

GROUP 22C

MANUAL TRANSAXLE OVERHAUL <F6MBA>

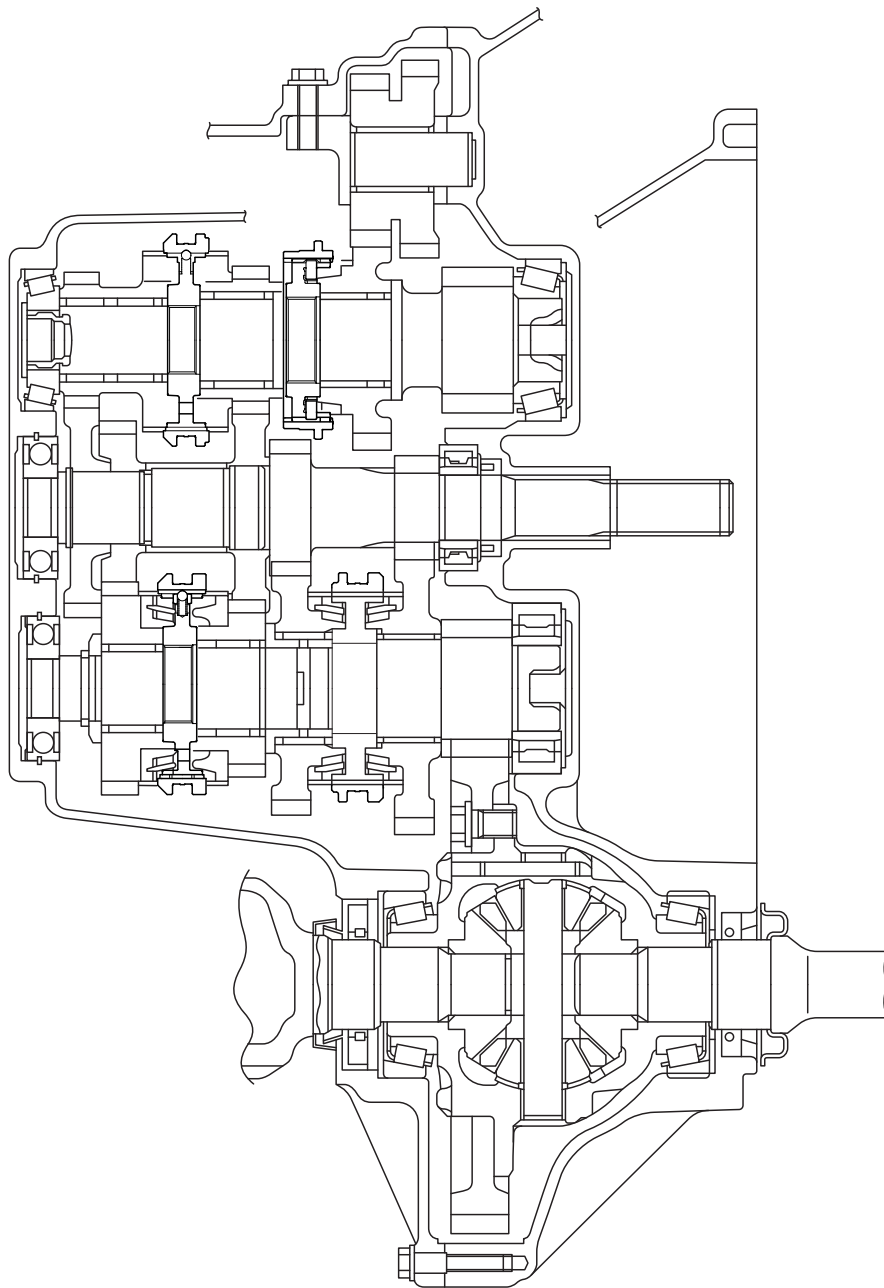
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GENERAL DESCRIPTION

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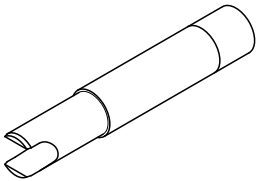
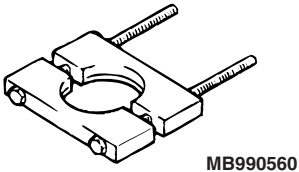
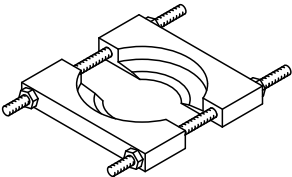
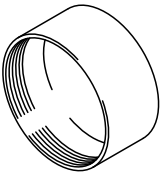
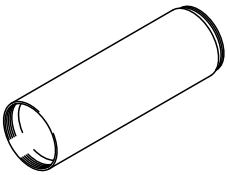
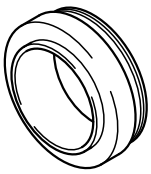
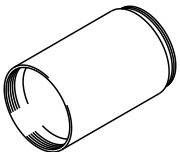
TRANSAXLE SECTIONAL VIEW

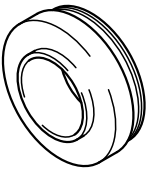
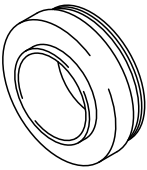
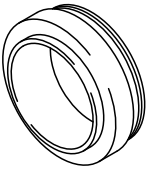
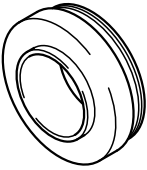
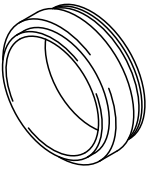
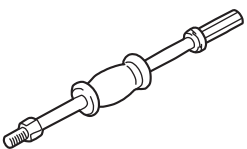
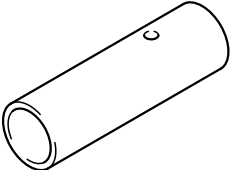
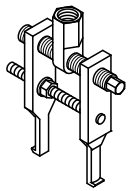


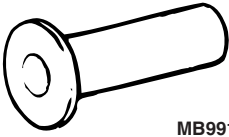
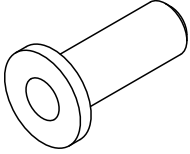
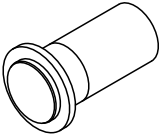
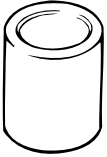
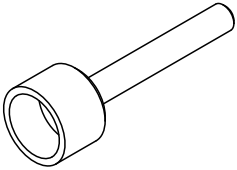
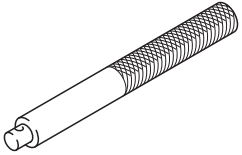
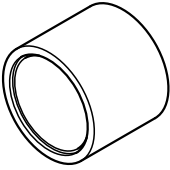
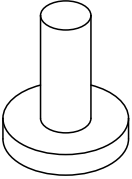
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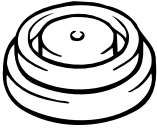
SPECIAL TOOLS

M1222000600426

TOOL	TOOL NUMBER AND NAME	SUPERSESSION	APPLICATION
	MB992038 Preload socket	–	<ul style="list-style-type: none"> • Measurement of differential side bearing preload • Measurement of output shaft No.2 bearing preload
 MB990560	MB990560 Rear axle shaft bearing installer	–	Remove of input and output shaft cylindrical roller bearing
	MD998917 Bearing remover	General service tool or MD998348-01	<ul style="list-style-type: none"> • Remove of each bearing • Remove of input and output shaft each gear
	MD998812 Installer cap	General service tool	Use with installer and installer adapter
	MD998814 Installer-200	MIT304180-A	Use with installer cap and installer adapter
	MD998823 Installer adapter	General service tool	Installation of input shaft each gear
	MD998813 Installer-100	General service tool	Use with installer and installer adapter

TOOL	TOOL NUMBER AND NAME	SUPERSESSION	APPLICATION
	MD998818 Installer adaptor	General service tool	Installation of input shaft cylindrical roller bearing
	MD998820 Installer adapter	MD998820-01	<ul style="list-style-type: none"> • Installation of input shaft radial ball bearing • Installation of output shaft cylindrical roller bearing
	MD998824 Installer adapter	MD998824-01	<ul style="list-style-type: none"> • Installation of each hub sleeve • Installation of output shaft radial ball bearing
	MD998819 Installer adapter	General service tool	Installation of output shaft taper roller bearing
	MD998827 Installer adapter	–	<ul style="list-style-type: none"> • Installation of reverse synchronizer sub-assembly • Installation of 5th-6th hub sleeve • Installation of taper roller bearing
 MB990211	MB990211 Slide hammer	MB990211-01	Use with slide hammer puller
	MD998368 Bearing installer	–	Removal and installation of select lever bearing
	MB992039	–	<ul style="list-style-type: none"> • Remove of tapered roller bearing No.1 • Remove of cylindrical roller bearing outer race

