and seal onto the dampener bolts and install the dampener bolts into the transfer case. Tighten the transfer case dampener bolts to 27 N.m (20 ft.lbs.).

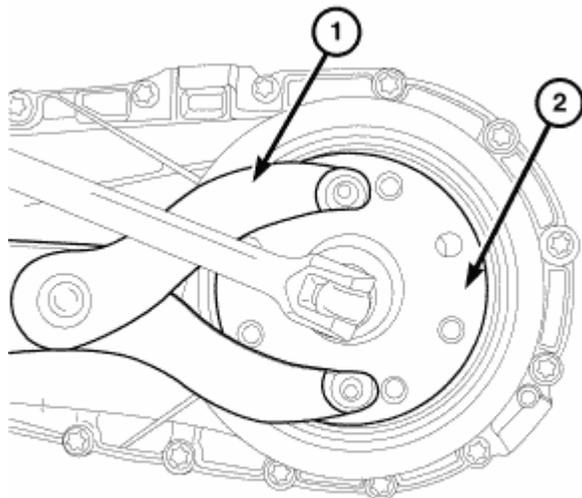


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**Fig. 51: Removing/Installing Rear Output Flange**  
Courtesy of CHRYSLER LLC

1 - REAR OUTPUT SHAFT FLANGE  
2 - MAINSHAFT

31. Install the rear output flange (1) onto the output shaft (2).



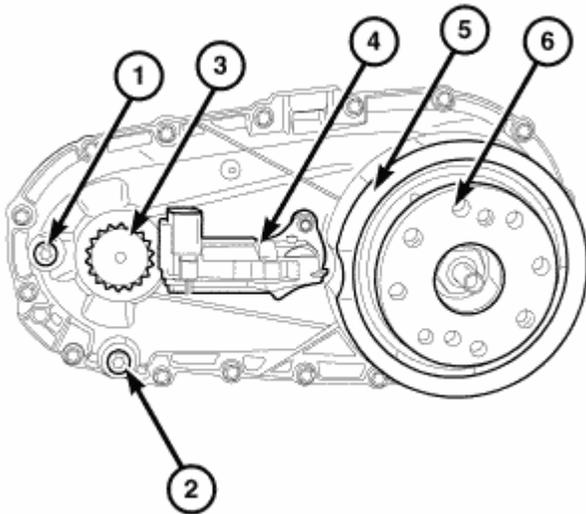
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**Fig. 52: Using Holder C-3281 To Remove/Install Rear Output Flange Nut**  
Courtesy of CHRYSLER LLC

1 - HOLDER C-3281

**2 - REAR OUTPUT SHAFT FLANGE**

32. Using Holder C-3281 (1), install the rear output shaft flange (2) nut. Tighten the nut to 122-176 N.m (90-130 ft.lbs.).



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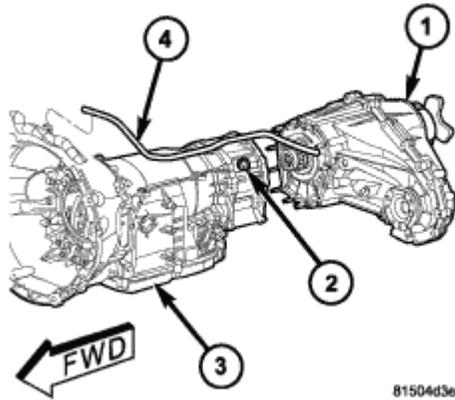
**Fig. 53: Transfer Case MP143 Component Locations**  
 Courtesy of CHRYSLER LLC

