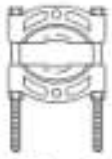
DISASSEMBLY AND ASSEMBLY

TRANSFER CASE - ALL WHEEL DRIVE (AWD)

Special Tools

Illustration	Tool Name	Tool Number
 ST1200-A	Remover, Bearing Cup	308-047 (T77F-1102-A)
 ST1471-A	Installer, Wheel Hub Bearing Cup	204-020 (T73T-1202-A)
 ST1368-A	Puller, Bearing	205-D064 (D84L-1123-A)
 ST1362-A	Remover, Stator Bearing	307-318 (T94P-77001-KH)
 ST1257-A	Holding Fixture, Drive Pinion Flange	205-126 (T78P-4851-A)
 ST1255-A	Adapter for 303-224 (Handle)	205-153 (T80T-4000-W)
 ST1186-A	Holding Fixture, Transmission	307-003 (T57L-500-B)
	Slide Hammer	100-001 (T50T-100-A)

 ST1351-A		
 ST2876-A	Installer, Front Pump Fluid Seal	307-184 (T87L-77248-AH)
 ST2509-A	Installer, Differential Bearing Cup	308-163 (T88C-77000-FH)
 ST1303-A	Remover/Installer, Bearing Tube	308-024 (T75L-7025-B)

Material

Item	Specification
Silicone Gasket and Sealant TA-30	WSE-M4G323-A4
MERCON® Multi-Purpose Automatic Transmission Fluid XT-2-QDX (US); XT-2-LM12 (Canada)	MERCON®

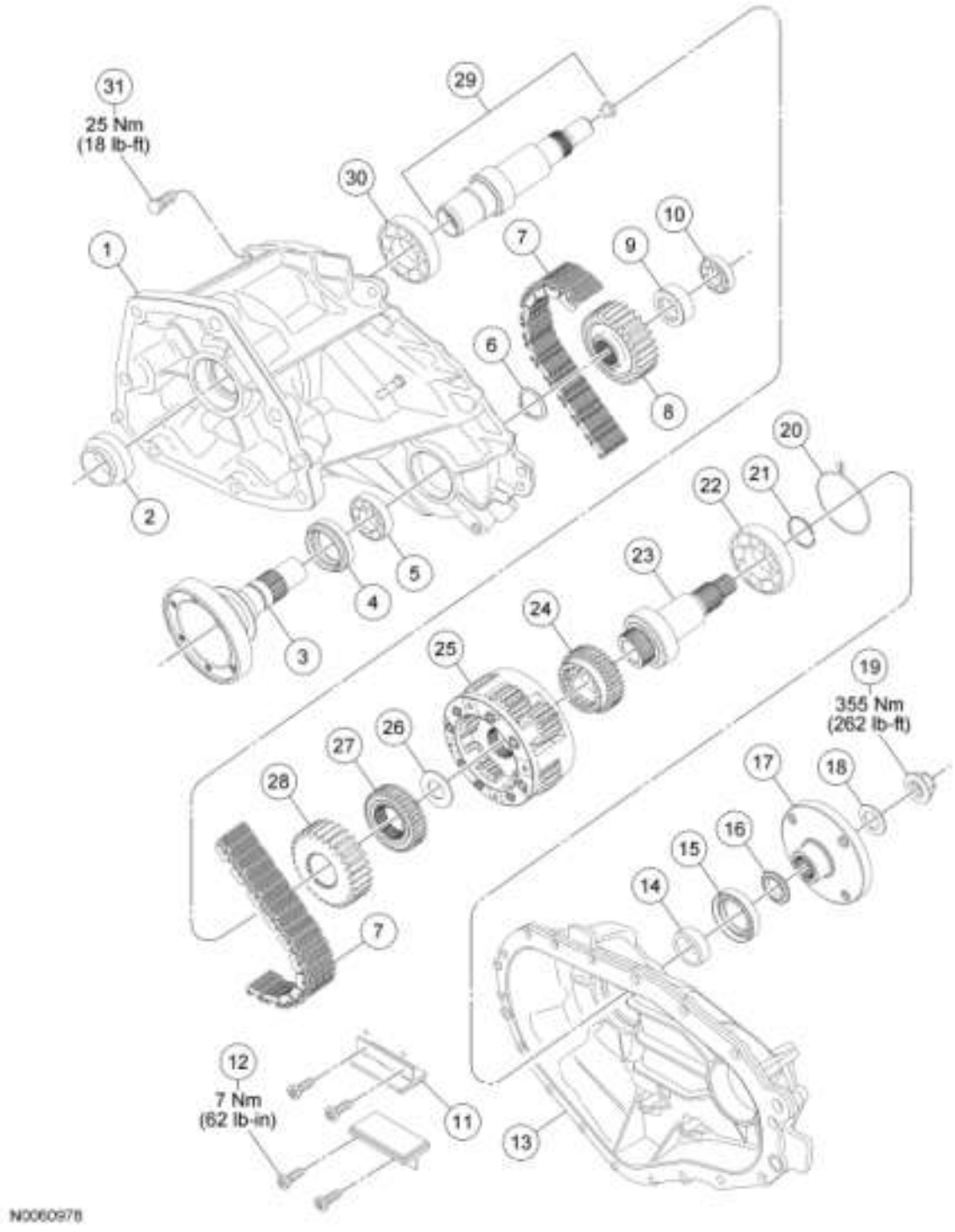


Fig. 11: Exploded View Of Transfer Case With Torque Specifications - All Wheel Drive (AWD)
Courtesy of FORD MOTOR CO.

Item	Part Number	Description
1	7005	Transfer case
2	7B215	Input shaft seal
3	7061	Output shaft
4	7B215	Yoke-to-flange seal
5	7025	Bearing
6	7917	Snap ring

7	7A029	Drive chains
8	7177	Lower drive sprocket
9	-	Spacer
10	7025	Bearing
11	7F123	Damper snubber
12	7A771	Torx® head screws (4 required)
13	7005	Transfer case
14	7025	Bearing
15	7B215	Yoke-to-flange seal
16	7052	Oil seal
17	7B214	Output flange
18	7B368	Output shaft yoke washer
19	7045	Output flange nut
20	7917	Snap ring
21	7R141	Snap ring
22	7025	Bearing
23	7061	Upper output shaft
24	-	Sun gear
25	-	Planetary gear
26	-	Thrust washer
27	-	Sun gear
28	-	Upper drive sprocket
29	7017	Input shaft assembly
30	7025	Input shaft bearing
31	7A443	Transfer case bolt (17 required)

DISASSEMBLY

CAUTION: Discard all seals after removing them.

1. Remove the transfer case from the vehicle. For additional information, refer to **Transfer Case**.

WARNING: Make sure the holding fixture lock pin is secure.

2. Using the special tool, secure the transfer case to a bench.

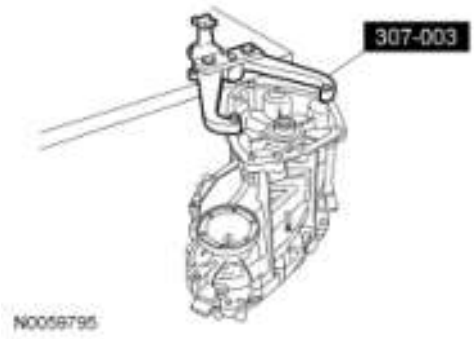


Fig. 12: Securing Transfer Case To A Bench Using Special Tool (307-003)
Courtesy of FORD MOTOR CO.

3. If not done previously, remove the drain plug and drain the fluid.
    - Install the drain plug when finished draining.

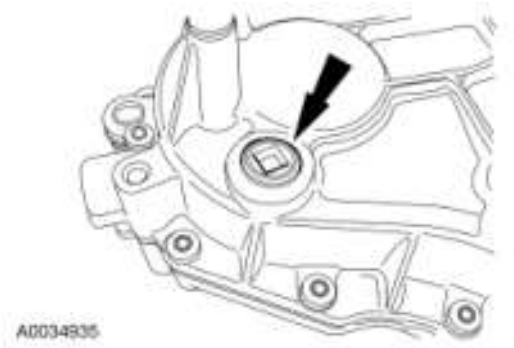


Fig. 13: Locating Drain Plug
Courtesy of FORD MOTOR CO.

NOTE: Index-mark the rear output flange and the upper output shaft.

4. Using the special tool to hold the output flange, remove the output flange nut.

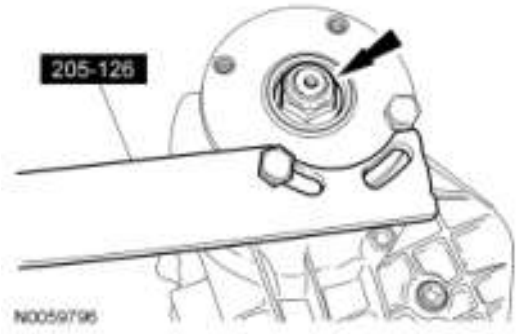


Fig. 14: Removing Output Flange Nut Using Special Tool (205-126) To Hold Output Flange
Courtesy of FORD MOTOR CO.

5. Remove the output flange and the output shaft yoke washer.

Fig. 15: Removing Output Flange & Output Shaft Yoke Washer
Courtesy of FORD MOTOR CO.

6. Remove the oil seal.

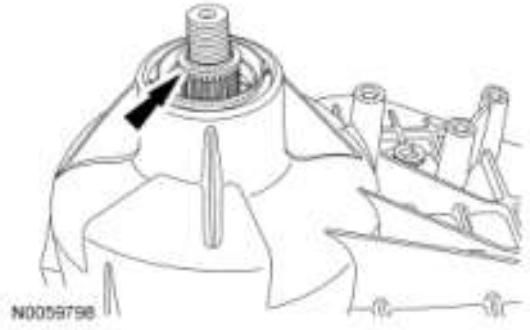


Fig. 16: Locating Oil Seal
Courtesy of FORD MOTOR CO.

7. Remove the 17 transfer case bolts.

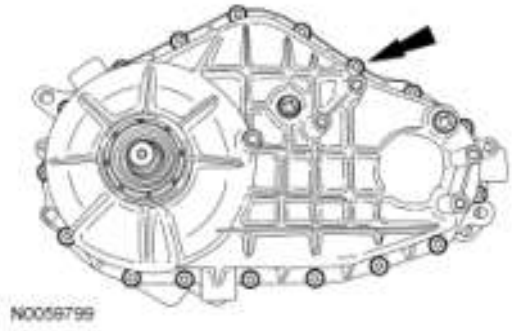


Fig. 17: Locating Transfer Case Bolts
Courtesy of FORD MOTOR CO.

8. Using a pry bar, separate the rear case from the front case.
    - Pry only at the transfer case pry bosses.

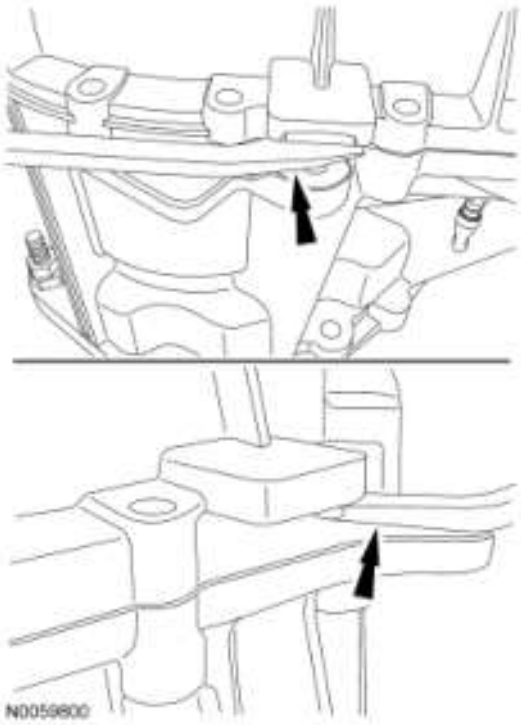


Fig. 18: Separating Rear Case From Front Case Using A Pry Bar
Courtesy of FORD MOTOR CO.

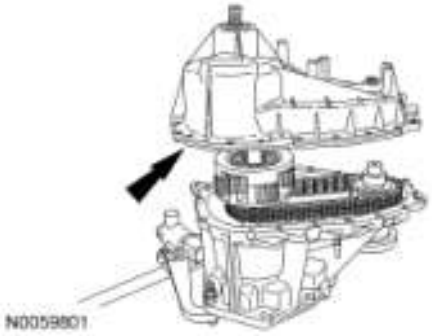


Fig. 19: Identifying Transfer Case
Courtesy of FORD MOTOR CO.

9. Remove the oil seal.

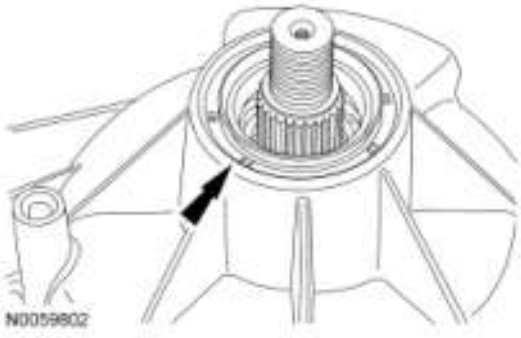


Fig. 20: Locating Oil Seal
Courtesy of FORD MOTOR CO.

10. Remove the bearing.

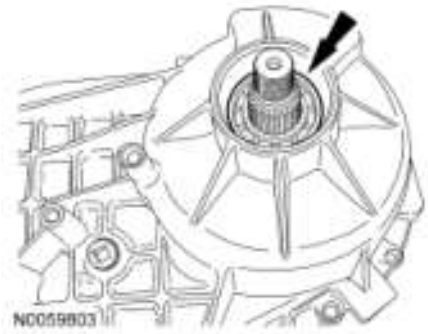


Fig. 21: Locating Bearing
Courtesy of FORD MOTOR CO.

11. Expand the snap ring, then remove the output shaft and bearing.

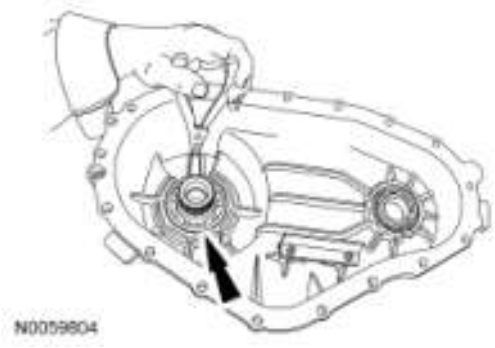


Fig. 22: Expand Snap Ring & Remove The Output Shaft & Bearing
Courtesy of FORD MOTOR CO.

12. Using the special tools, remove the bearing.

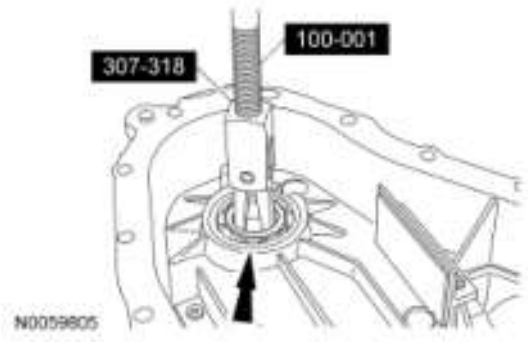


Fig. 23: Removing Bearing Using Special Tools (100-001, 307-318)
Courtesy of FORD MOTOR CO.

13. Remove the snap ring.

Fig. 24: Identifying Snap Ring
Courtesy of FORD MOTOR CO.

14. Using a suitable press, remove the bearing.

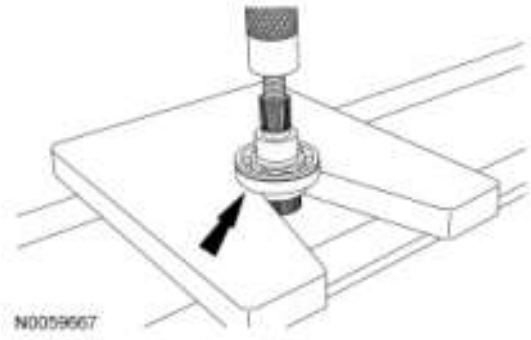


Fig. 25: Removing Bearing Using Suitable Press
Courtesy of FORD MOTOR CO.

15. Remove the damper snubber.

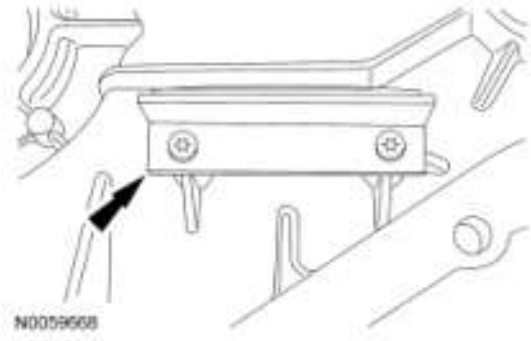


Fig. 26: Locating Damper Snubber
Courtesy of FORD MOTOR CO.

16. Remove the upper planetary gear, the thrust washer, the planetary, the upper drive sprocket, the drive chain, the lower drive sprocket and the sprocket spacer as an assembly.