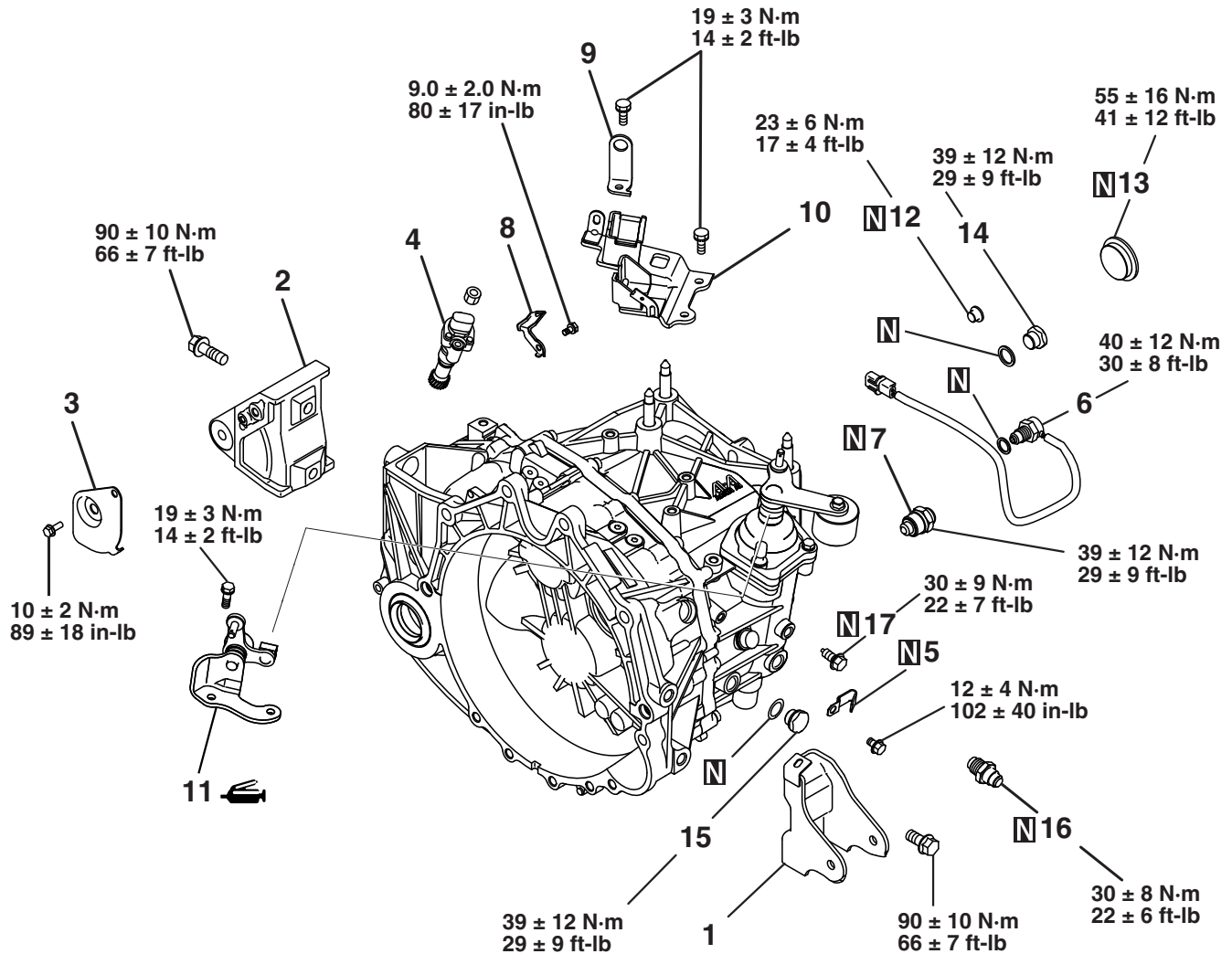
TOOL	TOOL NUMBER AND NAME	SUPERSESSION	APPLICATION
 MB991168	MB991168 Differential oil seal installer	MB991168-01	<ul style="list-style-type: none"> • Installation of tapered roller bearing No.1 • Installation of type T oil seal
	MB990699 Differential oil seal installer	–	Installation of cylindrical roller bearing outer race
	MB992037 Input shaft oil seal installer	–	Installation of type T oil seal
	MB991448 Bush remover & installer base	–	Installation of cylindrical roller bearing outer
	MD998550 Extension HSG seal installer	–	Installation of type T oil seal
	MB990938 Installer bar	MB990938-01	<ul style="list-style-type: none"> • Use with bush remover & installer base • Use with knuckle oil seal installer
	MB991445 Bush remover & installer base	–	Installation of tapered roller bearing
	MB991966 Bearing outer race installer	–	Installation of tapered roller bearing No.1

TOOL	TOOL NUMBER AND NAME	SUPERSESSION	APPLICATION
 MB991015	MB991015 Knuckle oil seal installer	MB991015-01	Installation of tapered roller bearing

TRANSAXLE

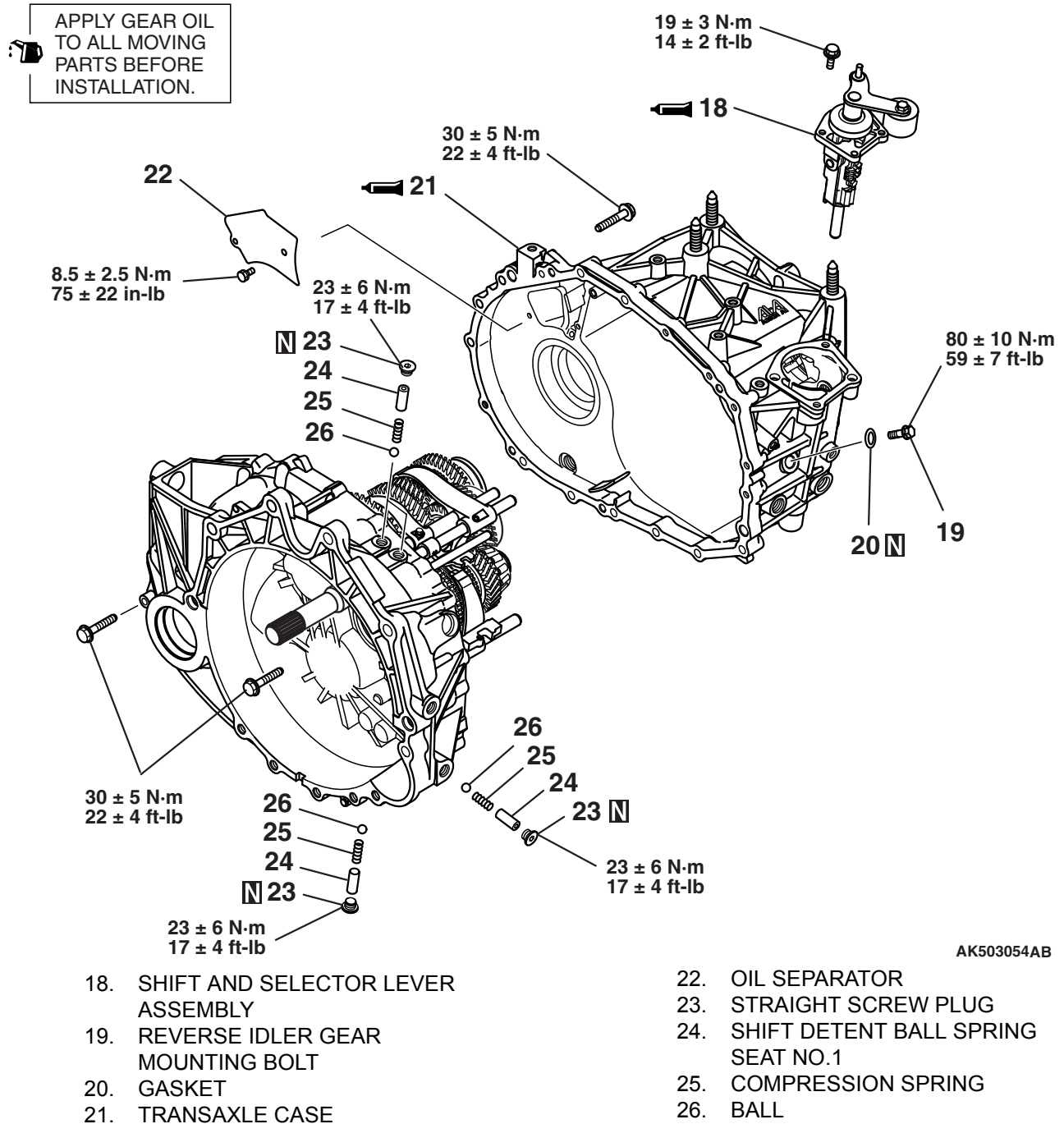
DISASSEMBLY AND ASSEMBLY

M1222016500031



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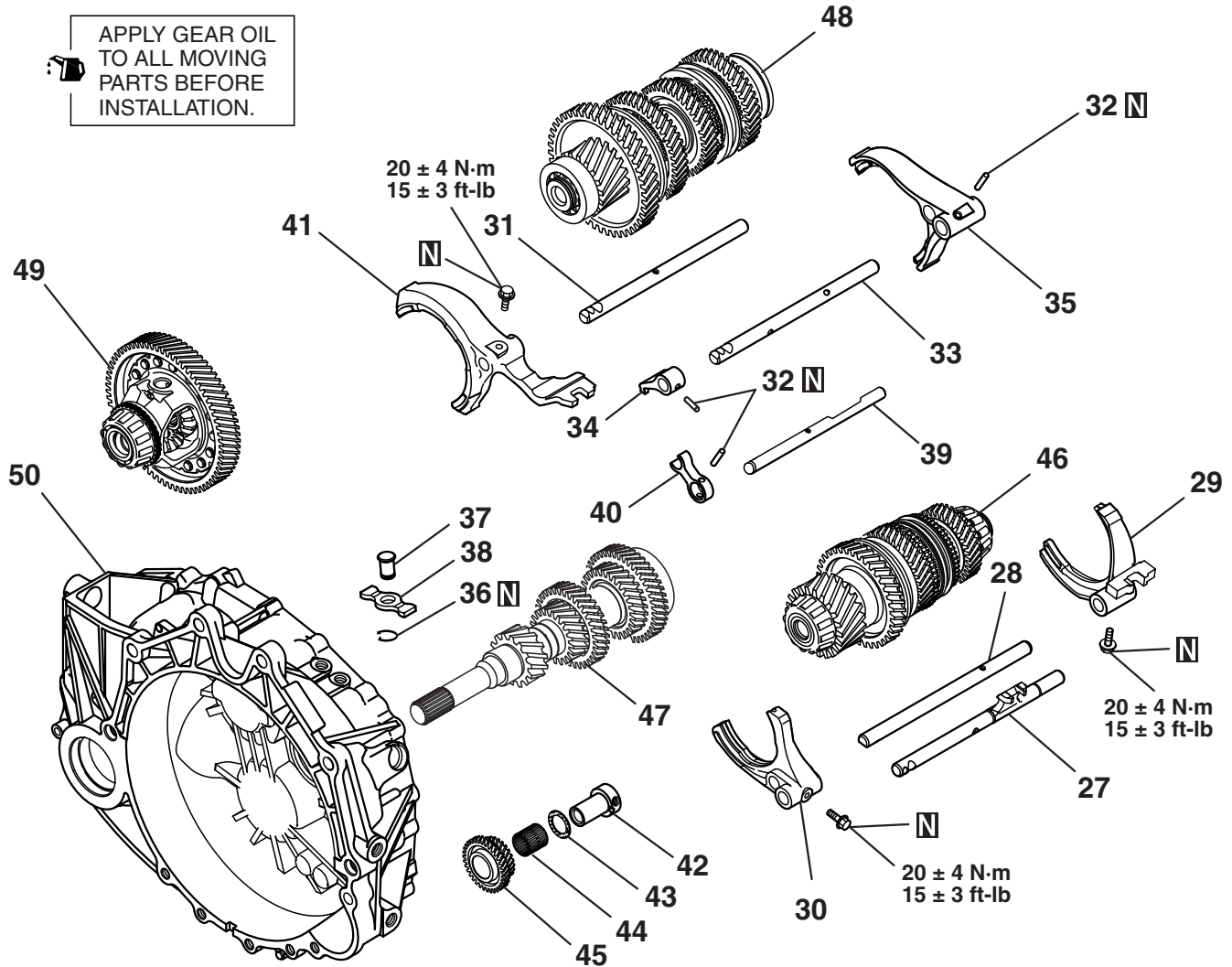
- | | |
|---------------------------------|---|
| 1. ROLL STOPPER BRACKET, FRONT | 10. CONTROL CABLE BRACKET |
| 2. ROLL STOPPER BRACKET, REAR | 11. SELECTING BELL CRANK ASSEMBLY AND CONTROL BELL CRANK DUST COVER |
| 3. HEAT PROTECTOR | 12. STRAIGHT SCREW PLUG |
| 4. VEHICLE SPEED SENSOR | 13. STRAIGHT SCREW PLUG |
| 5. CLAMP | 14. DRAIN PLUG |
| 6. BACKUP LIGHT SWITCH ASSEMBLY | 15. FILLER PLUG |
| 7. LOCK BALL ASSEMBLY | 16. LOCK BALL ASSEMBLY |
| 8. WIRING HARNESS CLAMP BRACKET | 17. STRAIGHT PIN |
| 9. TRANSAXLE CASE HANGER NO.1 | |



- 18. SHIFT AND SELECTOR LEVER ASSEMBLY
- 19. REVERSE IDLER GEAR MOUNTING BOLT
- 20. GASKET
- 21. TRANSAXLE CASE

- 22. OIL SEPARATOR
- 23. STRAIGHT SCREW PLUG
- 24. SHIFT DETENT BALL SPRING SEAT NO.1
- 25. COMPRESSION SPRING
- 26. BALL

APPLY GEAR OIL
TO ALL MOVING
PARTS BEFORE
INSTALLATION.



