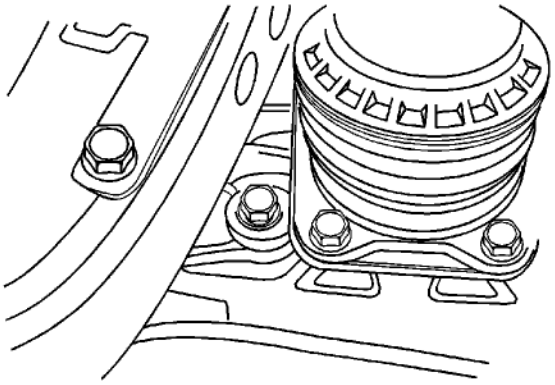
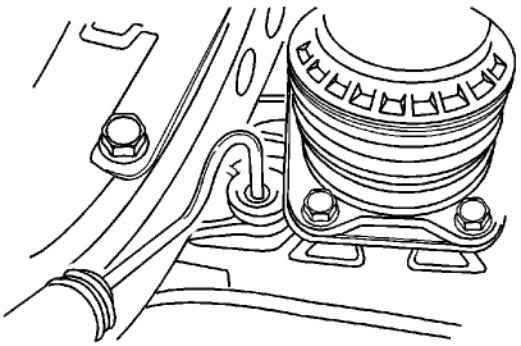
Transmission Fluid Level Inspection

Warning: Refer to Checking Hot Transmission Fluid through Drain Plug Hole Warning in the Preface section.



1. With the vehicle on a level surface and the fluid in the transaxle cold, remove the filler plug and check the fluid level. The fluid should come to the bottom edge of the plug hole.



2. If the level is low, add SAE 75W-85 GL-4 manual transaxle fluid through the filler plug hole until the fluid begins to run out.

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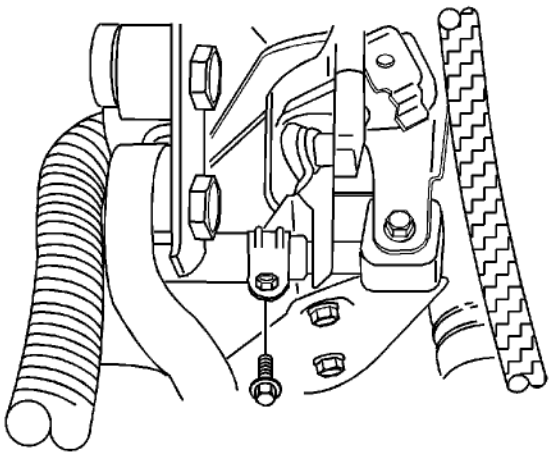
3. Reinstall the filler plug and tighten to **28 N·m (21 lb ft)**.
4. If the fluid is contaminated, drain the oil after removing the differential gear cover.

Shift Linkage Adjustment

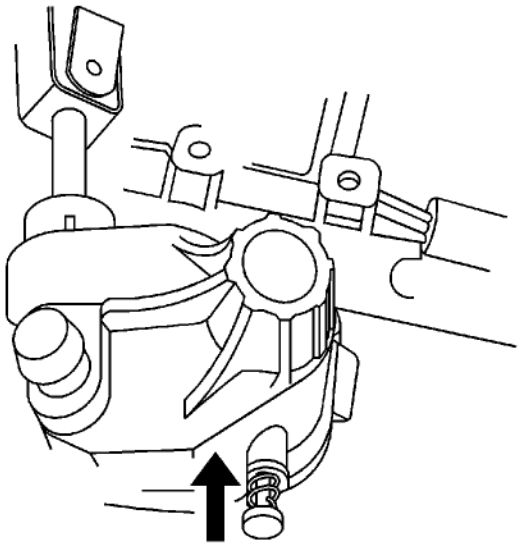
Warning: Refer to Battery Disconnect Warning in the Preface section.



1. Disconnect the negative battery cable.
2. Position the gearshift lever into Neutral.

Note: All the gears must be easy to engage when the vehicle is stationary, the engine is running, and the clutch is disengaged.

3. Loosen the rod clamp bolt.



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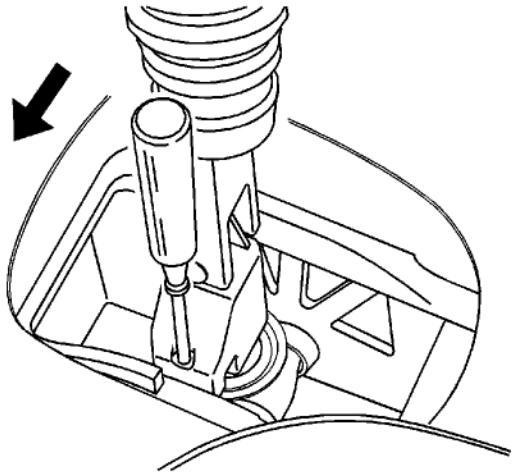
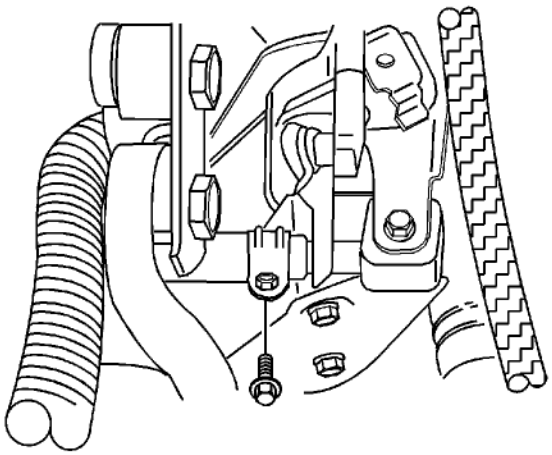
4. Turn the gearshift rod then depress the adjusting pin.

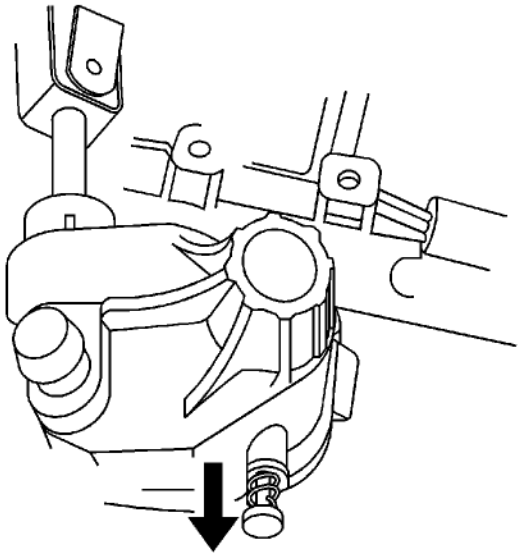


5. Remove the boot from the console.
6. Pull the boot upward to expose the shift control lever mechanism.
7. Position the gearshift lever close to the left side of the NEUTRAL position.
8. Insert a 5 mm (0.2 in) gage pin into the holes to align the gearshift lever with the gearshift lever housing.

Caution: Refer to Fastener Caution in the Preface section.



9. Tighten the rod clamp bolt to **14 N·m (124 lb in)**.



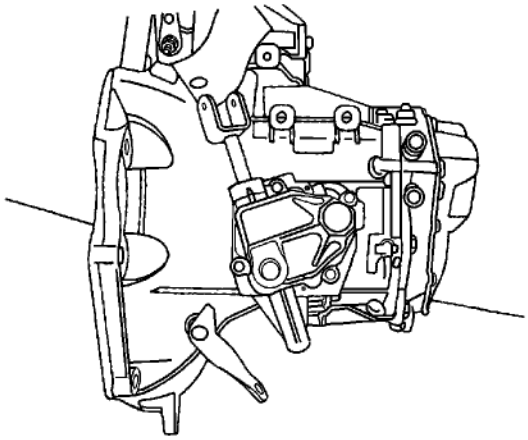
10. Turn the gearshift rod to release the adjusting pin.
11. Remove the 5 mm (0.2 inch) gage pin from the gearshift lever.
12. Connect the negative battery cable.
13. Install the boot to the console.

Transmission Disassemble

Special Tools

- J 3289-20 (KM 113-2) Holding Fixture
- J 6125-B Slide Hammer
- J 22888-20A Bearing Puller with J 22888-35 Puller Legs
- J 36633 Snap Ring Retainer
- J 42469 Shift Rod Remover
- KM-552 Fixture
- KM-553-A Fifth Gear Puller

Disassembly Procedure



1. Remove the transaxle from the vehicle. Refer to Transmission Replacement.
2. Remove the filler plug at the cover.

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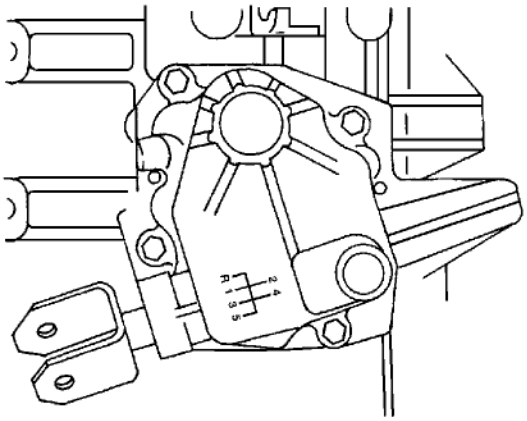
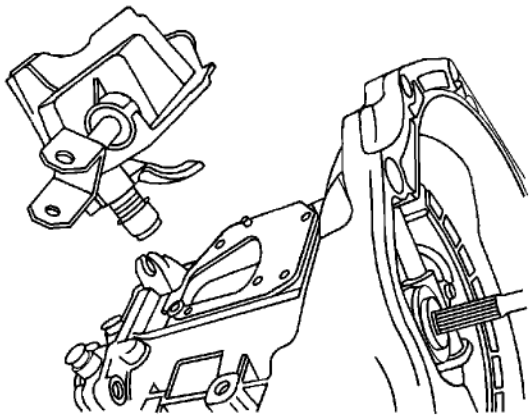
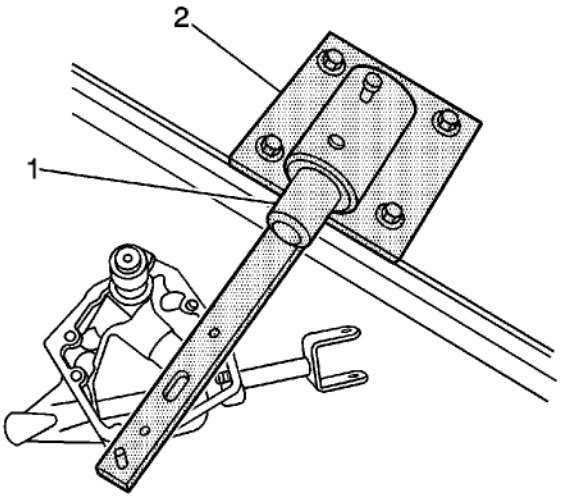


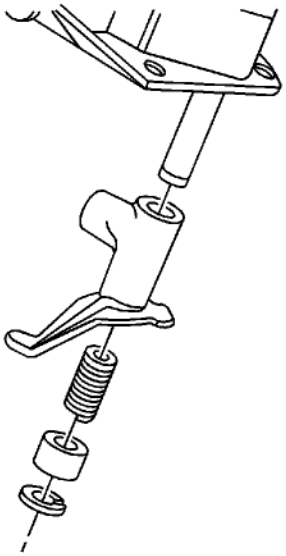
3. Remove the bolts from the gearshift lever cover.



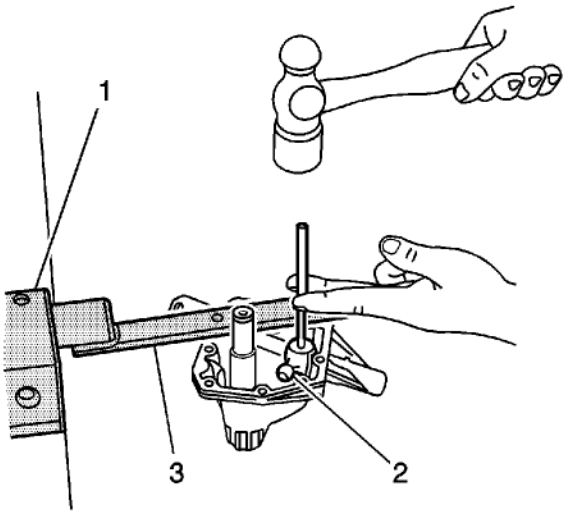
4. Remove the gearshift lever cover.



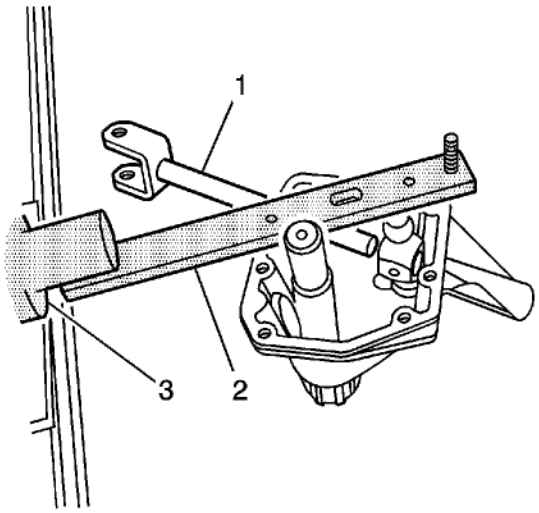
5. Bolt the gearshift lever cover to KM-552 (1).
6. Position KM-552 into J 3289-20 (2).



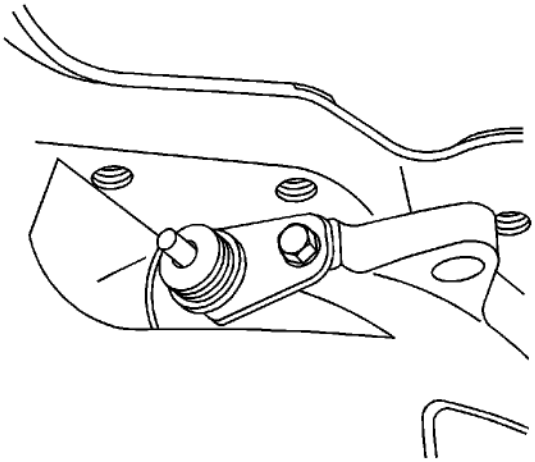
7. Remove the snap ring, the bushing, the spring, and the intermediate lever.