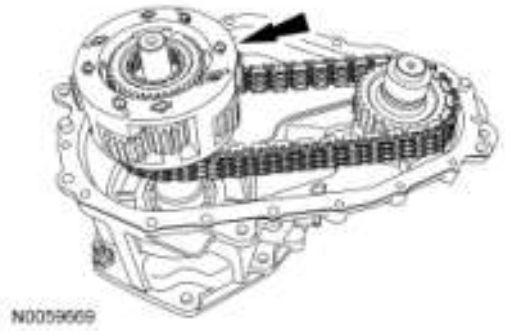


Fig. 27: Identifying Upper Planetary Gear, Thrust Washer, Planetary, Upper Drive Sprocket, Drive Chain, Lower Drive Sprocket & Sprocket Spacer
Courtesy of FORD MOTOR CO.

17. Remove the input shaft.

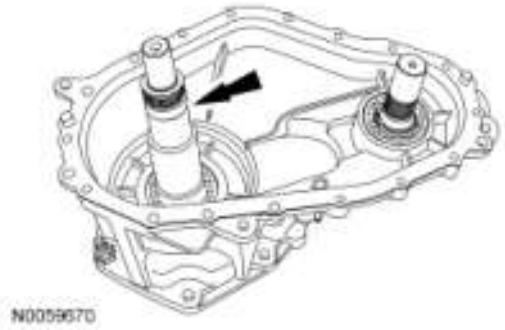


Fig. 28: Identifying Input Shaft
Courtesy of FORD MOTOR CO.

18. Remove the input shaft bearing.
19. Holding the front output shaft, remove the snap ring and the front output shaft.

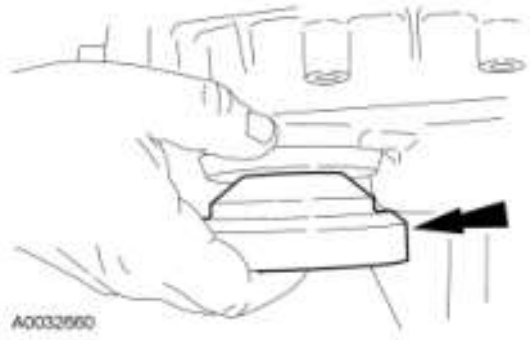


Fig. 29: Locating Front Output Shaft And Flange
Courtesy of FORD MOTOR CO.

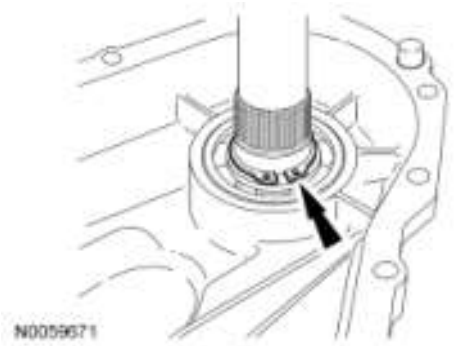


Fig. 30: Locating Input Shaft Bearing
Courtesy of FORD MOTOR CO.

20. Using the special tools, remove the bearings.

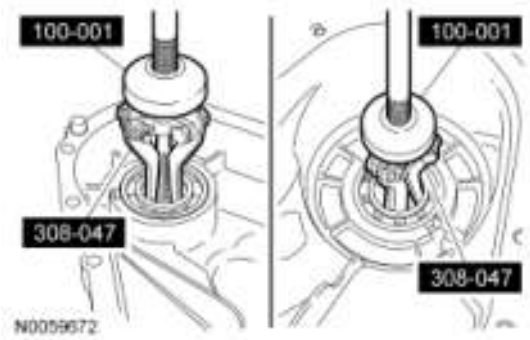


Fig. 31: Removing Bearing Using Special Tools (100-001, 308-047)
Courtesy of FORD MOTOR CO.

21. Remove the seals.

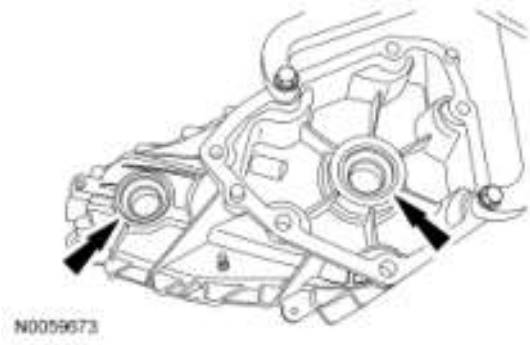


Fig. 32: Locating Seals
Courtesy of FORD MOTOR CO.

ASSEMBLY

1. Using the special tool, install the seals in the front transfer case.

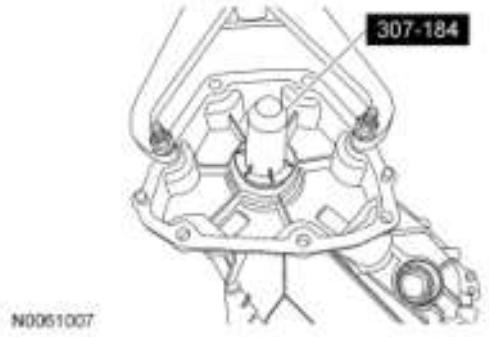


Fig. 33: Installing Seals In Front Transfer Case Using Special Tool (307-184)
Courtesy of FORD MOTOR CO.

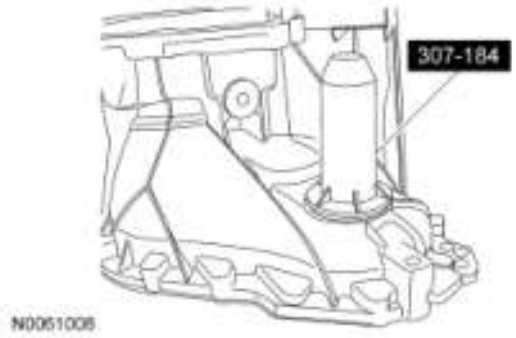


Fig. 34: Identifying Front Transfer Case
Courtesy of FORD MOTOR CO.

2. Using the special tools, install the bearing.

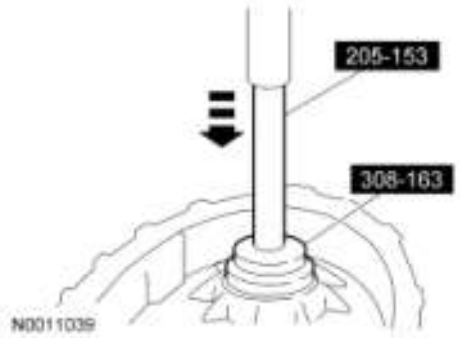


Fig. 35: Using Special Tools To Press Front Output Shaft Support Bearing Into Case
Courtesy of FORD MOTOR CO.

3. Install the front output shaft.
    - Install the front output shaft.
    - Install the snap ring.

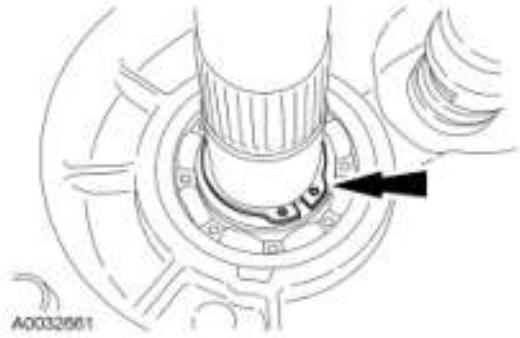


Fig. 36: Locating Snap Ring
Courtesy of FORD MOTOR CO.

4. Install the damper snubbers.
    - Tighten the Torx® screws to 7 Nm (62 lb-in).

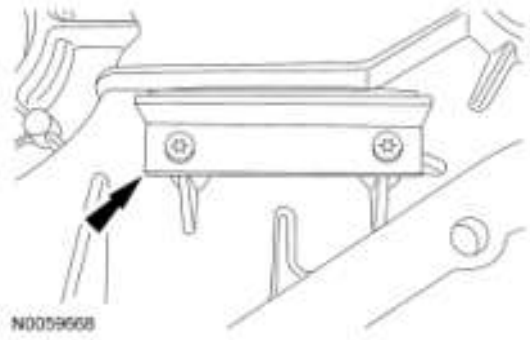


Fig. 37: Identifying Damper Snubbers
Courtesy of FORD MOTOR CO.

5. Using the special tools, install the bearing.

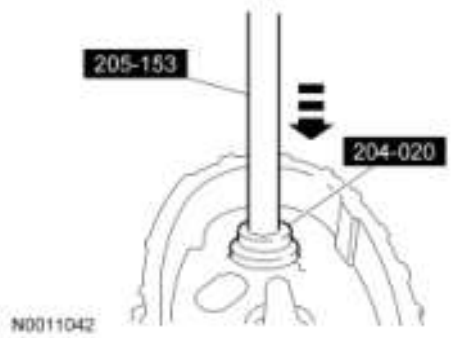


Fig. 38: Installing Bearing Using Special Tools (205-153, 204-020)
Courtesy of FORD MOTOR CO.

6. Install the input shaft.

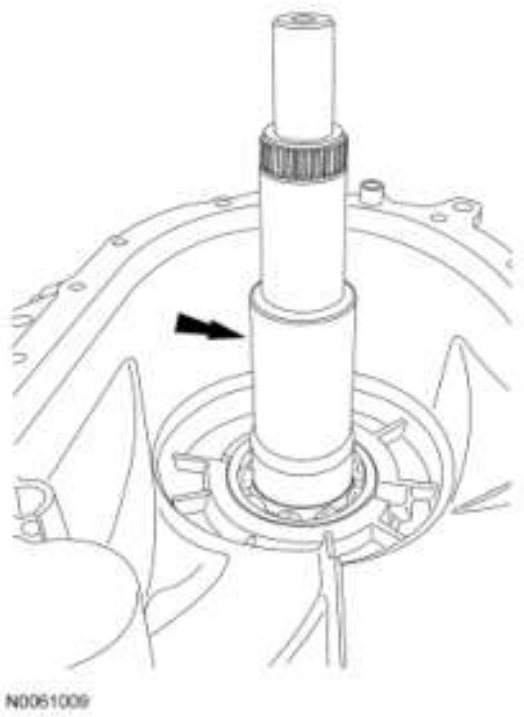


Fig. 39: Locating Input Shaft
Courtesy of FORD MOTOR CO.

7. Assemble the upper drive sprocket, lower drive sprocket and the drive chain.
8. Install the upper and lower drive sprockets and the drive chain as an assembly.

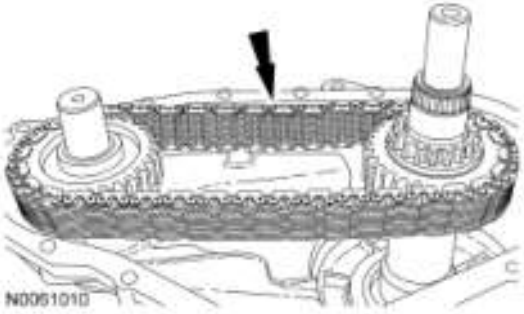


Fig. 40: Identifying Upper & Lower Drive Sprockets & Drive Chain
Courtesy of FORD MOTOR CO.

9. Install the lower planetary gear.

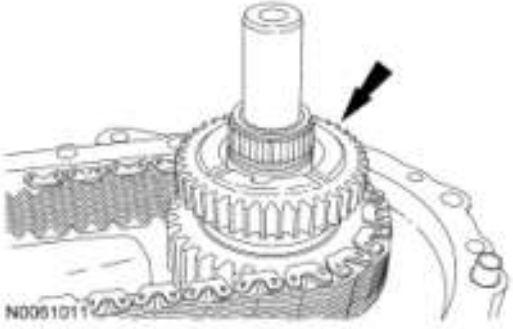


Fig. 41: Identifying Lower Planetary Gear
Courtesy of FORD MOTOR CO.

10. Install the front planetary gear assembly.

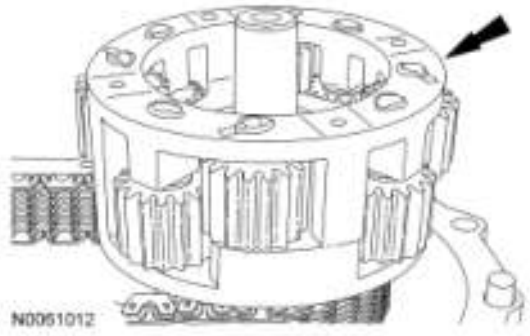


Fig. 42: Locating Front Planetary Gear Assembly
Courtesy of FORD MOTOR CO.

11. Install the thrust washer.

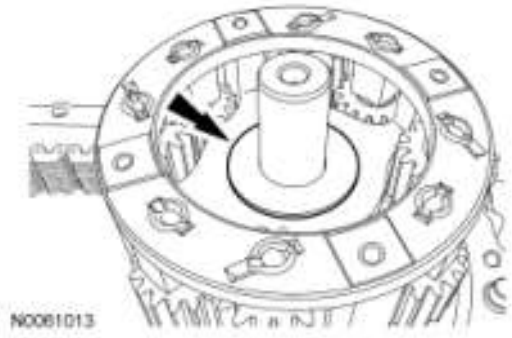


Fig. 43: Locating Thrust Washer
Courtesy of FORD MOTOR CO.

12. Install the upper planetary gear.

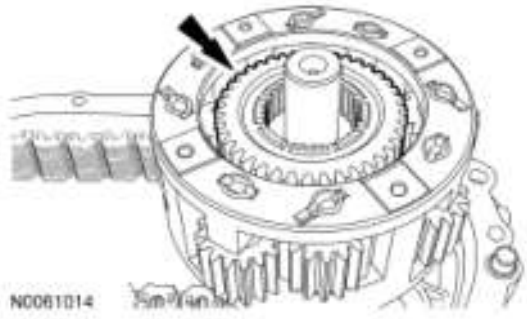


Fig. 44: Locating Upper Planetary Gear
Courtesy of FORD MOTOR CO.

13. Install the spacer.

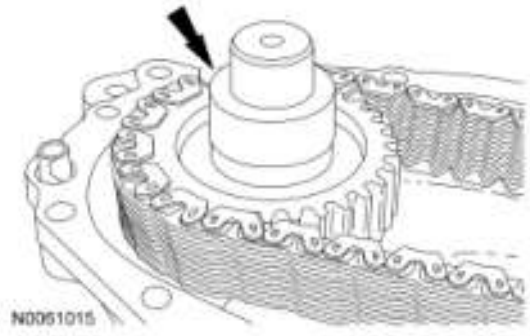


Fig. 45: Locating Spacer
Courtesy of FORD MOTOR CO.

14. Using the special tool, install the bearing.

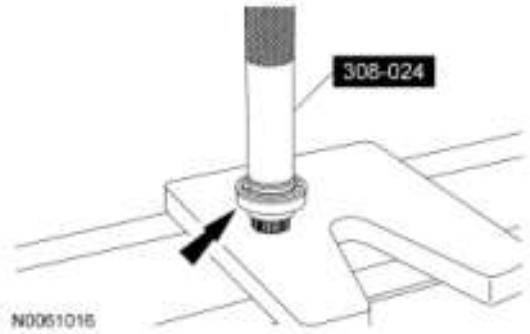


Fig. 46: Installing Bearing Using Special Tool (308-024)
Courtesy of FORD MOTOR CO.

15. Install the output shaft and bearing in the rear case half.
    - Expand the snap ring. Install the output shaft.

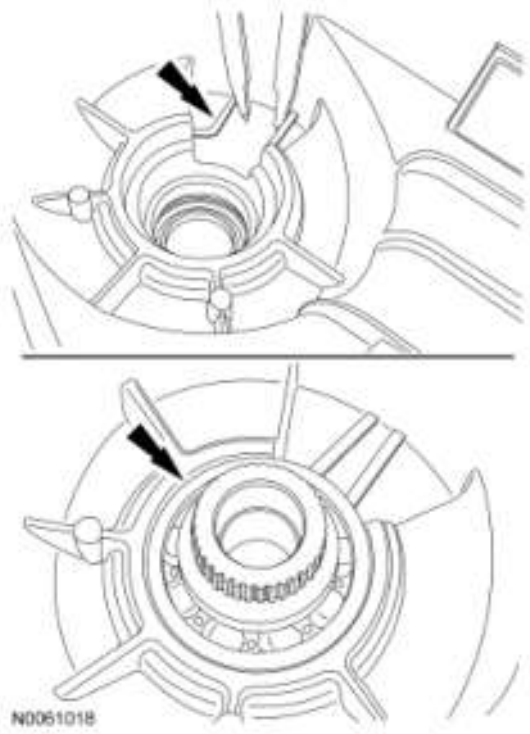


Fig. 47: Expanding Snap Ring & Installing Output Shaft
Courtesy of FORD MOTOR CO.

16. Using the special tool, install the yoke-to-flange seal.

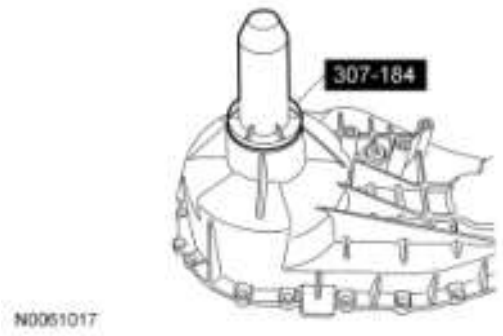


Fig. 48: Installing Yoke-To-Flange Seal Using Special Tool (307-184)
Courtesy of FORD MOTOR CO.

