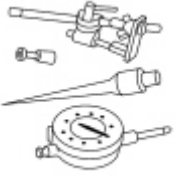
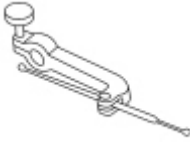





## Transmission

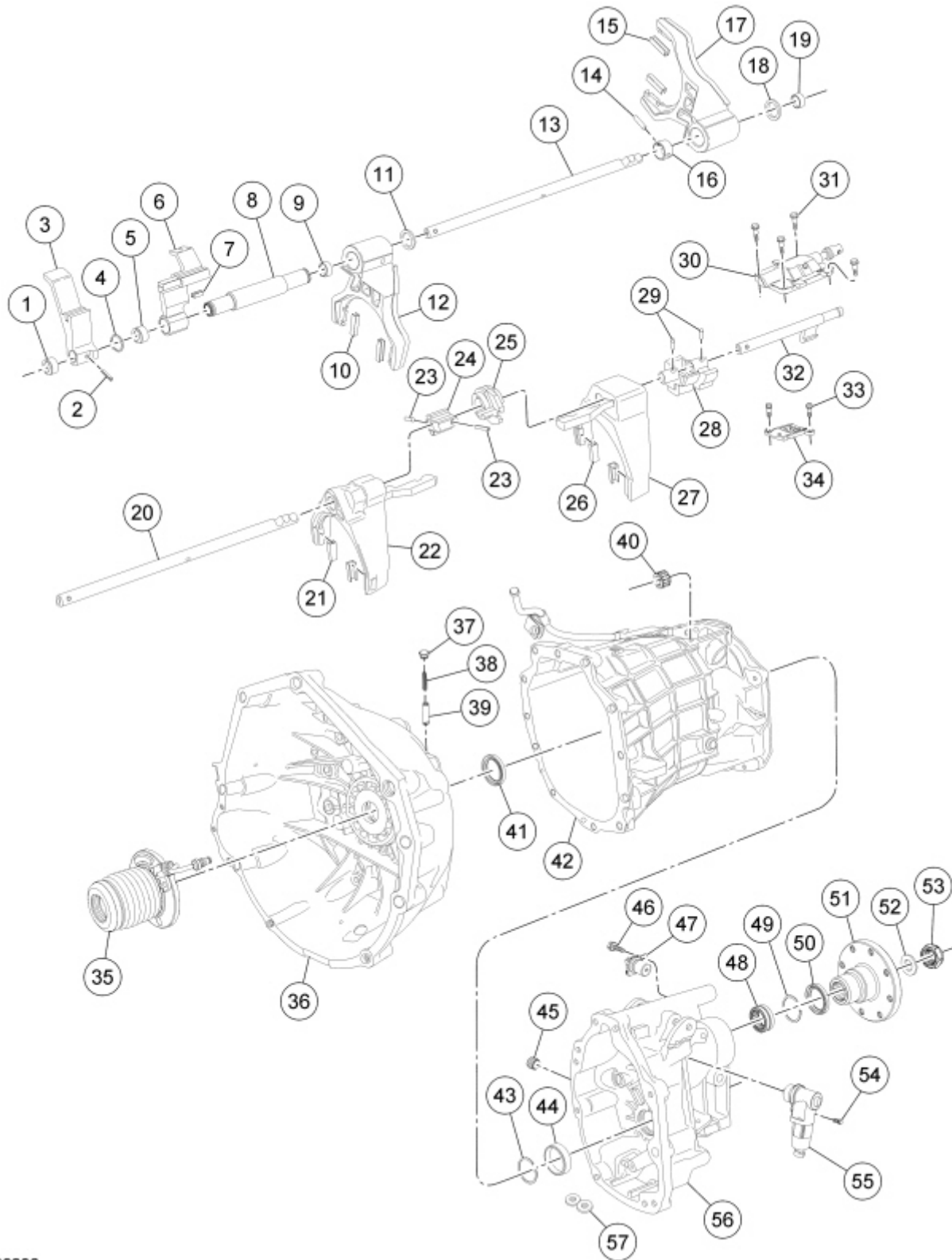
### Special Tool(s)

 <p>ST1214-A</p>	<p>Dial Indicator Gauge with Holding Fixture                  100-002 (TOOL-4201-C) or equivalent</p>
 <p>ST1348-A</p>	<p>Gauge, Clutch Housing                  308-021 (T75L-4201-A)</p>
 <p>ST1255-A</p>	<p>Handle                  205-153 (T80T-4000-W)</p>
 <p>ST1186-A</p>	<p>Holding Fixture, Transmission                  307-003 (T57L-500-B)</p>
 <p>ST2355-A</p>	<p>Installer, Input Shaft Oil Seal                  308-220 (T94P-7025-AH)</p>

### Material

Item	Specification
MERCON® V Automatic Transmission Fluid XT-5-QM (or XT-5-QMC) (US); CXT-5-LM12 (Canada)	MERCON® V
Silicone Gasket and Sealant TA-30	WSE-M4G323-A4
Threadlock and Sealer TA-25	WSK-M2G351-A5