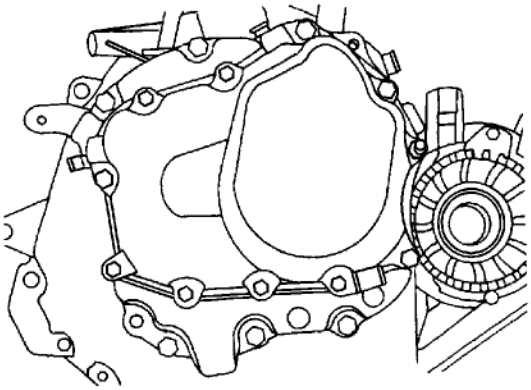
8. Remove the shift finger lever pin (2).



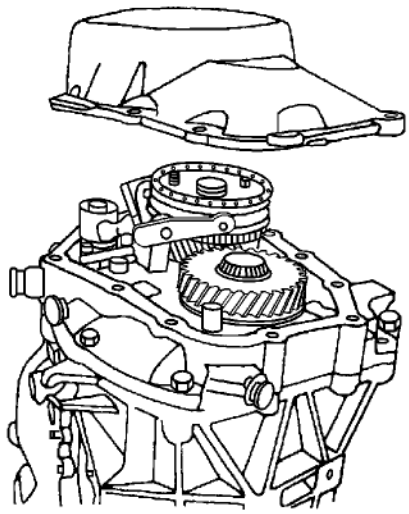
9. Remove the gearshift rod (1) and the shift finger lever.



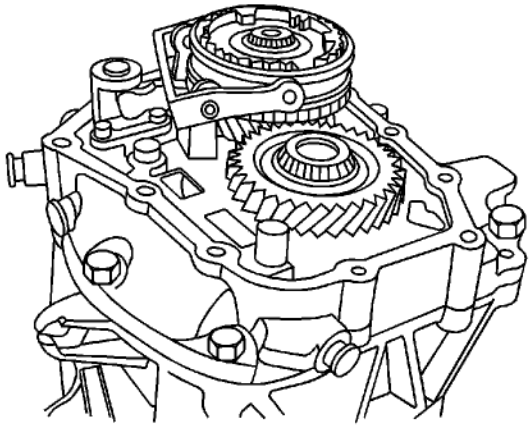
10. Remove the bolt and the speedometer-driven gear from the transaxle housing.



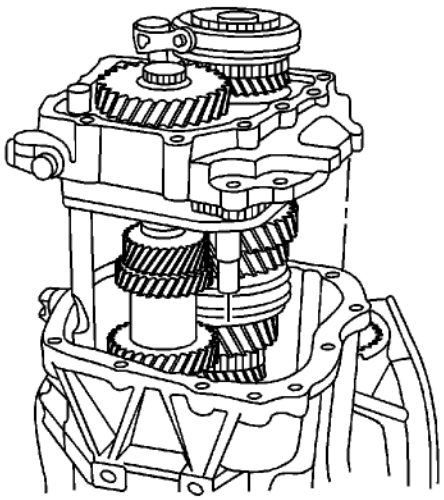
11. Remove the transaxle cover bolts.



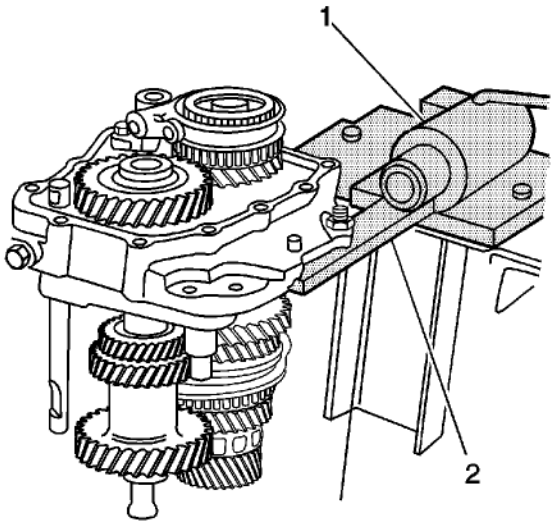
12. Remove the transaxle cover.



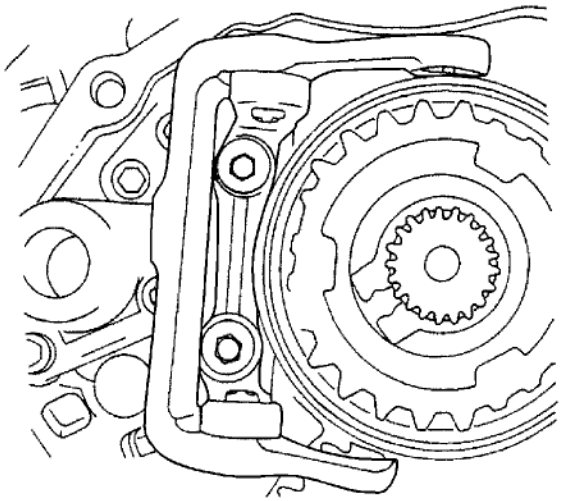
13. Shift the transaxle into 2nd gear.
14. Remove the bearing plate bolts.



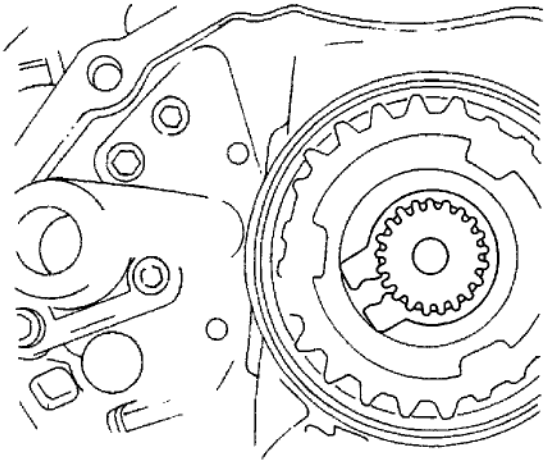
15. Remove the bearing plate from the case with the shafts attached.



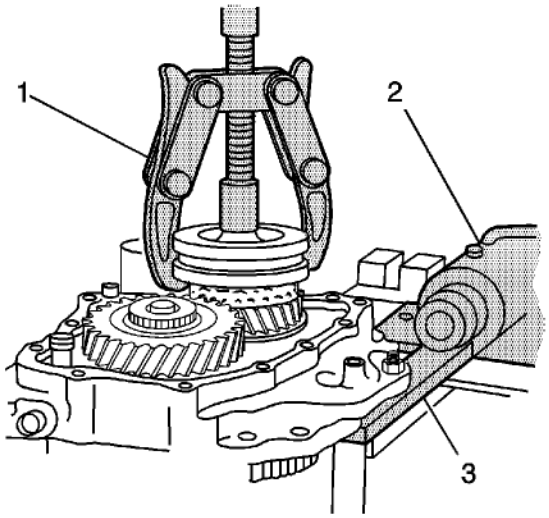
16. Shift the transaxle into reverse (R).
17. Bolt the bearing plate to KM-552 (2) and install KM-552 (2) into J 3289-20 (1).



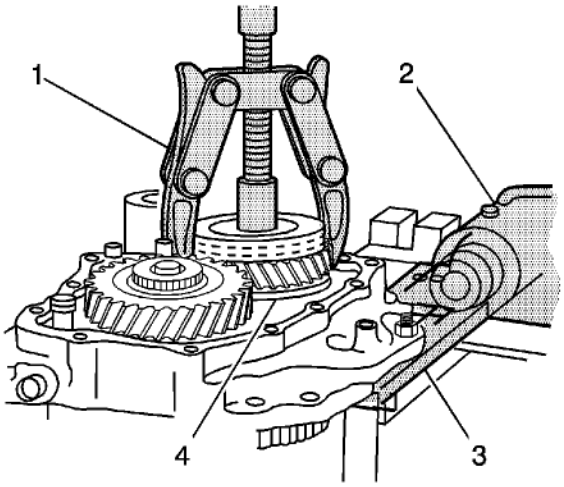
18. Remove the bolts and the 5th gear fork from the bearing plate.



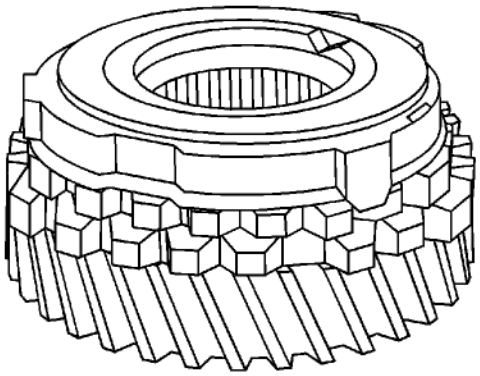
19. Remove the mainshaft-driven 5th speed assembly snap ring.



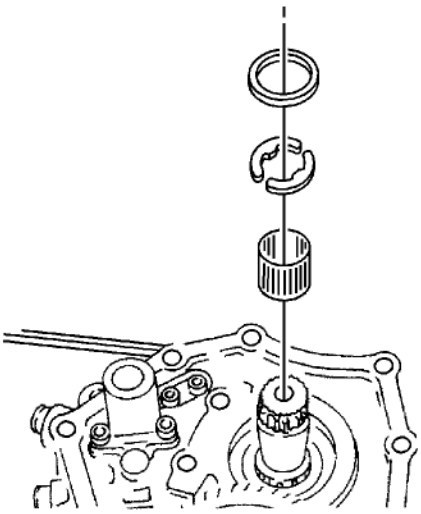
20. Remove the 5th driven gear synchronizer sleeve and the synchronizer gear using J 22888-20A (1) with the puller legs J 22888-35.



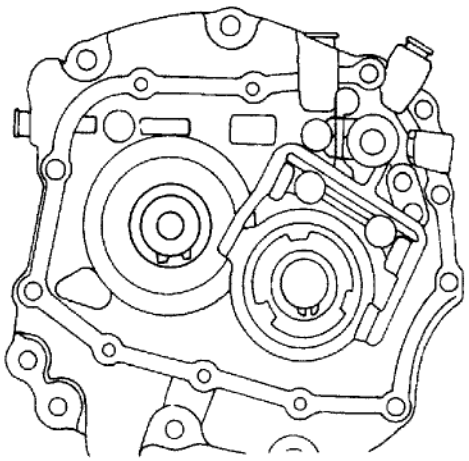
21. Remove the mainshaft-driven 5th gear assembly (4).



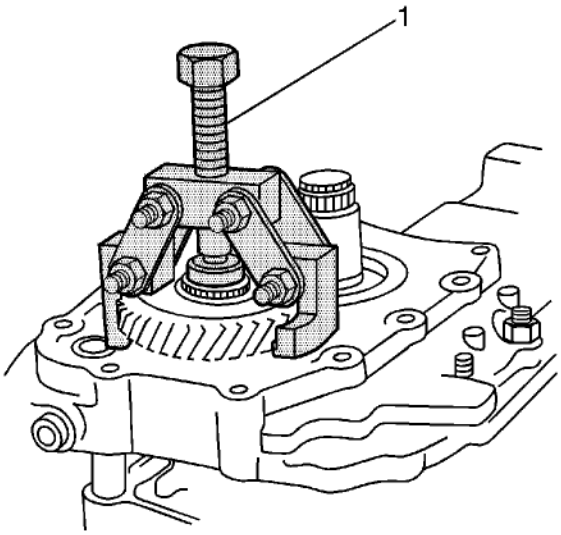
22. Remove the brass synchronizer ring.



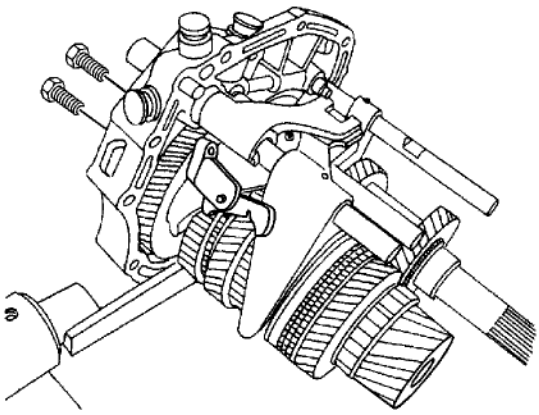
23. Remove the needle bearing, the retaining ring, and the thrust washers.



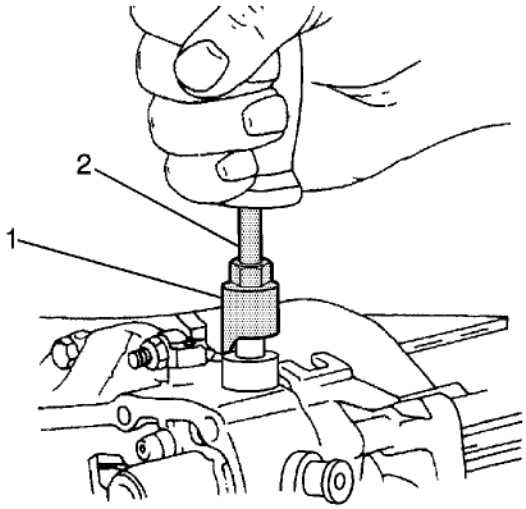
24. Remove the input drive 5th gear snap ring.



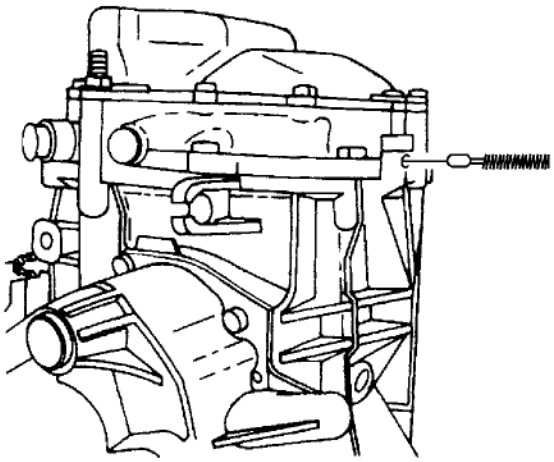
25. Remove the input drive 5th gear using KM-553-A (1).