CAUTION: Applying excess silicone rubber can damage the internal components.

17. Apply a 3 mm (0.125 in) bead of silicone rubber on the rear case mating surface.
18. Assemble the front and rear case halves.
19. Install the transfer case bolts.
    - Tighten to 25 Nm (18 lb-ft) evenly in a star pattern.
20. Using the special tool to hold the output flange, install the nut.
    - Tighten to 355 Nm (262 lb-ft).

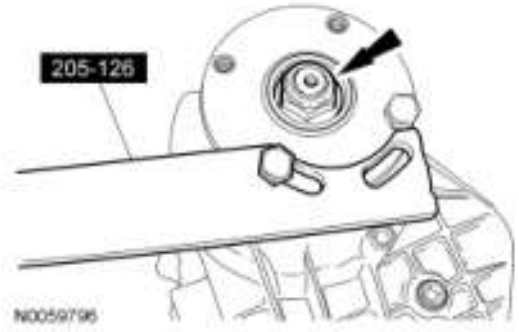


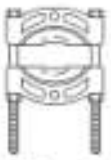
Fig. 49: Installing Nut Using Special Tool (205-126) To Hold Output Flange
Courtesy of FORD MOTOR CO.

21. Install the transfer case in the vehicle. For additional information, refer to **Transfer Case**.
22. Fill the transfer case. For additional information, refer to **Transfer Case Draining and Filling**.

TRANSFER CASE - 1-SPEED TORQUE-ON-DEMAND

Special Tools

Illustration	Tool Name	Tool Number

 ST1200-A	Remover, Bearing Cup	308-047 (T77F-1102-A)
 ST1471-A	Installer, Wheel Hub Bearing Cup	204-020 (T73T-1202-A)
 ST1368-A	Puller, Bearing	205-D064 (D84L-1123-A) or equivalent
 ST1362-A	Remover, Stator Bearing	307-318 (T94P-77001-KH)
 ST1257-A	Holding Fixture, Drive Pinion Flange	205-126 (T78P-4851-A)
 ST1783-A	Installer, Differential Bearing Cup	308-163 (T88C-77000-FH)
 ST1255-A	Adapter for 303-224 (Handle)	205-153 (T80T-4000-W)
 ST1186-A	Holding Fixture, Transmission	307-003 (T57L-500-B)
 ST1185-A	Slide Hammer	100-001 (T50T-100-A)

 ST1769-A	Installer, Input Shaft Bearing	308-085 (T83T-7025-C)
 ST2305-A	Installer, Input Shaft Oil Seal	308-186 (T90T-7127-B)
 ST1213-A	Remover, Bushing	307-001 (TOOL-1175-AC) or equivalent
 ST2415-A	Remover, Output Shaft Flange	307-523 or equivalent
 ST1385-A	Remover, Oil Seal	303-409 (T92C-6700-CH)
 ST1466-A	Installer, Valve Stem Oil Seal	303-367 (T90P-6510-AH)

Material

Item	Specification
Threadlock and Sealer TA-25	WSK-M2G351-A5
Silicone Gasket and Sealant TA-30	WSE-M4G323-A4
MERCON® Multi-Purpose Automatic Transmission Fluid XT-2-QDX (US); XT-2-LM12 (Canada)	MERCON®

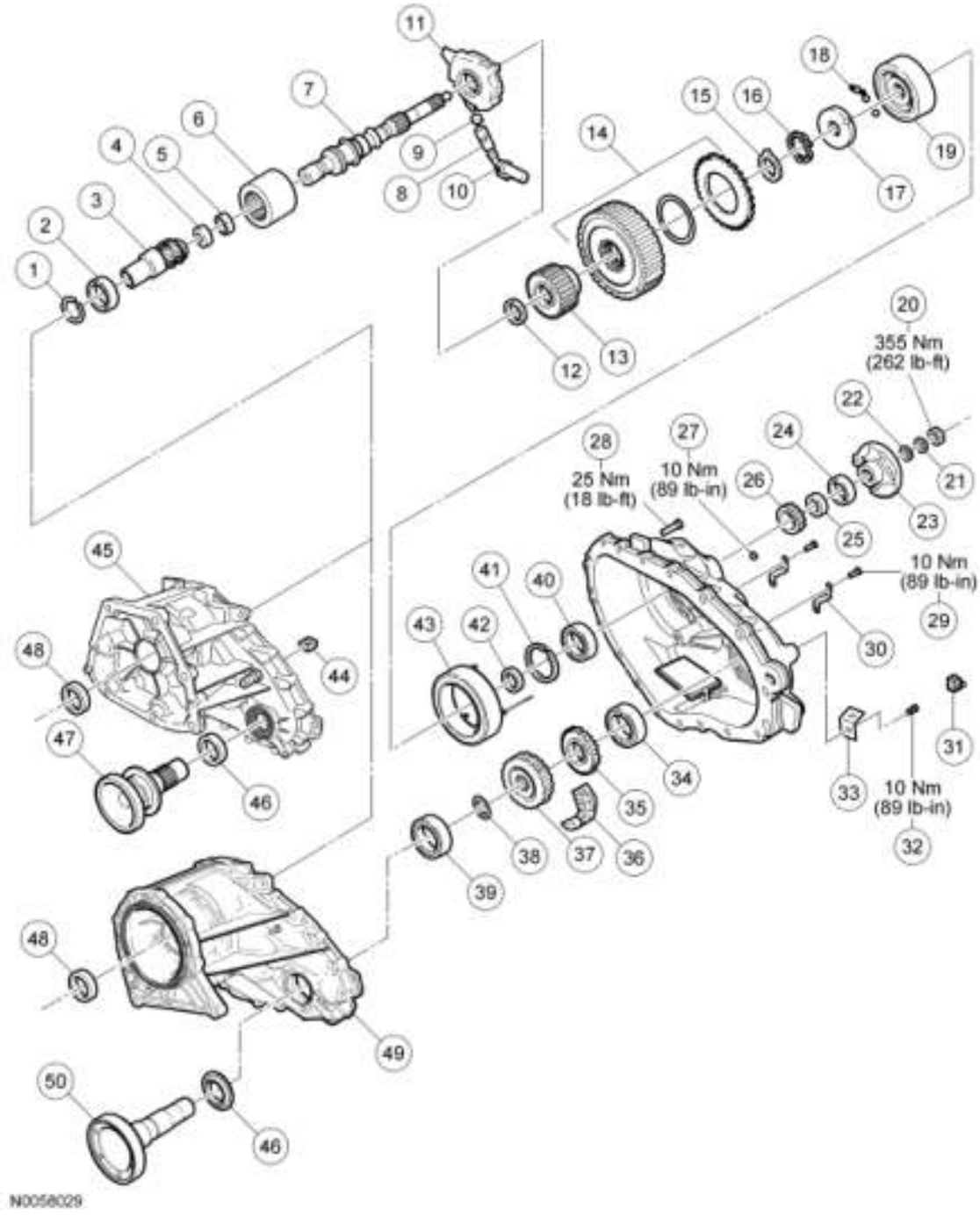


Fig. 50: Exploded View Of Transfer Case With Torque Specifications - 1-Speed Torque-On-Demand
Courtesy of FORD MOTOR CO.

Item	Part Number	Description
1	7917	Snap ring
2	7025	Bearing
3	7017	Input shaft
4	7025	Bearing
5	-	Output shaft bushing (part of 7017)
6	7017	Collar

7	7061	Rear output shaft and oil pump assembly
8	7A210	Pump hose
9	382846	Hose clamp
10	7A098	Oil strainer
11	7A149	Pump assembly
12	7Z111	Thrust washer
13	7177	Drive sprocket (30T)
14	7C108	Clutch pack assembly
15	7917	Snap ring
16	7E085	Wave spring
17	7R428	Apply cam
18	7A534	Balls (3 required)
19	7G362	Cam and coil housing assembly
20	7045	Rear output shaft flange nut
21	7B368	Output shaft flange washer
22	7052	Output flange oil seal
23	7B214	Rear output shaft flange
24	7B215	Yoke-to-flange oil seal
25	7072	Spacer
26	7G450	Tone wheel (upper)
27	N620480	Clutch coil assembly nut (3 required)
28	7A443	Transfer case bolt (17 required)
29	N802503	Bolt (hex-head) 2 required
30	7K470	Bracket
31	-	Electrical connector
32	N802503	Bolt (hex-head) 2 required
33	7K470	J-clip
34	7025	Front output shaft rear bearing
35	7G450	Tone wheel (lower)
36	7A029	Drive chain
37	7177	Driven sprocket (30T)
38	7064	Snap ring
39	7025	Bearing
40	7025	Rear output shaft support bearing
41	7917	Snap ring
42	7D221	Thrust bearing
43	7G361	Clutch coil assembly
44	7L027	Oil pan magnet
45	7005	Transfer case cover (4.0L with 5R55)
46	7B215	Oil seals (4.0L with 5R55)
47	7061	Output shaft and flange (front) (4.0L with 5R55)
48	7B215	Input seals
49	7005	Transfer case cover (4.6L with 6R60)

50	7061	Output shaft and flange (4.6L with 6R60)

DISASSEMBLY

CAUTION: Discard all seals after removing them.

1. Remove the transfer case. For additional information, refer to **Transfer Case**.

WARNING: Make sure the holding fixture lock pin is secure.

2. Using the special tool, secure the transfer case to the bench.

Fig. 51: Securing Transfer Case To Bench
Courtesy of FORD MOTOR CO.

3. If not previously done, remove the drain plug and drain the fluid.
   - When finished draining, install the drain plug and tighten to 20 N.m (15 lb-ft).

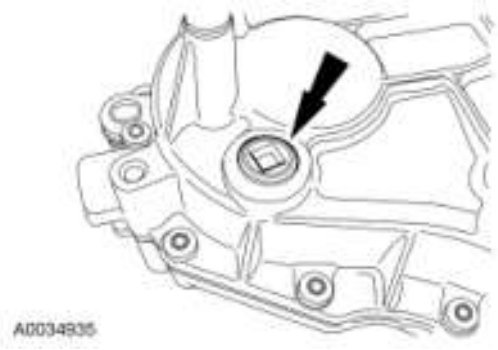


Fig. 52: Locating Drain Plug
Courtesy of FORD MOTOR CO.

4. Using the special tool to hold the output flange, remove the nut.

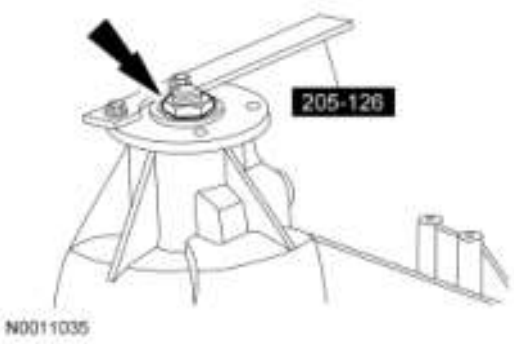


Fig. 53: Locating Output Flange Nut And Special Tool (205-126)
Courtesy of FORD MOTOR CO.

5. Remove the output shaft yoke washer.
6. Using the special tool, remove the output flange.

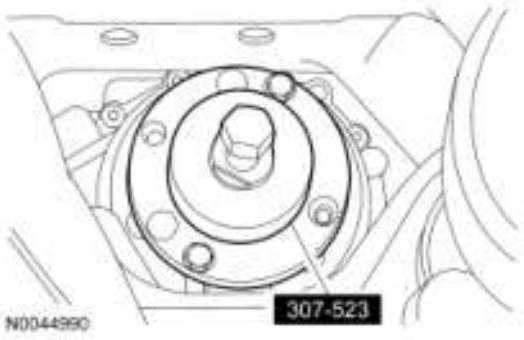


Fig. 54: Removing Rear Output Shaft Flange Using Special Tool (307-523)
Courtesy of FORD MOTOR CO.

7. Remove and discard the output flange oil seal.
8. Using the special tools, remove and discard the yoke-to-flange seal.

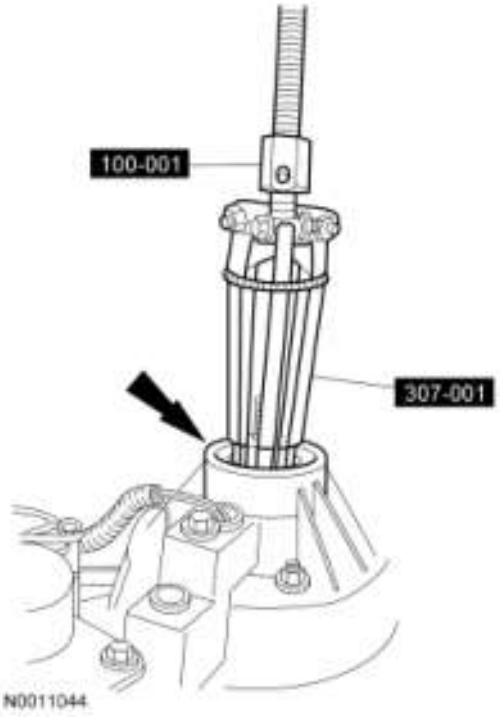


Fig. 55: Removing Rear Output Shaft Oil Seal Using Special Tools (100-001, 307-001)
Courtesy of FORD MOTOR CO.

9. Remove the coil wire pin from the electrical connector.
    - Remove the connector interlock.
    - Remove the coil wire pin (pin 16).
        - Use the electrical connector pin extractor tool.

Fig. 56: Locating Coil Wire Electrical Connector
Courtesy of FORD MOTOR CO.

10. Remove the 17 transfer case bolts.

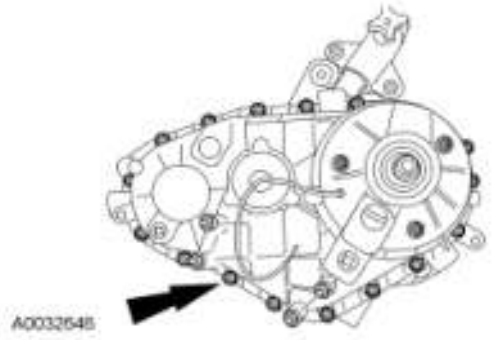


Fig. 57: Locating Transfer Case Bolts
Courtesy of FORD MOTOR CO.

11. Remove the 3 clutch coil assembly nuts.

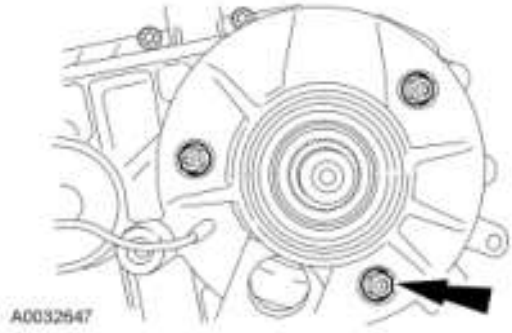


Fig. 58: Locating Clutch Coil Assembly Nuts
Courtesy of FORD MOTOR CO.

12. Separate the transfer case halves at the transfer case pry bosses.

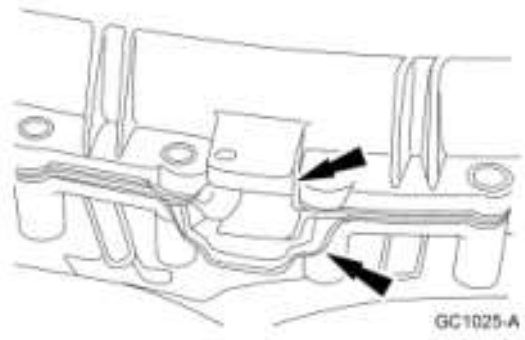


Fig. 59: Separating Transfer Case Halves At Transfer Case Pry Bosses
Courtesy of FORD MOTOR CO.

13. Remove the snap ring, then using the special tool, remove the rear output shaft support bearing.

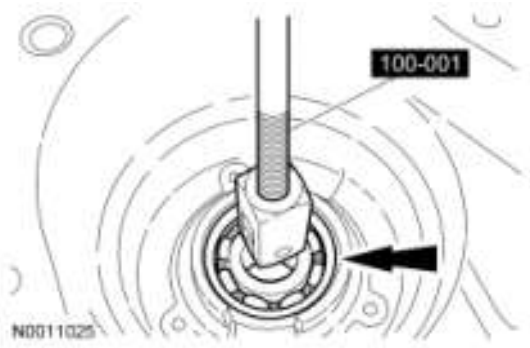


Fig. 60: Locating Rear Output Shaft Support Bearing And Special Tool
Courtesy of FORD MOTOR CO.

14. Using the special tool, remove the front output shaft rear bearing.

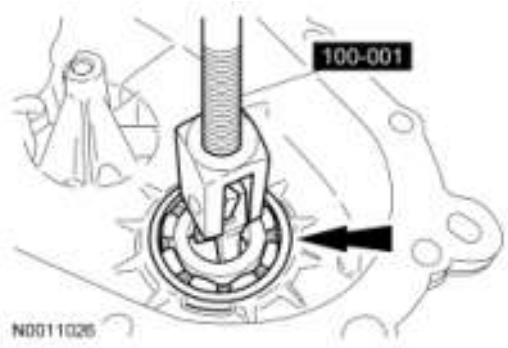


Fig. 61: Locating Front Output Shaft Rear Bearing And Special Tool
Courtesy of FORD MOTOR CO.