### Transmission Case and Shift Components — Disassembled View



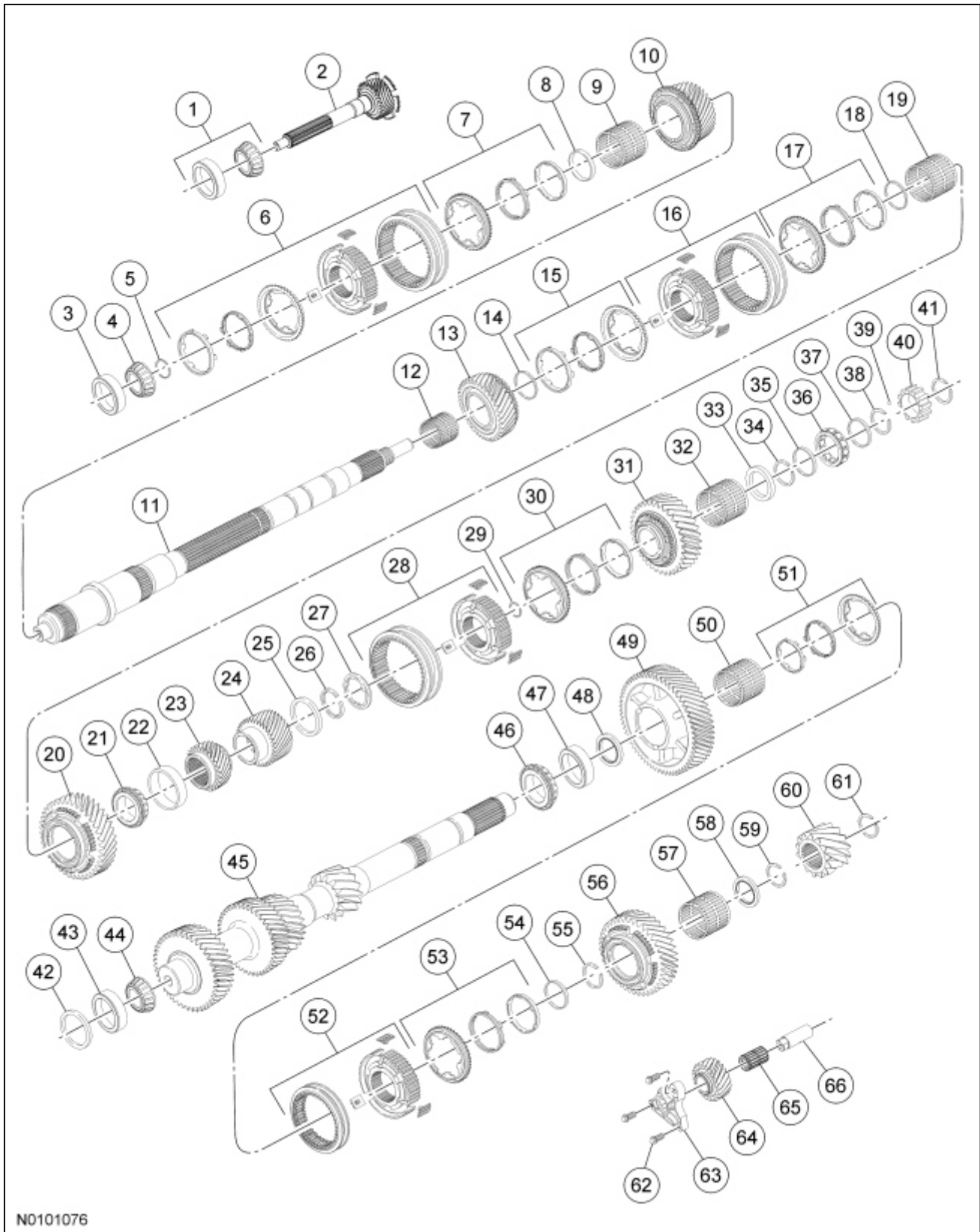
N0099296

Item	Part Number	Description
1	7W425	Shift rail bushing
2	7A082	Roll pin
3	7241	Reverse shift rail lever
4	7A082	Snap ring
5	7W425	Shift rail bushing
6	7241	5th/6th outer shift rail lever
7	7241	5th/6th outer shift lever pad

8	7241	5th/6th inner shift rail lever
9	7W425	Shift rail bushing
10	7L082	3rd/4th shift fork pad
11	7241	Washer
12	7230B	3rd/4th shift fork
13	7241	5th/6th shift rail
14	7A082	Roll pin
15	7L082	Reverse shift fork pad
16	7241	Shift rail collar
17	7230	Reverse shift fork
18	7241	Washer
19	7W425	Shift rail bushing
20	7L267	1st/2nd, 3rd/4th shift rail
21	7L082	5th shift fork pad
22	7230	5th shift fork
23	7A082	Roll pins
24	7814	Selector pin
25	7K201	Interlock plate
26	7L082	1st/2nd shift fork pad
27	7230	1st/2nd shift fork
28	—	Shift gate
29	7A082	Roll pins
30	7C453	Shift cover assembly
31	—	Shift cover bolt (4 required)
32	—	Shift guide rail
33	—	Shift guide plate bolt (2 required)
34	7F476	Shift guide plate
35	7A508	Clutch slave cylinder
36	6392	Clutch housing
37	7234	Shift detent plug
38	7234	Shift detent spring
39	7234	Shift detent
40	7127	Top shift rail bearing
41	7052	Input shaft seal
42	7005	Transmission main case
43	7A082	Snap ring
44	7025	Output shaft bearing cup
45	7A010	Case plug
46	7A443	Output Shaft Speed (OSS) sensor bolt
47	7H103	<a href="#">OSS</a> sensor
48	7025	Output shaft bearing
49	7A082	Output shaft bearing snap ring
50	7052	Extension housing seal
51	7089	Output flange

	7119	Thrust washer
53	7K440	Output flange nut
54	—	Reverse lockout solenoid bolt
55	7374	Reverse lockout solenoid
56	7A039	Extension housing
57	7L027	Magnet

**Transmission Gear Assemblies — Disassembled View**



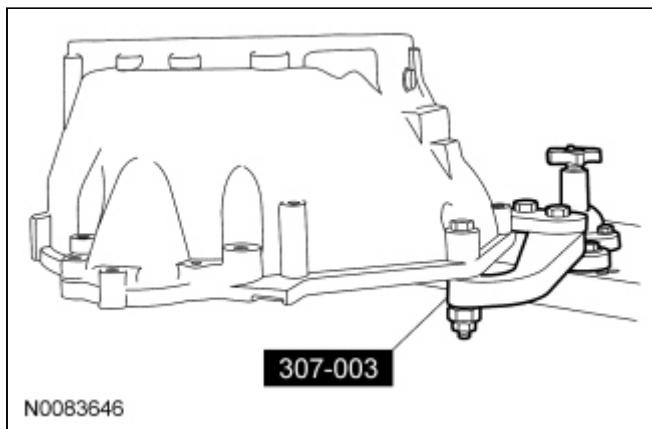
ND101076

Item	Part Number	Description
1	7025	Input shaft bearing
2	7017	Input shaft
3	—	Output shaft bearing race
4	7025	Output shaft front bearing
5	7A082	Snap ring
6	7124	3rd/4th synchronizer assembly
7	7107	3rd/4th synchronizer blocking ring assembly

8	7117	Spacer
9	7025	3rd gear needle bearing
10	7B340	3rd gear
11	7061	Output shaft
12	7025	2nd gear needle bearing
13	7102	2nd gear
14	7117	Spacer
15	7107	2nd gear synchronizer blocking ring assembly
16	7124	1st/2nd synchronizer assembly
17	7117	1st gear synchronizer blocking ring assembly
18	7050	Spacer
19	7025	1st gear needle bearing
20	7100	1st gear
21	7025	Output shaft rear bearing
22	7025	Output shaft bearing race
23	7L047	6th driven gear
24	7K316	5th driven gear
25	7A082	Thrust washer
26	7A082	Split washer
27	—	Synchronizer cone (part of 7107)
28	7124	Reverse synchronizer assembly
29	7A082	Snap ring
30	7107	Reverse gear synchronizer blocking ring assembly
31	7C238	Reverse gear
32	7N168	Reverse gear needle bearing
33	7A385	Thrust washer
34	7A082	Snap ring
35	7A082	Spacer
36	7025	Rear output shaft bearing
37	7A082	Spacer
38	7A082	Snap ring
39	7E172	Check ball
40	7H150	Speedometer rotor
41	7A082	Snap ring
42	7L172	Shim
43	7025	Countershaft front bearing race
44	7025	Countershaft front bearing
45	7113	Countershaft
46	7025	Countershaft rear bearing
47	7025	Countershaft rear bearing race
48	7025	Thrust washer
49	7146	6th gear
50	7025	6th gear needle bearing
51	7107	Synchronizer blocking ring assembly

	7124	5th/6th synchronizer assembly
53	7107	Synchronizer blocking ring assembly
54	7117	Spacer
55	7A082	Snap ring
56	7144	5th gear
57	7025	5th gear needle bearing
58	7025	Thrust washer
59	7A082	Snap ring
60	—	Reverse driver gear
61	7A082	Snap ring
62	7C211	Reverse idler shroud bracket bolt
63	7723	Reverse idler shaft bracket
64	7141	Reverse idler gear
65	7025	Reverse idler gear needle bearing
66	7140	Reverse idler gear shaft

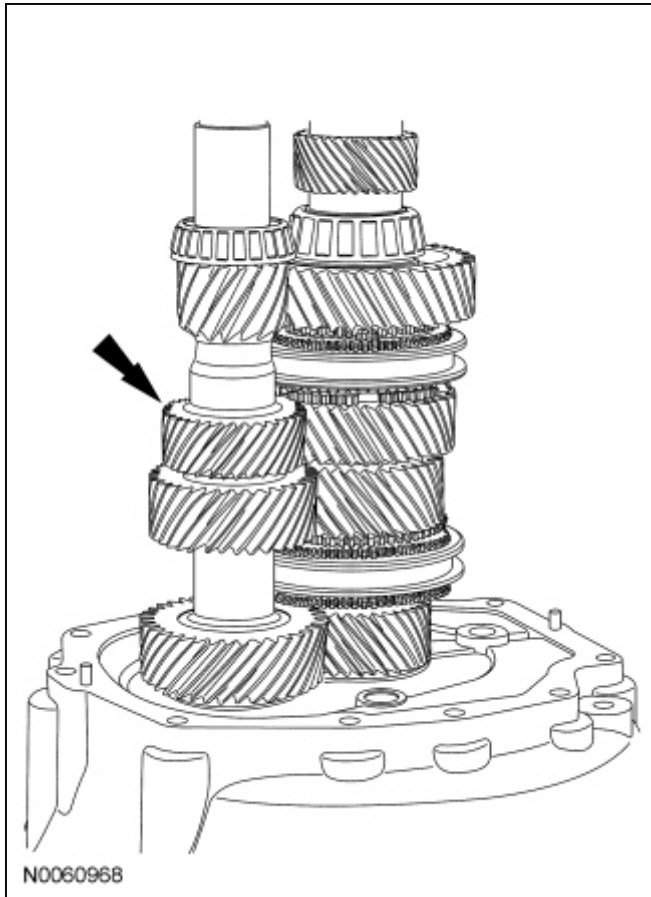
1. Lubricate all components with transmission fluid during assembly.
2. Attach the transmission clutch housing to the Transmission Holding Fixture.