1 - FILL PLUG	4 - SHIFT MOTOR
2 - DRAIN PLUG	5 - DAMPENER
3 - ID TAG	6 - REAR OUTPUT SHAFT FLANGE

33. Install and tighten drain plug (2) to 12-15 N.m (9-11 ft. lbs.).

**INSTALLATION**

**INSTALLATION-TRANSFER CASE MP143**



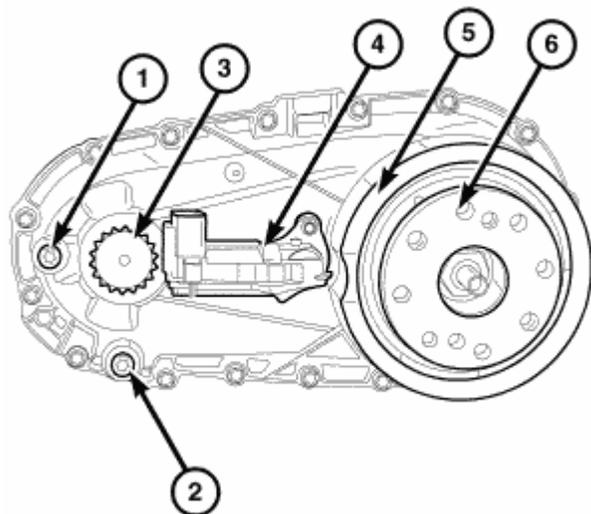
**Fig. 54: Identifying Transfer Case, Nuts, Transmission & Transfer Case Vent Tube**  
Courtesy of CHRYSLER LLC

- |  |
|--|
| 1 - TRANSFER CASE<br>2 - NUTS<br>3 - TRANSMISSION<br>4 - TRANSFER CASE VENT TUBE |
|--|

1. Mount transfer case on a transmission jack.
2. Secure transfer case to jack with chains.
3. Position transfer case under vehicle.
4. Align transfer case (1) and transmission (3) shafts and install transfer case onto the transmission.
5. Install and tighten transfer case attaching nuts (2) to 35 N.m (26 ft. lbs.) torque.
6. Connect the transfer case shift motor electrical connector.
7. Connect the transfer case vent hose (4).
8. Connect front propeller shaft and install rear propeller shaft. Refer to **INSTALLATION** .

## 2007 Dodge Nitro R/T

2007 TRANSFER CASE MP143 - Service Information - Nitro



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**Fig. 55: Transfer Case MP143 Component Locations**  
 Courtesy of CHRYSLER LLC

1 - FILL PLUG	4 - SHIFT MOTOR
2 - DRAIN PLUG	5 - DAMPENER
3 - ID TAG	6 - REAR OUTPUT SHAFT FLANGE

9. Fill transfer case to bottom edge of fill plug (1) opening with MOPAR® ATF+4 ATF.
10. Install the transfer case fill plug (1). Tighten the plug to 12-15N.m (9-11 ft.lbs.).
11. Install rear crossmember and skid plate, if equipped. Tighten crossmember bolts to 41 N.m (30 ft. lbs.) torque.
12. Remove transmission jack and support stand.
13. Lower vehicle and verify transfer case shift operation.

### SPECIFICATIONS

#### SPECIFICATIONS-TRANS CASE MP143

### SPECIFICATIONS

DESCRIPTION	SPECIFICATION
FLUID TYPE	MOPAR® AFT+4
Capacity	.85L (180 pints)

### TORQUE SPECIFICATIONS

DESCRIPTION	N.m	Ft. Lbs.	In. Lbs.
Bolt, crossmember	41	30	-
Plugs, drain/fill	12-15	9-11	-