15. Remove the thrust bearing.

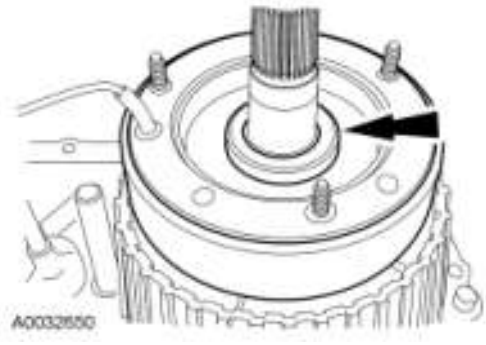


Fig. 62: Locating Thrust Bearing
Courtesy of FORD MOTOR CO.

16. Remove the cam and coil housing assembly.

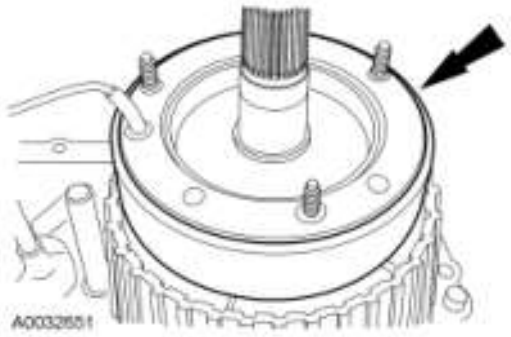


Fig. 63: Locating Cam And Coil Housing Assembly
Courtesy of FORD MOTOR CO.

17. Remove the apply cam and 3 steel balls.
18. Remove the wave spring.

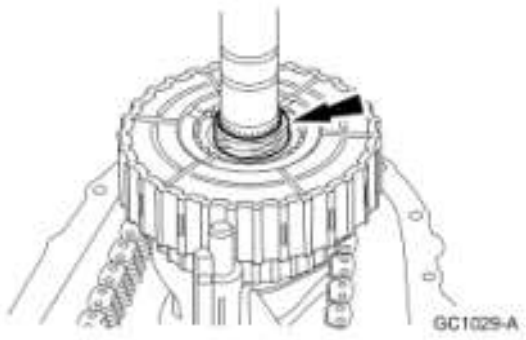


Fig. 64: Locating Steel Balls & Wave Spring
Courtesy of FORD MOTOR CO.

19. Remove the snap ring.

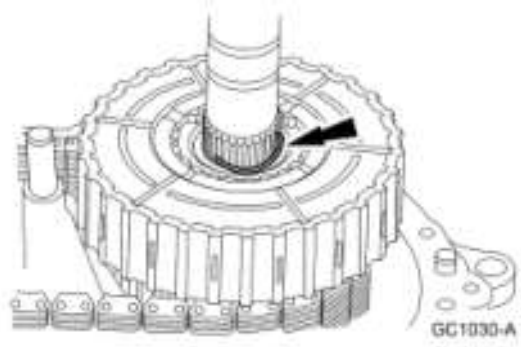


Fig. 65: Locating Clutch Pack Assembly & Snap Ring
Courtesy of FORD MOTOR CO.

CAUTION: When removing or installing the clutch pack assembly, do not separate the clutch pack assembly. Keep tension on the clutch pack upon removal. Set the clutch pack assembly on the bench in the same position as it was located in the transfer case. The thrust washer in the lower clutch pack uses tabs to hold it in place. If the thrust washer is not in place, a transfer case clearance problem can occur.

20. Remove the clutch pack assembly.
21. Remove the drive chain and the 2 sprockets as an assembly.

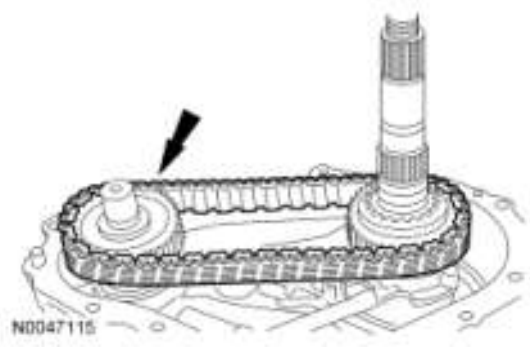


Fig. 66: Locating Drive Chain
Courtesy of FORD MOTOR CO.

22. Remove and clean the oil pan magnet.

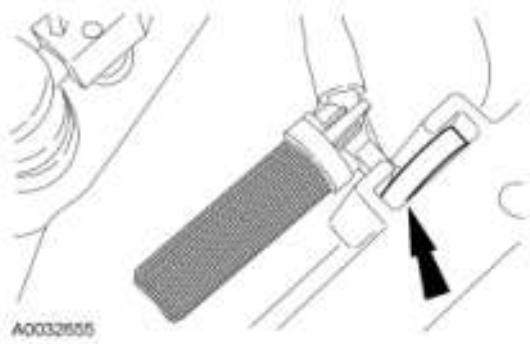


Fig. 67: Locating Oil Pan Magnet
Courtesy of FORD MOTOR CO.

23. Remove the thrust washer.

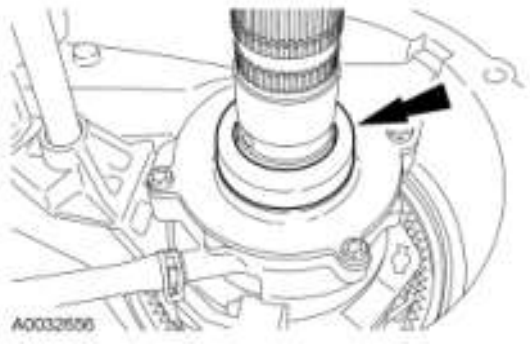


Fig. 68: Locating Thrust Washer
Courtesy of FORD MOTOR CO.

CAUTION: Do not disassemble the pump assembly.

24. Remove the pump assembly and the rear output shaft as an assembly.

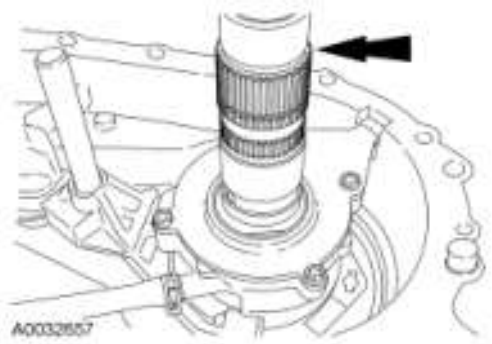


Fig. 69: Locating Rear Output Shaft
Courtesy of FORD MOTOR CO.

25. Using the special tool, remove the oil seal.

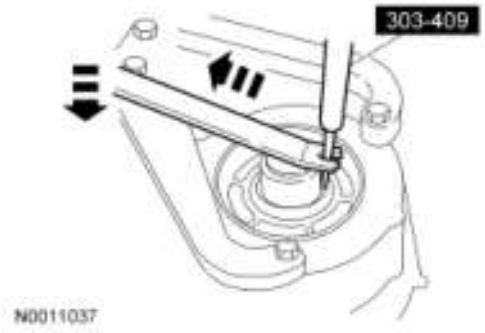


Fig. 70: Removing Oil Seal Using Special Tool
Courtesy of FORD MOTOR CO.

26. While holding the front output shaft and flange, remove the snap ring.

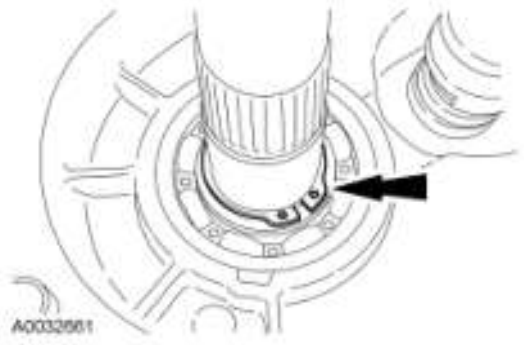


Fig. 71: Locating Snap Ring
Courtesy of FORD MOTOR CO.

27. Remove the front output shaft and flange.

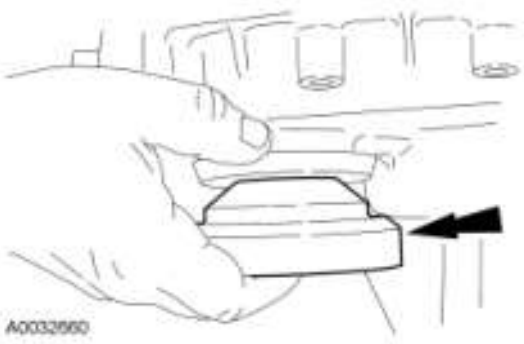


Fig. 72: Locating Front Output Shaft And Flange
Courtesy of FORD MOTOR CO.

28. Using the special tools, remove the oil seal.

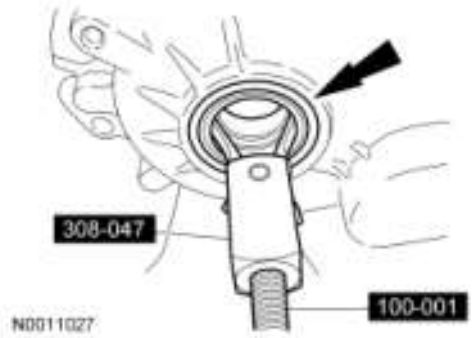


Fig. 73: Locating Oil Seal And Special Tools
Courtesy of FORD MOTOR CO.

29. Using the special tools, remove the front output shaft support bearing.

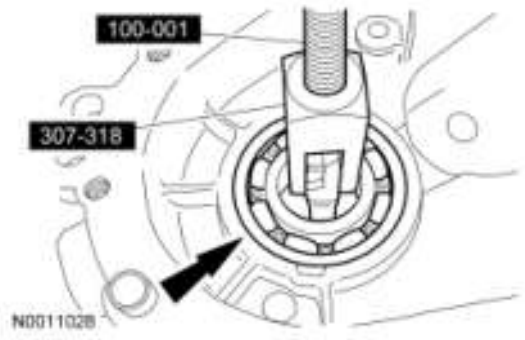


Fig. 74: Locating Front Output Shaft Support Bearing And Special Tools
Courtesy of FORD MOTOR CO.

ASSEMBLY

1. Using the special tools, press the front output shaft support bearing into the case.

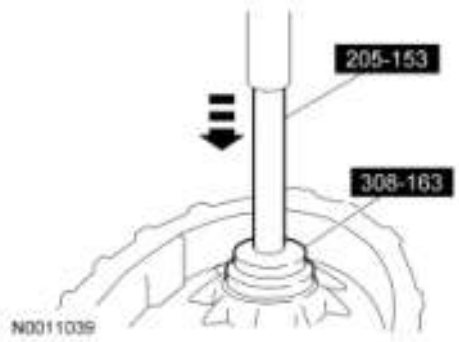


Fig. 75: Using Special Tools To Press Front Output Shaft Support Bearing Into Case
Courtesy of FORD MOTOR CO.

2. Using the special tool, install the oil seal.

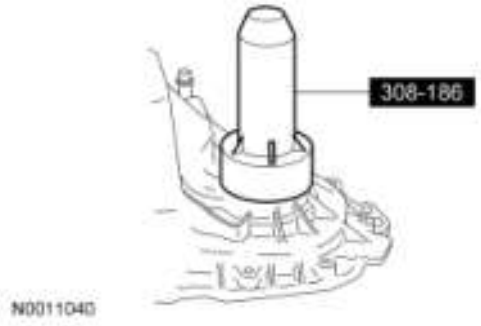


Fig. 76: Installing Oil Seal Using Special Tool (308-186)
Courtesy of FORD MOTOR CO.

3. Using the special tool, install the oil seal.

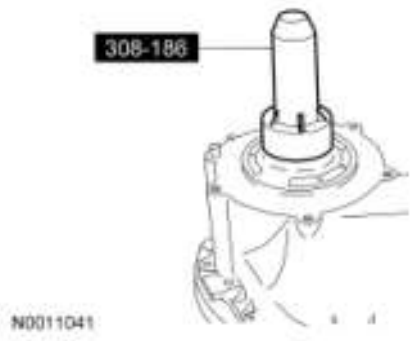


Fig. 77: Installing Oil Seal Using Special Tool (308-186)
Courtesy of FORD MOTOR CO.

4. Install the front output shaft and flange and snap ring.

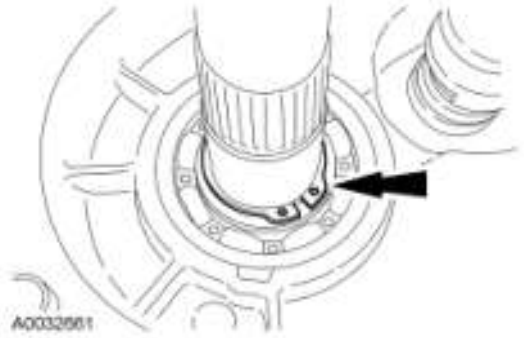


Fig. 78: Locating Snap Ring
Courtesy of FORD MOTOR CO.

CAUTION: Do not disassemble the pump assembly.

5. Install the pump assembly and the rear output shaft as an assembly.

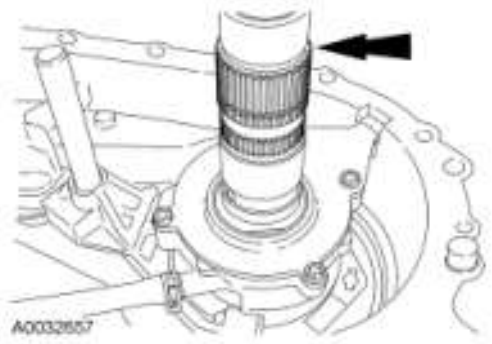


Fig. 79: Locating Rear Output Shaft
Courtesy of FORD MOTOR CO.

6. Install the thrust washer.

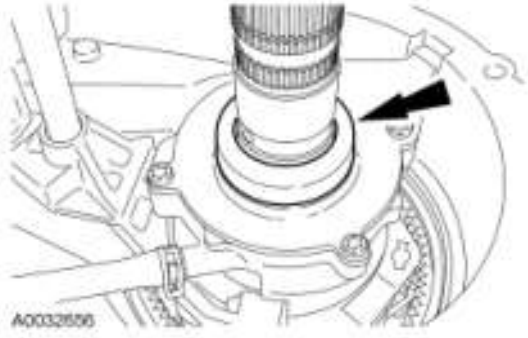


Fig. 80: Locating Thrust Washer
Courtesy of FORD MOTOR CO.

7. Install the oil pan magnet.

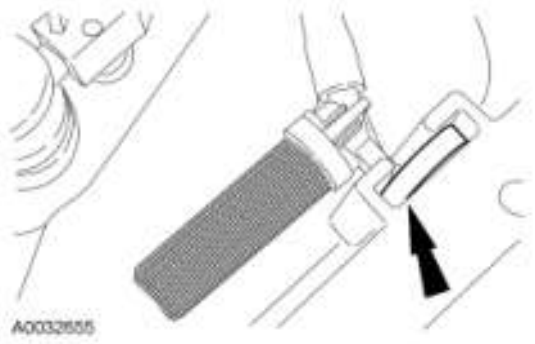


Fig. 81: Locating Oil Pan Magnet
Courtesy of FORD MOTOR CO.

8. Install the drive chain and the 2 sprockets as an assembly.

CAUTION: When removing or installing the clutch pack assembly, do not separate the clutch pack assembly. Keep tension on the clutch pack upon removal. Set the clutch pack assembly on the bench in the same position as it was located in the transfer case. The thrust washer in the lower clutch pack uses tabs to hold it in place. If the thrust washer is not in place, a transfer case clearance problem can occur.

9. Install the clutch pack assembly.

CAUTION: Use a new snap ring.

10. Install the snap ring.

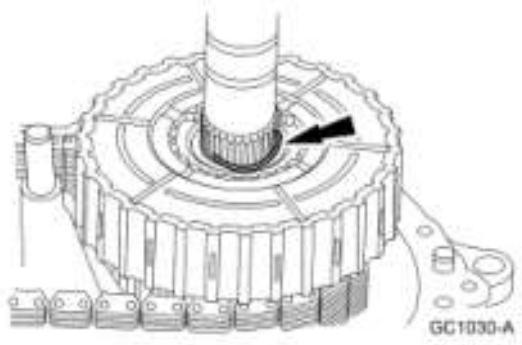


Fig. 82: Locating Clutch Pack Assembly & Snap Ring
Courtesy of FORD MOTOR CO.

11. Install the wave spring.

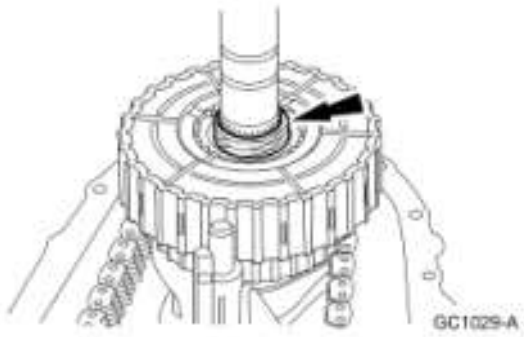


Fig. 83: Locating Steel Balls & Wave Spring
Courtesy of FORD MOTOR CO.