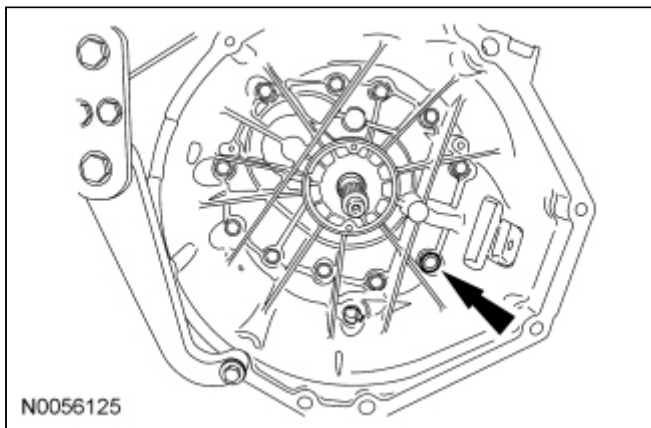
3. **NOTE:** If a new front input shaft bearing or front countershaft bearing was installed, install the new bearing cups.

Install the input shaft bearing cup and the countershaft bearing cup. Do not install the shims at this time.

4. Install the input shaft.
5. Install the output shaft onto the input shaft.
6. Install the countershaft.
  - Lift the output shaft upward, tilt the countershaft and install.



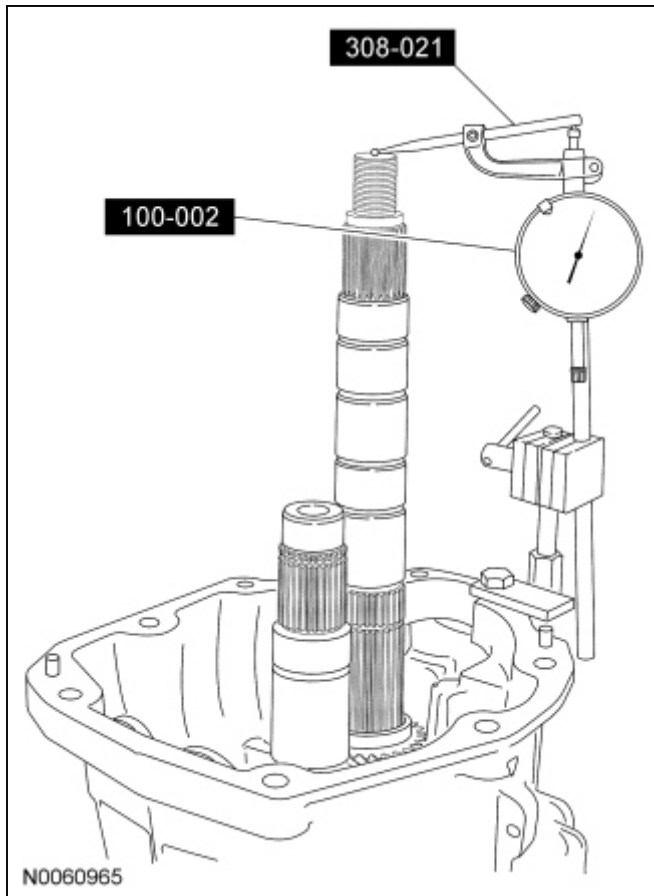
7. Install the transmission main case-to-clutch housing bolts.
  - Tighten to 48 Nm (35 lb-ft).



8. **NOTE:** Rotate the input shaft/output shaft to seat the bearings.

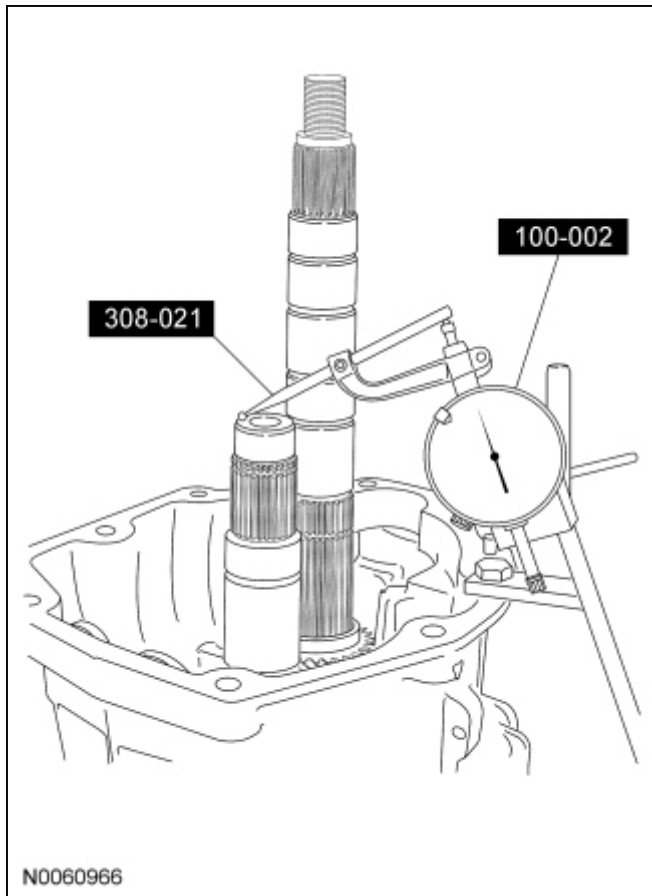
Using the Dial Indicator Gauge with Holding Fixture and the Clutch Housing Gauge, measure the input shaft/output shaft end play by applying an upward load on the input shaft. Record the measurement.



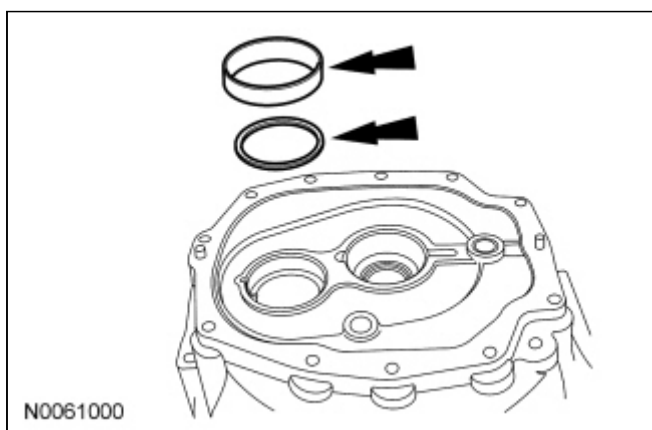


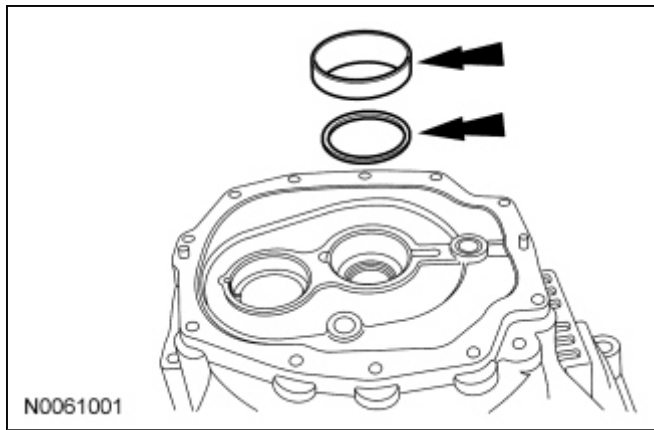
9. Reposition the Dial Indicator Gauge with Holding Fixture and the Clutch Housing Gauge on the countershaft.
10. **NOTE:** Rotate the countershaft to seat the bearings.