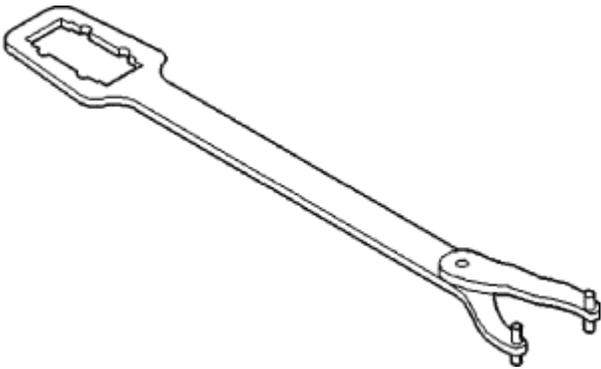
## 2007 Dodge Nitro R/T

2007 TRANSFER CASE MP143 - Service Information - Nitro

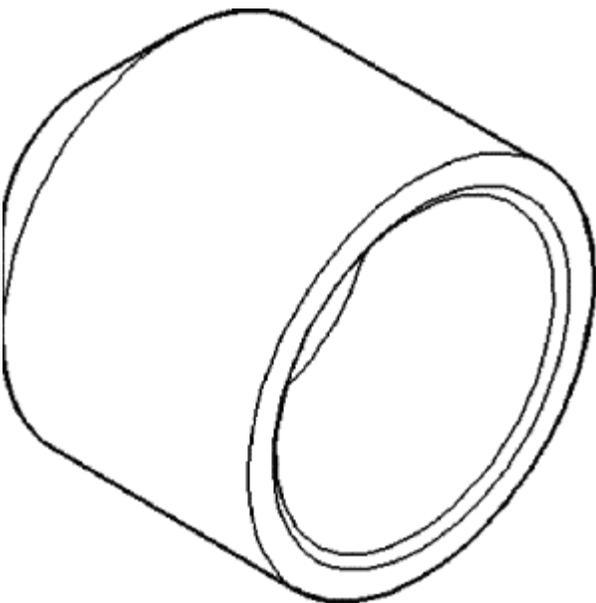
Bolts, case half	27	20	-
Nut, companion flange	122-176	90-130	-
Screws, Chain Guide Rail	5-8	-	44-71
Bolts, Shift Motor	12	9	-
Nuts, Transfer Case to Transmission	35	26	-
Bolt, Damper to Transfer Case	27	20	-

### SPECIAL TOOLS

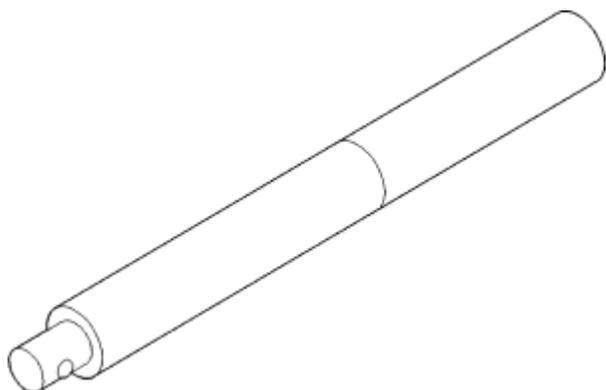
#### SPECIAL TOOLS-MP143



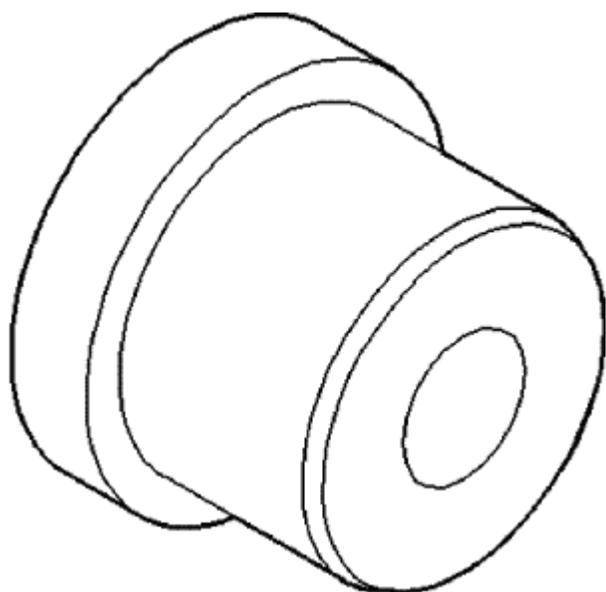
**Fig. 56: Holder, Yoke - C-3281**  
Courtesy of CHRYSLER LLC