12. Install the apply cam and 3 steel balls.
13. Install the cam and coil housing assembly.

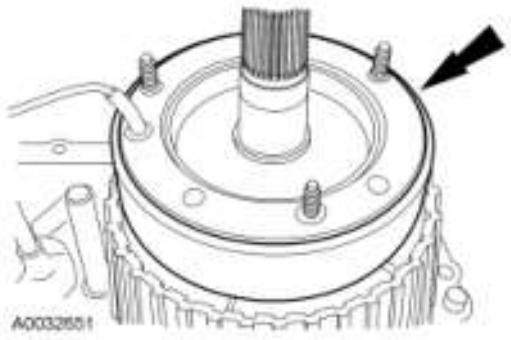


Fig. 84: Locating Cam And Coil Housing Assembly
Courtesy of FORD MOTOR CO.

14. Install the thrust bearing.

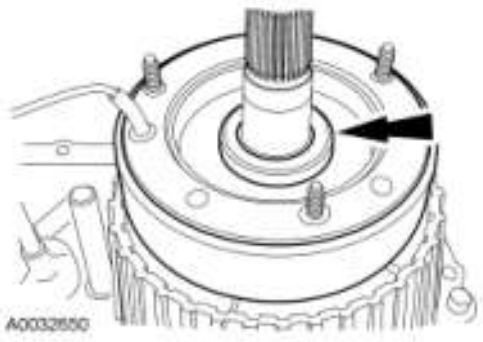


Fig. 85: Locating Thrust Bearing
Courtesy of FORD MOTOR CO.

15. Using the special tools and a suitable press, install the front output shaft rear bearing into the case.

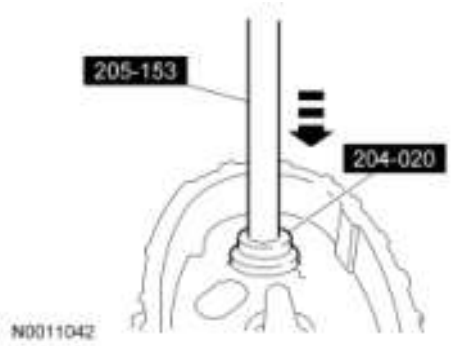


Fig. 86: Installing Front Output Shaft Rear Bearing Into Case Using Special Tools (205-153, 204-020)
Courtesy of FORD MOTOR CO.

16. Using the special tools and a suitable press, install the rear output shaft rear bearing into the case.

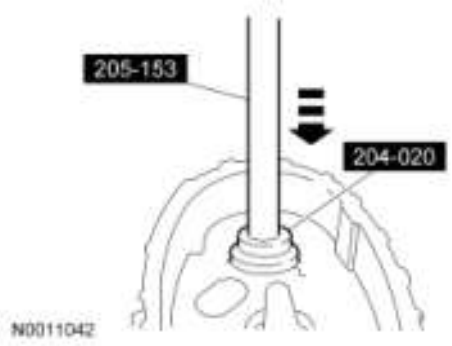


Fig. 87: Installing Rear Output Shaft Rear Bearing Into Case Using Special Tools (205-153, 204-020)
Courtesy of FORD MOTOR CO.

17. Position and support the clutch coil assembly, then install the 3 nuts.
    - Tighten to 10 N.m (89 lb-in).

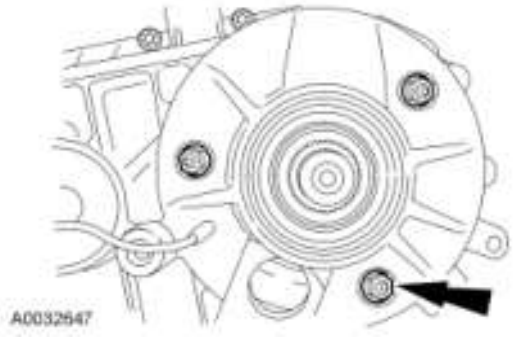


Fig. 88: Locating Clutch Coil Assembly Nuts
Courtesy of FORD MOTOR CO.

CAUTION: Applying excess silicone rubber can damage the internal components.

18. Apply a 3 mm (0.11 in) bead of silicone rubber on the rear case mating surface.

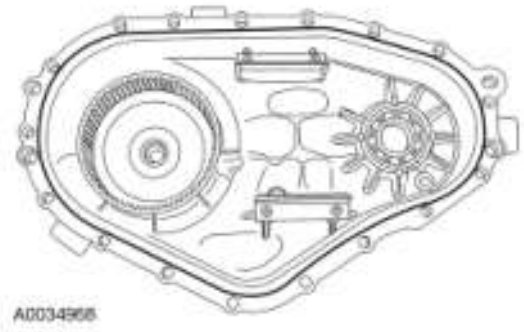


Fig. 89: Applying Bead Of Silicone Rubber On Rear Case Mating Surface
Courtesy of FORD MOTOR CO.

19. Assemble the front and rear case halves.
20. Install the transfer case bolts.
    - Tighten to 25 N.m (18 lb-ft) evenly in a star pattern.

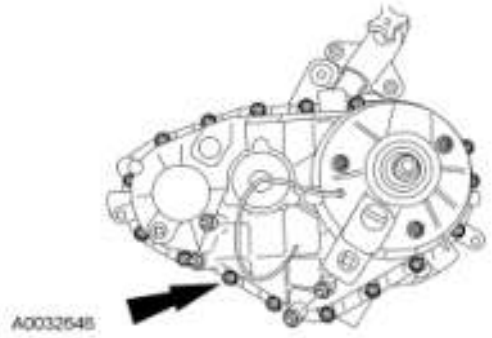


Fig. 90: Locating Transfer Case Bolts
Courtesy of FORD MOTOR CO.

21. Install the yoke-to-flange oil seal.

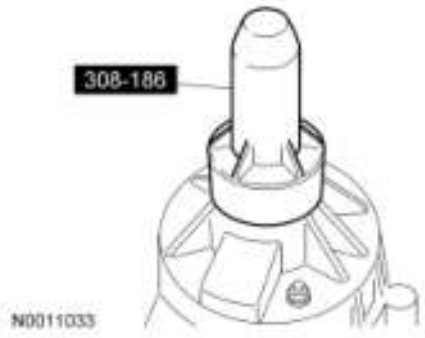


Fig. 91: Installing Rear Output Shaft Oil Seal Using Special Tools (308-186)
Courtesy of FORD MOTOR CO.

22. Install a new output flange oil seal.

NOTE: Align the index marks made during disassembly.

23. Install the output flange.

24. Install the output shaft yoke washer.
25. Using the special tool to hold the output flange, install the nut.
    - Tighten to 355 N.m (262 lb-ft).

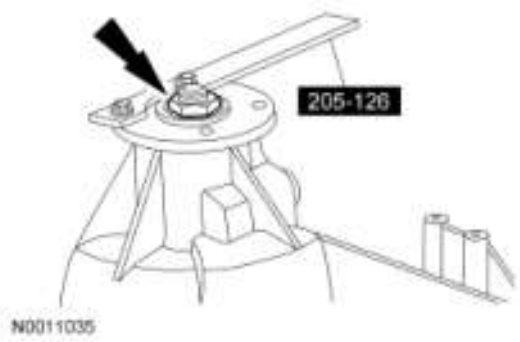


Fig. 92: Locating Output Flange Nut And Special Tool (205-126)
Courtesy of FORD MOTOR CO.

26. Install the coil wire pin to the electrical connector.
    - Install the coil wire pin (pin 16).
    - Install the connector interlock.

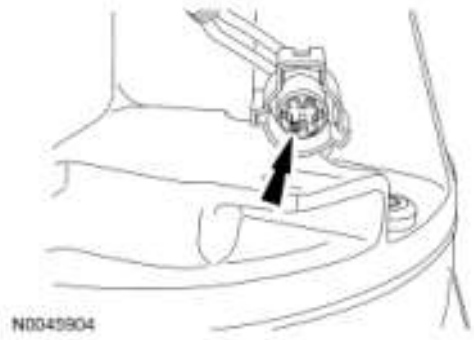


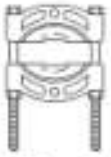
Fig. 93: Locating Coil Wire Electrical Connector
Courtesy of FORD MOTOR CO.

27. Install the transfer case in the vehicle. For additional information, refer to **Transfer Case**.
28. Fill the transfer case. For additional information, refer to **Transfer Case Draining and Filling**.

TRANSFER CASE - 2-SPEED TORQUE-ON-DEMAND

Special Tools

Illustration	Tool Name	Tool Number
 ST1200-A	Remover, Bearing Cup	308-047 (T77F-1102-A)
	Installer, Wheel Hub Bearing	

 ST1471-A	Cup	204-020 (T73T-1202-A)
 ST1368-A	Puller, Bearing	205-D064 (D84L-1123-A) or equivalent
 ST1362-A	Remover, Stator Bearing	307-318 (T94P-77001-KH)
 ST1257-A	Holding Fixture, Drive Pinion Flange	205-126 (T78P-4851-A)
 ST1783-A	Installer, Differential Bearing Cup	308-163 (T88C-77000-FH)
 ST1255-A	Adapter for 303-224 (Handle)	205-153 (T80T-4000-W)
 ST1186-A	Holding Fixture, Transmission	307-003 (T57L-500-B)
 ST1185-A	Slide Hammer	100-001 (T50T-100-A)
 ST1769-A	Installer, Input Shaft Bearing	308-085 (T83T-7025-C)

 ST2305-A	Installer, Input Shaft Oil Seal	308-186 (T90T-7127-B)
 ST1213-A	Remover, Bushing	307-001 (TOOL-1175-AC) or equivalent
 ST2415-A	Remover, Output Shaft Flange	307-523 or equivalent
 ST1385-A	Remover, Oil Seal	303-409 (T92C-6700-CH)
 ST1466-A	Installer, Valve Stem Oil Seal	303-367 (T90P-6510-AH)

Material

Item	Specification
Threadlock and Sealer TA-25	WSK-M2G351-A5
Silicone Gasket and Sealant TA-30	WSE-M4G323-A4
MERCON® Multi-Purpose Automatic Transmission Fluid XT-2-QDX (US); XT-2-LM12 (Canada)	MERCON®

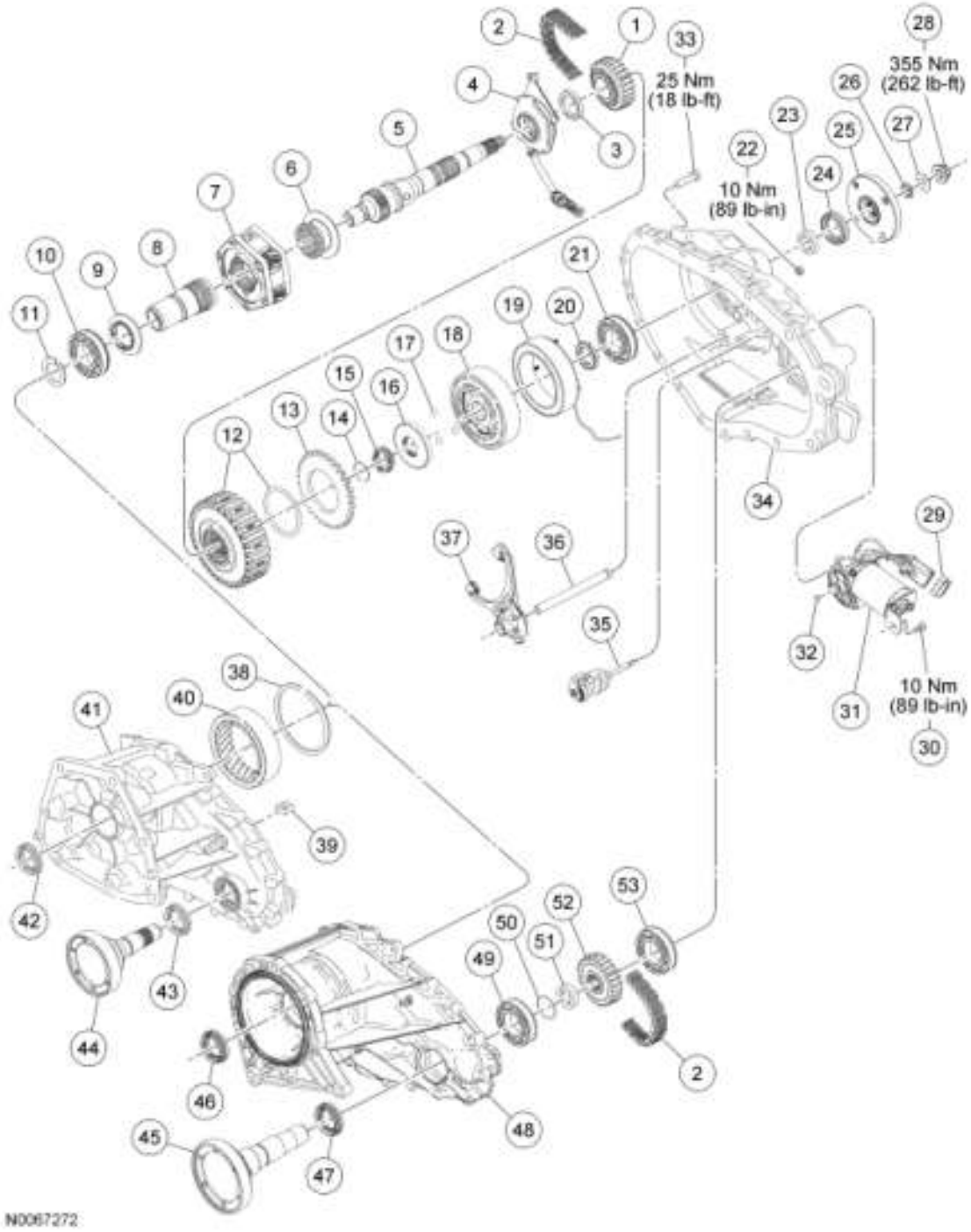


Fig. 94: Exploded View Of Transfer Case With Torque Specifications - 2-Speed Torque-On-Demand
Courtesy of FORD MOTOR CO.

Item	Part Number	Description
1	7177	Drive sprocket
2	7A029	Drive chain
3	7Z112	Thrust washer
4	-	Oil pump assembly
5	7061	Rear output shaft
6	7100	High-low collar

7	7A398	Front planetary gear set assembly
8	7017	Input shaft
9	7N062	Hub
10	7127	Bearing
11	7917	Snap ring
12	7C108	Clutch pack assembly
13	7H150	Valve assembly
14	7917	Snap ring
15	7G159	Wave spring
16	7R428	Apply cam
17	7A534	Balls (3 required)
18	7G362	Cam and coil housing assembly
19	7G361	Clutch coil assembly
20	7A443	Thrust bearing
21	7025	Front output shaft rear bearing
22	7045	Clutch coil nut (3 required)
23	7G450	Wheel
24	7B215	Yoke-to-flange oil seal
25	7B214	Rear output shaft flange
26	7052	Output flange oil seal
27	7B368	Output shaft flange washer
28	7045	Rear output shaft flange nut
29	-	Electrical connector
30	N800670-S	Shift motor bolt (3 required)
31	7G360	Transfer case shift motor
32	7288	Shifter shaft seal
33	7A443	Transfer case bolt (17 required)
34	7005	Rear transfer case
35	7F063	Electric shift cam, torsion spring and shift shaft assembly
36	7240	Shift rail
37	7289	Reduction shift fork
38	7917	Snap ring
39	7L027	Oil pan magnet
40	7A153	Ring gear
41	7005	Transfer case cover (4.0L with 5R55)
42	7B215	Oil seal
43	7B215	Oil seal
44	7061	Output shaft and flange (front) (4.0L with 5R55)
45	7061	Output shaft and flange (front) (4.6L with 6R60)
46	7B215	Oil seal
47	7B215	Oil seal
48	7005	Transfer case cover (4.6L with 6R60)

49	7025	Bearing
50	7917	Snap ring
51	-	Spacer
52	7177	Driven sprocket
53	7025	Bearing

DISASSEMBLY

NOTE: Discard all seals after removing them.

1. Remove the transfer case. For additional information, refer to **Transfer Case**.

WARNING: Make sure the holding fixture lock pin is secure.

2. Using the special tool, secure the transfer case to the bench.

Fig. 95: Securing Transfer Case To Bench
Courtesy of FORD MOTOR CO.

3. Remove the 3 heat shield bolts, then remove the heat shield if equipped.
   - To install, tighten to 16 Nm (12 lb-ft).

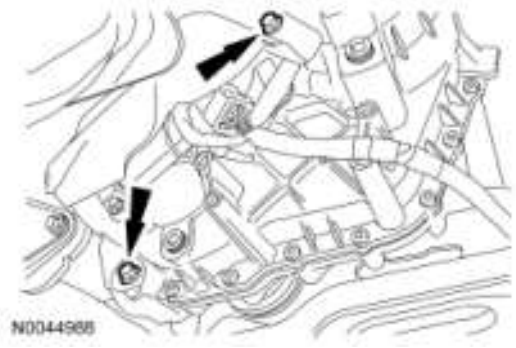


Fig. 96: Locating Heat Shield Bolts
Courtesy of FORD MOTOR CO.

4. If not previously done, remove the drain plug and drain the fluid.
   - When finished draining, install the drain plug and tighten to 20 N.m (15 lb-ft).