AK503053 AB

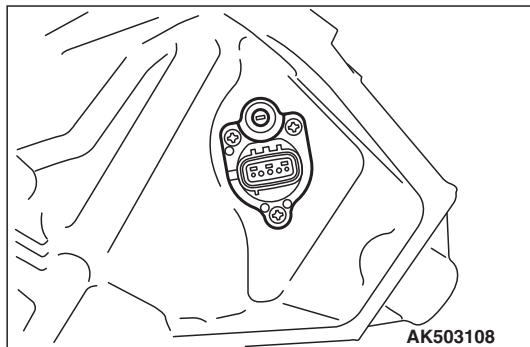
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|----------------------------------|------------------------------------|
| 27. SHIFT FORK SHAFT NO.4 | 40. GEAR SHIFT HEAD NO.3 |
| 28. SHIFT FORK SHAFT NO.3 | 41. GEAR SHIFT FORK ASSEMBLY NO.1 |
| 29. GEAR SHIT FORK ASSEMBLY NO.3 | 42. REVERSE IDLER GEAR SHAFT |
| 30. REVERSE SHIFT FORK | 43. THRUST WASHER |
| 31. GEAR SHIFT FORK SHAFT NO.1 | 44. NEEDLE ROLLER BEARING |
| 32. SLOTTED SPRING PIN | 45. REVERSE IDLER GEAR |
| 33. GEAR SHIFT FORK SHAFT NO.2 | 46. OUTPUT SHAFT NO.2 SUB-ASSEMBLY |
| 34. GEAR SHIFT HEAD NO.2 | 47. INPUT SHAFT SUB-ASSEMBLY |
| 35. GEARSHIFT FORK ASSEMBLY NO.2 | 48. OUTPUT SHAFT NO.1 SUB-ASSEMBLY |
| 36. E-RING | 49. DIFFERENTIAL SUB-ASSEMBLY |
| 37. SHIFT ARM PIVOT | 50. CLUTCH HOUSING |
| 38. SHIFT ARM | |
| 39. GEAR SHIFT FORK SHAFT NO.5 | |

Required Special Tools:

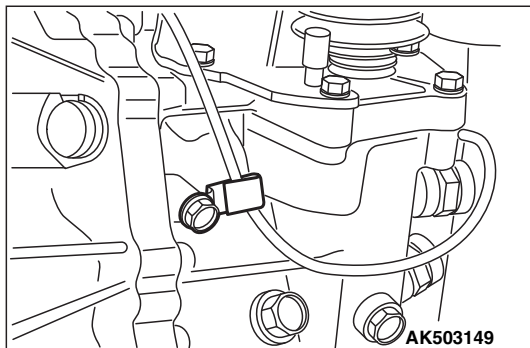
- MB992038: Preload socket

DISASSEMBLY

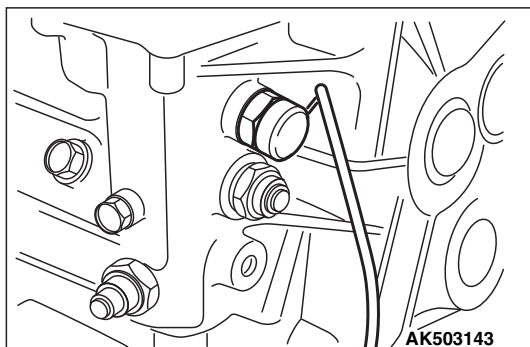
1. Remove the speedometer driven gear assembly.



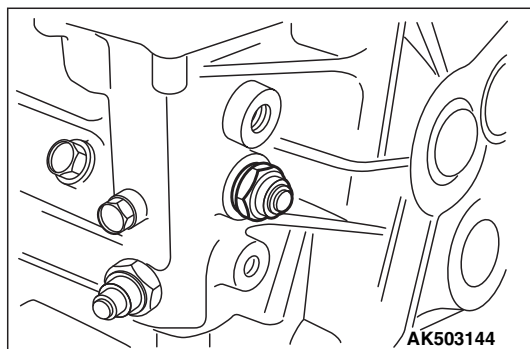
2. Remove the clamp.

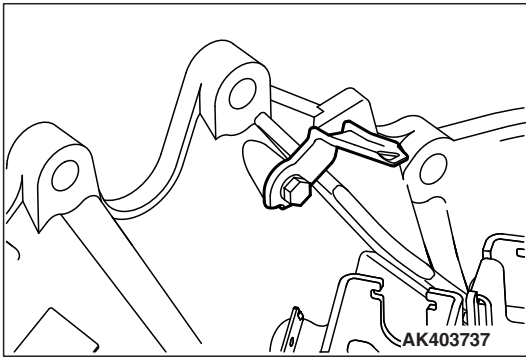


3. Remove the backup light switch assembly.
4. Remove the backup light switch harness connector from control cable bracket.

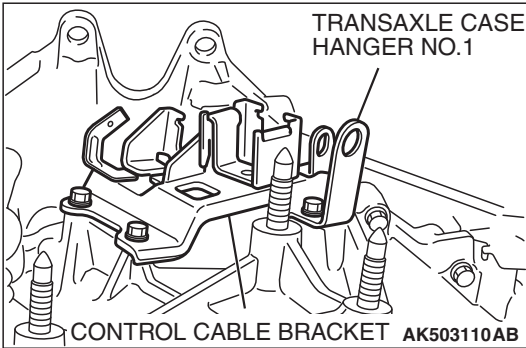


5. Remove the lock ball assembly.

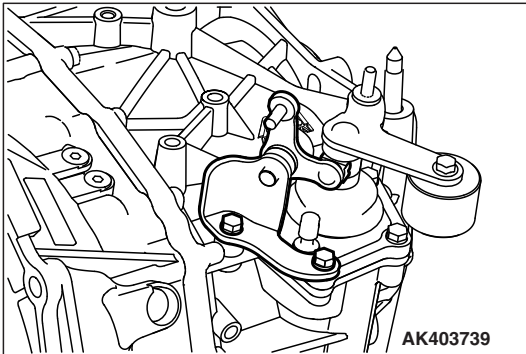




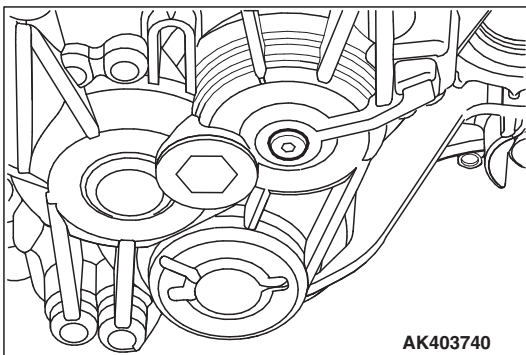
6. Remove the wiring harness clamp bracket.



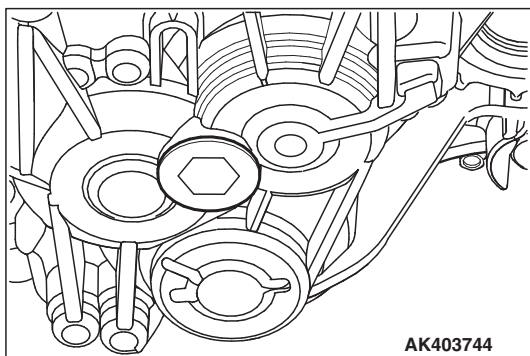
7. Remove the control cable bracket with transaxle case hanger No.1.



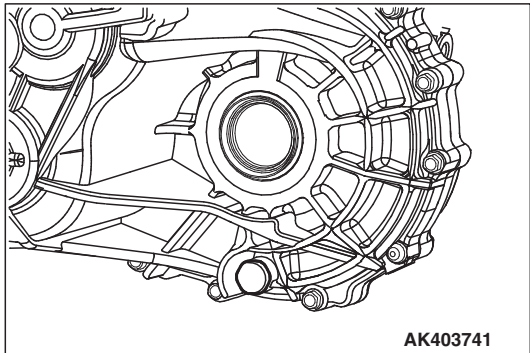
8. Remove the selecting bell crank assembly and the control bell crank dust cover.



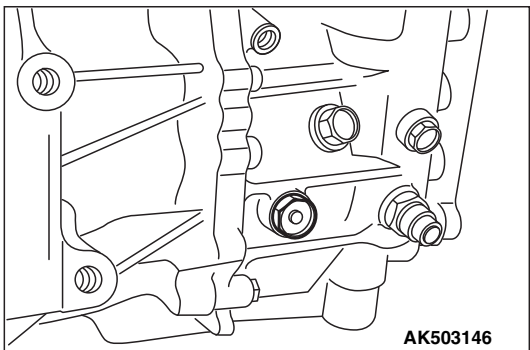
9. Remove the straight screw plug with head.



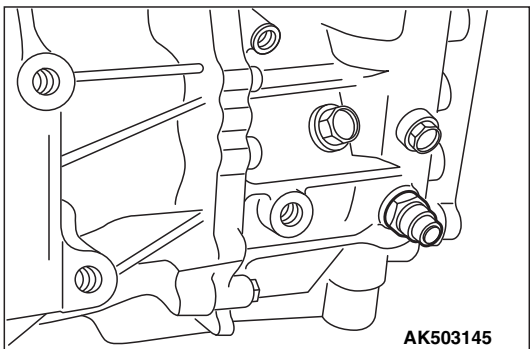
10. Using the 27 mm (1.06 inches) socket, remove the straight screw plug with head.



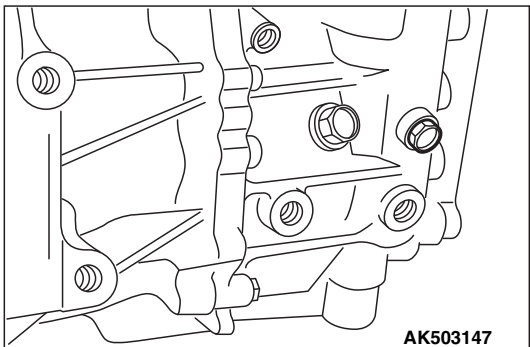
11. Remove the drain plug and the gasket.