Using the Dial Indicator Gauge with Holding Fixture and the Clutch Housing Gauge, measure the countershaft gear end play by pulling upward on the countershaft. Record the measurement.

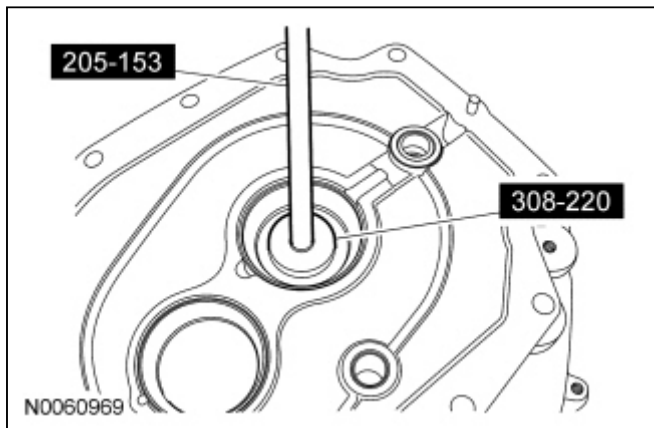


11. Remove the transmission case.
12. Remove the countershaft.
13. Remove the output shaft.
14. Remove the input shaft.
15. Remove the input shaft bearing cup and the countershaft bearing cup.
16. Using the recorded end play measurements, select and install the appropriate shims to achieve the correct end play. Input shaft, output shaft and countershaft endplay specification is 0.0127-0.0889 mm (0.0005-0.0035 in). Install the front input shaft bearing cup and the front countershaft bearing cup.
  - Lubricate the bearing cups with petroleum jelly.

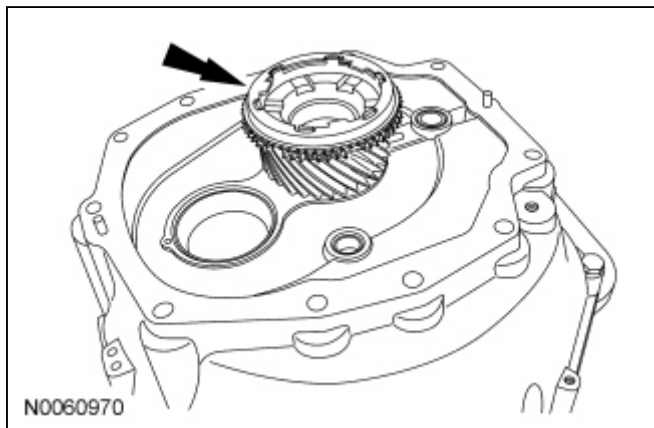




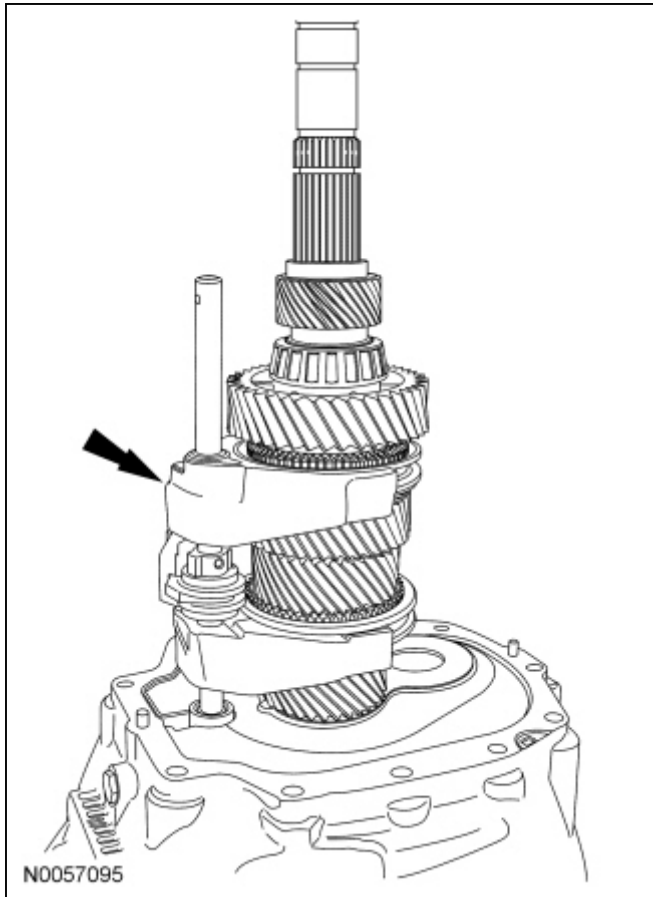
17. Using the Input Shaft Oil Seal Installer with Handle, install the new input shaft seal.



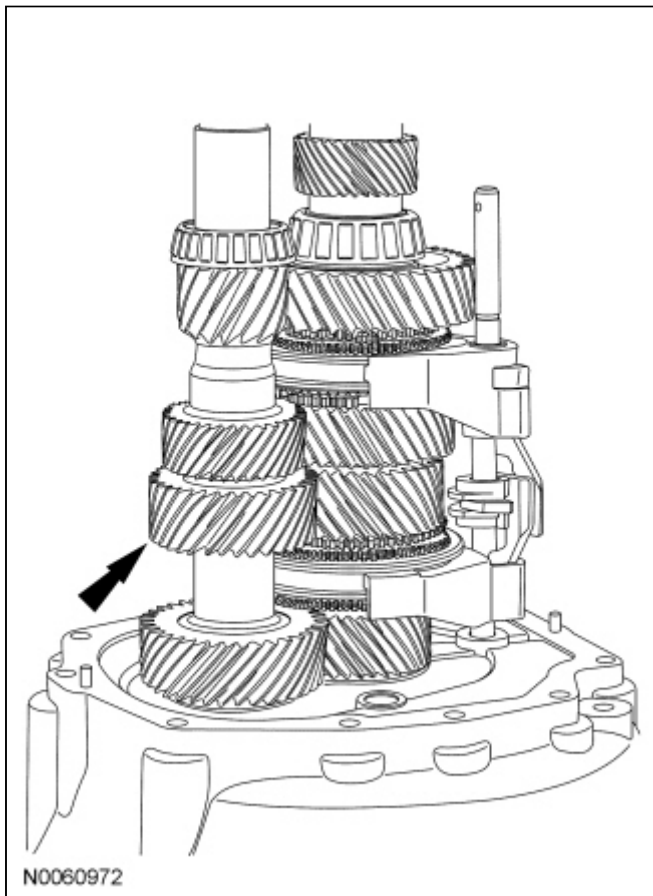
18. Install the input shaft and 4th gear synchronizer blocking ring.



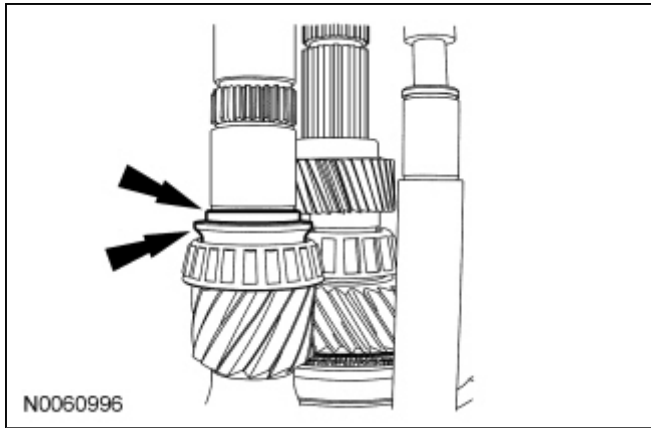
19. Assemble the shift rail assembly to the output shaft, then install the output shaft and shift rail as an assembly.
- Rotate the output shaft to engage the 4th gear synchronizer blocking ring with the synchronizer keys.