Fig. 97: Locating Drain Plug
Courtesy of FORD MOTOR CO.

5. Using the special tool to hold the output flange, remove the nut.

Fig. 98: Removing Nut Using Special Tool (205-126) To Hold Output Flange
Courtesy of FORD MOTOR CO.

6. Remove the output shaft yoke washer.
7. Using the special tool, remove the output flange.

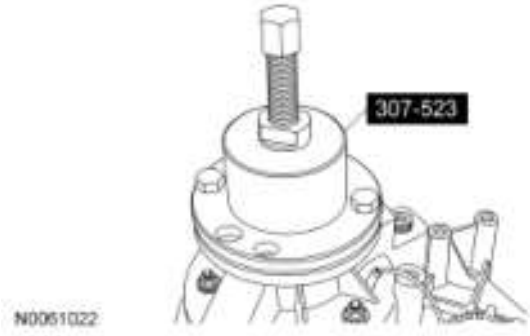


Fig. 99: Removing Output Flange Using Special Tool (307-523)
Courtesy of FORD MOTOR CO.

8. Remove and discard the output flange oil seal.

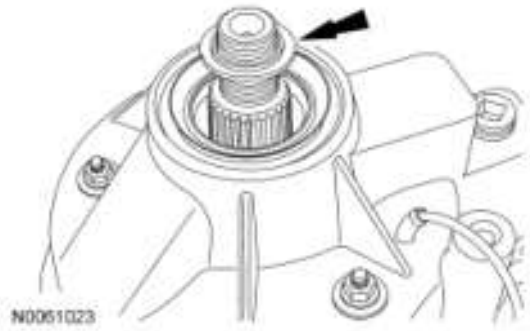


Fig. 100: Locating Output Flange Oil Seal
Courtesy of FORD MOTOR CO.

9. Using the special tools, remove and discard the yoke-to-flange seal.

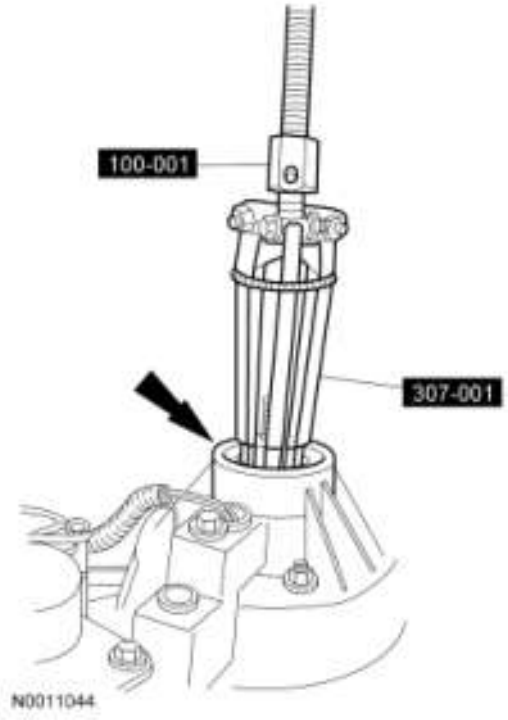


Fig. 101: Removing Rear Output Shaft Oil Seal Using Special Tools (100-001, 307-001)
Courtesy of FORD MOTOR CO.

10. Remove the coil wire pin from the electrical connector.
    - Remove the connector interlock.
    - Remove the coil wire pin (pin 16).
        - Use the electrical connector pin extractor tool.

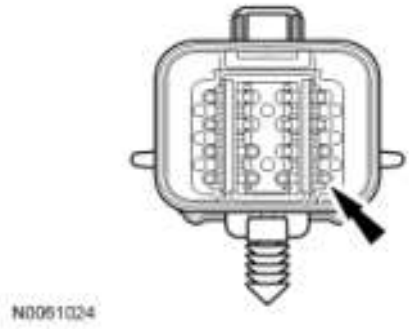


Fig. 102: Locating Coil Wire Pin
Courtesy of FORD MOTOR CO.

11. Remove the 4 transfer case shift motor bolts.
12. Remove the transfer case shift motor.

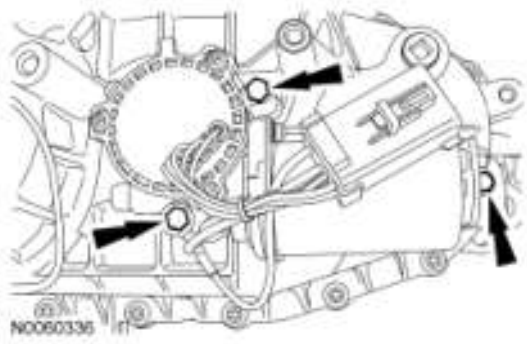


Fig. 103: Locating Transfer Case Shift Motor Bolts
Courtesy of FORD MOTOR CO.

13. Remove the 17 transfer case bolts.

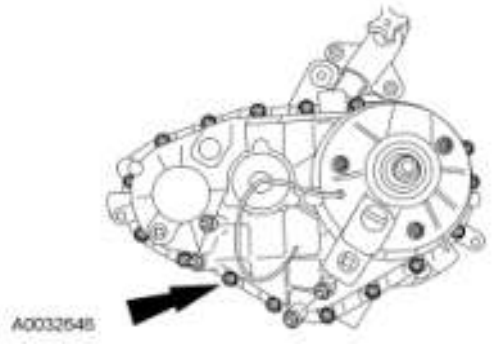


Fig. 104: Locating Transfer Case Bolts
Courtesy of FORD MOTOR CO.

14. Remove the 3 clutch coil assembly nuts.

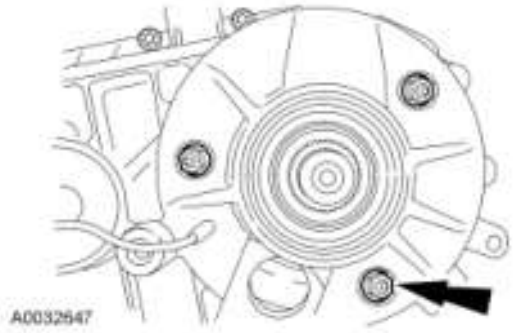


Fig. 105: Locating Clutch Coil Assembly Nuts
Courtesy of FORD MOTOR CO.

15. Separate the transfer case halves at the transfer case pry bosses.

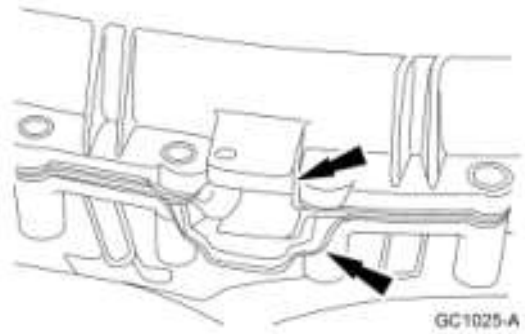


Fig. 106: Separating Transfer Case Halves At Transfer Case Pry Bosses
Courtesy of FORD MOTOR CO.

16. Remove the snap ring, then using the special tool, remove the rear output shaft support bearing.

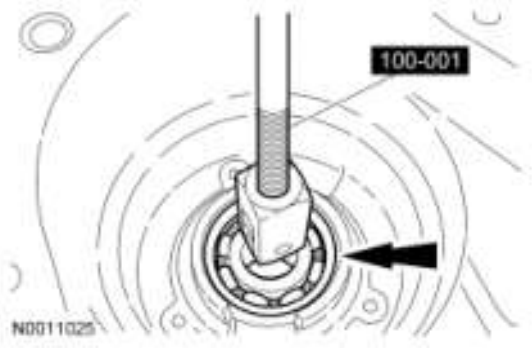


Fig. 107: Locating Rear Output Shaft Support Bearing And Special Tool
Courtesy of FORD MOTOR CO.

17. Using the special tool, remove the front output shaft rear bearing.

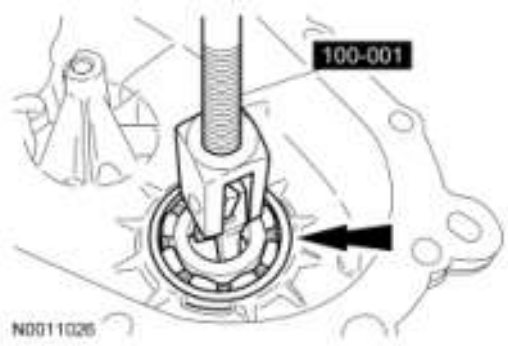


Fig. 108: Locating Front Output Shaft Rear Bearing And Special Tool
Courtesy of FORD MOTOR CO.

18. Remove the thrust bearing.

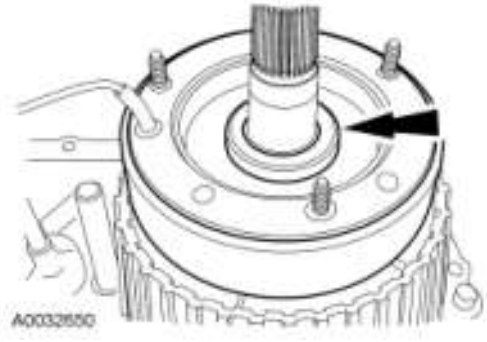


Fig. 109: Locating Thrust Bearing
Courtesy of FORD MOTOR CO.

19. Remove the cam and coil housing assembly.

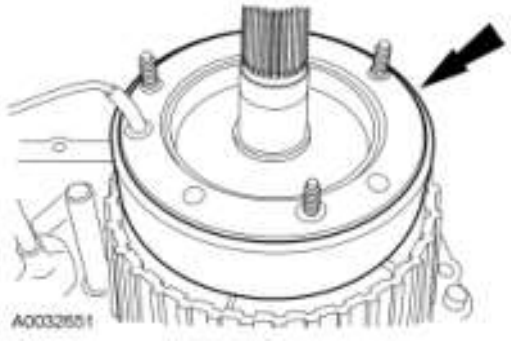


Fig. 110: Locating Cam And Coil Housing Assembly
Courtesy of FORD MOTOR CO.

20. Remove the apply cam and 3 steel balls.
21. Remove the wave spring.

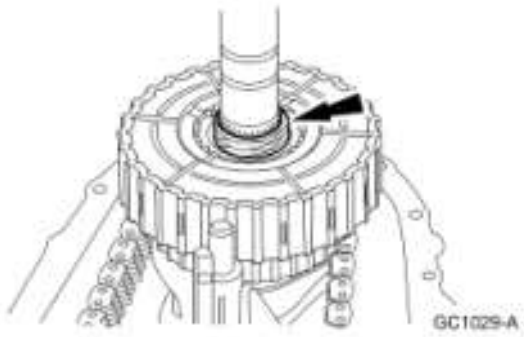


Fig. 111: Locating Steel Balls & Wave Spring
Courtesy of FORD MOTOR CO.

22. Remove the snap ring.

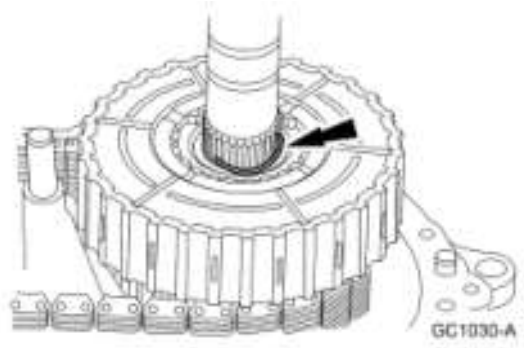


Fig. 112: Locating Clutch Pack Assembly & Snap Ring
Courtesy of FORD MOTOR CO.

CAUTION: When removing or installing the clutch pack assembly, do not separate the clutch pack assembly. Keep tension on the clutch pack upon removal. Set the clutch pack assembly on the bench in the same position as it was located in the transfer case. The thrust washer in the lower clutch pack uses tabs to hold it in place. If the thrust washer is not in place, a transfer case clearance problem can occur.

23. Remove the clutch pack assembly.

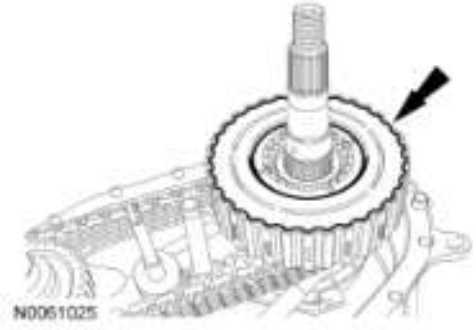


Fig. 113: Locating Clutch Pack Assembly
Courtesy of FORD MOTOR CO.

24. Remove the driven sprocket thrust washer.

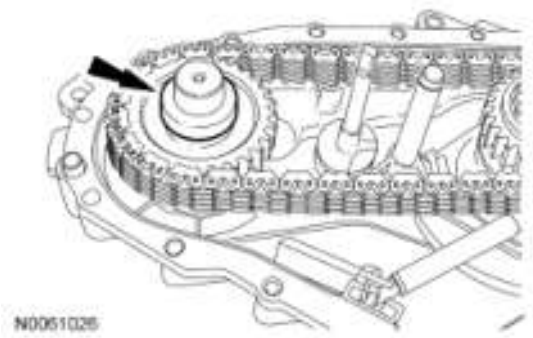


Fig. 114: Locating Driven Sprocket Thrust Washer
Courtesy of FORD MOTOR CO.

25. Remove the drive chain and the 2 sprockets as an assembly.

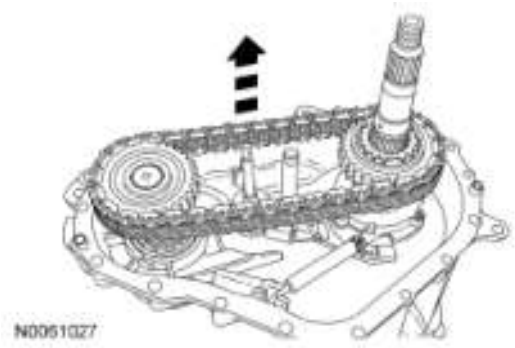


Fig. 115: Removing Drive Chain
Courtesy of FORD MOTOR CO.

26. Remove and clean the oil pan magnet.

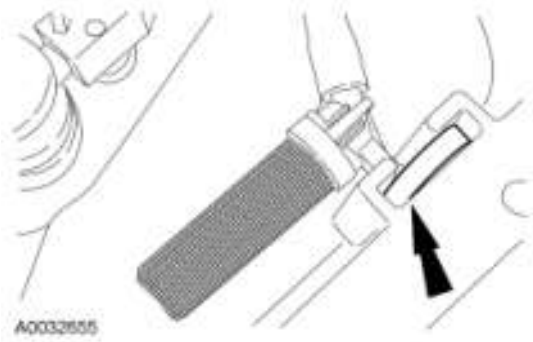


Fig. 116: Locating Oil Pan Magnet
Courtesy of FORD MOTOR CO.

27. Remove the thrust washer.

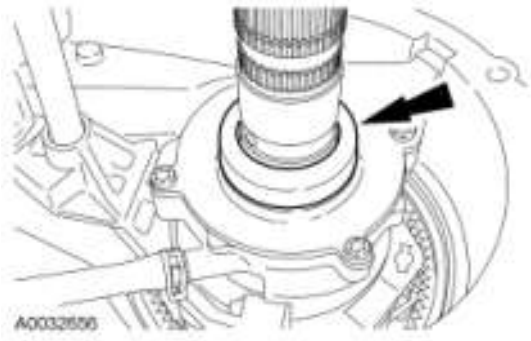


Fig. 117: Locating Thrust Washer
Courtesy of FORD MOTOR CO.

CAUTION: Do not disassemble the pump assembly.

28. Remove the pump assembly and the rear output shaft as an assembly.

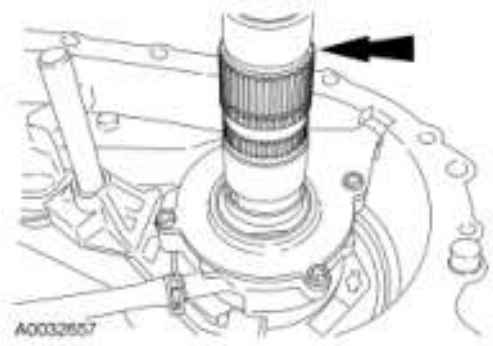


Fig. 118: Locating Rear Output Shaft
Courtesy of FORD MOTOR CO.

CAUTION: Do not disassemble the electric shift cam assembly.

29. Remove the electric shift cam assembly.

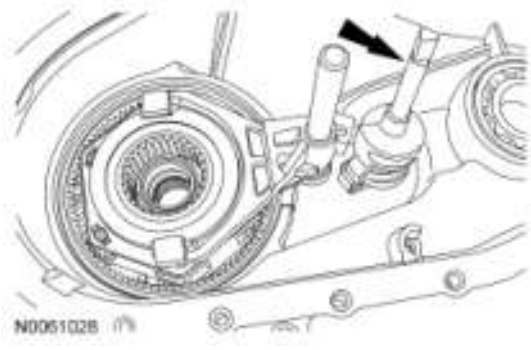


Fig. 119: Locating Electric Shift Cam Assembly
Courtesy of FORD MOTOR CO.