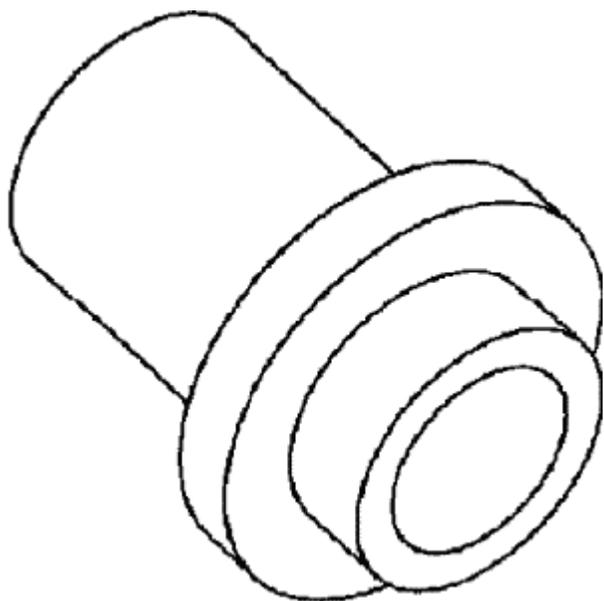
**Fig. 57: Installer C-3972-A**  
Courtesy of CHRYSLER LLC



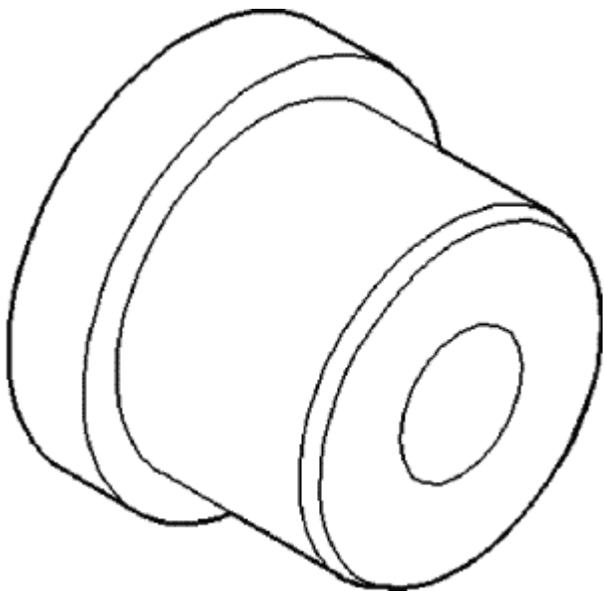
**Fig. 58: Universal Handle C-4171**  
Courtesy of CHRYSLER LLC



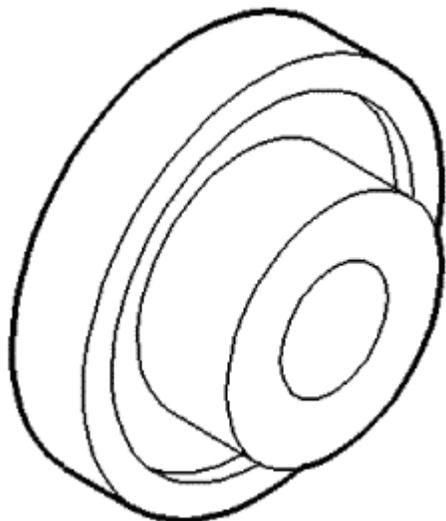
**Fig. 59: Installer, Bushing - 5066**  
Courtesy of CHRYSLER LLC



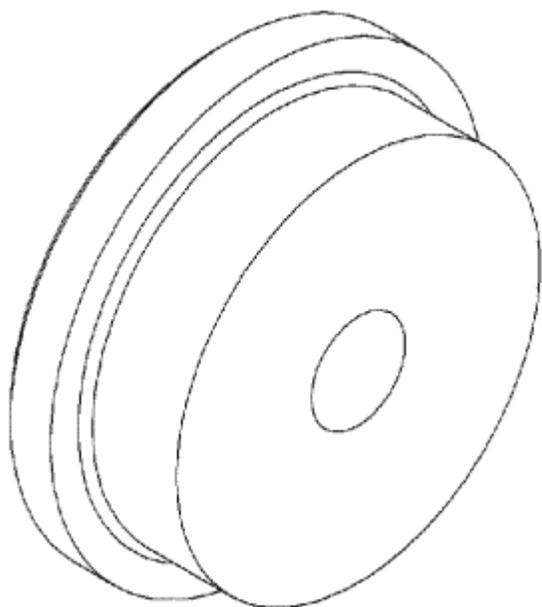
**Fig. 60: Installer 6560**  
Courtesy of CHRYSLER LLC