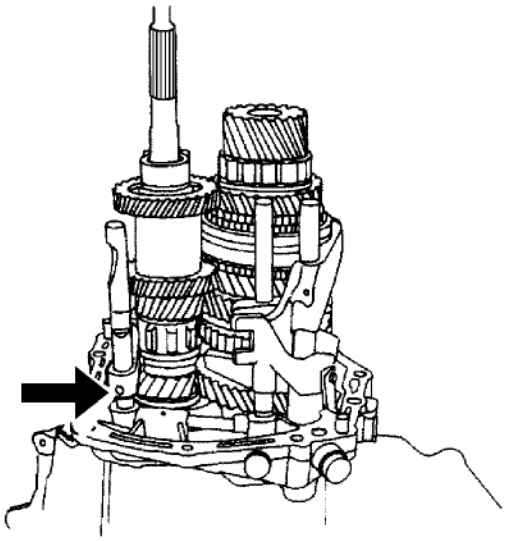
26. Remove the bolts and the 5th gearshift connector from the bearing plate using the pawl.



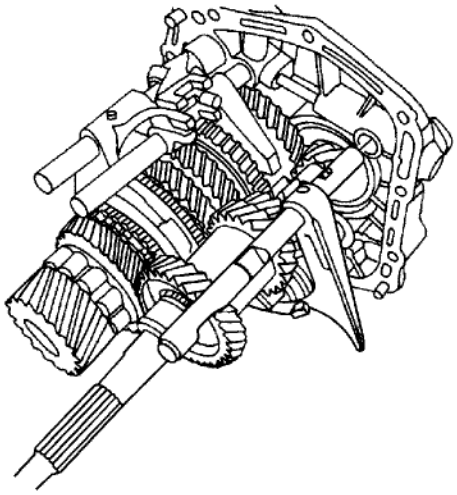
27. Remove the 4 shift-rod plugs using J 42469 (1) and J 6125-B (2).



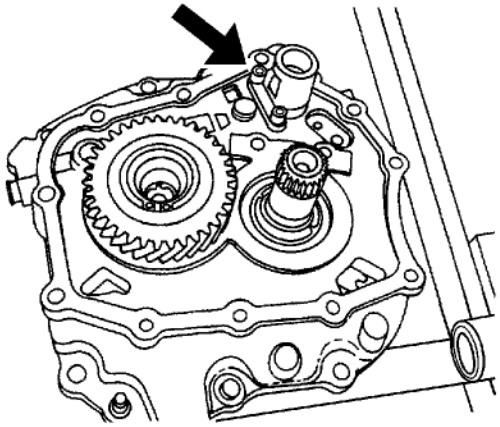
28. Remove the spring and the rod lock pin from the small plug hole.



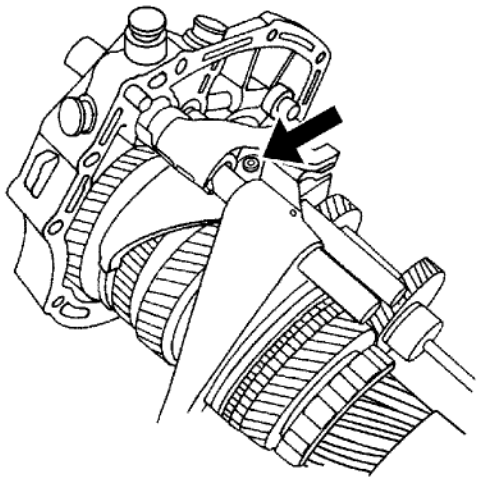
29. Remove the pin from the reverse gearshift rod/fork assembly.



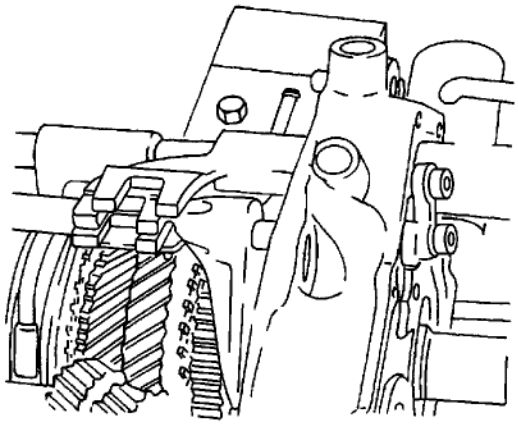
30. Remove the reverse gearshift rod/fork assembly from the bearing plate.



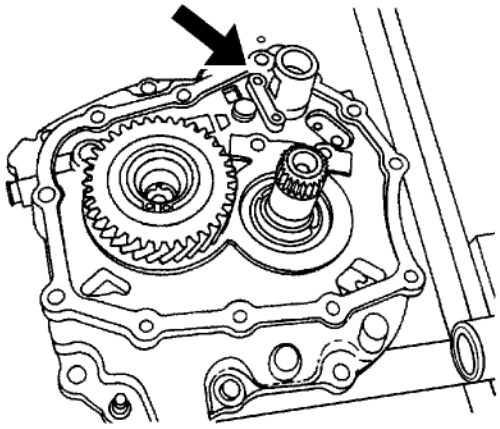
31. Remove the bolts from the support bracket.



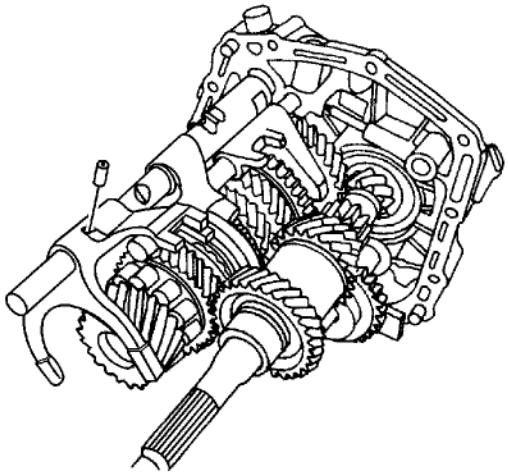
32. Remove the 1st-2nd gearshift fork holding pin.



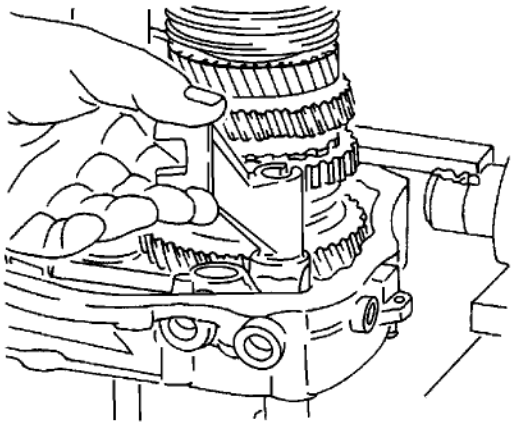
33. Drive the 1st-2nd gearshift rod out until it is just free of the bearing plate.



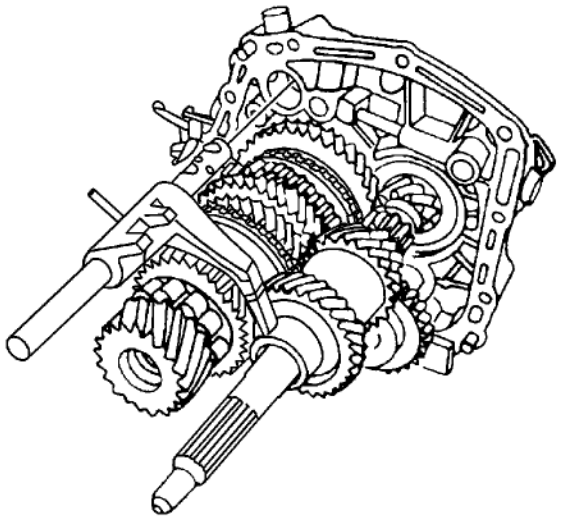
34. Remove the support bracket from the bearing plate.



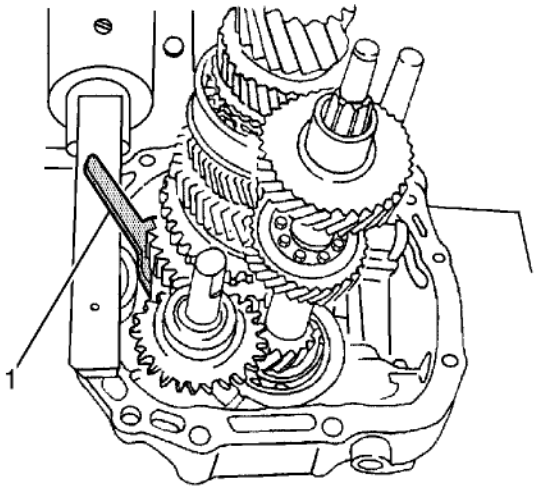
35. Remove the 3rd-4th gearshift fork holding pin and the 3rd-4th gearshift rod.



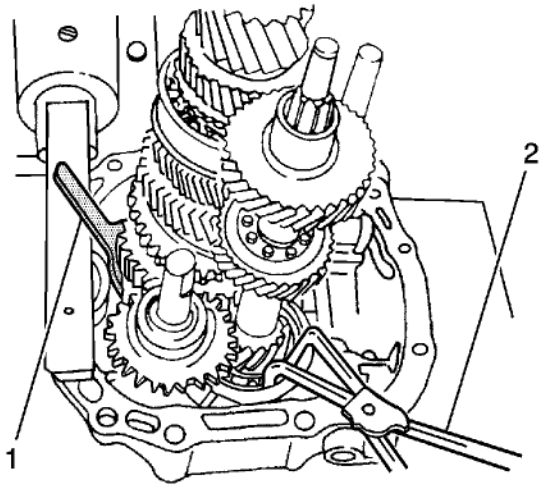
36. Remove the 5th gearshift lever from the bearing plate.



37. Remove the 1st-2nd gearshift rod.



38. Compress the snap ring holding the mainshaft and secure it with the J 36633 (1).

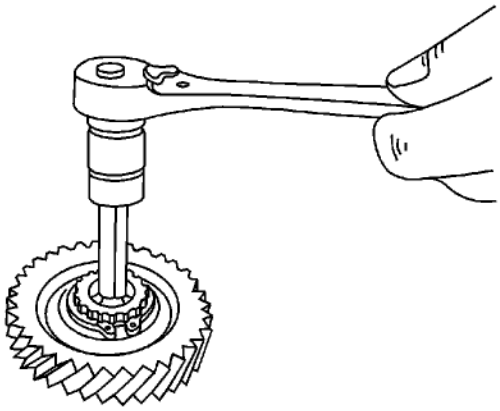


39. Hold the snap ring open at the base of the input shaft using the snap ring pliers (2).
40. Remove the mainshaft assembly and the input shaft assembly from the bearing plate.

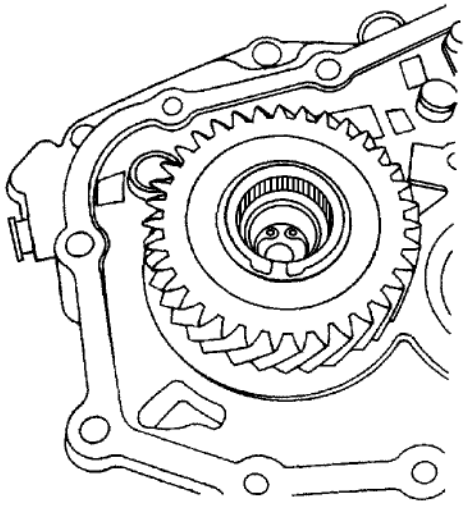
Input Shaft Disassemble

Special Tools

J 22912-B Universal Bearing Puller



1. Remove the detent bolt at the end of the input driveshaft.



2. Remove the snap ring at the base of the gear cluster.

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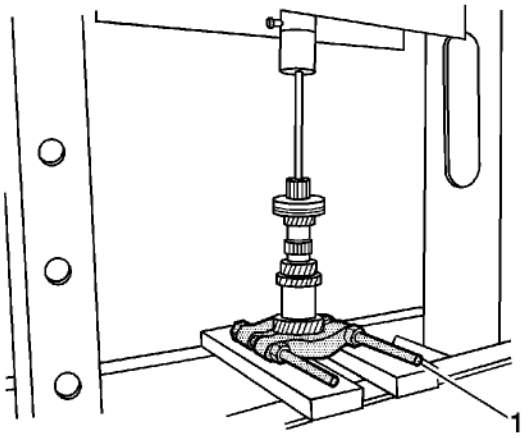
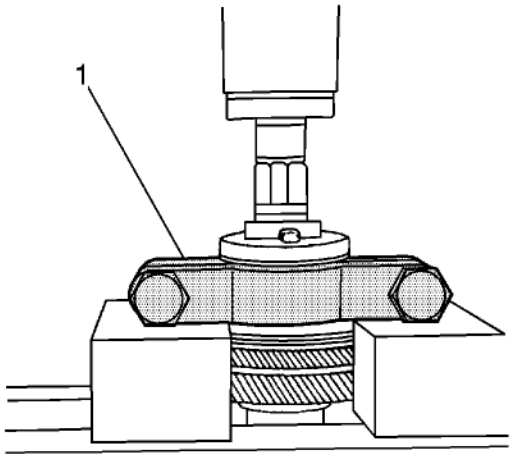
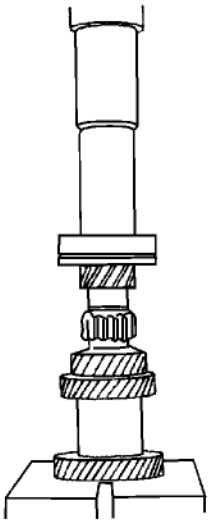


3. Press the input driveshaft from the input shaft cluster gear using J 22912-B (1).



4. Remove the cluster shaft bearing from the input shaft gear cluster using J 22912-B (1).

Input Shaft Assemble



1. Press the cluster shaft bearing onto the input shaft gear cluster.

2. Press the input driveshaft into the input shaft gear cluster assembly.

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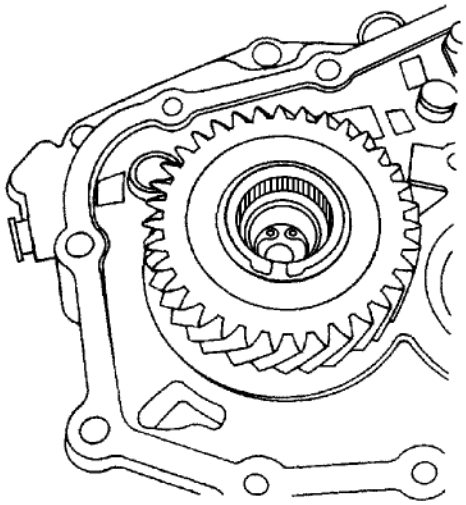
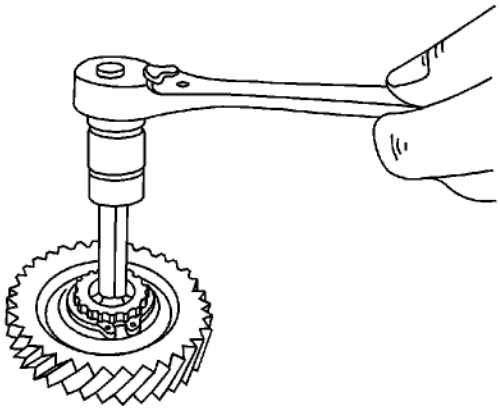


3. Install the snap ring at the base of the gear cluster.

   Caution: Refer to Fastener Caution in the Preface section.