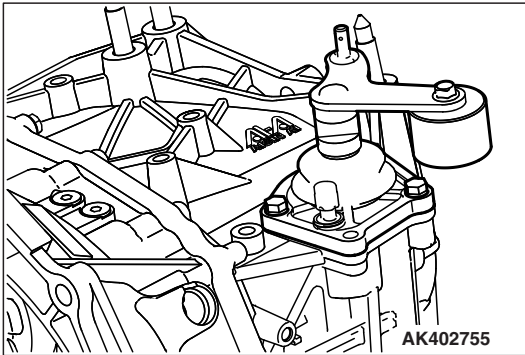
12. Remove the filler plug and the gasket.



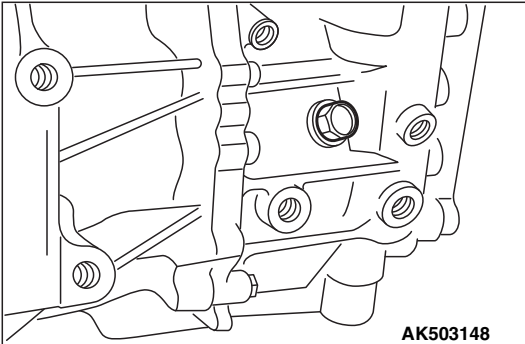
13. Remove the lock ball assembly.



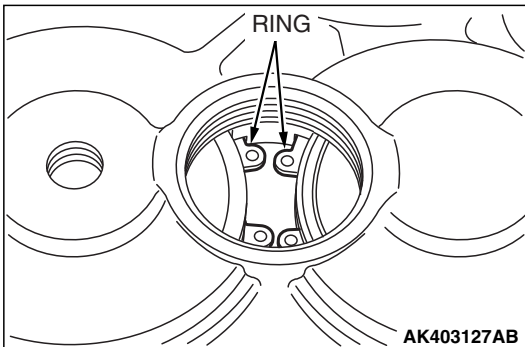
14. Remove the straight pin.



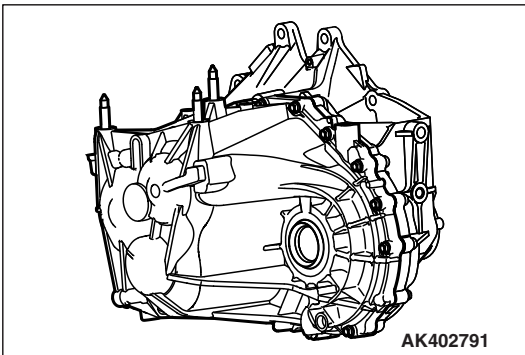
15.Remove the shift and select lever shaft assembly.



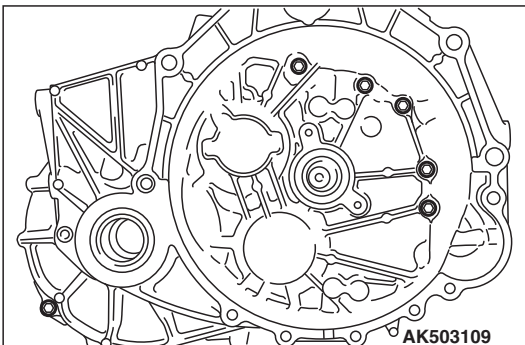
16.Remove the reverse idler gear mounting bolt and gasket.

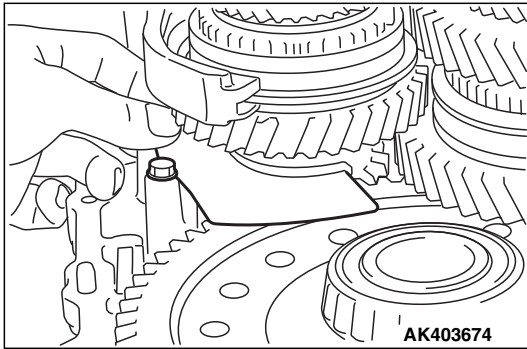


17.Use snap ring pliers to expand the indicated hole snap rings. The hole snap rings will release the radial ball bearings, and the input shaft and output shaft No.1 will fall under its own weight.

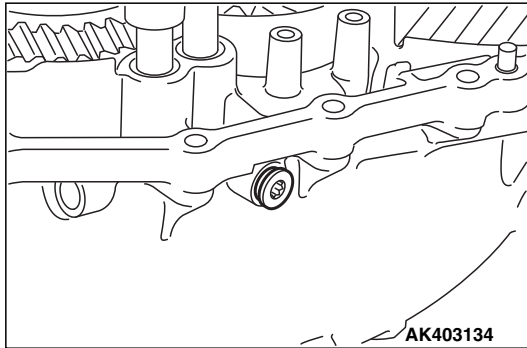


18.Remove the transaxle case.

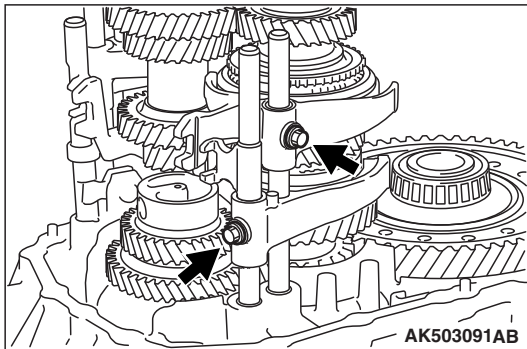




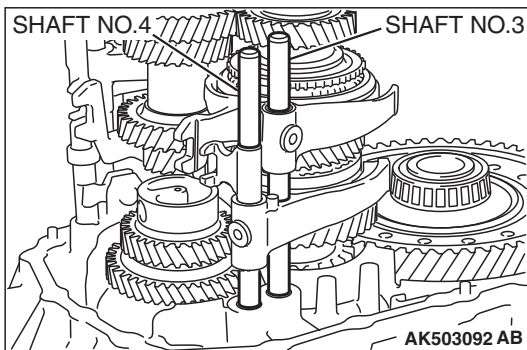
19.Remove the oil separator.



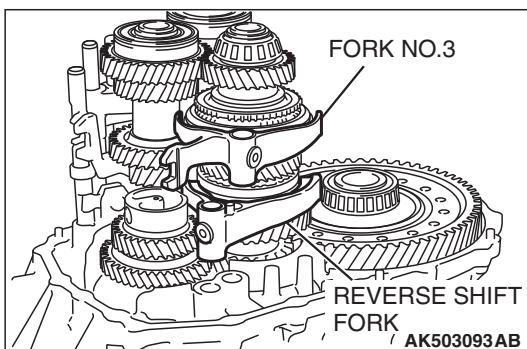
20.Remove the straight screw plug with head, the shift detent ball spring seat No.1, the compression spring and ball (four places).



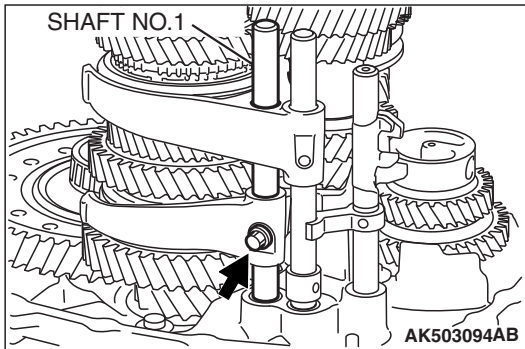
21.Remove the washer based hexagon bolt.



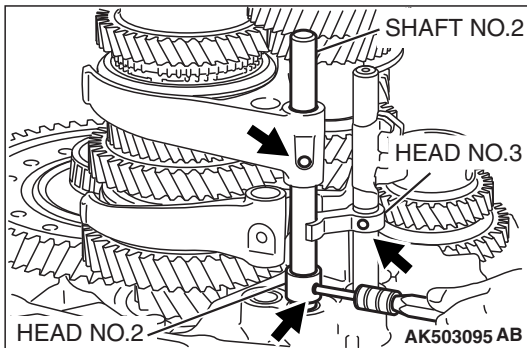
22.Remove the gear shift fork shaft No.4 and the gear shift fork shaft No.3.



23.Remove the gear shift fork assembly No.3 and the reverse shift fork.

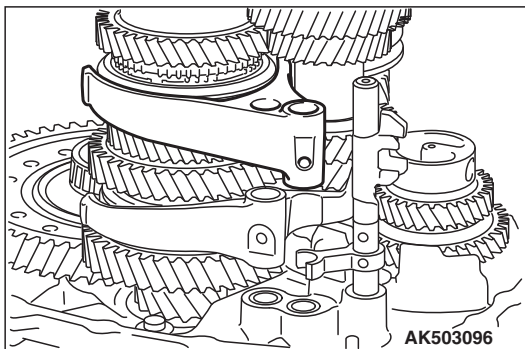


24. Remove the washer based hexagon bolt and then remove the gear shift fork shaft No. 1

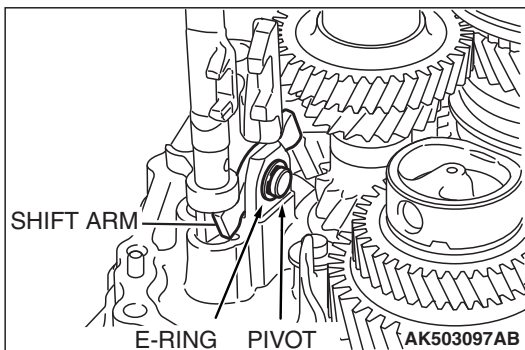


25. Remove the slotted spring pins (three places).

26. Remove the gear shift fork shaft No. 2 and gear shift head No. 2.

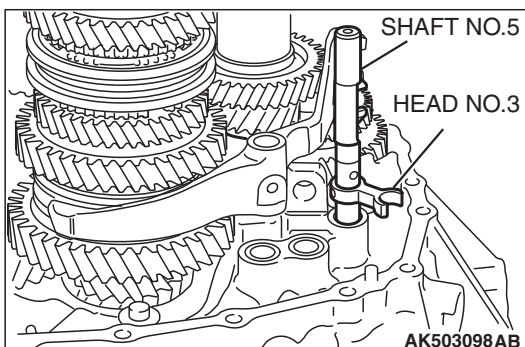


27. Remove the gear shift fork assembly No. 2.

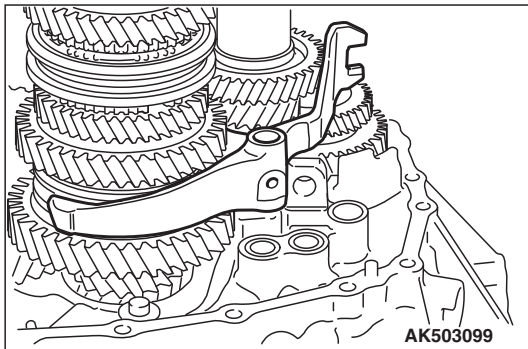


28. Remove the E-ring.

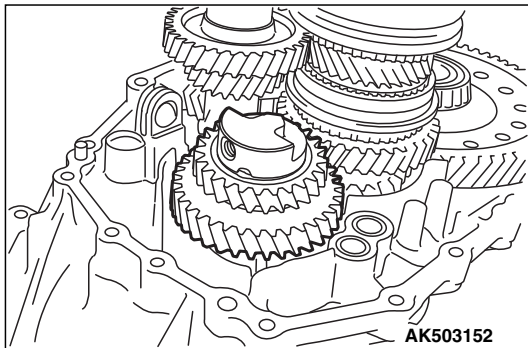
29. Remove the pivot and shift arm.