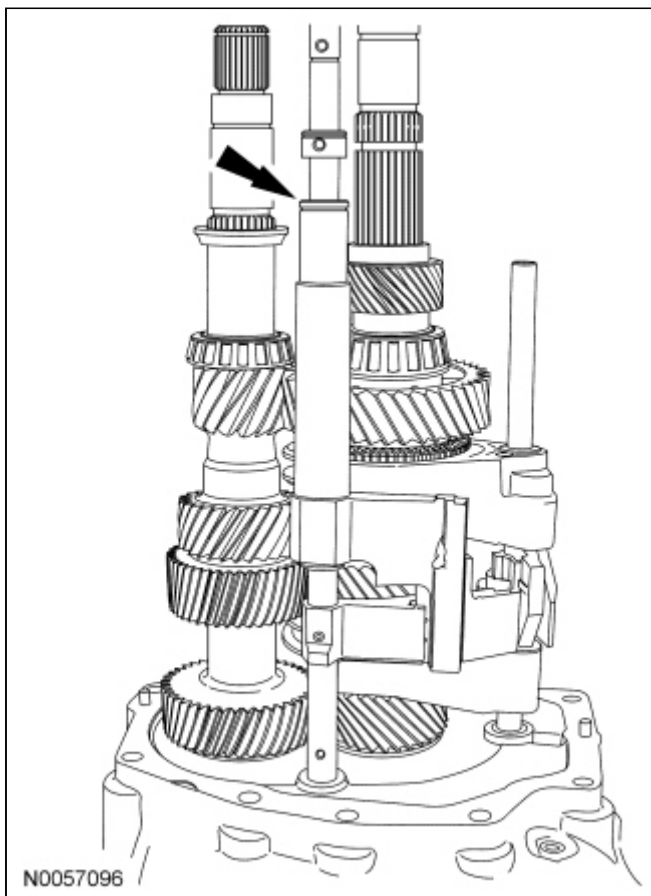
20. Lift up the output shaft, then install the countershaft.



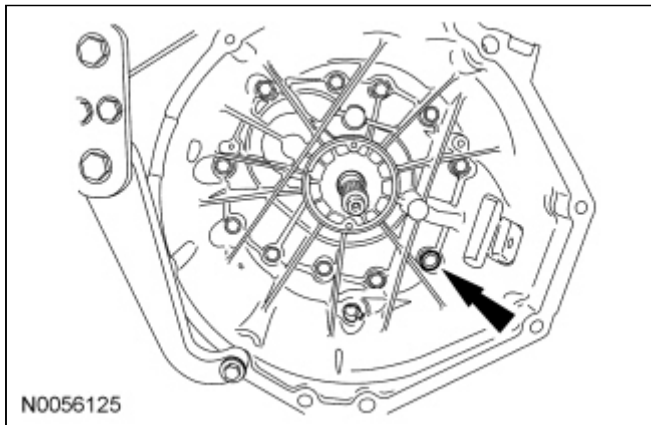
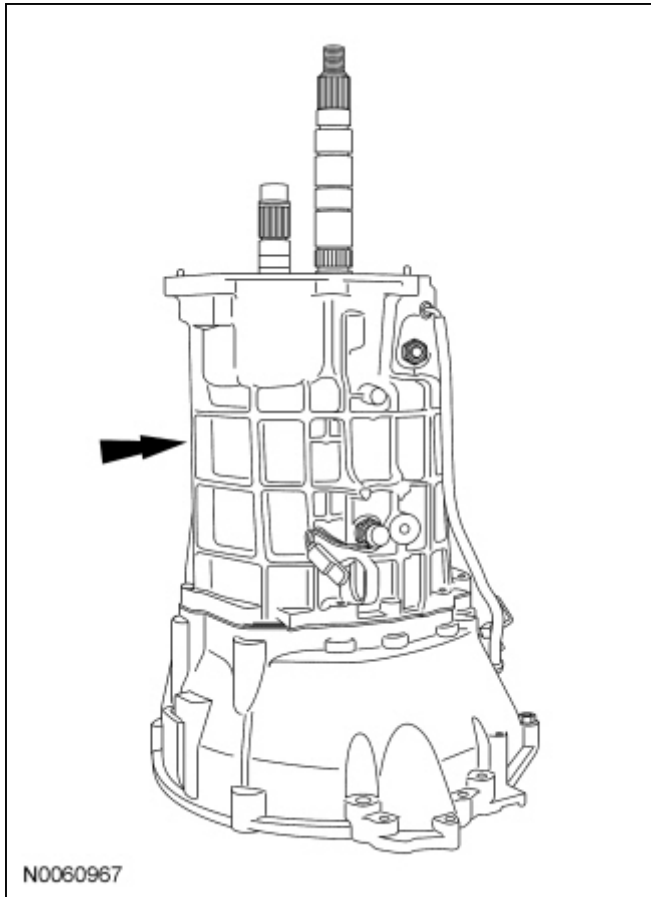
21. Install the 6th gear spacer and thrust washer.



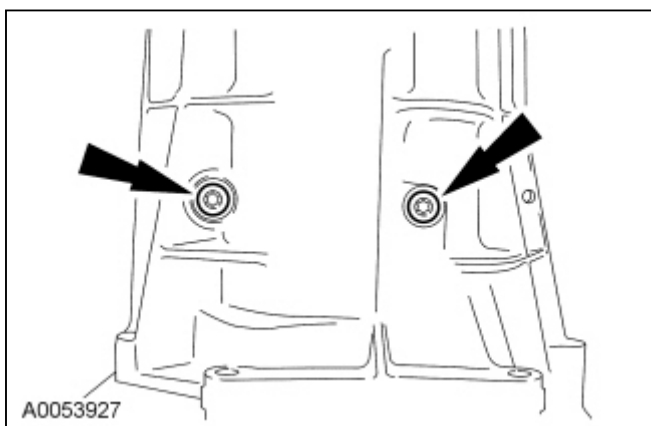
22. Install the 5th/6th and reverse shift rail assembly and align the slots of the shift levers with the shift interlock plate.



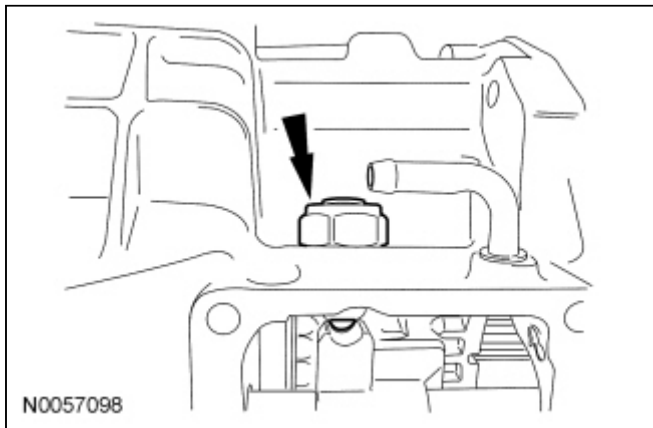
23. Clean the mating surfaces of the transmission main case and the transmission clutch housing. Apply a bead of silicone rubber to the sealing surface on the transmission clutch housing. Install the transmission main case and the front offset lever.
- Make sure the transmission is in NEUTRAL to keep the 3rd/4th gear shift rail from engaging. Check for correct alignment of roller with top shift rail.
  - Tighten the bolts in a star pattern to 48 Nm (35 lb-ft).



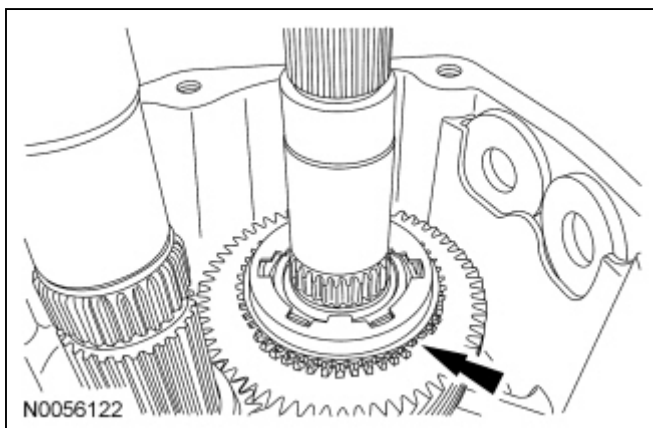
24. Apply threadlock and sealer to the threads of the shift lever guide bolts, then install the bolts.
- Tighten to 27 Nm (20 lb-ft).
  - Pull up on the 5th/6th shift rail to align the slot of the interlock plate with the guide bolt hole.