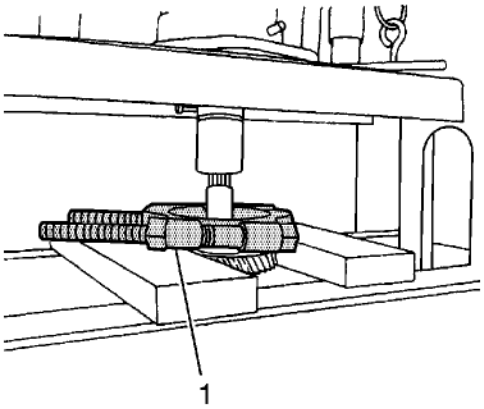


4. Install the detent bolt at the end of the input driveshaft and tighten to **15 N·m (11 lb ft)**.

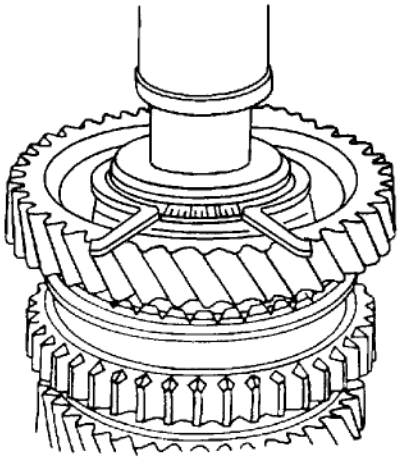
Main Shaft Disassemble

Special Tools

J 22912-B Universal Bearing Puller



1. Remove the mainshaft bearing using J 22912-B (1).



2. Remove the snap ring.

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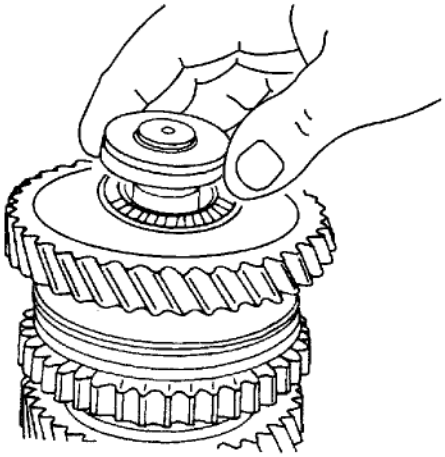
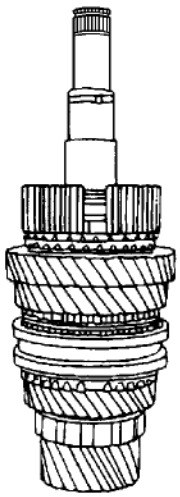
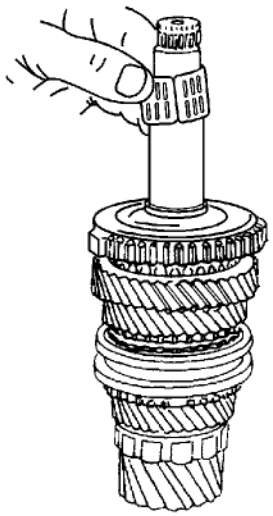


3. Remove the 1st gear, the flat-type 1st gear needle bearing, and the mainshaft wear plate.

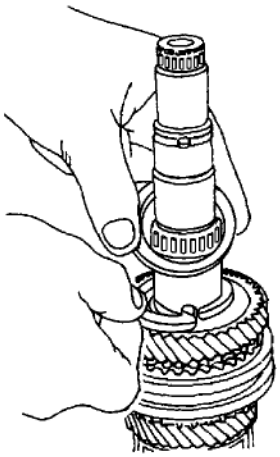
4. Remove the synchronizer hub sleeve that contains the synchronizer spring.
5. Remove the outer blocking ring.



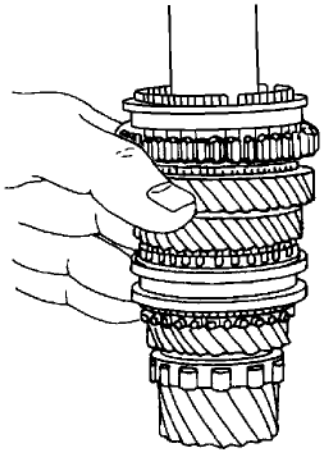
6. Remove the keys from the 1st-2nd synchronizer gear.



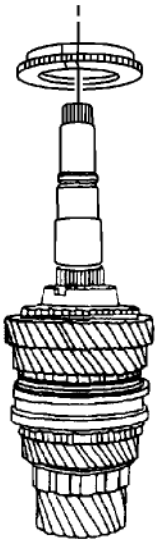
7. Remove the barrel-type 1st gear needle bearing.



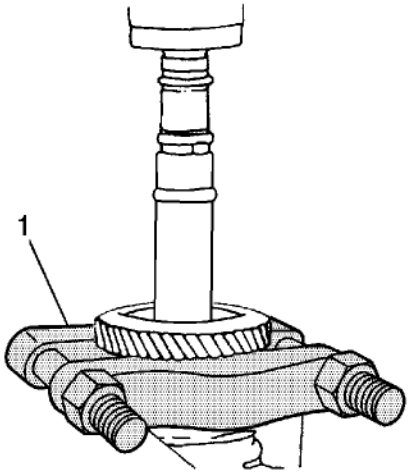
8. Remove the snap ring and the washer.



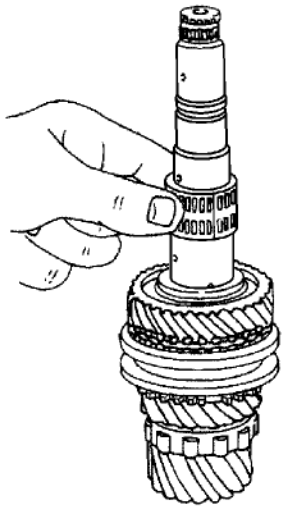
9. Remove the 1st-2nd synchronizer gear from the mainshaft.



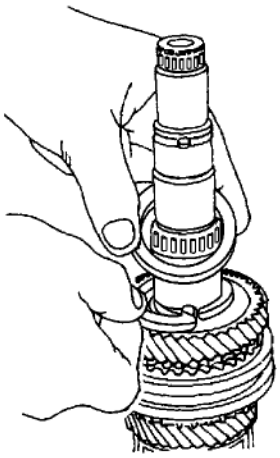
10. Remove the 1st-2nd gear blocking ring.



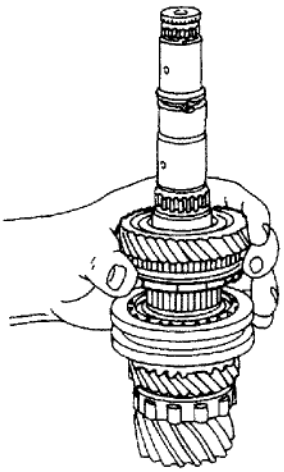
11. Remove the 2nd gear using J 22912-B (1).



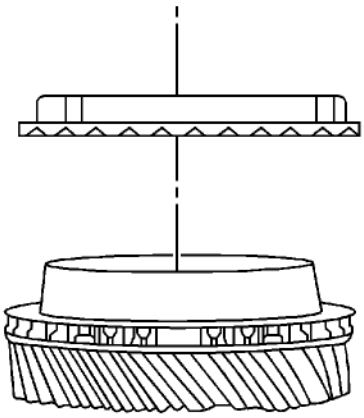
12. Remove the 2nd gear needle bearing.



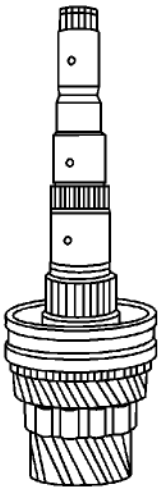
13. Remove the ring and the thrust washer



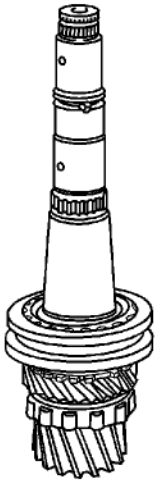
14. Remove the 3rd gear and the synchronizer blocking ring.



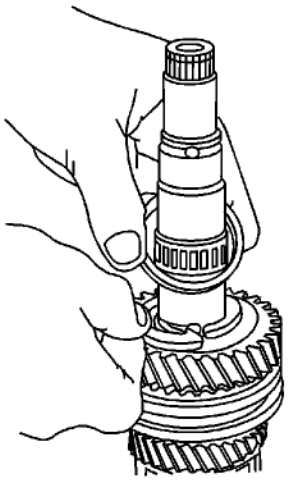
15. Separate the synchronizer blocking ring from the 3rd gear.



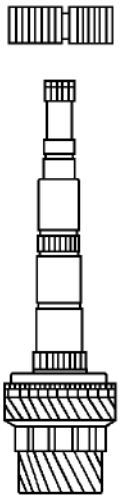
16. Remove the 3rd gear needle bearing from the mainshaft.



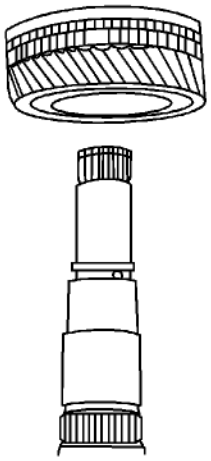
17. Remove the synchronizer sleeve containing the keys and the spring



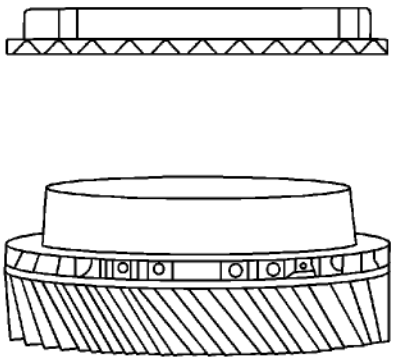
18. Remove the snap ring and the washer from the mainshaft.



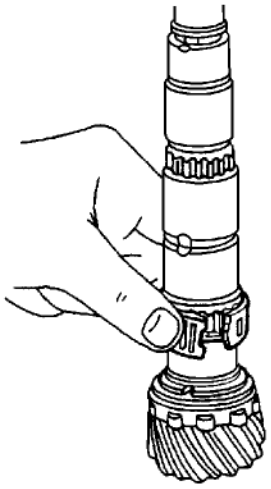
19. Remove the 3rd-4th synchronizer gear containing the synchronizer spring.



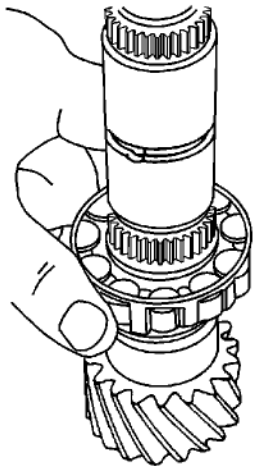
20. Remove the 4th gear assembly.



21. Separate the synchronizer blocking ring from the 4th gear.

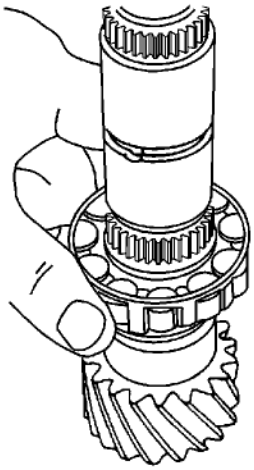


22. Remove the 4th gear needle bearing, the ring, and the thrust washer.

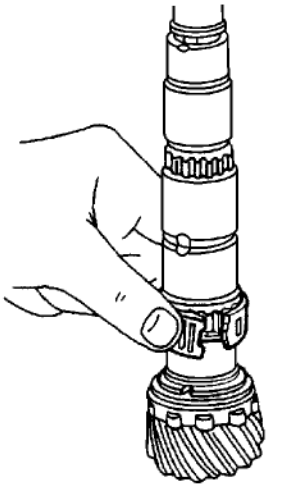


23. Remove the mainshaft bearing.

Main Shaft Assemble



1. Install the mainshaft bearing



2. Install the ring, the thrust washer, and the 4th gear needle bearing.

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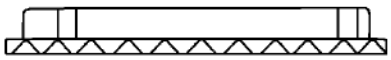
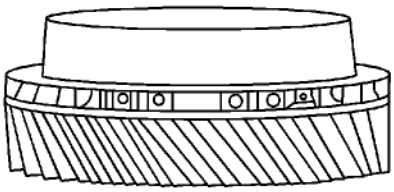
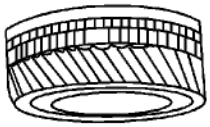
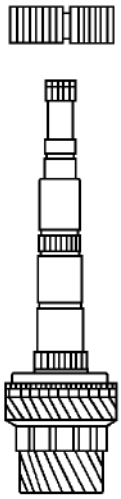




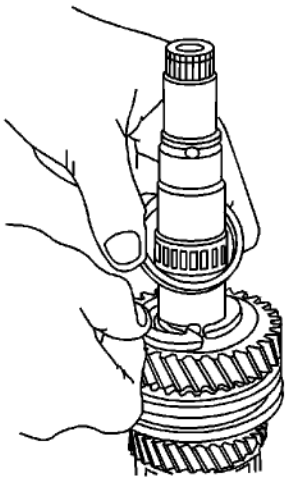
3. Attach the synchronizer blocking ring to the 4th gear.



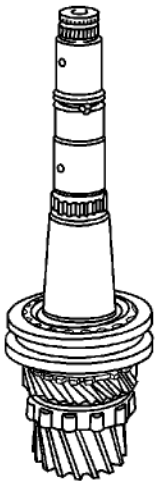
4. Install the 4th gear assembly.