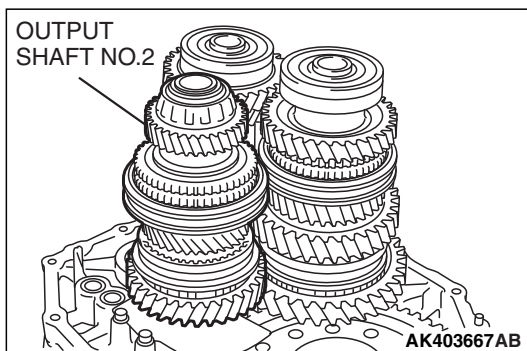
30. Remove the gear shift fork shaft No. 5 and gear shift head No. 3.



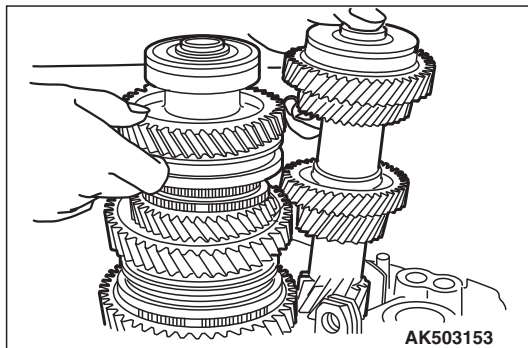
31.Remove the gear shift fork assembly No.1.



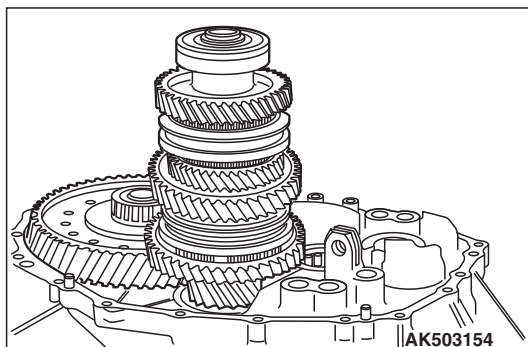
32.Remove the reverse idler gear shaft, reverse idler thrust washer, needle roller bearing and reverse idler gear.



33.Remove the output shaft No.2 sub-assembly.



34.Slide the synchronizer sleeve to the 3rd gear and then remove the input shaft.



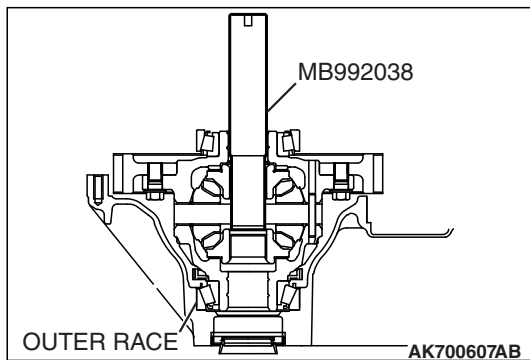
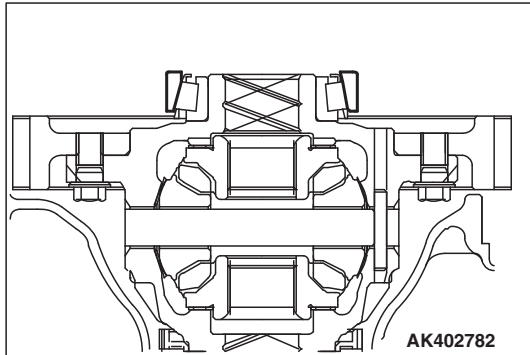
35.Remove the output shaft No.1 sub-assembly

36.Remove the differential sub-assembly.

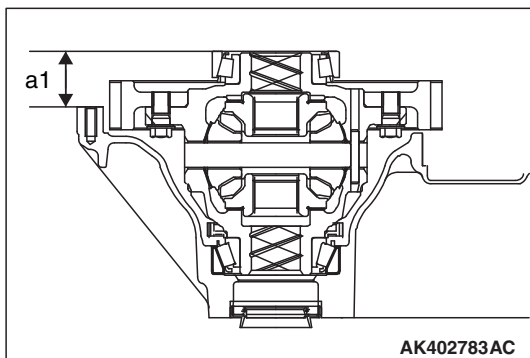
ADJUSTMENT BEFORE ASSEMBLY

DIFFERENTIAL SIDE BEARING PRELOAD ADJUSTMENT

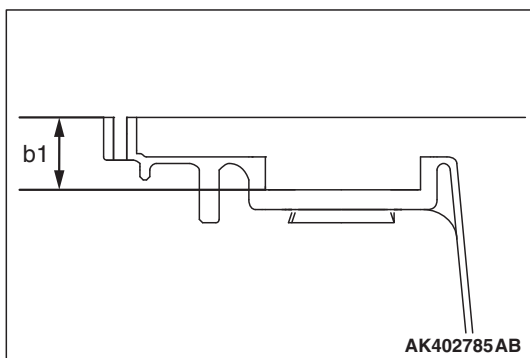
1. Set the differential assembly to the clutch housing.
2. Push and fit the tapered roller bearing outer race by hand.



3. To fit the tapered roller bearing outer race, rotate the differential assembly about 10 times with the special tool MB992038.

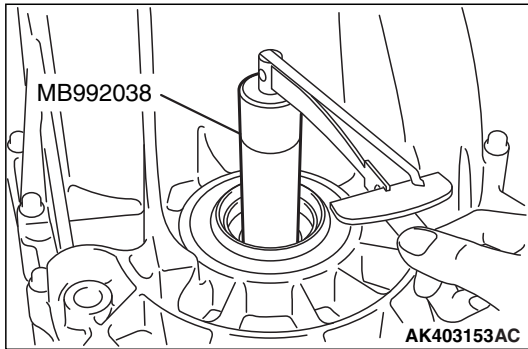


4. Put the clutch housing on the surface table and use a height gauge to measure the dimension "a1," which is from the mating surface of the clutch housing to the end surface of the tapered roller bearing outer race.



5. Put the straight edge on the mating surface of the transaxle case and measure the dimension "b1" with a vernier caliper.
6. Select the shim whose dimension is the difference between "b1" and "a1."
7. Install the differential assembly to the transaxle case. Tighten the transaxle case bolts to the specified torque.

Tightening torque: 30 ± 5 N·m (22 ± 4 ft-lb)

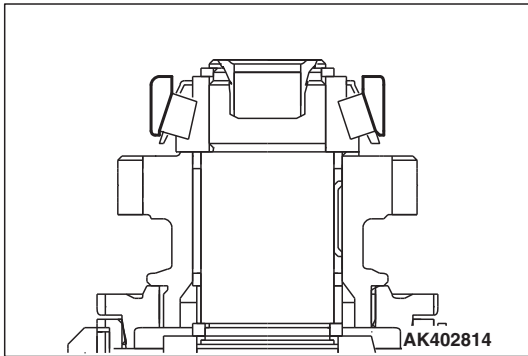


8. Using special tool MB992038, measure the rotational starting torque of differential case. When it is not within the standard range, reselect the shim.

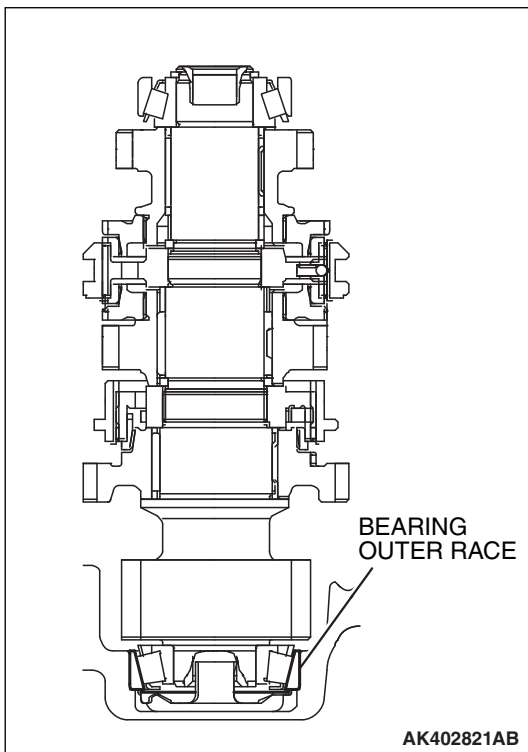
Standard value: 1.00 – 2.49 N·m (8.85 – 22.04 in-lb)

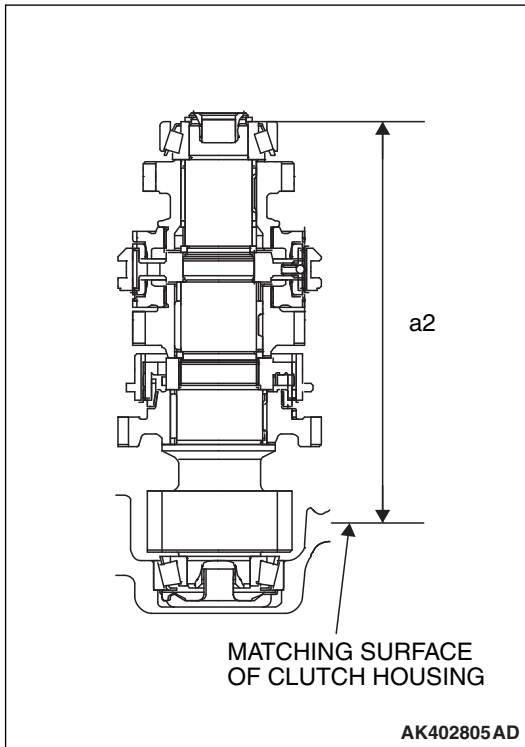
OUTPUT SHAFT NO. 2 BEARING PRELOAD ADJUSTMENT

1. Set the output shaft No.2 sub-assembly and differential assembly to the clutch housing.
2. Push and fit the tapered roller bearing outer race by hand.