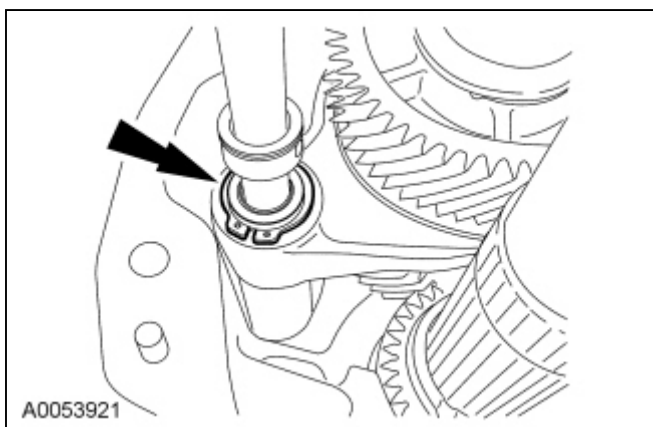
25. Install a new front offset lever roll pin.
  - Install the pin until it is flush with the lever.
26. Apply threadlock and sealer to the threads of the shift detent, then install the shift detent assembly.
  - Tighten to 40 Nm (30 lb-ft).



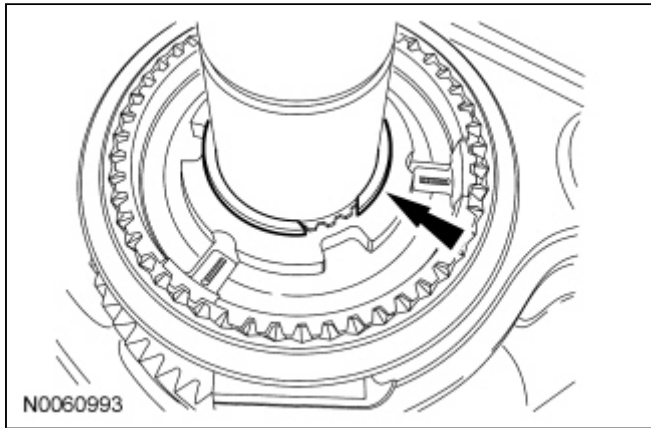
27. Install the 5th/6th gear needle bearing.
28. Install 5th/6th gear, then install the 5th/6th gear synchronizer double cone and blocking ring as an assembly.
  - Before installing the blocking ring, index-mark the blocking ring to the synchronizer hub.



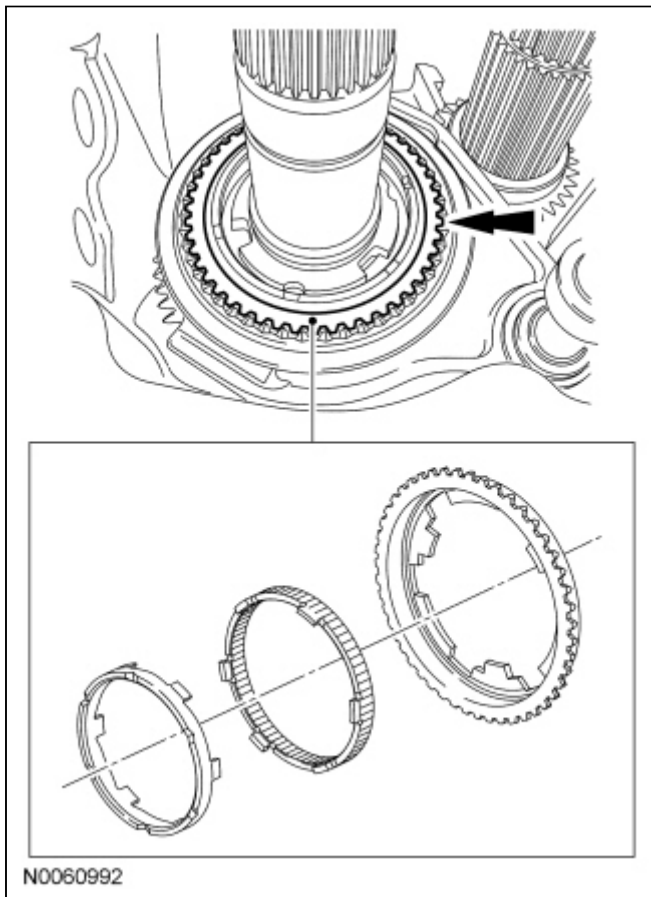
29. Install the 5th/6th gear shift fork and the 5th/6th gear synchronizer as an assembly.
  - The synchronizer hub has a tight fit on the shaft, and may need to be installed separately.
  - Make sure the synchronizer hub is correctly aligned with the blocking ring.
30. Install the new 5th/6th shift fork snap ring.



31. Install a new snap ring on the countershaft.

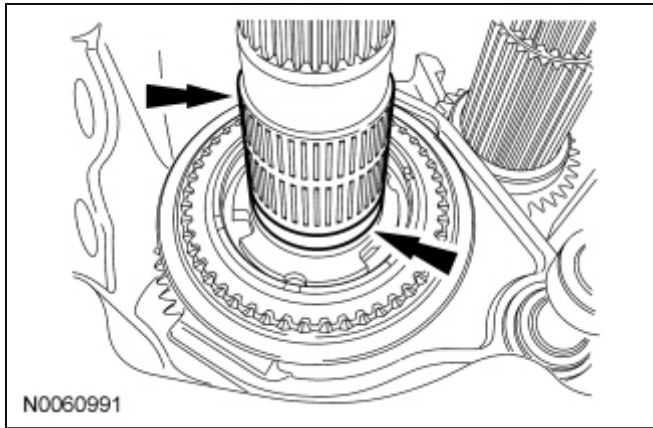


32. Install the 5th/6th gear synchronizer double cone and blocking ring as an assembly.



33. Install the spacer and the 5th drive gear needle bearing.

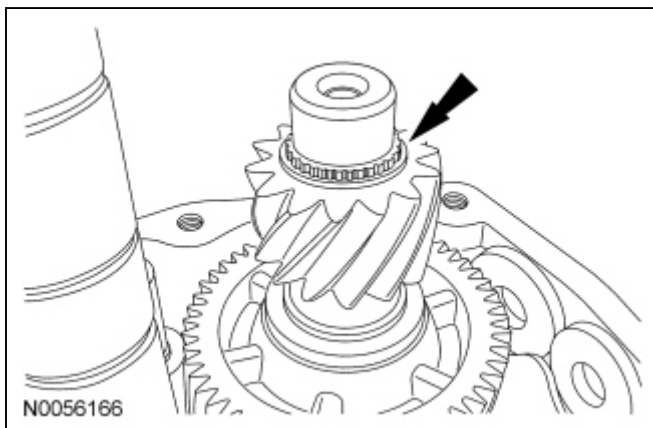




34. Install the following components:
- The 5th drive gear.
  - The 5th drive gear thrust washer.
  - A new 5th drive gear snap ring.

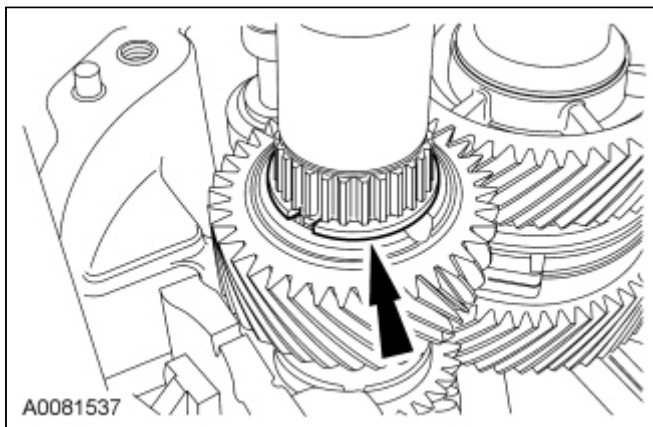
35. Using a suitable driver, install the reverse drive gear.