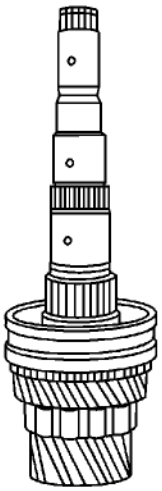
5. Install the 3rd-4th gear synchronizer containing the synchronizer spring.



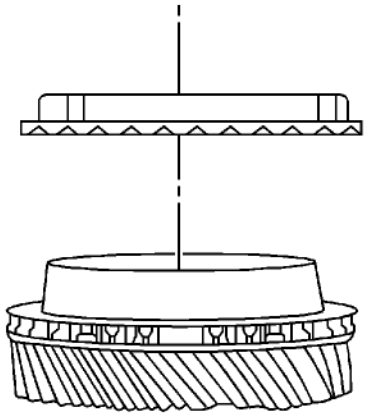
6. Install the snap ring and the washer around the mainshaft.



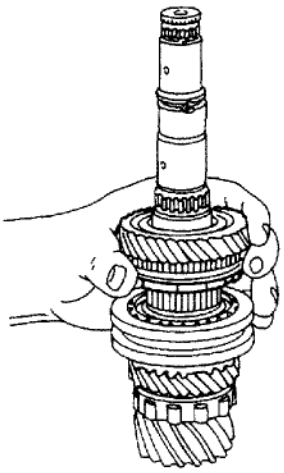
7. Install the synchronizer sleeve containing the keys and the spring.



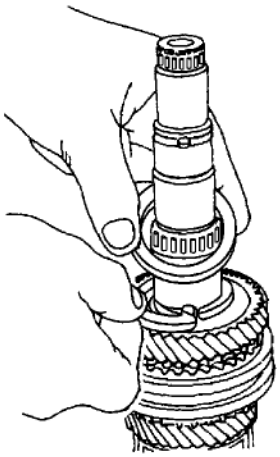
8. Install the 3rd gear needle bearing.



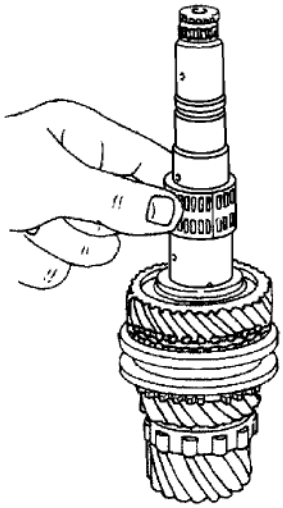
9. Attach the synchronizer blocking ring to the 3rd gear.



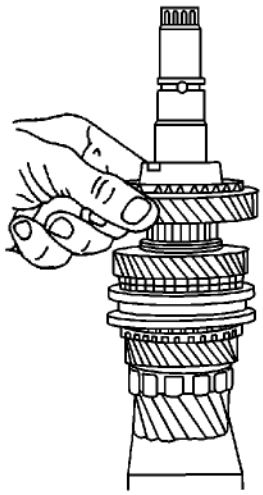
10. Install the 3rd gear assembly.



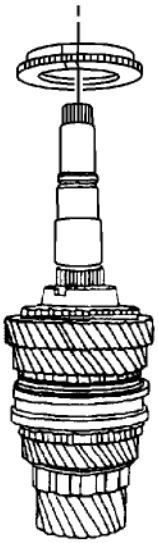
11. Install the thrust washer and the ring.



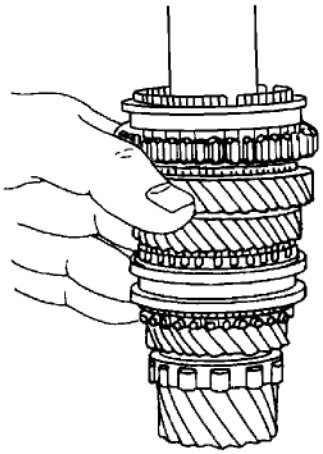
12. Install the 2nd gear needle bearing.



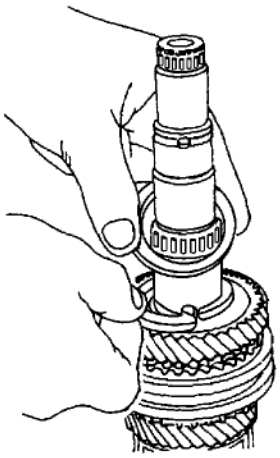
13. Install the 2nd gear.



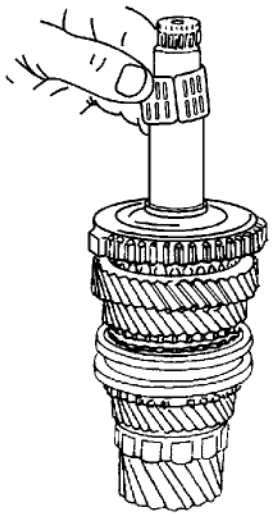
14. Install the 1st-2nd gear blocking ring.



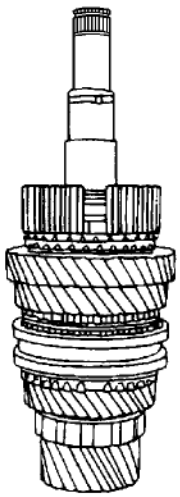
15. Install the 1st-2nd synchronizer gear.



16. Install the washer and the snap ring.

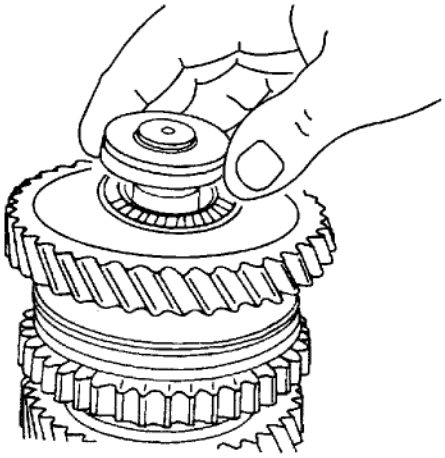


17. Install the 1st gear needle bearing.

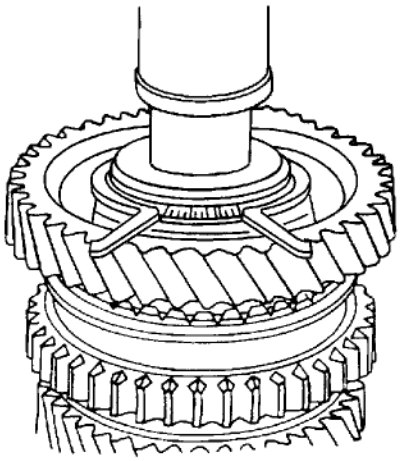


18. Install the keys onto the 1st-2nd synchronizer gear.

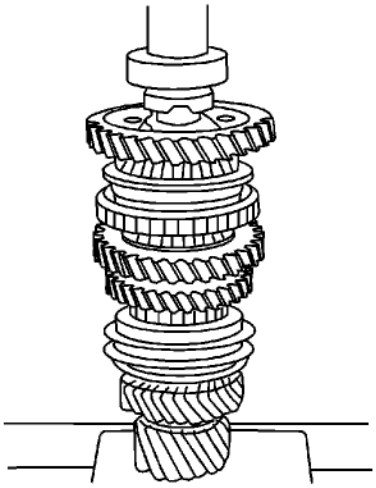
19. Install the synchronizer hub sleeve containing the synchronizer spring.



20. Install the outer blocking ring.
21. Install the mainshaft wear plate, the flat-type 1st gear needle bearing, and the 1st gear.

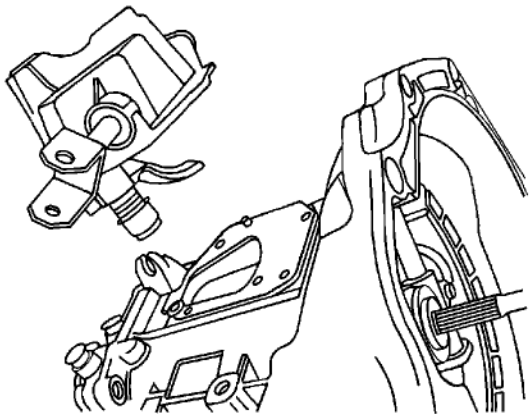


22. Install the snap ring.

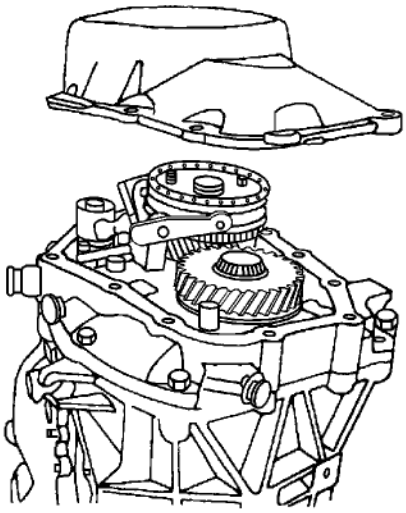


23. Press on the mainshaft bearing.

Transmission Case Disassemble



1. Remove the transaxle from the vehicle. Refer to Transmission Replacement .
2. Remove the shift lever cover bolts and the shift lever cover. Do not disassemble the shift lever cover.



3. Remove the transaxle cover bolts and the transaxle cover.

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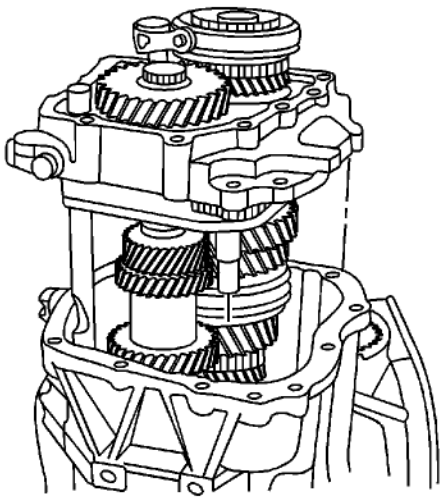
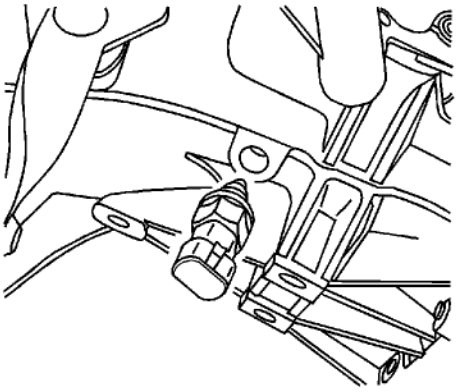
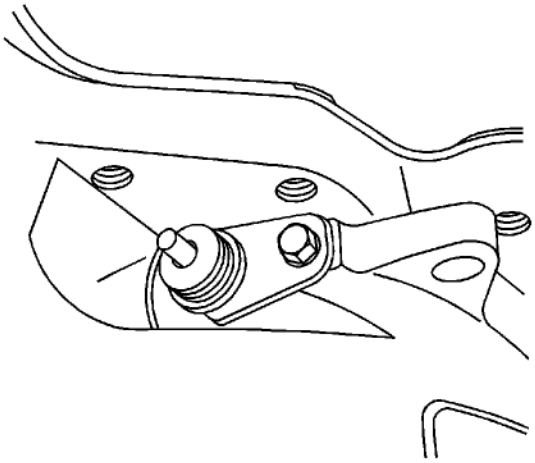


4. Remove the bearing plate bolts and the bearing plate, with the shafts attached. Do not disassemble the shafts.



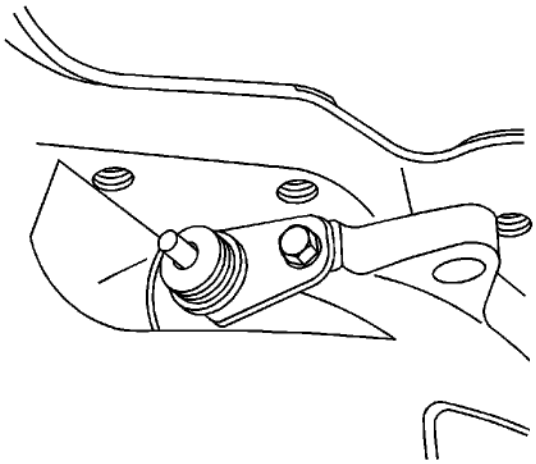
5. Remove the differential from the transaxle housing. Do not disassemble the differential. Refer to Differential Case Disassemble .
6. Remove the backup lamp switch from the transaxle housing.



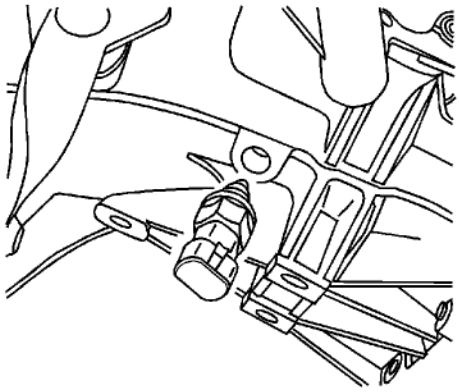
7. Remove the clutch-release bearing and the clutch-release bearing guide. Refer to Release Bearing Replacement .
8. Remove the speedometer-driven gear bolt and the speedometer-driven gear from the transaxle housing.

Transmission Case Assemble

Caution: Refer to Fastener Caution in the Preface section.



1. Install the speedometer-driven gear into the transaxle housing.
2. Install the speedometer-driven gear bolt and tighten to **4 N·m (35 lb in)**.



3. Install the clutch-release bearing guide and the clutch-release bearing. Refer to Release Bearing Replacement.
4. Install the backup lamp switch into the transaxle housing and tighten to **20 N·m (15 lb ft)**.