30. Remove the reduction shift fork and the high-low collar as an assembly.

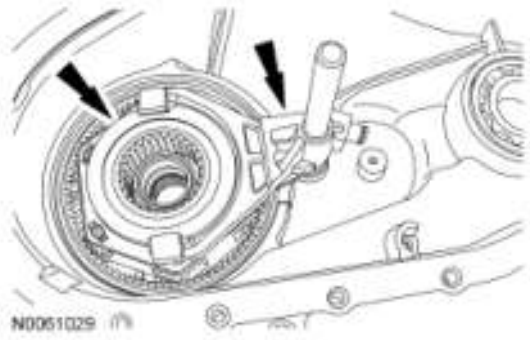


Fig. 120: Locating Reduction Shift Fork And High-Low Collar
Courtesy of FORD MOTOR CO.

31. Remove the shift rail.

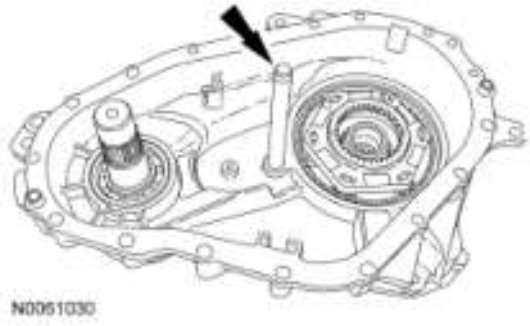


Fig. 121: Locating Shift Rail
Courtesy of FORD MOTOR CO.

32. Using the special tool, remove the oil seal.

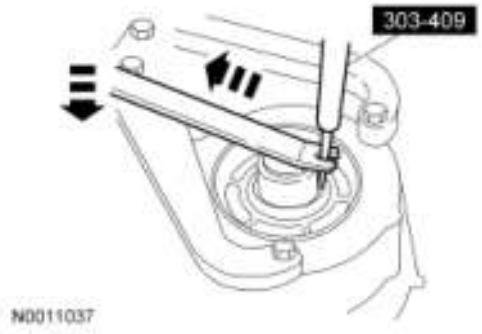


Fig. 122: Removing Oil Seal Using Special Tool
Courtesy of FORD MOTOR CO.

33. Remove the front planetary gear set assembly.
    1. Expand the snap ring.
    2. Remove the front planetary gear set assembly.

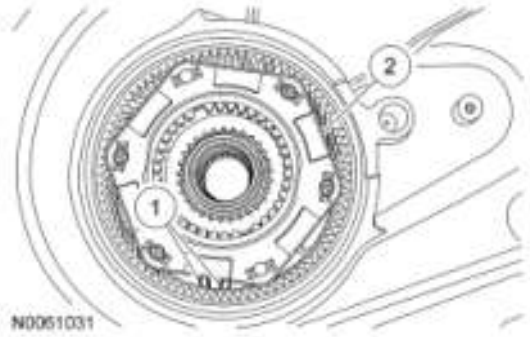


Fig. 123: Identifying Snap Ring And Front Planetary Gear Set Assembly
Courtesy of FORD MOTOR CO.

34. Using a drift and hammer, remove the output shaft bushing and bearing, if necessary.

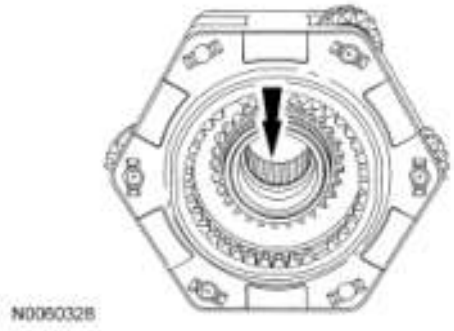


Fig. 124: Locating Output Shaft Bushing And Bearing
Courtesy of FORD MOTOR CO.

35. If planetary gear carrier support bearing removal is necessary, remove the snap ring.

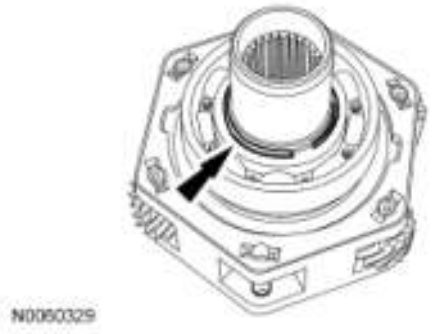


Fig. 125: Locating Snap Ring
Courtesy of FORD MOTOR CO.

36. Using a suitable press and the special tool, remove the planetary gear carrier support bearing.

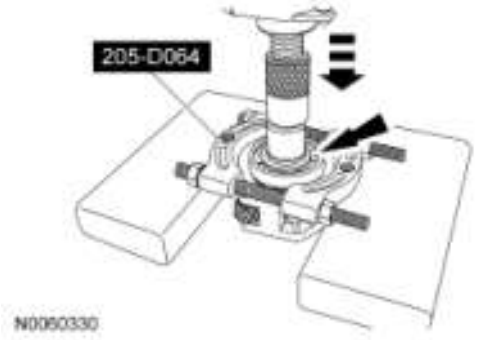


Fig. 126: Removing Planetary Gear Carrier Support Bearing Using Press And Special Tool
Courtesy of FORD MOTOR CO.

37. Remove the planetary input shaft.

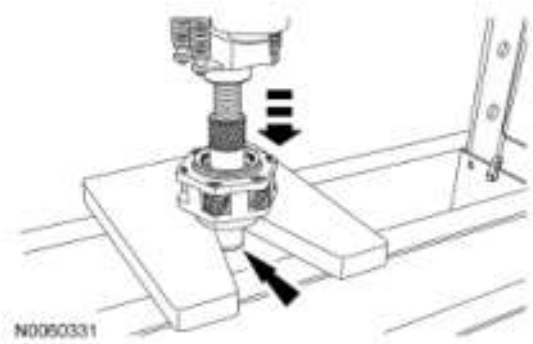


Fig. 127: Removing Planetary Input Shaft
Courtesy of FORD MOTOR CO.

38. While holding the front output shaft and flange, remove the snap ring.

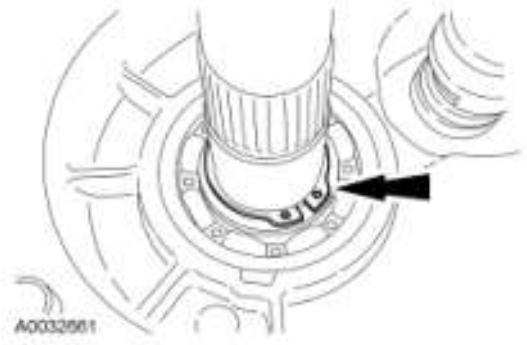


Fig. 128: Locating Snap Ring
Courtesy of FORD MOTOR CO.

39. Remove the front output shaft and flange.

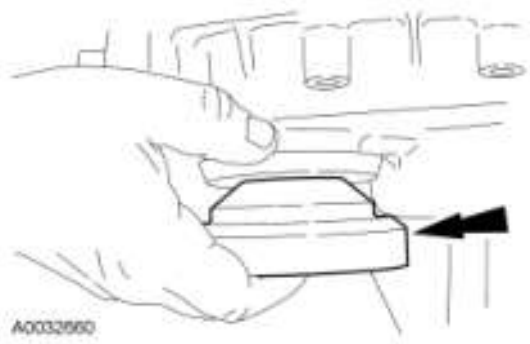


Fig. 129: Locating Front Output Shaft And Flange
Courtesy of FORD MOTOR CO.

40. Using the special tools, remove the oil seal.

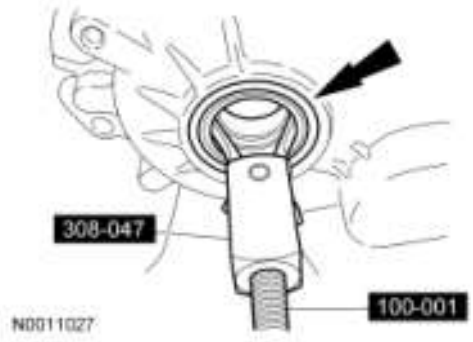


Fig. 130: Locating Oil Seal And Special Tools
Courtesy of FORD MOTOR CO.

41. Using the special tools, remove the front output shaft support bearing.

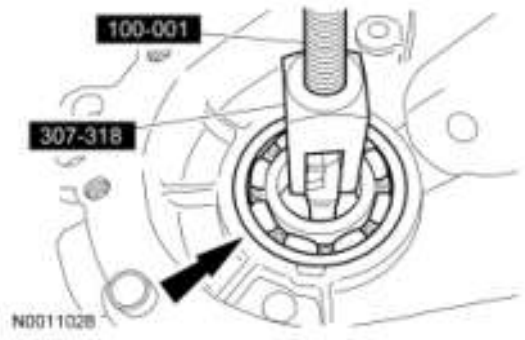


Fig. 131: Locating Front Output Shaft Support Bearing And Special Tools
Courtesy of FORD MOTOR CO.

42. Remove the shifter shaft seal.

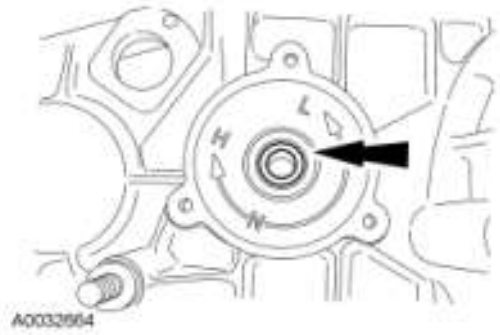


Fig. 132: Locating Shifter Shaft Seal
Courtesy of FORD MOTOR CO.

ASSEMBLY

CAUTION: Do not crush the seal.

1. Using the special tool, install the shifter shaft seal.

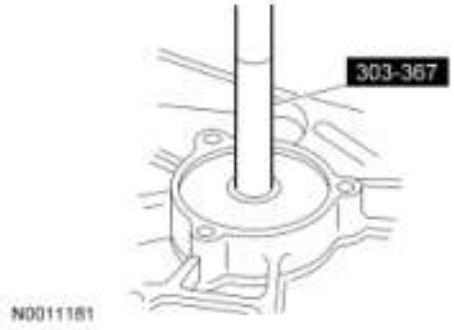


Fig. 133: Identifying Special Tool
Courtesy of FORD MOTOR CO.

2. Using the special tools, press the front output shaft support bearing into the case.

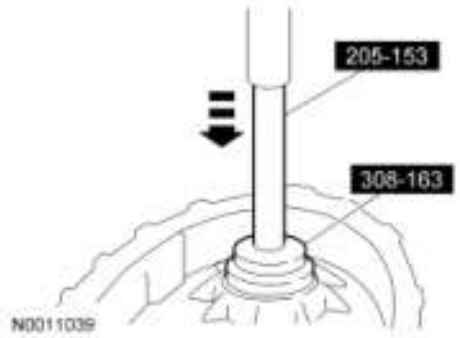


Fig. 134: Using Special Tools To Press Front Output Shaft Support Bearing Into Case
Courtesy of FORD MOTOR CO.

3. Using the special tool, install the oil seal.

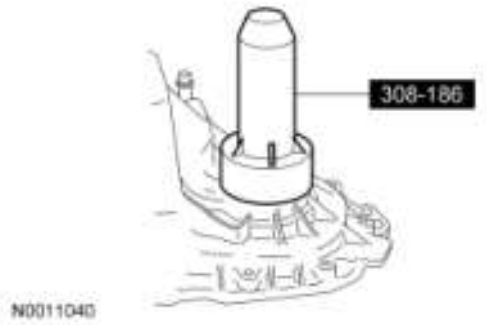


Fig. 135: Installing Oil Seal Using Special Tool (308-186)
Courtesy of FORD MOTOR CO.

4. Using the special tool, install the oil seal.

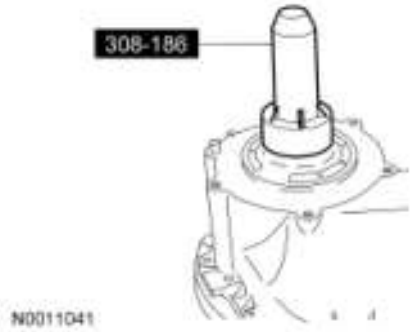


Fig. 136: Installing Oil Seal Using Special Tool (308-186)
Courtesy of FORD MOTOR CO.

5. Install the front output shaft and flange and snap ring.

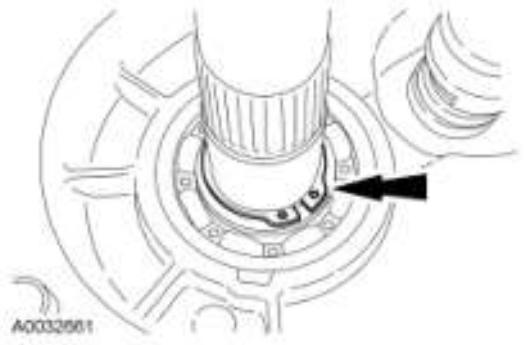


Fig. 137: Locating Snap Ring
Courtesy of FORD MOTOR CO.

CAUTION: Do not crush the bearing cage.

6. Using a suitable press and the special tool, install the bushing and the bearing, if removed.

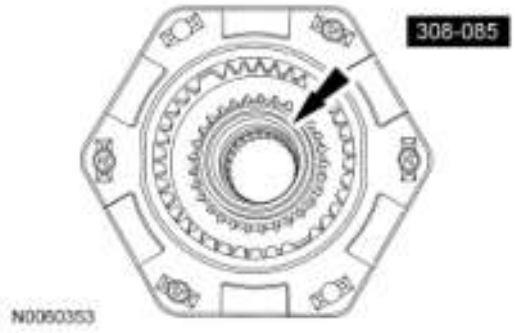


Fig. 138: Installing Bushing & Bearing Using A Suitable Press & Special Tool (308-085)
Courtesy of FORD MOTOR CO.

7. Using a suitable press, install the planetary gear carrier support bearing, if removed.

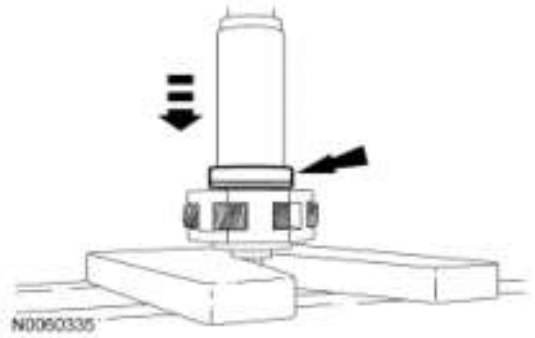


Fig. 139: Installing Planetary Gear Carrier Support Bearing Using A Suitable Press
Courtesy of FORD MOTOR CO.

8. Install the snap ring.

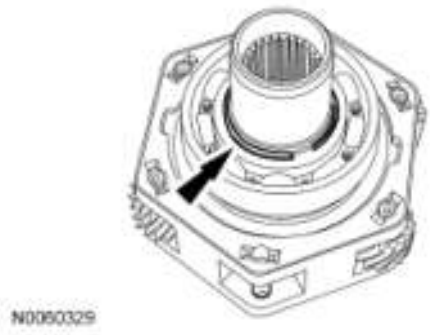


Fig. 140: Locating Snap Ring
Courtesy of FORD MOTOR CO.

9. Install the front planetary gear set assembly.
    1. Expand the snap ring.
    2. Position the front planetary gear set assembly and release the snap ring.

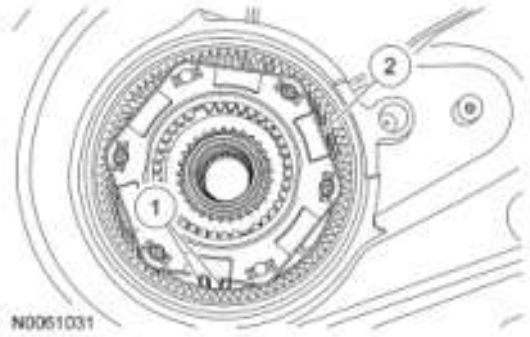


Fig. 141: Identifying Snap Ring And Front Planetary Gear Set Assembly
Courtesy of FORD MOTOR CO.

10. Install the shift rail.

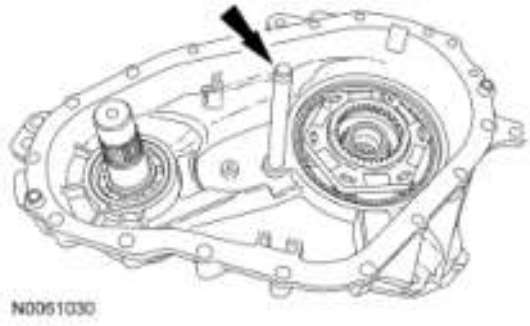


Fig. 142: Locating Shift Rail
Courtesy of FORD MOTOR CO.

11. Install the reduction shift fork and the high-low collar as an assembly.

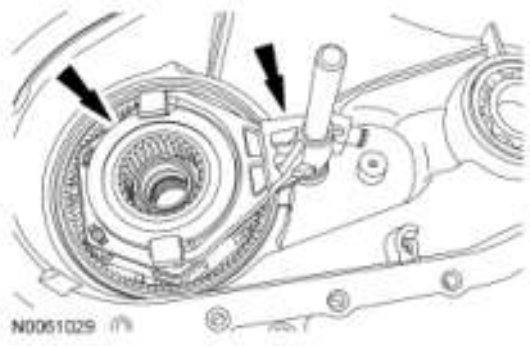


Fig. 143: Locating Reduction Shift Fork And High-Low Collar
Courtesy of FORD MOTOR CO.