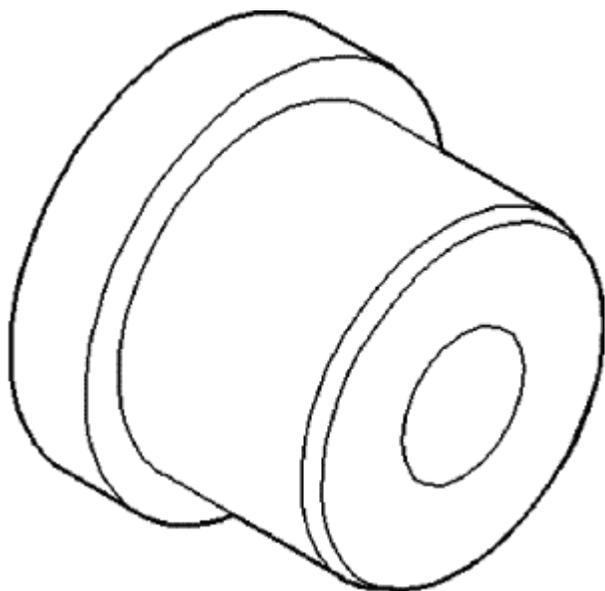
**Fig. 61: Installer - 7829A**  
Courtesy of CHRYSLER LLC



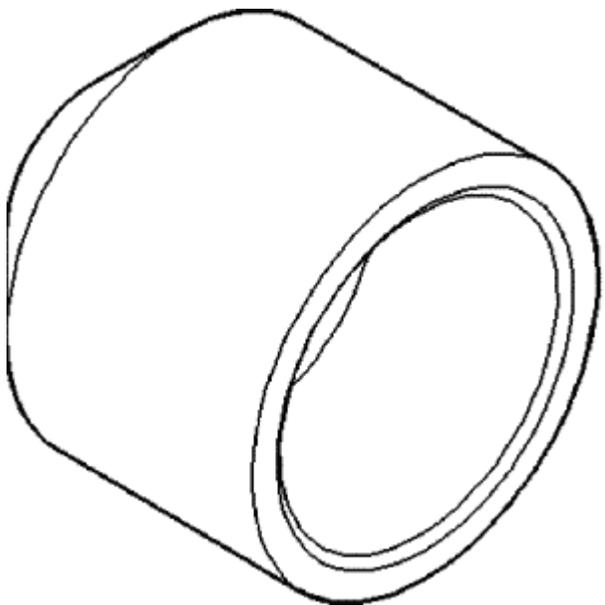
**Fig. 62: Installer - 8152**  
Courtesy of CHRYSLER LLC



**Fig. 63: Installer 8245**  
Courtesy of CHRYSLER LLC



**Fig. 64: Installer - 8693A**  
Courtesy of CHRYSLER LLC

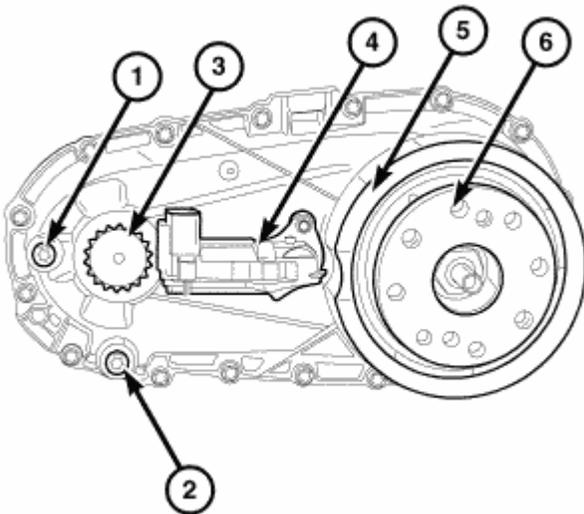


**Fig. 65: Installer, Seal - 9672**  
Courtesy of CHRYSLER LLC

**FLUID**

**STANDARD PROCEDURE**

**FLUID DRAIN/REFILL**



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**Fig. 66: Transfer Case MP143 Component Locations**  
 Courtesy of CHRYSLER LLC