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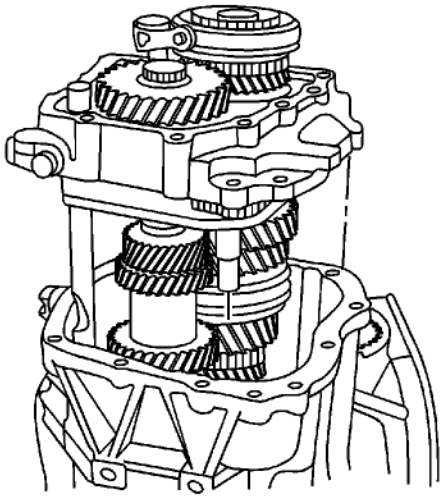
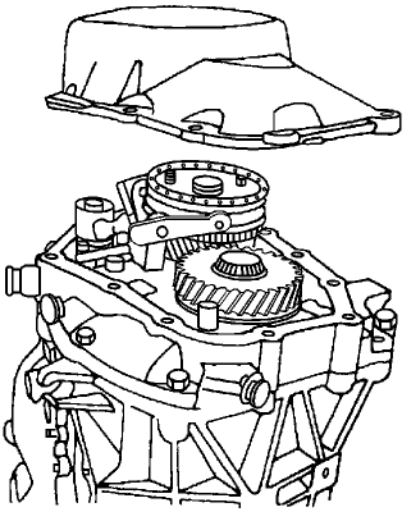
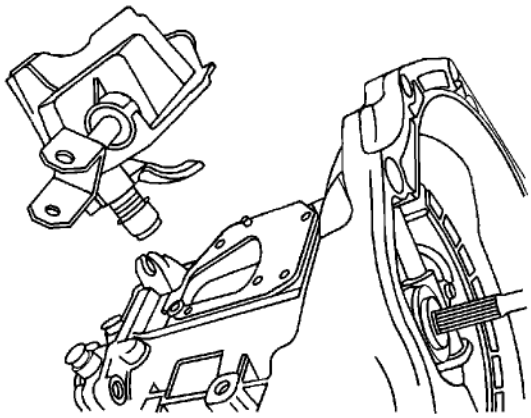


5. Install the differential into the transaxle housing. Refer to Differential Case Assemble.
6. Install the bearing plate, with the shafts attached.
7. Install the bearing plate bolts and tighten to **22 N·m (16 lb ft)**.



8. Install the transaxle cover.
9. Install the transaxle cover bolts and tighten to **18 N·m (13 lb ft)**.

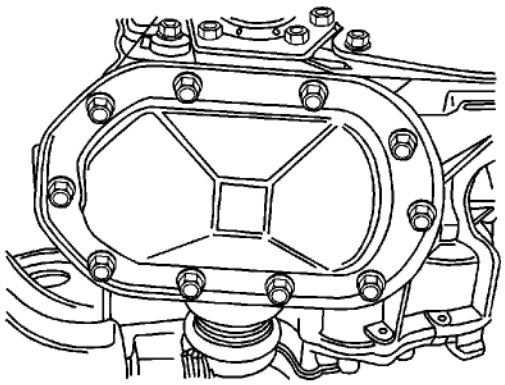


10. Install the gearshift lever cover.
11. Install the gearshift lever cover bolts and tighten to **22 N·m (16 lb ft)**.
12. Install the transaxle into the vehicle. Refer to Transmission Replacement.

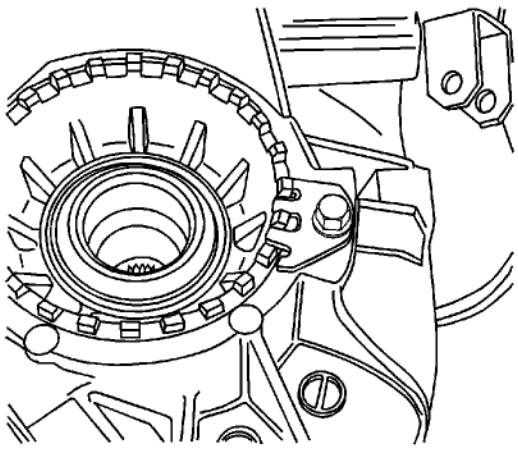
Differential Case Disassemble

Special Tools

- J 22888-20A Bearing Puller with J 22888-35 Puller Legs
- KM-520 Remover/Installer



1. Remove the differential cover bolts, the differential cover, and the differential cover gasket.



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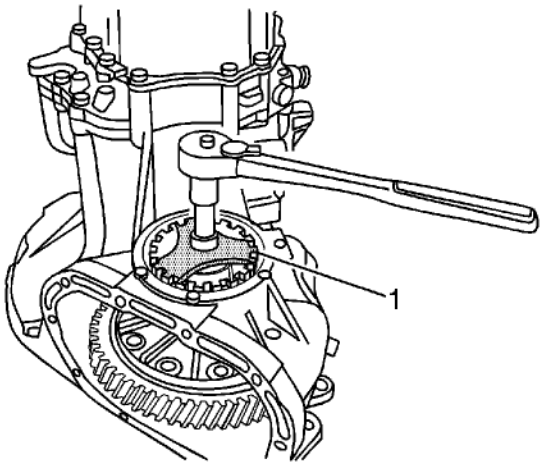
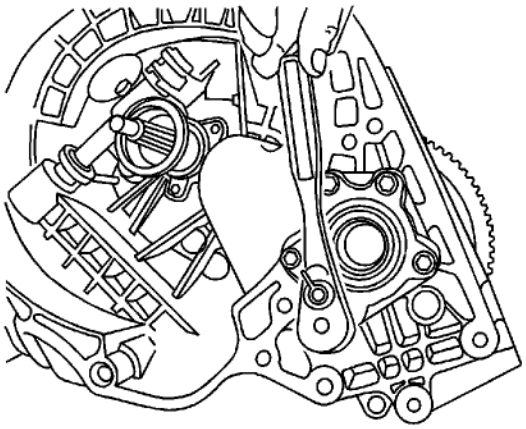
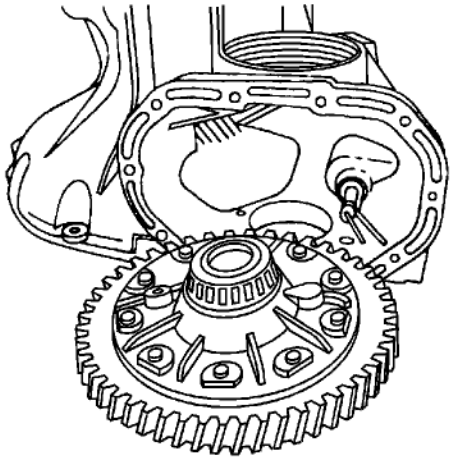
2. Remove the bearing-adjusting ring retainer plate bolt and the bearing-adjusting ring retainer plate.



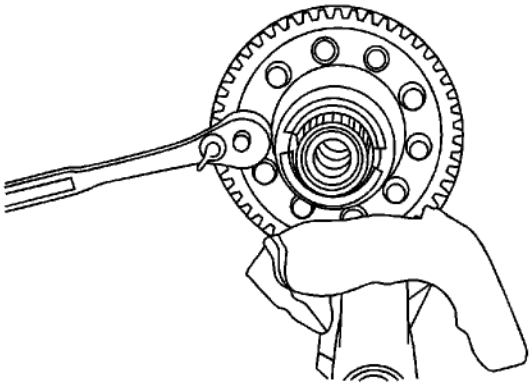
3. Remove the bearing-adjusting ring using KM-520 (1).



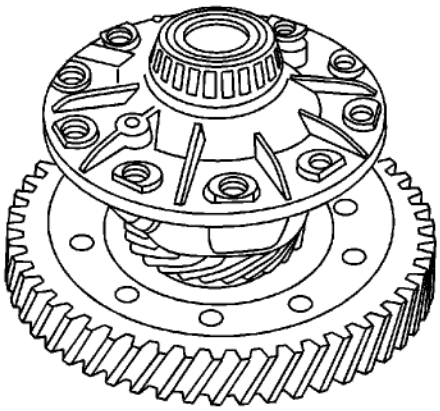
4. Remove the right-side bearing-retainer bolts and the right-side bearing retainer.



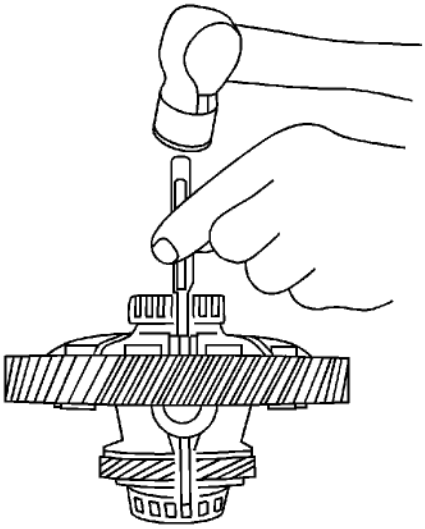
5. Remove the differential assembly from the transaxle case.



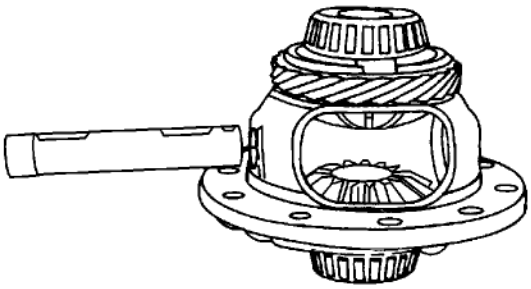
6. Remove the ring gear bolts.



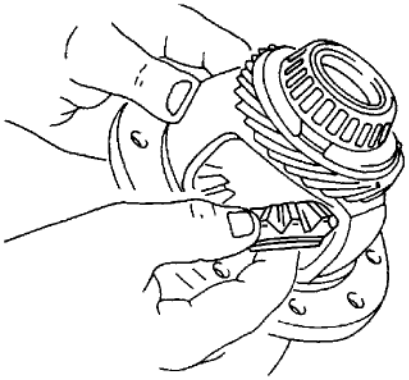
7. Separate the ring gear from the differential housing.



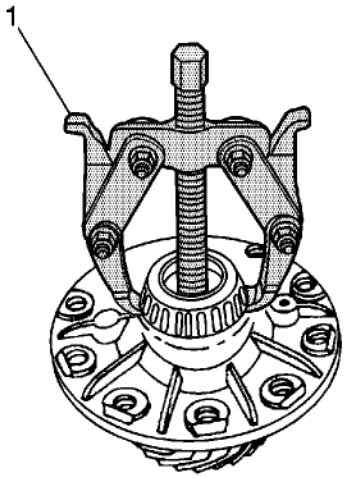
8. Drive the pinion gear shaft lock pin from the differential housing and the pinion gear shaft.



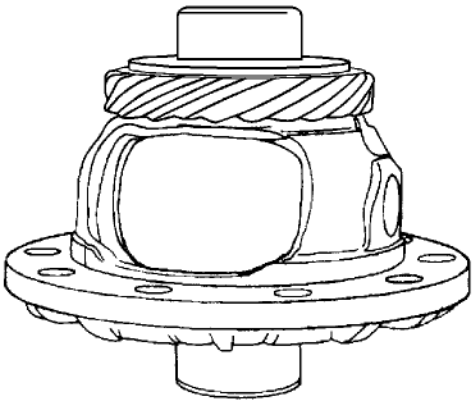
9. Remove the pinion gear shaft.



10. Remove the pinion gears and the washers.
11. Remove the side gears and the side thrust washers.



12. Remove both of the differential bearings using J 22888-20A (1) with the puller legs J 22888-35 .

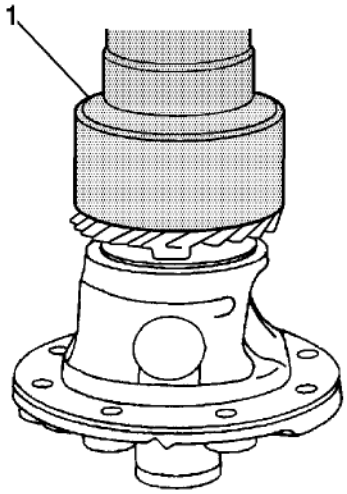


13. Remove the speedometer drive gear from the differential gear housing.

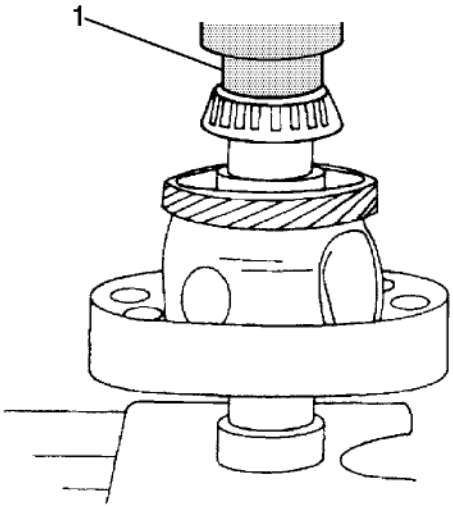
Differential Case Assemble

Special Tools

- KM-520 Remover/Installer
- KM-522 Installer
- KM-525 Installer



1. Install the speedometer drive gear onto the differential gear housing using KM-525 (1).



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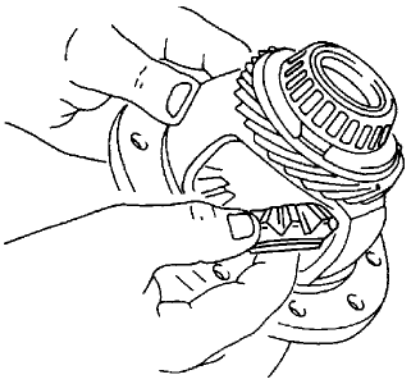
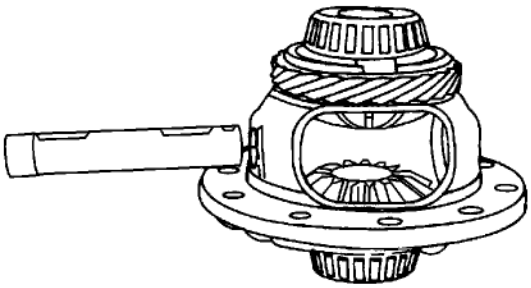
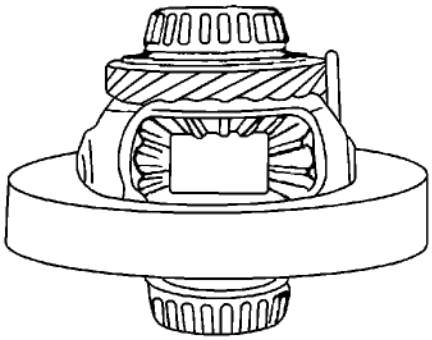
2. Install both of the differential bearings using KM-522 (1).



3. Install the side gears and the side thrust washers into the differential housing.
4. Install the differential pinion gears and the differential pinion gear washers into the differential housing.