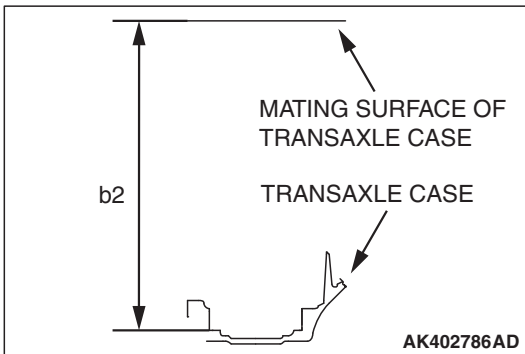


3. To fit the tapered roller bearing outer race, rotate the output shaft No.2 sub-assembly by hand about 10 times.



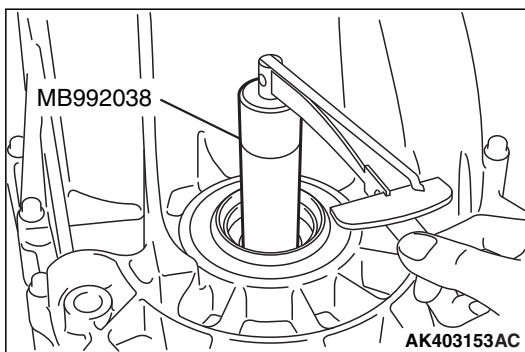


4. Put the clutch housing on the surface table and measure the dimension "a2," which is from the mating surface of the clutch housing to the end surface of the bearing outer race, with a height gauge.



5. Put the straight edge on the mating surface of the transaxle case and measure the dimension "b2" with a vernier caliper.
6. Select the shim whose dimension is the difference between "b2" and "a2."
7. Install the output shaft No.2 sub-assembly and differential assembly to the clutch housing. Tighten the transaxle case bolts to the specified torque.

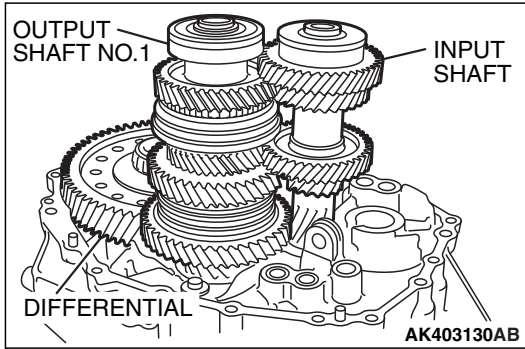
Tightening torque: 30 ± 5 N·m (22 ± 4 ft-lb)



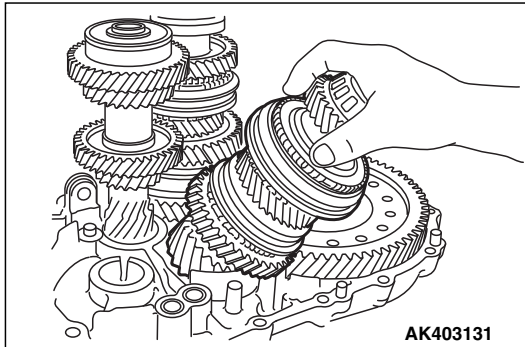
8. Using special tool MB992038, measure the rotational starting torque on the differential shaft. From this rotational starting torque, subtract the value measured in the adjustment of the bearing preload on the differential side. When this is not within the standard range, reselect the shim.

Standard value: $3.89 - 5.51$ N·m ($34.43 - 48.77$ in-lb)

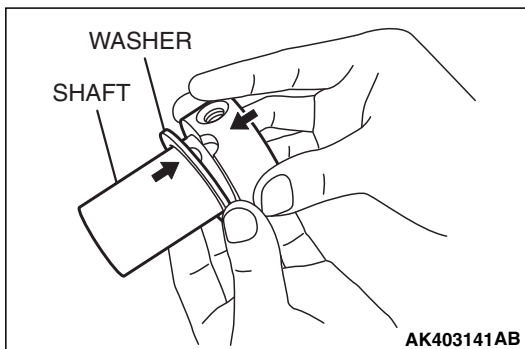
ASSEMBLY



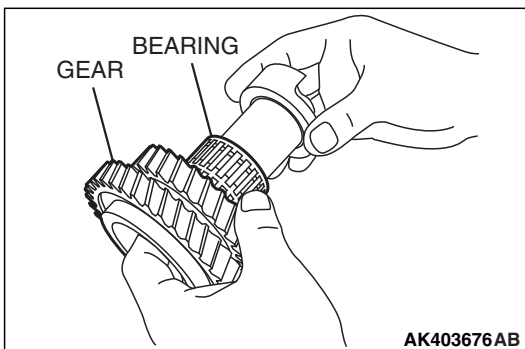
1. Install the differential sub-assembly in the clutch housing.
2. Install the input shaft sub-assembly and output shaft No.1 sub-assembly in the clutch housing simultaneously.

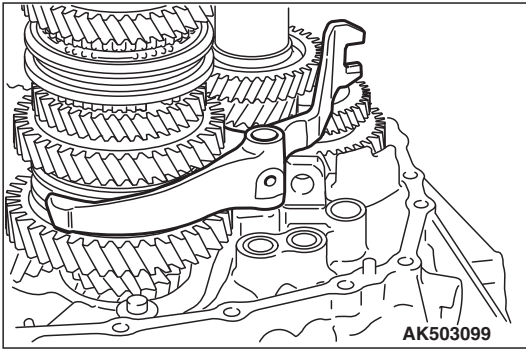


3. Install the output shaft No.2 sub-assembly in the clutch housing as shown in the illustration.

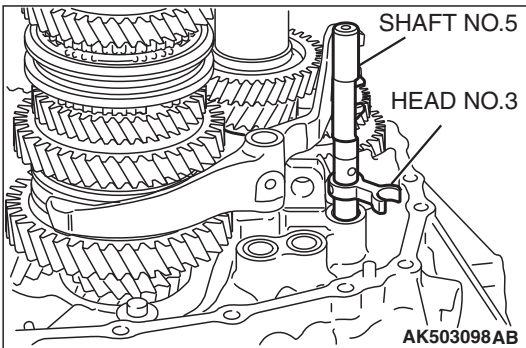


4. Set the reverse idler gear, the needle roller bearing, the reverse idler thrust washer and the reverse idler gear shaft.
NOTE: Fit the projection of the anti-rotation for the reverse idler thrust washer into the reverse idle gear shaft as shown.
5. Install them to the clutch housing.

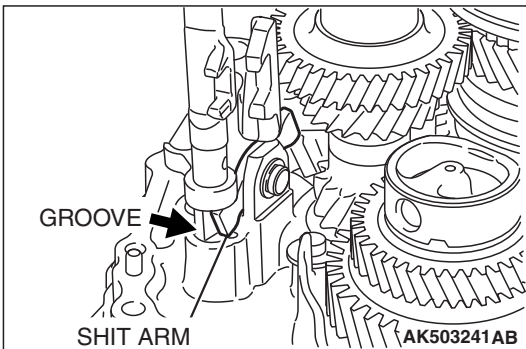




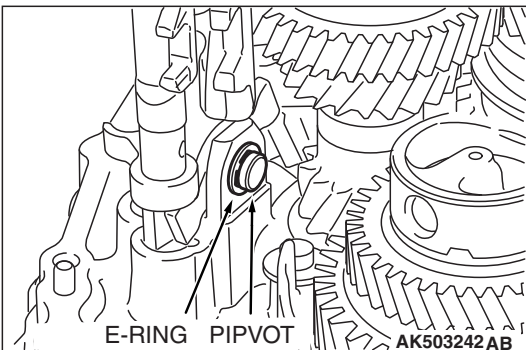
6. Install the gear shift fork assembly No.1.



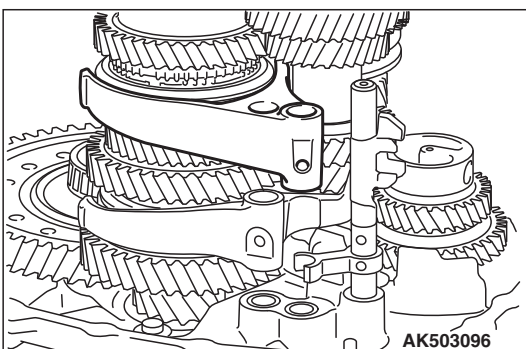
7. Install the gear shift head No.3 and gear shift fork shaft No.5.



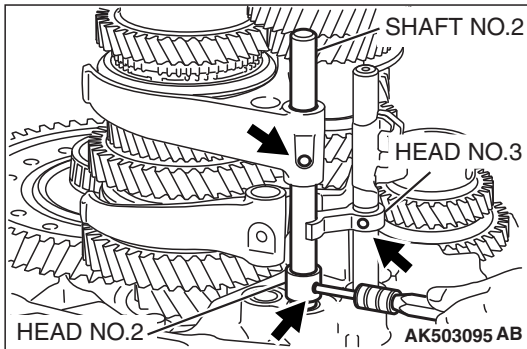
8. Insert the shift arm into the clutch housing, fitting it in the groove of the gear shift fork shaft No.5.



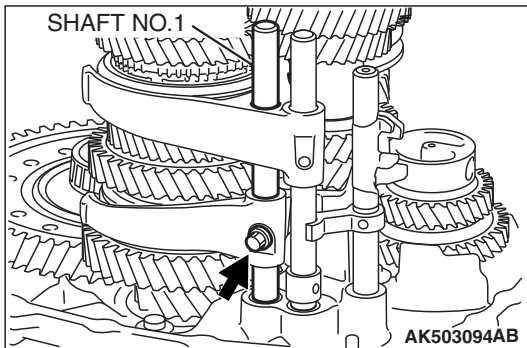
9. After insert the pivot into the clutch housing and the shift arm, install the E-ring into the arm pivot.



10. Install the gear shift fork assembly No.2.

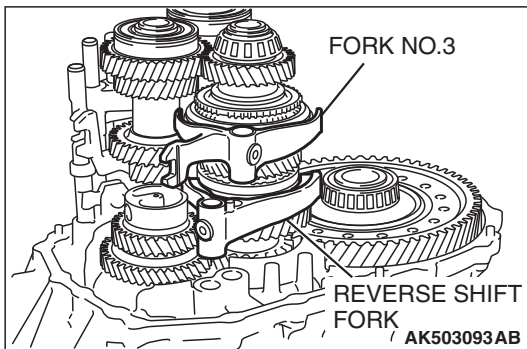


11. Insert the shaft No. 2 in the order of gear shift fork assembly No. 2, gear shift head No. 2 with the shift arm and clutch housing.
12. Stick the slotted spring pin in the gear shift head No. 2, gear shift head No. 3 and gear shift fork No. 2.

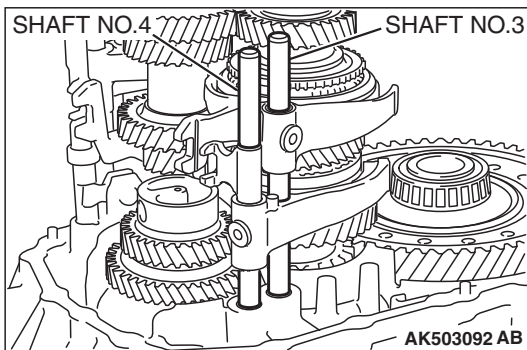


13. Insert the shaft No. 1 in the order of fork No. 2, No. 1 and the clutch housing.
14. Tighten the washer based hexagon bolts to the specified torque.