1 - FILL PLUG	4 - SHIFT MOTOR
2 - DRAIN PLUG	5 - DAMPENER
3 - ID TAG	6 - REAR OUTPUT SHAFT FLANGE

1. Raise vehicle.

**NOTE:** The fill (2) and drain (3) plugs are both in the rear case.

2. Position drain pan under transfer case.
3. Remove drain and fill plugs and drain lubricant completely.
4. Install drain plug. Tighten plug to 12-15 N.m (9-11 ft. lbs.).
5. Remove drain pan.
6. Fill transfer case to bottom edge of fill plug opening with MOPAR® ATF+4 ATF.
7. Install and tighten fill plug to 12-15 N.m (9-11 ft. lbs.).
8. Lower vehicle.

## SEAL-FRONT OUTPUT SHAFT

### REMOVAL

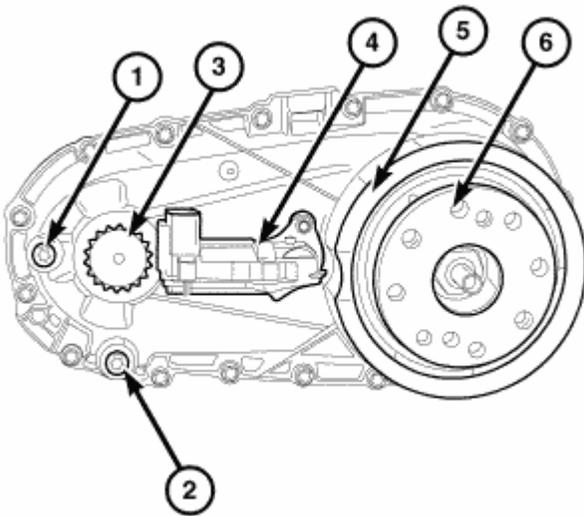
#### FRONT OUTPUT SHAFT SEAL

The front output shaft seal and wear sleeve cannot be serviced in the vehicle. The transfer case must be disassembled to remove the front output shaft assembly and seal.

**SHIFT MOTOR**

**DESCRIPTION**

**DESCRIPTION-SHIFT MOTOR**



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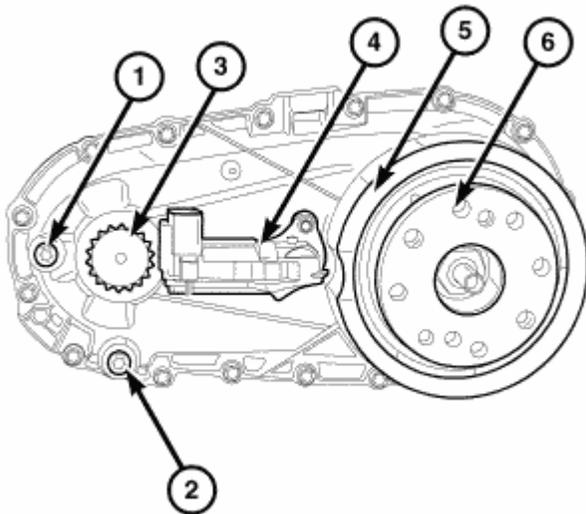
**Fig. 67: Transfer Case MP143 Component Locations**  
 Courtesy of CHRYSLER LLC

1 - FILL PLUG	4 - SHIFT MOTOR
2 - DRAIN PLUG	5 - DAMPENER
3 - ID TAG	6 - REAR OUTPUT SHAFT FLANGE

A rotary switch on the instrument panel controls the Electric Shift on-the-fly transfer case mode selection. Switch positions are labeled 2WD and 4 LOCK, shown by an indicator in the instrument cluster. The switch uses resistive multiplexing to signal the Front Control Module (FCM) which mode to select.