36. Install a new reverse drive gear snap ring.

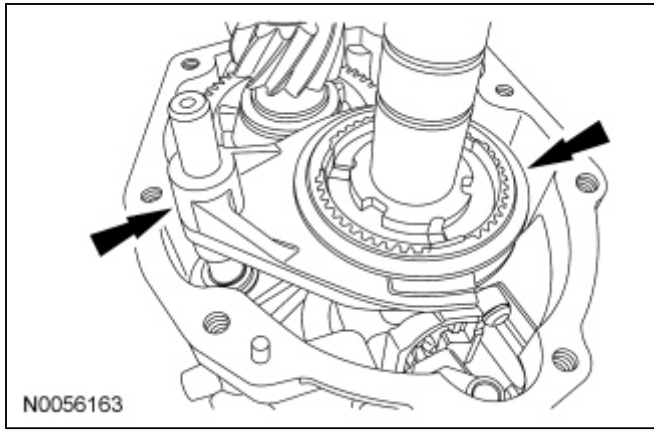


37. Using a suitable tool, press the 5th driven gear.
- Align the splines of the 5th driven gear with the drive gear on the countershaft extension.

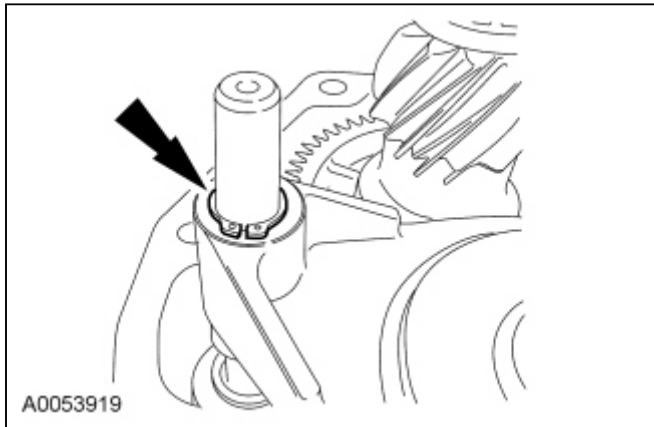
38. Install the split ring and retainer.



39. Install the reverse shift fork, the reverse synchronizer and the strut retainer as an assembly.
- The synchronizer hub has a tight fit on the shaft and may need to be installed separately.

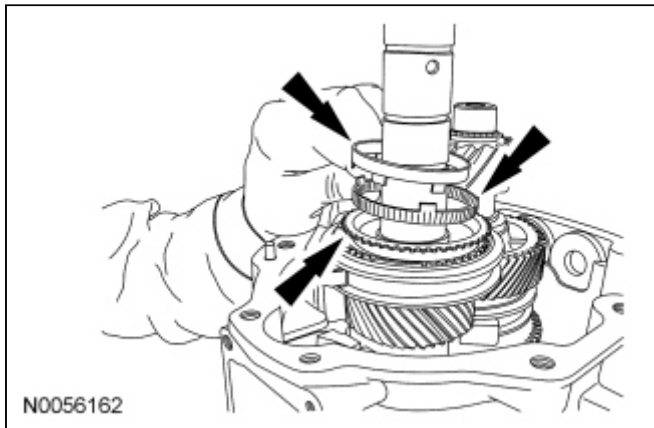


40. Install a new reverse shift fork snap ring.

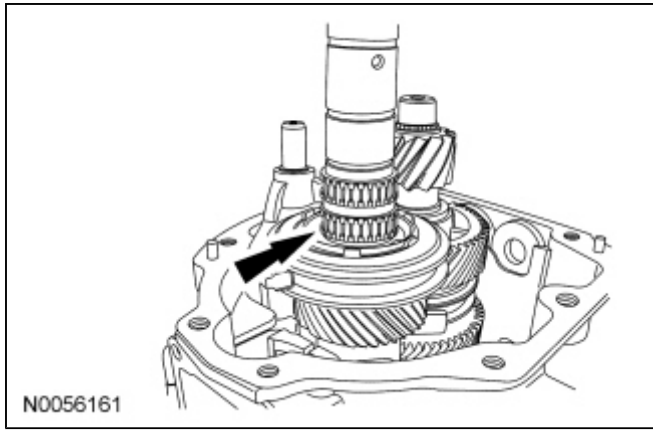


41. Install a new reverse gear synchronizer snap ring.

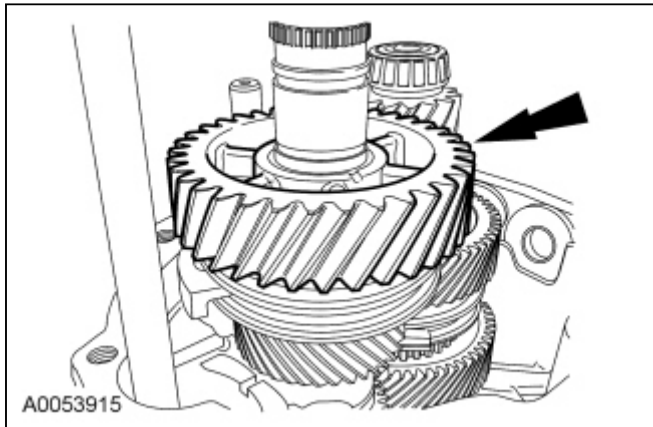
42. Install the reverse gear synchronizer blocking rings.



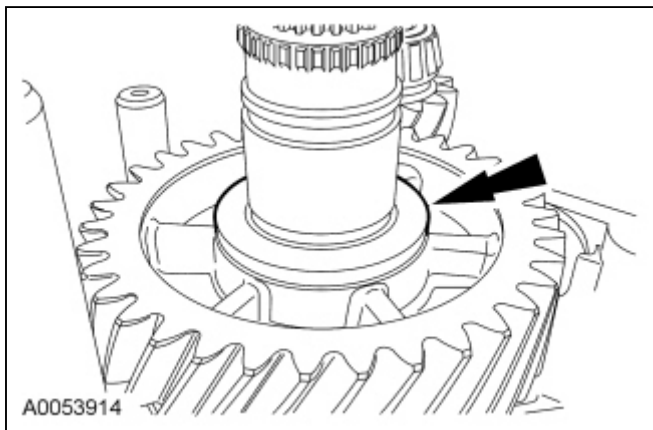
43. Install the reverse gear needle bearing.



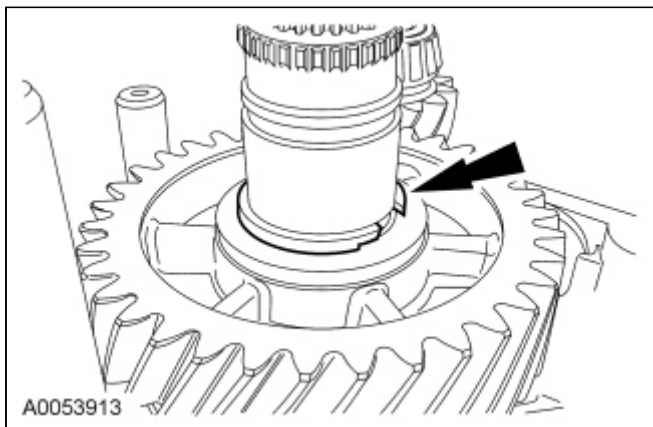
44. Install the reverse gear.