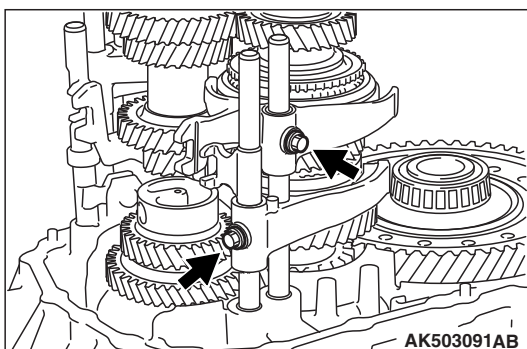
Tightening torque: 20 ± 4 N·m (15 ± 3 ft-lb)



15. Install the reverse shift fork and the gear shift fork assembly No. 3.

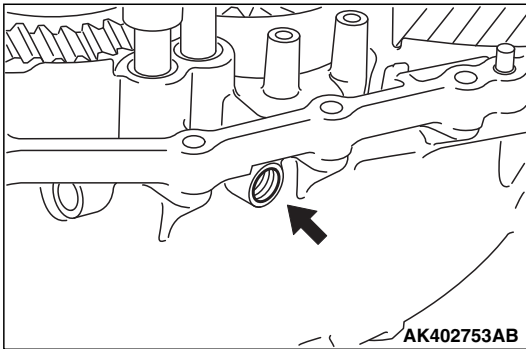


16. Insert the gear shift fork shaft No. 3 in the order of gear shift fork assembly No. 3, reverse shift fork, and clutch housing.
17. Insert the gear shift fork shaft No. 4 in the order of reverse shift fork and clutch housing.



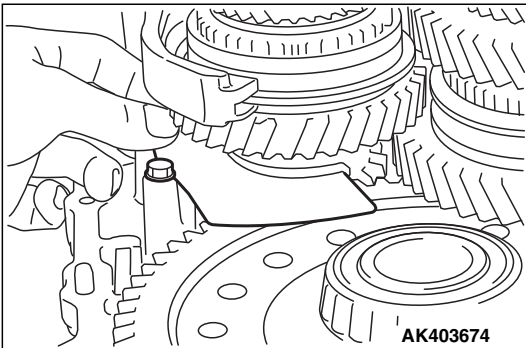
18. Tighten the washer based hexagon bolts to the specified torque.

Tightening torque: 20 ± 4 N·m (15 ± 3 ft-lb)



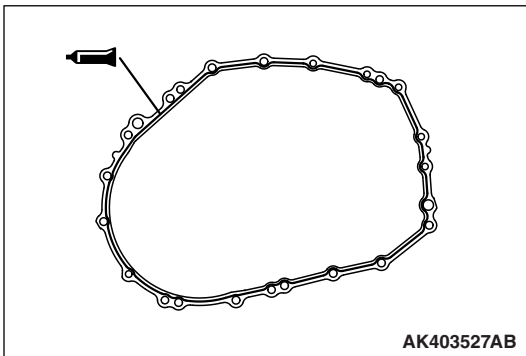
19. Install the ball, the compression spring, the shift detent ball seat spring No.1 and the new straight screw plug with head to specified torque (four places).

Tightening torque: 23 ± 6 N·m (17 ± 4 ft-lb)



20. Install the oil separator to the transaxle case and tighten the bolts to the specified torque.

Tightening torque: 8.5 ± 2.5 N·m (75 ± 22 in-lb)



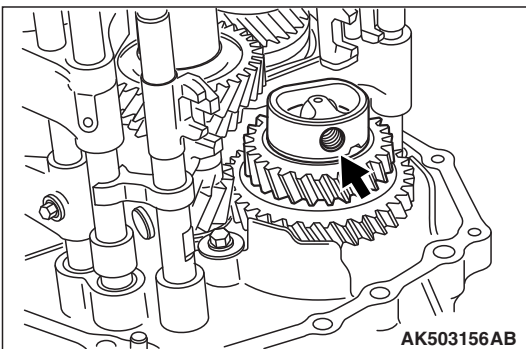
21. Completely degrease the FIPG-applied surface so that water and oil including the old sealant cannot adhere to the surface coated with the sealant.

Never touch the degreased surface by hand.

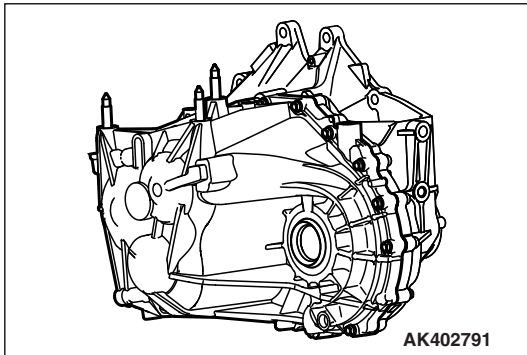
22. Apply a 1.2 mm (0.0472 inch) diameter bead of sealant as illustrated onto the transaxle case.

Specified sealant:

Mitsubishi Part No. MD974421 or equivalent

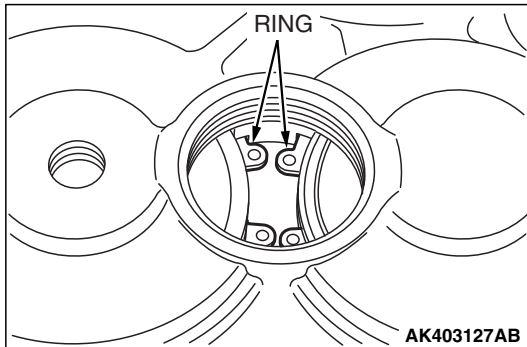
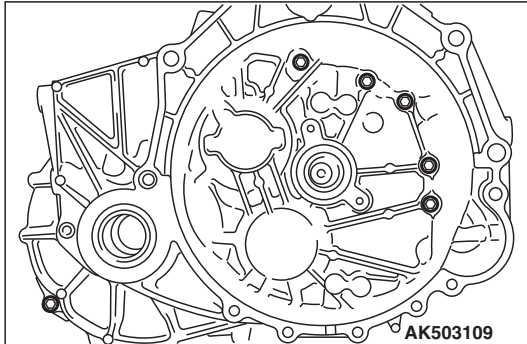


23. Before installing the transaxle case, confirm that the reverse idler gear mounting hole is positioned as shown in the illustration.

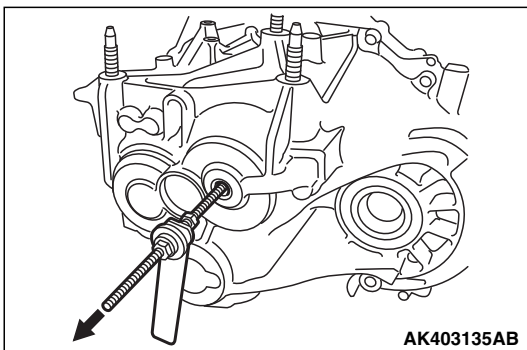


24. Install the clutch housing to the transaxle case and tighten the bolts to the specified torque.

Tightening torque: 30 ± 5 N·m (22 ± 4 ft-lb)



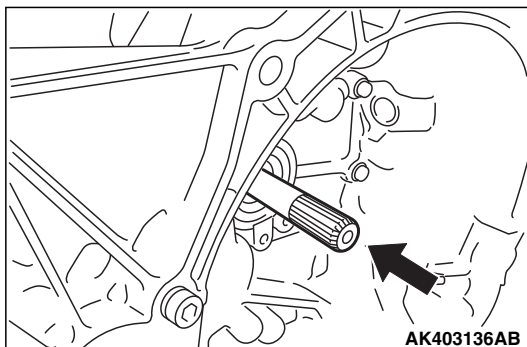
25. Extend the hole snap ring and install it on the radial ball bearing.



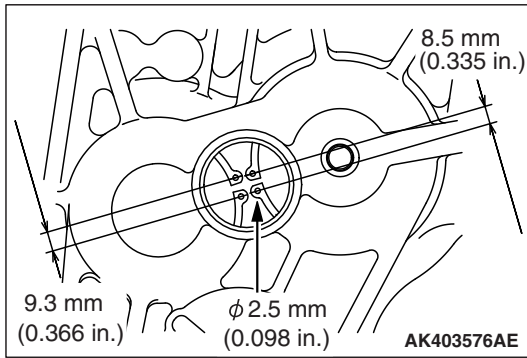
26. Install stud bolt to the output shaft No.1 sub-assembly.

27. Pull the output shaft No.1 sub-assembly in the direction as shown in the illustration and fit the hole snap ring into the bearing groove.

NOTE: After installation, keep the sealed area away from oil for approximately one hour.



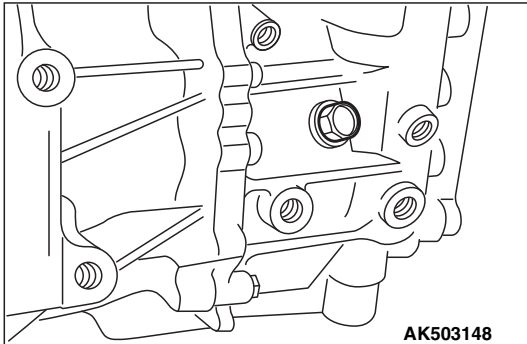
28. Push the input shaft sub-assembly in the direction as shown in the illustration and fit the hole snap ring into the bearing groove.



29. Lift the output No.1 sub-assembly.

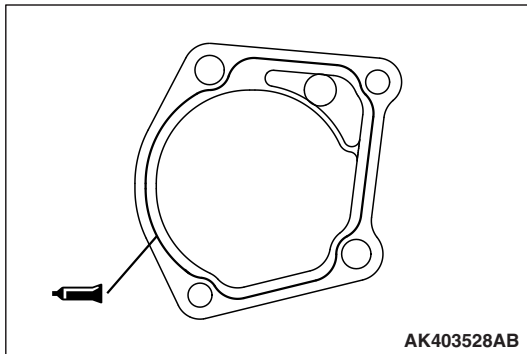
30. Confirm that the dimension between the centers of ϕ 2.5 mm (0.335 inch) holes on the hole snap ring is in accordance with the illustration.

31. Check the hole snap ring fits securely into the bearing groove.



32. Install the reverse idler gear mounting bolt and gasket to the specified torque.

Tightening torque: 80 ± 10 N·m (59 ± 7 ft-lb)



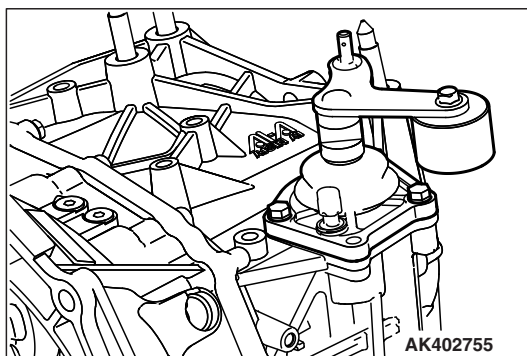
33. Completely degrease the FIPG-applied surface so that water and oil including the old sealant cannot adhere to the surface coated with the sealant.