CAUTION: Do not disassemble the electric shift cam assembly.

12. Install the electric shift cam assembly.

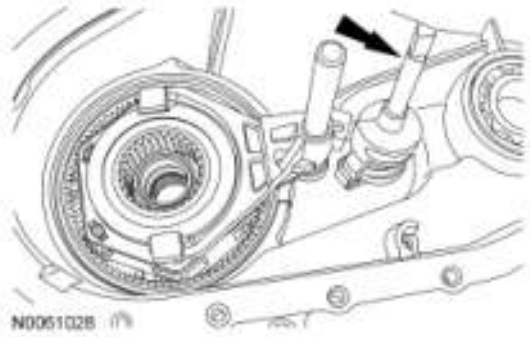


Fig. 144: Locating Electric Shift Cam Assembly
Courtesy of FORD MOTOR CO.

CAUTION: Do not disassemble the pump assembly.

13. Install the pump assembly and the rear output shaft as an assembly.

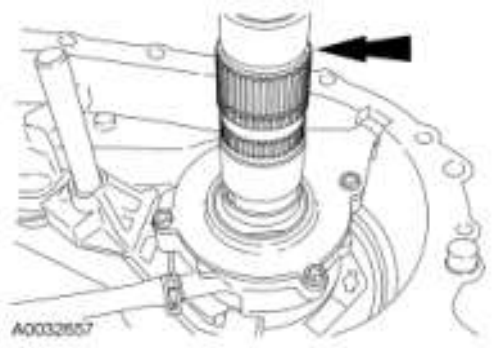


Fig. 145: Locating Rear Output Shaft
Courtesy of FORD MOTOR CO.

14. Install the thrust washer.

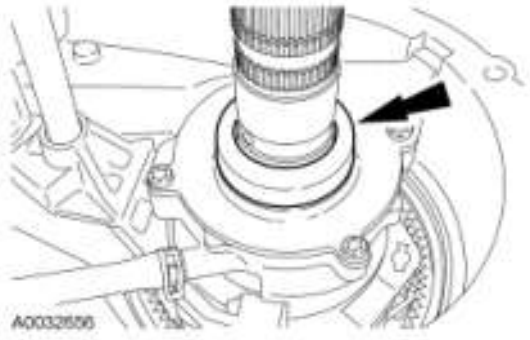


Fig. 146: Locating Thrust Washer
Courtesy of FORD MOTOR CO.

15. Install the oil pan magnet.

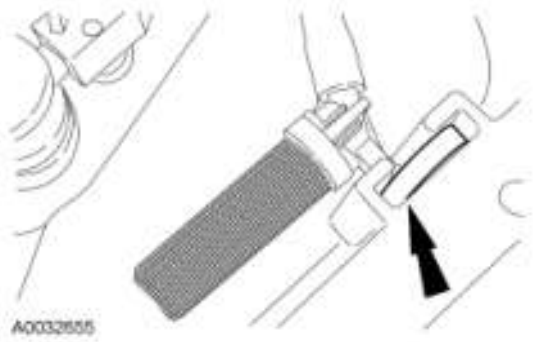


Fig. 147: Locating Oil Pan Magnet
Courtesy of FORD MOTOR CO.

16. Install the drive chain and the 2 sprockets as an assembly.

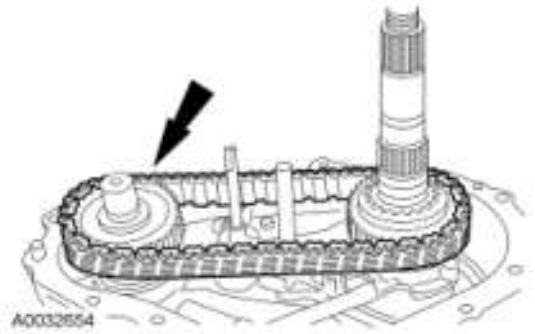


Fig. 148: Locating Drive Chain
Courtesy of FORD MOTOR CO.

CAUTION: When removing or installing the clutch pack assembly, do not separate the clutch pack assembly. Keep tension on the clutch pack upon removal. Set the clutch pack assembly on the bench in the same position as it was located in the transfer case. The thrust washer in the lower clutch pack uses tabs to hold it in place. If the thrust washer is not in place, a transfer case clearance problem can occur.

17. Install the clutch pack assembly.

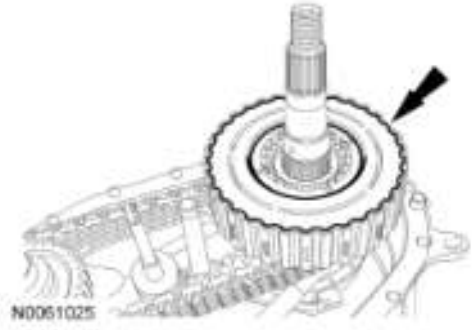


Fig. 149: Locating Clutch Pack Assembly
Courtesy of FORD MOTOR CO.

CAUTION: Use a new snap ring.

18. Install the snap ring.

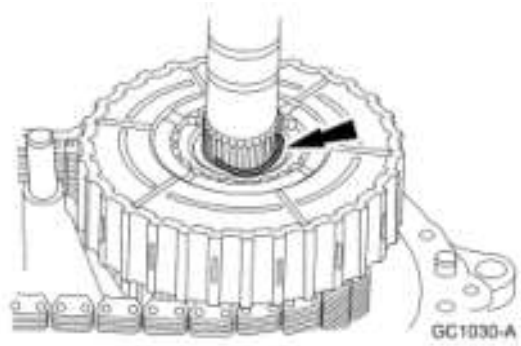


Fig. 150: Locating Clutch Pack Assembly & Snap Ring
Courtesy of FORD MOTOR CO.

19. Install the wave spring.

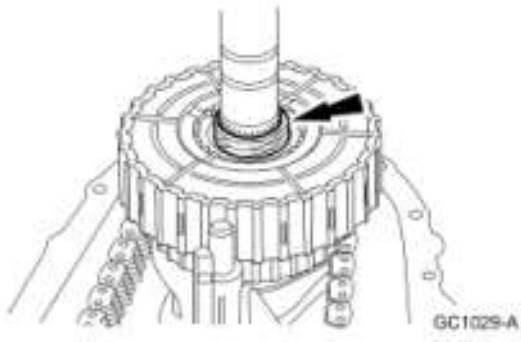


Fig. 151: Locating Steel Balls & Wave Spring
Courtesy of FORD MOTOR CO.

20. Install the apply cam and 3 steel balls.
21. Install the cam and coil housing assembly.

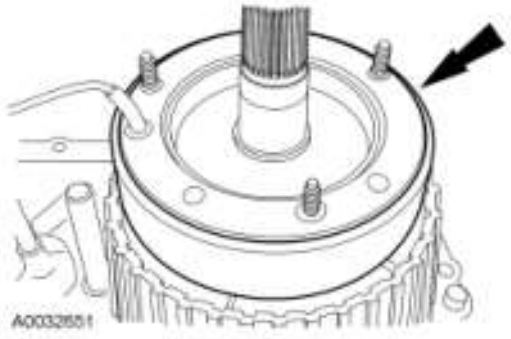


Fig. 152: Locating Cam And Coil Housing Assembly
Courtesy of FORD MOTOR CO.

22. Install the thrust bearing.

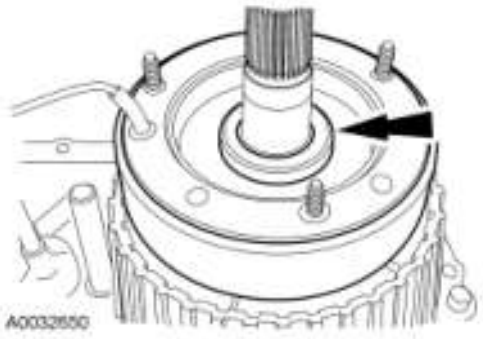


Fig. 153: Locating Thrust Bearing
Courtesy of FORD MOTOR CO.

23. Using the special tools and a suitable press, install the front output shaft rear bearing into the case.

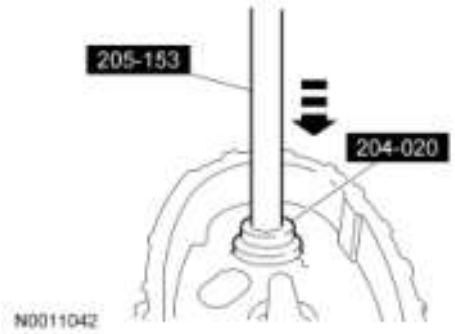


Fig. 154: Installing Front Output Shaft Rear Bearing Into Case Using Special Tools (205-153, 204-020)
Courtesy of FORD MOTOR CO.

24. Install the driven sprocket thrust washer.

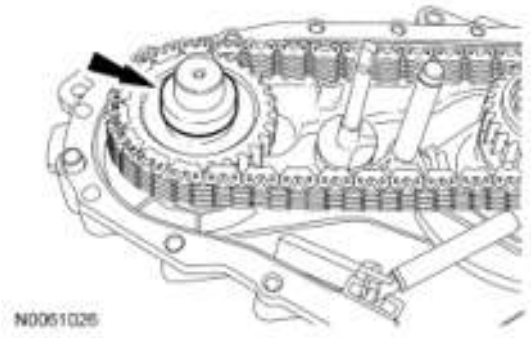


Fig. 155: Locating Driven Sprocket Thrust Washer
Courtesy of FORD MOTOR CO.

25. Using the special tools and a suitable press, install the rear output shaft rear bearing into the case.

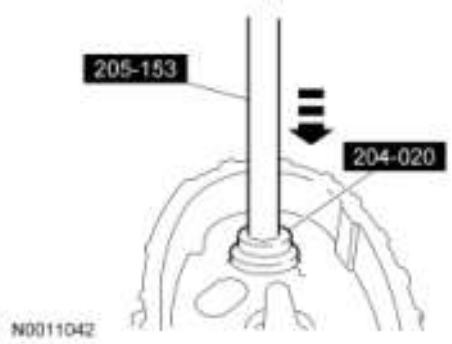


Fig. 156: Installing Rear Output Shaft Rear Bearing Into Case Using Special Tools (205-153, 204-020)
Courtesy of FORD MOTOR CO.

26. Position and support the clutch coil assembly, then install the 3 nuts.
    - Tighten to 10 N.m (89 lb-in).

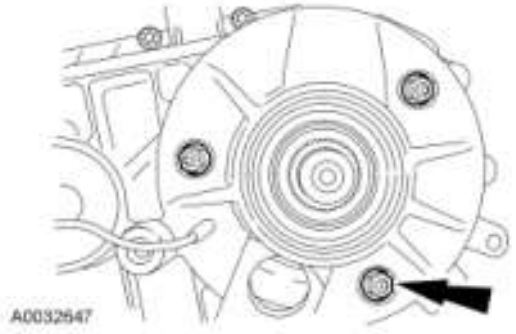


Fig. 157: Locating Clutch Coil Assembly Nuts
Courtesy of FORD MOTOR CO.

CAUTION: Applying excess silicone rubber can damage the internal components.

27. Apply a 3 mm (0.11 in) bead of silicone rubber on the rear case mating surface.

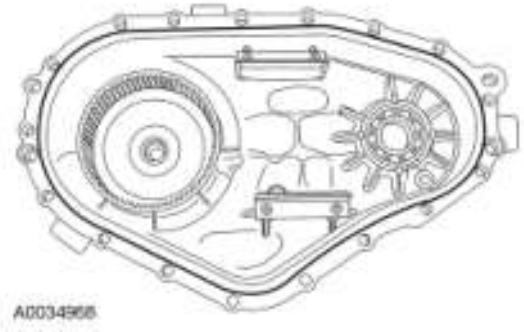


Fig. 158: Applying Bead Of Silicone Rubber On Rear Case Mating Surface
Courtesy of FORD MOTOR CO.

28. Assemble the front and rear case halves.

Fig. 159: Assembling Front And Rear Case Halves
Courtesy of FORD MOTOR CO.

29. Install the transfer case bolts.
    - Tighten to 25 N.m (18 lb-ft) evenly in a star pattern.

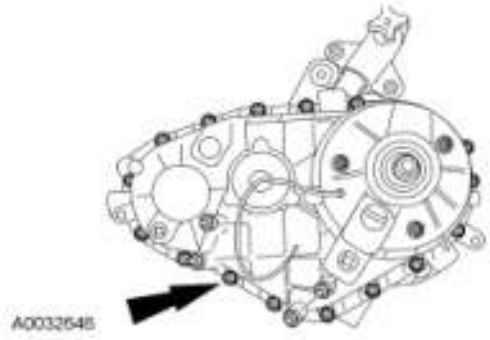


Fig. 160: Locating Transfer Case Bolts
Courtesy of FORD MOTOR CO.

30. Install the yoke-to-flange oil seal.

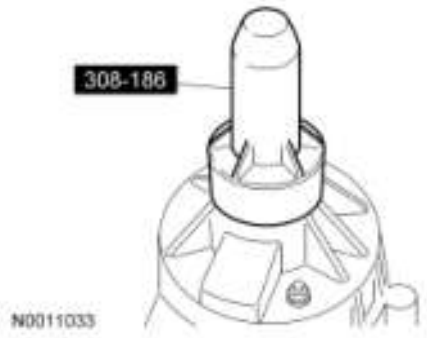


Fig. 161: Installing Rear Output Shaft Oil Seal Using Special Tools (308-186)
Courtesy of FORD MOTOR CO.

31. Install a new output flange oil seal.

NOTE: Align the index marks made during disassembly.

32. Install the output flange.
33. Install the output shaft yoke washer.

34. Using the special tool to hold the output flange and install the nut.
    - Tighten to 355 N.m (262 lb-ft).

Fig. 162: Installing Nut Using Special Tool (205-126) To Hold Output Flange
Courtesy of FORD MOTOR CO.

NOTE: Make sure the motor mounting surfaces are clean.

35. Apply a 3 mm (0.11 in) bead of sealant to the motor mounting surface on the case.

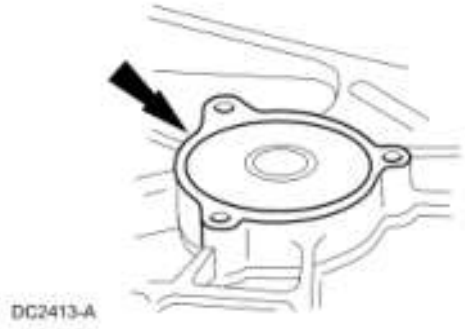


Fig. 163: Applying Bead Of Sealant To Motor Mounting Surface On Case
Courtesy of FORD MOTOR CO.

36. Position the transfer case shift motor and install the 4 bolts.
    - Tighten to 10 N.m (89 lb-in).

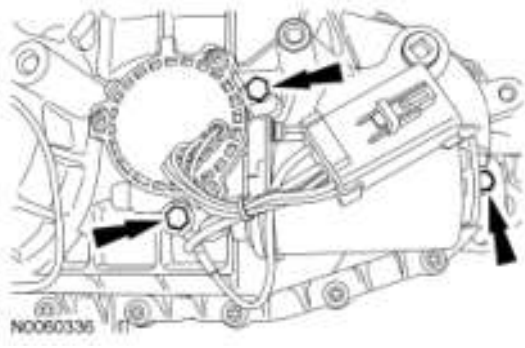


Fig. 164: Locating Transfer Case Shift Motor Bolts
Courtesy of FORD MOTOR CO.

37. Install the coil wire pin to the electrical connector.

- Install the coil wire pin (pin 16).
- Install the connector interlock.

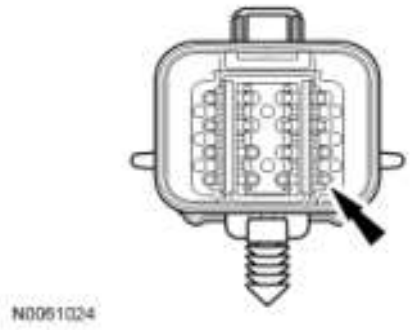


Fig. 165: Locating Coil Wire Pin
Courtesy of FORD MOTOR CO.

38. Position the heat shield and install the 3 heat shield bolts.
    - Tighten to 16 N.m (12 lb-ft).

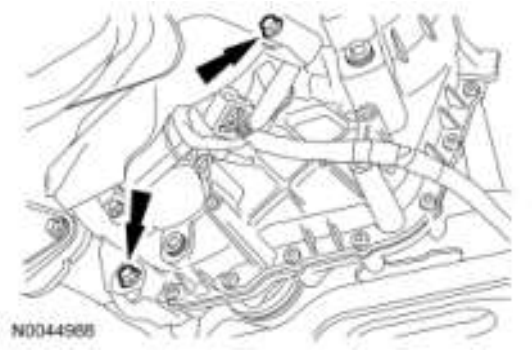


Fig. 166: Locating Heat Shield Bolts
Courtesy of FORD MOTOR CO.

39. Install the transfer case in the vehicle. For additional information, refer to **Transfer Case**.
40. Fill the transfer case. For additional information, refer to **Transfer Case Draining and Filling**.