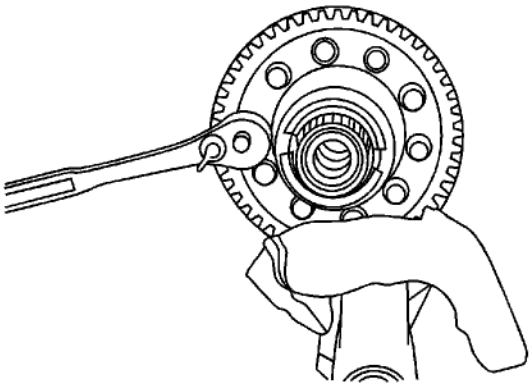


5. Install the pinion gear shaft into the differential housing.

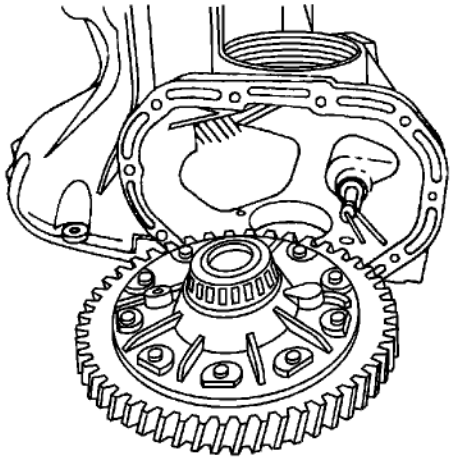


6. Install the pinion gear shaft lock pin into the differential housing and the pinion gear shaft.

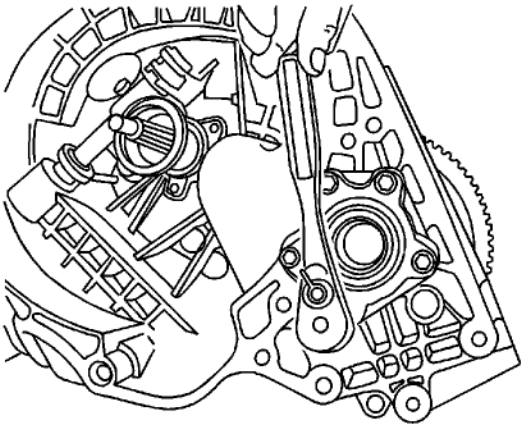
   Caution: Refer to Fastener Caution in the Preface section.



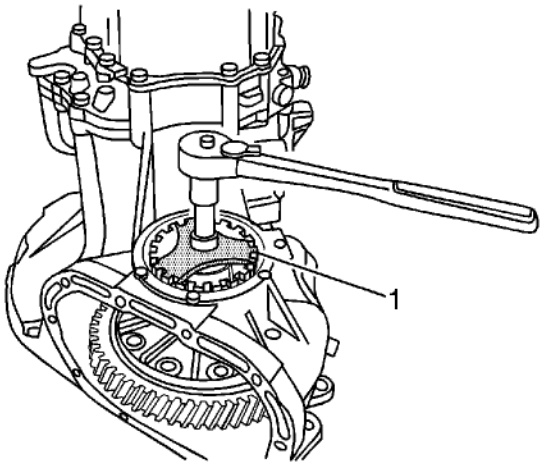
7. Install the ring gear.
8. Install the ring-gear bolts and tighten to **70 N·m (52 lb ft)**.



9. Install the differential assembly into the transaxle case.



10. Install the right-side bearing retainer.
11. Install the right-side bearing retainer bolts and tighten to **25 N·m (18 lb ft)**.

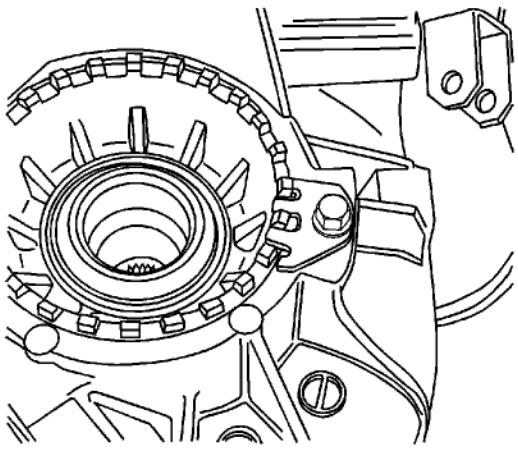


12. Install the bearing-adjusting ring.
13. Tighten the bearing-adjusting ring using KM-520 (1) until there is no end play with the differential.
14. Adjust the preload on the differential bearings.

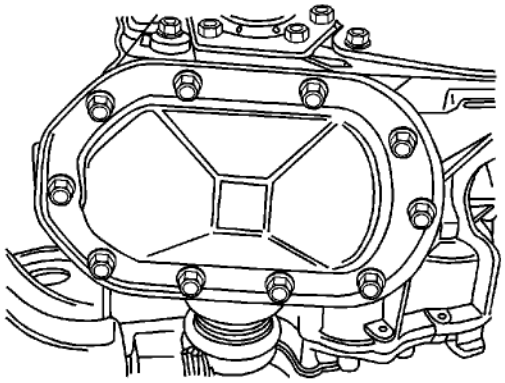
Specification

- Used Bearings: 1 N·m (9 lb in) is required to rotate the differential one revolution per second.
- New Bearings: 2 N·m (18 lb in) is required to rotate the differential one revolution per second.

15. Tighten or loosen the bearing ring adjuster to get the required preload on the bearings.



16. Install the bearing-adjusting ring-retainer plate and the bearing-adjusting ring-retainer plate bolt and tighten to **5 N·m (44 lb in)**.



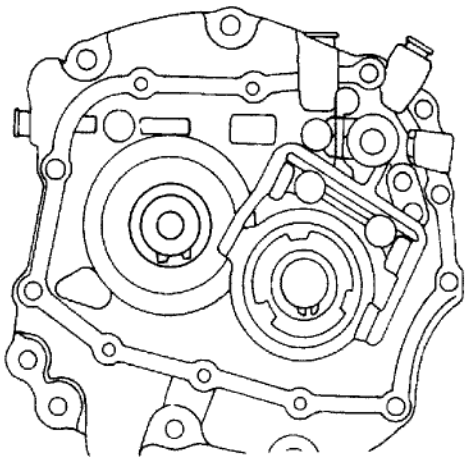
17. Install the differential cover gasket and cover.
18. Install the differential cover bolts and tighten to **40 N·m (30 lb ft)**.

Transmission Assemble

Special Tools

- *J 3289-20 (KM 113-2)* Holding Fixture
- *J 36633* Snap Ring Retainer
- *KM-334* Installer Sleeve
- *KM-552* Fixture
- *KM-554* Installer

Assembly Procedure



1. Join the mainshaft and the input shaft.
2. Compress the snap ring at the base of the mainshaft and hold with J 36633 (1).
3. Hold the snap ring at the base of the input drive shaft with the snap ring pliers.
4. Install the mainshaft/input shaft assembly onto the bearing plate.
5. Release the mainshaft snap ring and the input shaft snap ring.

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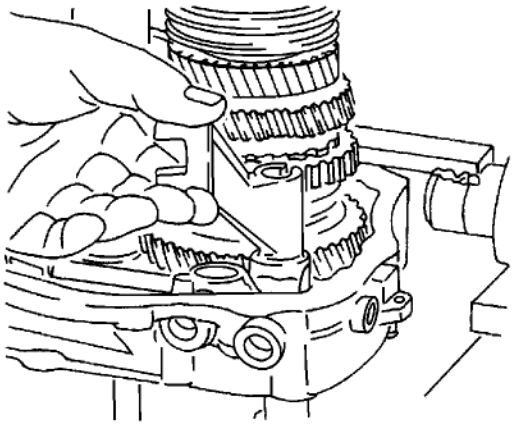
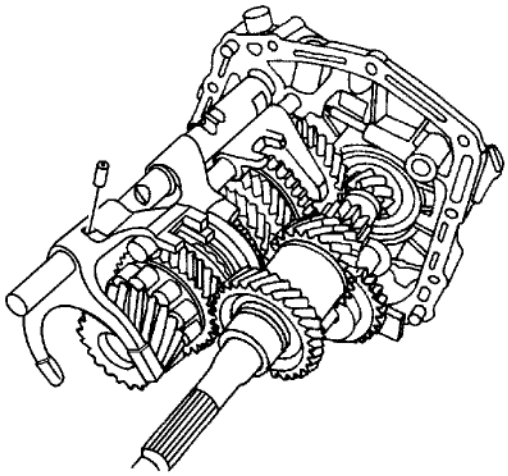
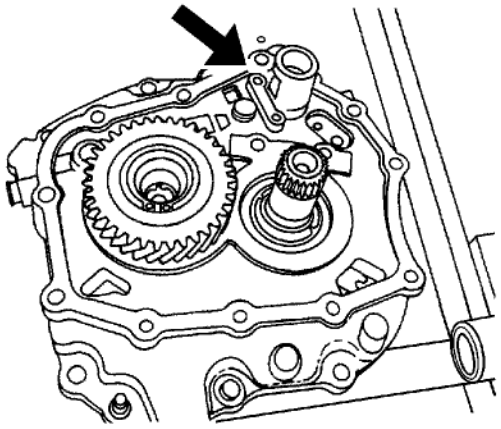


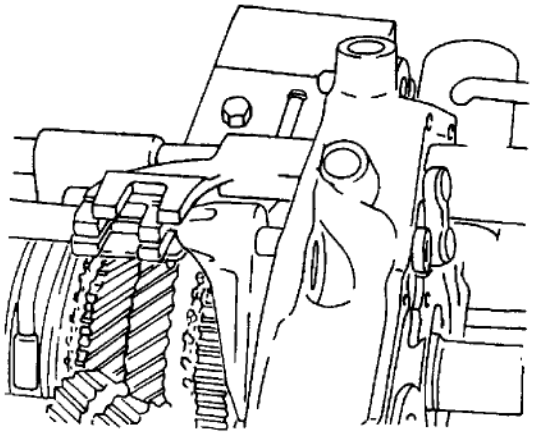
6. Position the 1st-2nd gearshift fork.
7. Install the 5th gearshift lever into the bearing plate.



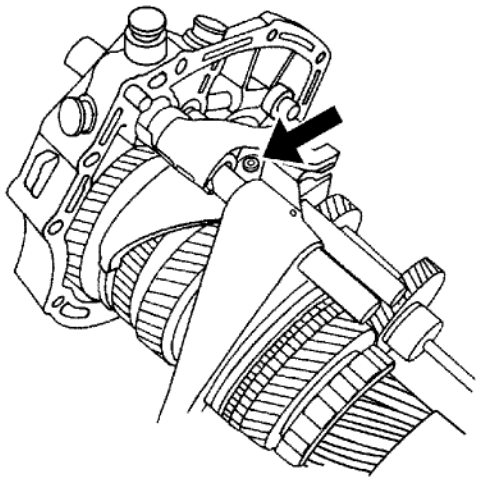
8. Install the 3rd-4th gearshift rod/fork holding pin.



9. Install the support bracket onto the bearing plate.

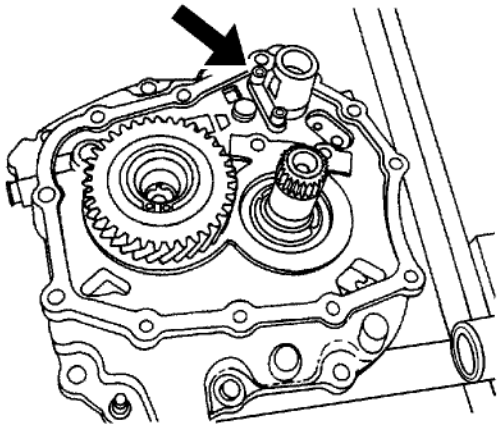


10. Install the 1st-2nd gearshift rod/fork onto the bearing plate.

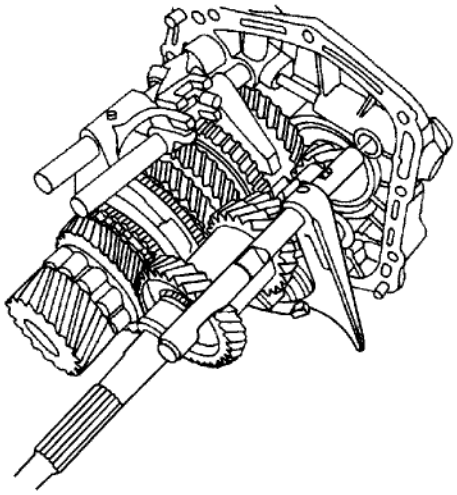


11. Install the 1st-2nd gearshift fork holding pin.

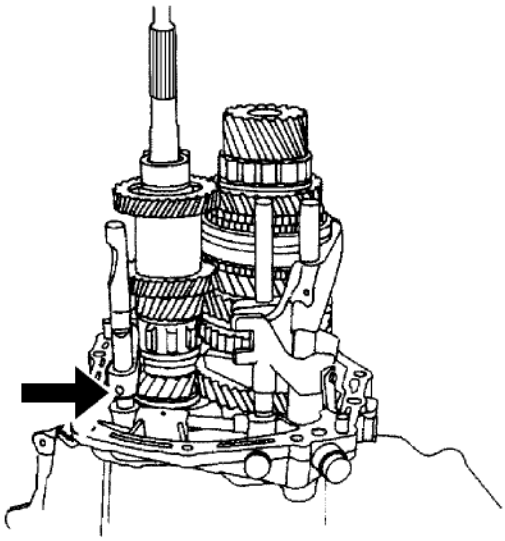
Caution: Refer to Fastener Caution in the Preface section.



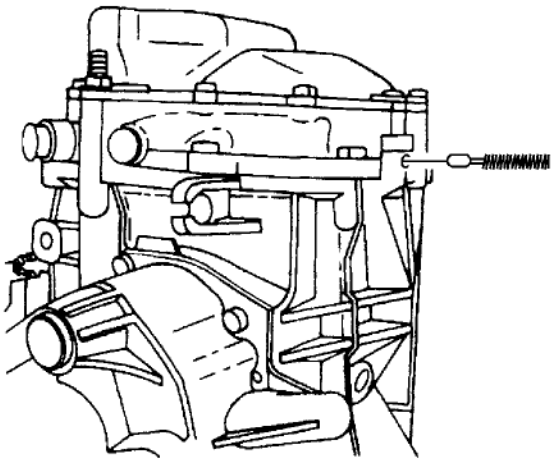
12. Install the support bracket bolts and tighten to **7 N·m (62 lb in)**.