**OPERATION**

**OPERATION-SHIFT MOTOR**



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**Fig. 68: Transfer Case MP143 Component Locations**

Courtesy of CHRYSLER LLC

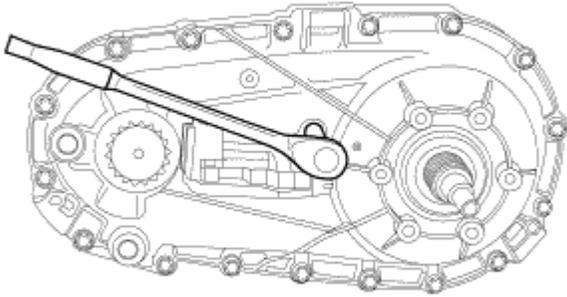
1 - FILL PLUG	4 - SHIFT MOTOR
2 - DRAIN PLUG	5 - DAMPENER
3 - ID TAG	6 - REAR OUTPUT SHAFT FLANGE

The FCM, which receives its operating signal from the switch via the Cab Compartment Node and the CAN intra-vehicle communications network, operates an electric motor that shifts the transfer case. The FCM obtains additional data necessary for operation and provides diagnostic outputs via the CAN network. Diagnostic outputs include fault codes and the ability to "read" switch position and position sensor output. For test purposes, a diagnostic tester such as the MDT II or the MOPAR Diagnostic System can operate the motor. A warning lamp in the instrument cluster illuminates if a malfunction in the electric-shift system occurs.

A motor and encoder (position sensor) replace a lever on the shaft that shifts the transfer case. When a shift is requested, the motor turns the shaft until the sensor indicates that the correct angular position has been reached. To prevent the transfer case from making unintended shifts, the switch must be in position for 0.25 seconds before a shift will take place. A shift can take up to 1.25 seconds from the time that the switch is moved for full travel. If the shift is not completed in the appropriate time, the module will repeat the action up to five times. Misalignment of the gears in the transfer case may block a shift, which will be detected by a sensor; the motor will then reverse and try again to complete the shift. Blockage can occur if the vehicle is stationary when the shift is initiated, but if the vehicle is moving as recommended when the shift is initiated, then blockage is unlikely. If the shift is not completed after five attempts, the cluster indicator will flash and the driver will have to return the switch to its former position and repeat the operation.

## REMOVAL

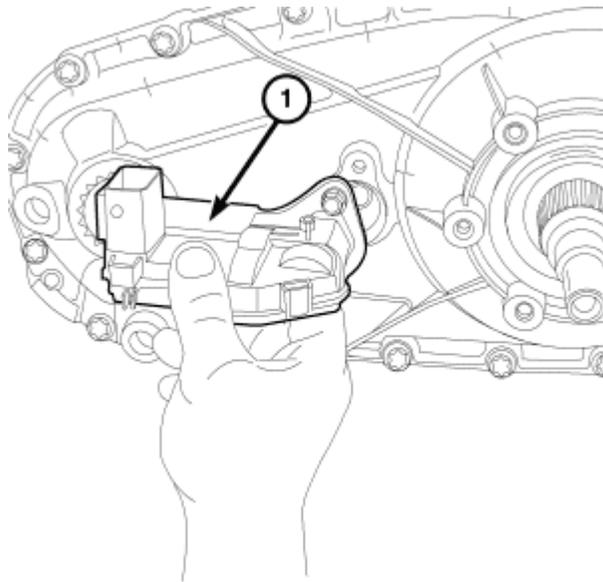
### REMOVAL-SHIFT MOTOR



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**Fig. 69: Removing/Installing Shift Motor Bolts**  
Courtesy of CHRYSLER LLC