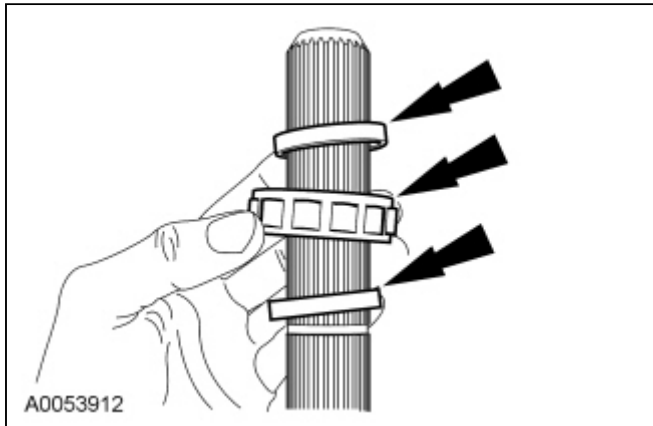
45. Install the reverse gear thrust washer.



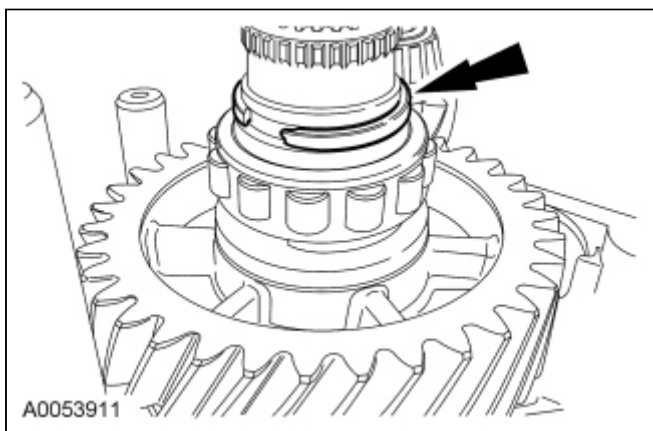
46. Install a new reverse gear snap ring.



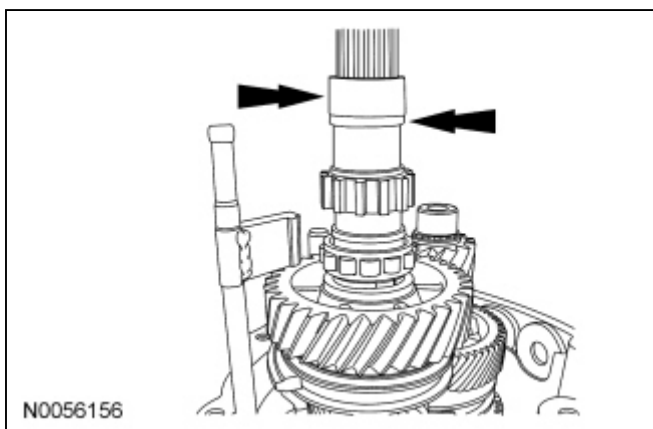
47. Install the lower spacer, the rear output shaft roller bearing and the upper spacer.



48. Install a new rear output shaft roller bearing snap ring.

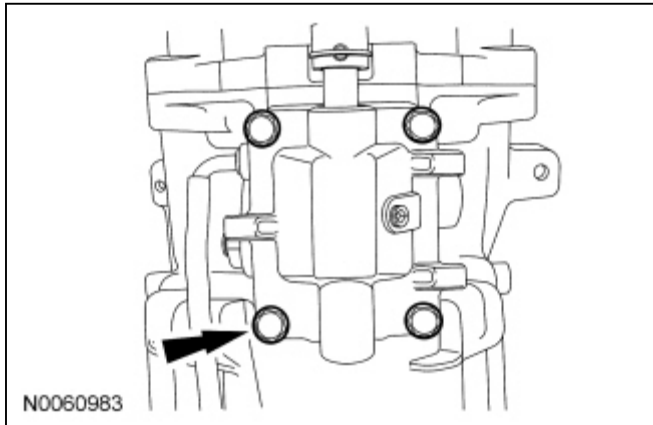


49. Position the check ball on the shaft. Install the Output Shaft Speed (OSS) sensor tone wheel. Install a new OSS sensor tone wheel retaining ring.
50. Install the reverse shift rail, then install a new reverse shift rail roll pin.
- Install the pin until it is flush with the lever.
51. Install the bearing spacer and the race.



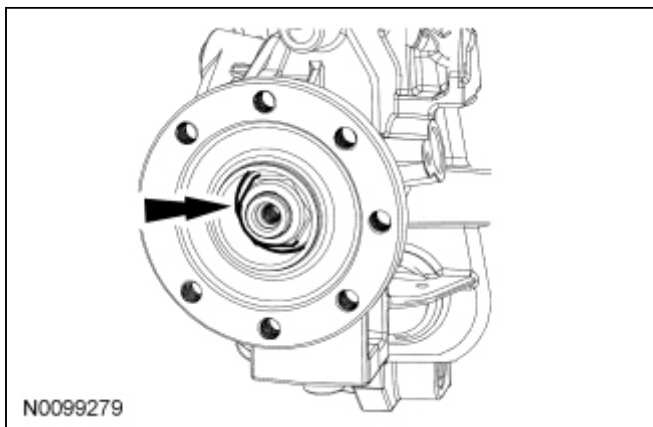
52. Clean the mating surfaces of the transmission main case and the extension housing. Apply a bead of silicone rubber to the sealing surface on the transmission case. Install the extension housing and tighten the bolts.
- Tighten to 48 Nm (35 lb-ft).
53. Install the vent hose.

54. Install the shift detent cover and the 4 shift detent cover bolts.
- Tighten to 20 Nm (177 lb-in).

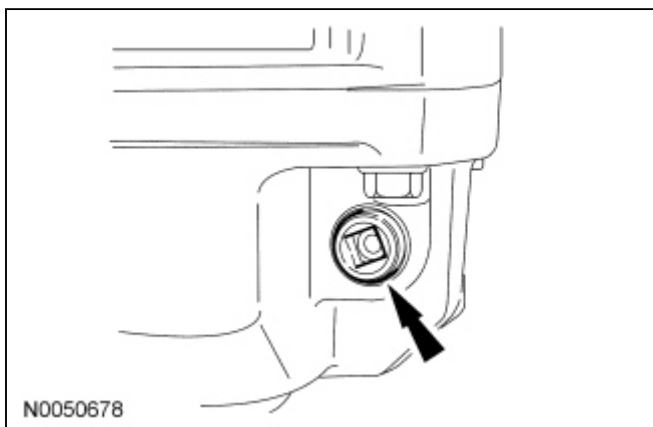


55. Install the output shaft flange.

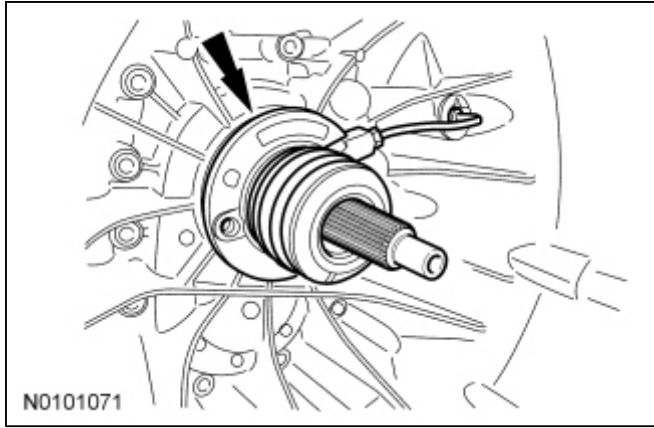
56. Install the output shaft flange nut as follows:
- Using the old flange nut, tighten to 135 Nm (100 lb-ft).
  - Remove the nut and discard.
  - Install a new flange nut and tighten to 142 Nm (105 lb-ft).



57. Apply threadlock and sealer to the drain plug threads. Install the drain plug.
- Tighten to 27 Nm (20 lb-ft).



58. Install the clutch slave cylinder and the 2 clutch slave cylinder bolts.
- Tighten to 12 Nm (106 lb-in).



59. Install the clutch hydraulic tube and clip to the connector.