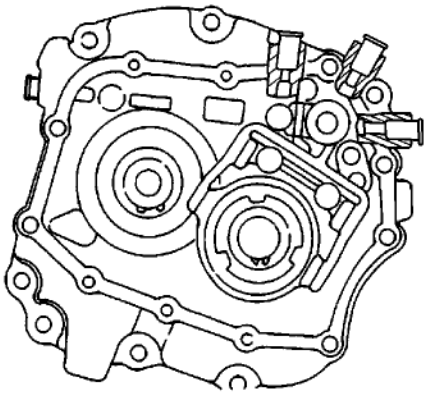
13. Install the reverse gearshift rod/fork on the bearing plate.



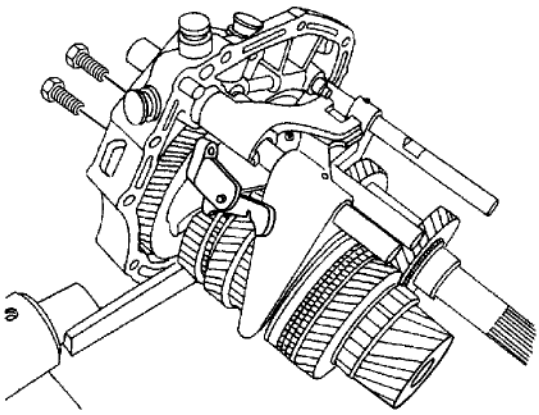
14. Install the reverse gearshift rod/fork holding pin.



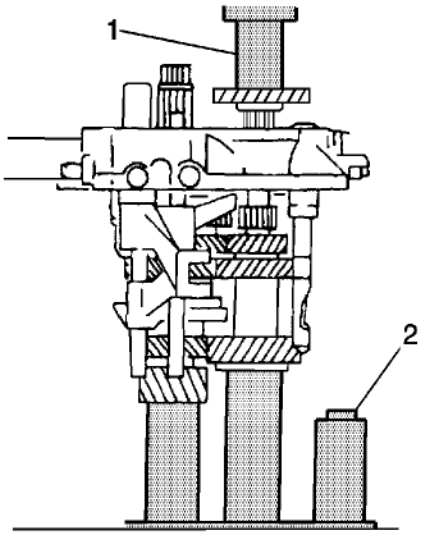
15. Install the rod lock pin and spring into the small plug hole.



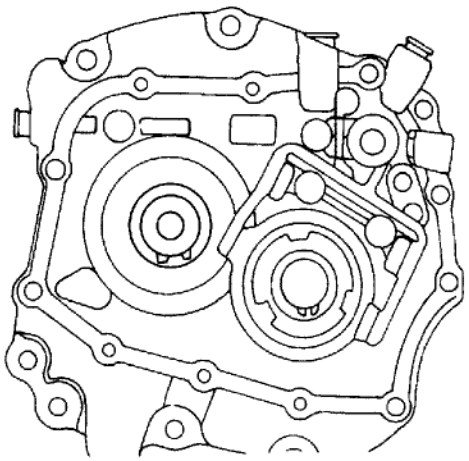
16. Install the 4th gearshift rod plugs.



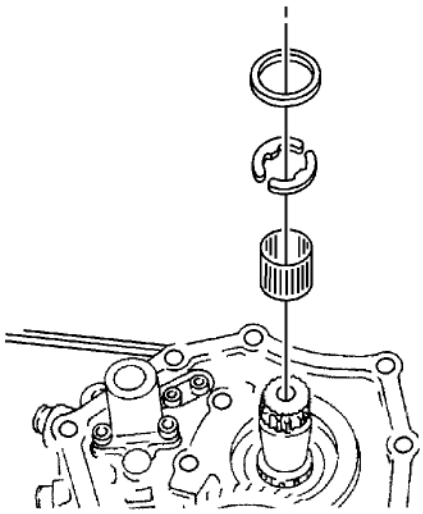
17. Install the 5th gearshift connector onto the bearing plate, using the pawl.
18. Install the 5th gearshift connector bolts and tighten to **7 N·m (62 lb in)**.



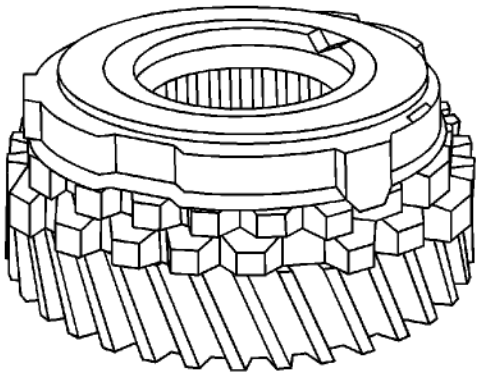
19. Install the input drive 5th gear using KM-554 (2) and KM-334 (1).



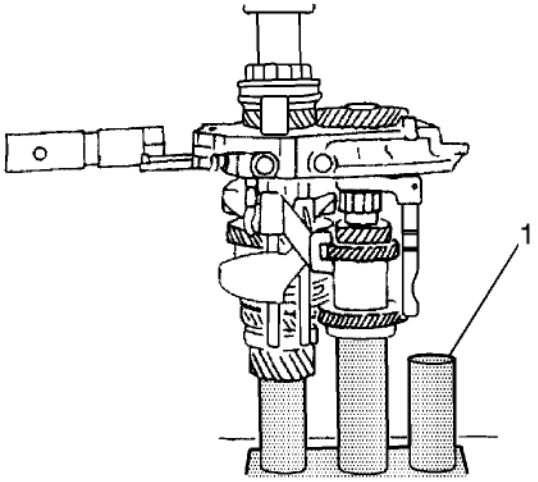
20. Install the snap rings securing the 5th drive gear.



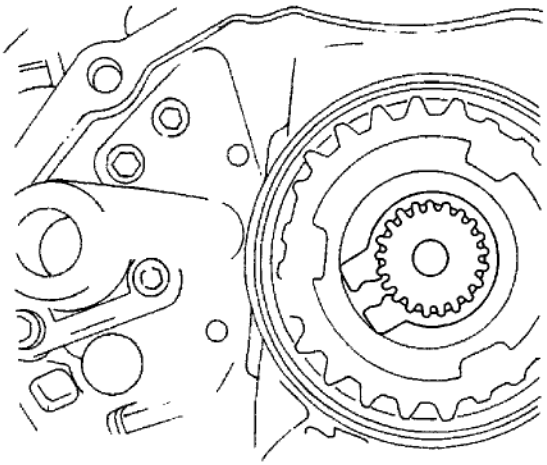
21. Install the thrust washers, the retaining ring, and the needle bearing into the mainshaft-driven 5th gear assembly.



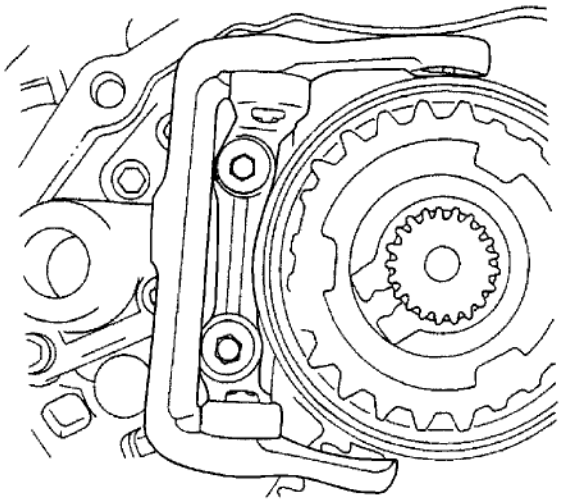
22. Install the brass synchronizer ring onto the mainshaft-driven 5th gear assembly.



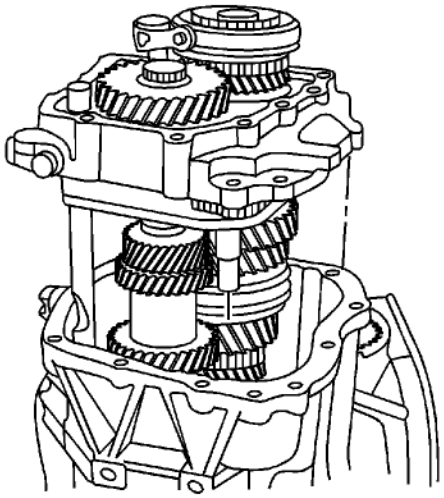
23. Install the mainshaft-driven 5th gear assembly.
24. Install the 5th drive gear synchronizer gear and the synchronizer sleeve using KM-554 (1).



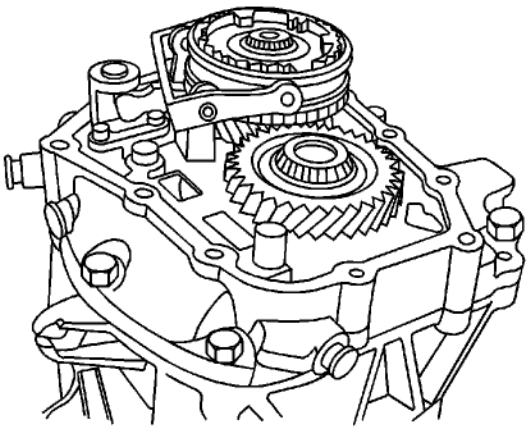
25. Install the snap ring holding the 5th speed-driven assembly.



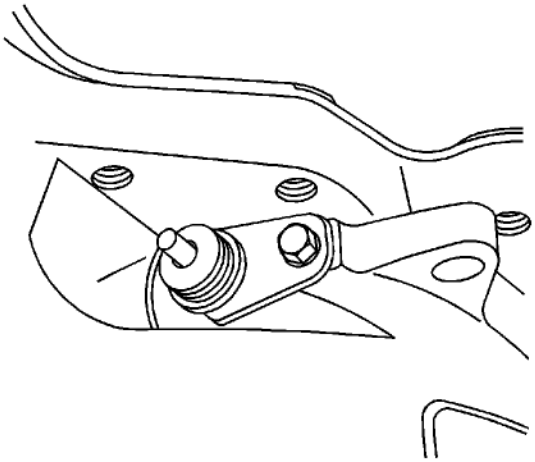
26. Install the 5th gear fork onto the bearing plate.
27. Install the 5th gear fork bolts and tighten to **22 N·m (16 lb ft)**.



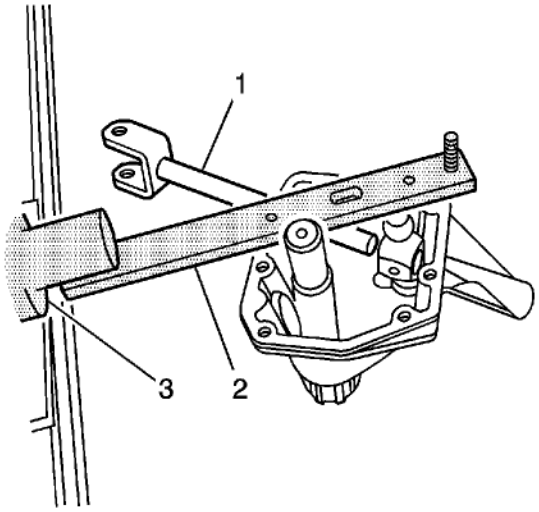
28. Remove the bearing plate from the fixture.
29. Shift the transaxle into the 2nd gear.
30. Install the bearing plate, with the shafts attached, into the case.



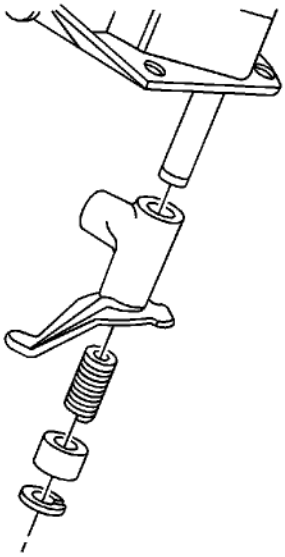
31. Install the bearing plate bolts and tighten to **22 N·m (16 lb ft)**.



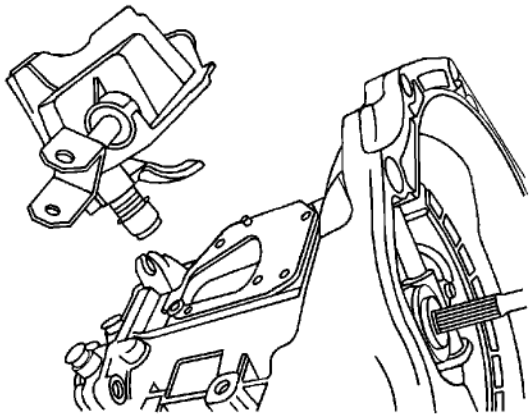
32. Install the speedometer-driven gear into the transaxle housing.
33. Install the speedometer-driven gear bolt and tighten to **4 N·m (35 lb in)**.



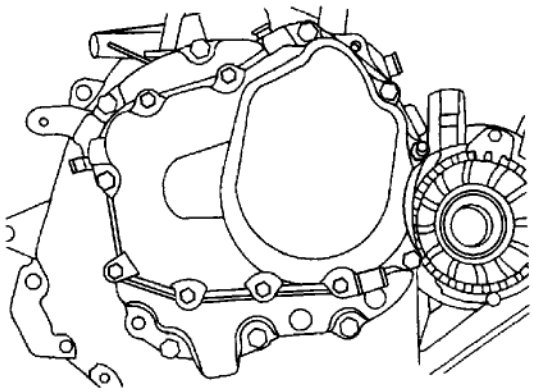
34. Bolt the gearshift lever cover to KM-552 (2).
35. Position the fixture into the base J 3289-20 (3).
36. Install the gearshift rod (1), the shift finger lever, and the gearshift lever pin.



37. Install the snap ring, the bushing, the spring, and the intermediate lever.
38. Remove the gearshift lever cover from the base and the fixture.
39. Shift the transaxle into NEUTRAL.



40. Install the gearshift lever cover.
41. Install the gearshift lever cover bolts and tighten to **22 N·m (16 lb ft)**.



42. Install the transaxle cover.
43. Install the transaxle cover bolts and tighten to **18 N·m (13 lb ft)**.
44. Install the transaxle into the vehicle. Refer to Transmission Replacement.