1. Disconnect the electrical connector from the shift motor.
2. Remove the shift motor mounting bolts.



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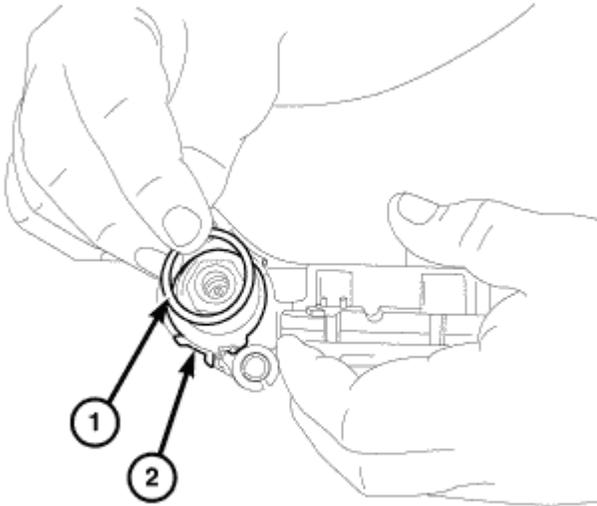
**Fig. 70: Removing/Installing Shift Motor**  
Courtesy of CHRYSLER LLC

**1 - SHIFT MOTOR**

3. Remove the shift motor (1) from the transfer case.

**INSTALLATION**

**INSTALLATION-SHIFT MOTOR**



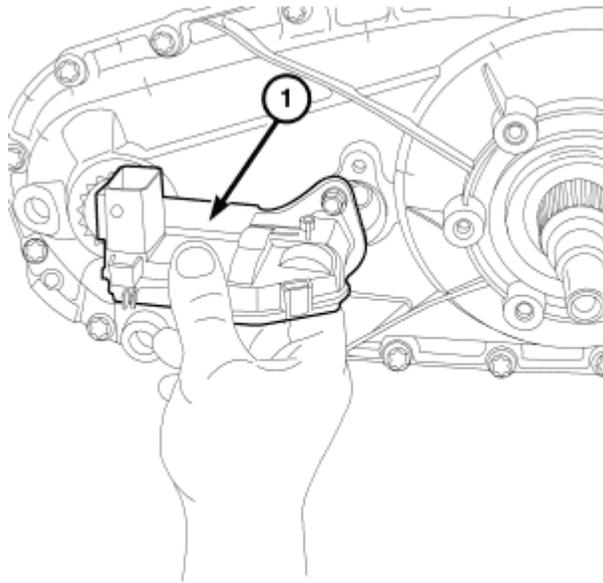
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**Fig. 71: Removing/Installing Shift Motor O-Ring**  
Courtesy of CHRYSLER LLC

- |   |
|---|
| 1 - SHIFT MOTOR O-RING<br>2 - SHIFT MOTOR |
|---|

**NOTE:** If re-using the original shift motor be certain to replace the shift motor O-ring.

1. Lubricate the shift motor O-ring (1) with trans jell or petroleum jelly.

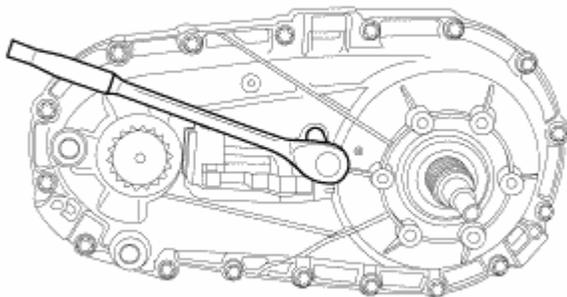


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**Fig. 72: Removing/Installing Shift Motor**  
Courtesy of CHRYSLER LLC

1 - SHIFT MOTOR

2. Install the shift motor into the transfer case.



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**Fig. 73: Removing/Installing Shift Motor Bolts**  
Courtesy of CHRYSLER LLC

3. Apply MOPAR® lock and seal onto the shift motor bolts and install the bolts into the transfer case.
4. Tighten the shift motor bolts to 12 N.m (9 ft.lbs.).

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5. Install the electrical harness connector into the shift motor.
6. Check and fill transfer case fluid as necessary. See **STANDARD PROCEDURE**.