Never touch the degreased surface by hand.

34. Apply a 1.2 mm (0.0472 inch) diameter bead of sealant as illustrated onto the control shaft cover.

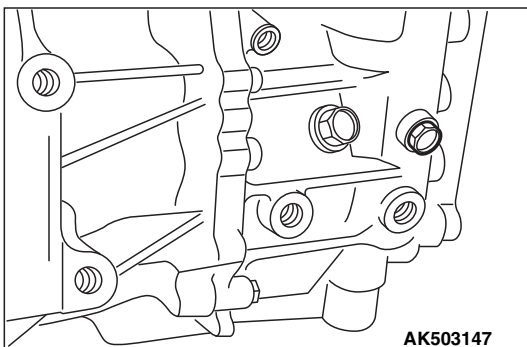
Specified sealant:

Mitsubishi Part No. MD974421 or equivalent



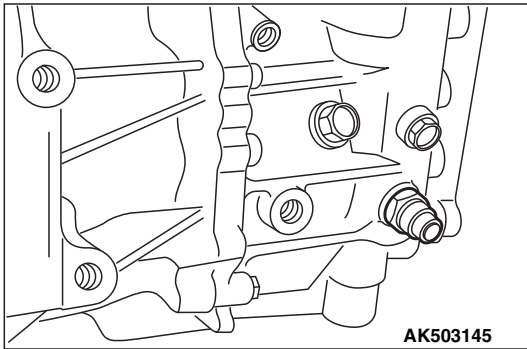
35. Install the shift and select lever shaft assembly to the transaxle case and tighten the bolts to the specified torque.

Tightening torque: 19 ± 3 N·m (14 ± 2 ft-lb)



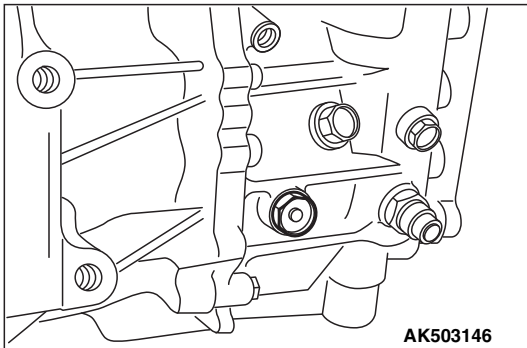
36. Install the straight pin to the specified torque.

Tightening torque: 30 ± 9 N·m (22 ± 7 ft-lb)



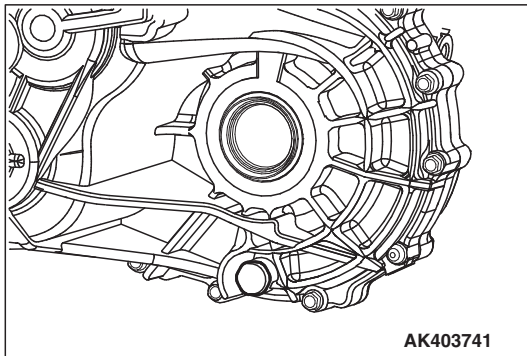
37. Install the lock ball assembly and tighten to the specified torque.

Tightening torque: 30 ± 8 N·m (22 ± 6 ft-lb)



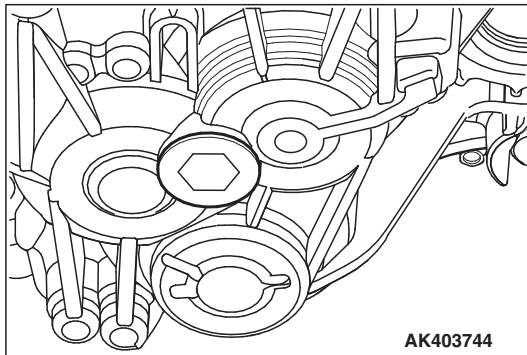
38. Install the filler plug and new gasket and tighten to the specified torque.

Tightening torque: 39 ± 12 N·m (29 ± 9 ft-lb)



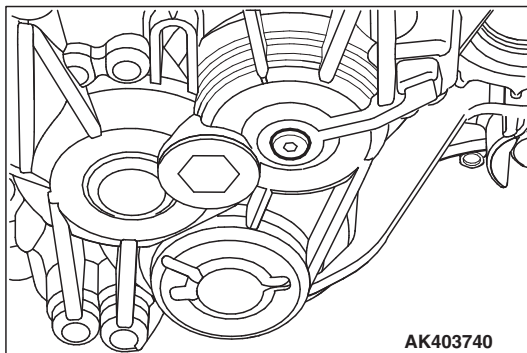
39. Install the drain plug and new gasket and tighten to the specified torque.

Tightening torque: 39 ± 12 N·m (29 ± 9 ft-lb)



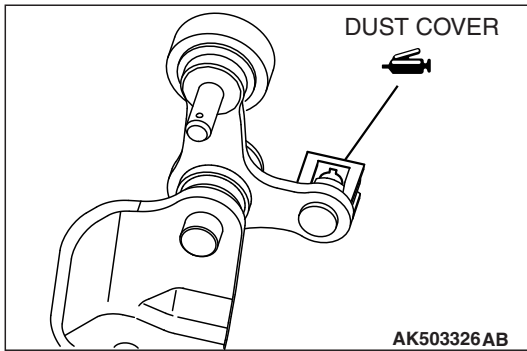
40. Using the 27 mm (1.06 inches) socket wrench, Install the new straight screw plug with head and tighten to the specified torque.

Tightening torque: 55 ± 16 N·m (41 ± 12 ft-lb)



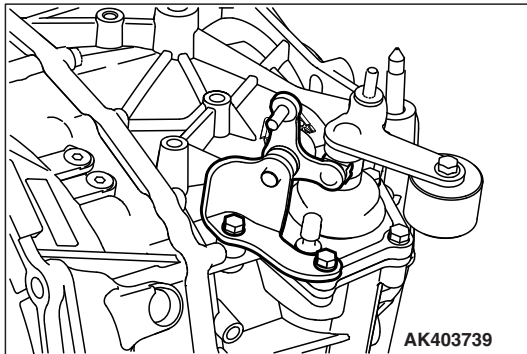
41. Install the straight screw plug with head and tighten to the specified torque.

Tightening torque: 23 ± 6 N·m (17 ± 4 ft-lb)



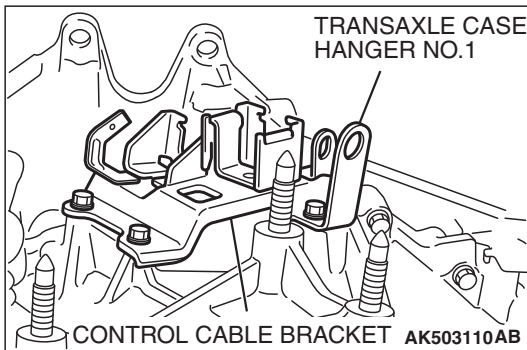
42. Apply grease to the hole and the sides of control bell crank dust cover.

Specified grease:
Mitsubishi Part No. 0101011 or equivalent



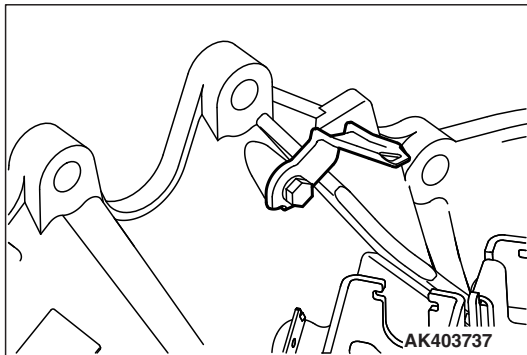
43. Install the selecting bell crank assembly and control bell crank dust cover to the transaxle case and tighten the bolts to the specified torque.

Tightening torque: 19 ± 3 N·m (14 ± 2 ft-lb)



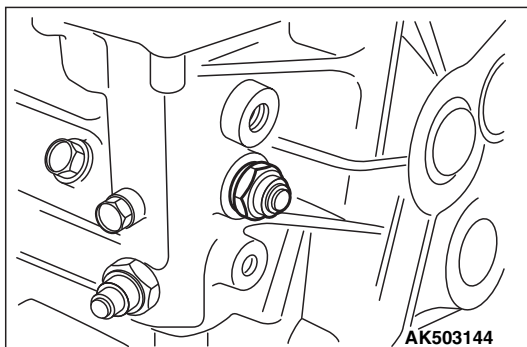
44. Install the control cable bracket with transaxle case hanger No.1 to the transaxle case and tighten the bolts to the specified torque.

Tightening torque: 19 ± 3 N·m (14 ± 2 ft-lb)



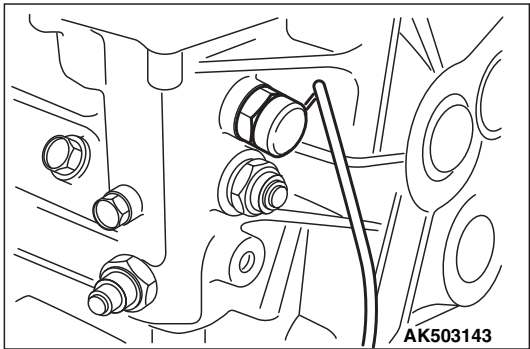
45. Install the wiring harness clamp bracket to the clutch housing and tighten the bolt to the specified torque.

Tightening torque: 9.0 ± 2.0 N·m (80 ± 17 in-lb)

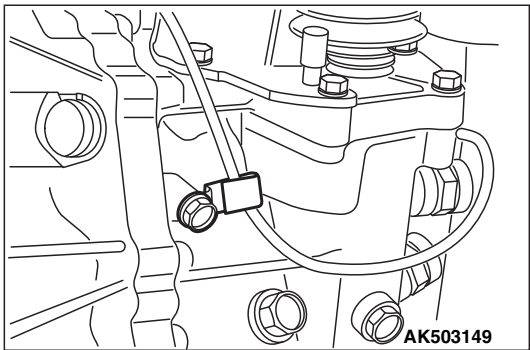


46. Install the lock ball assembly and tighten to the specified torque.

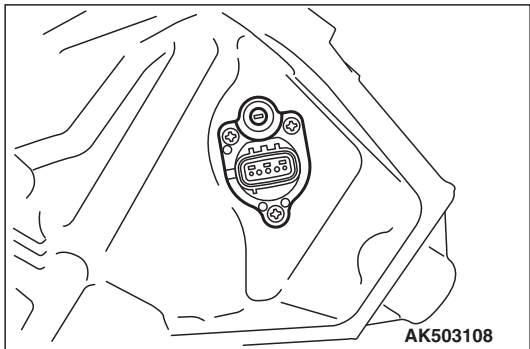
Tightening torque: 39 ± 12 N·m (29 ± 9 ft-lb)



47. Install the backup light switch assembly and tighten to the specified torque.
- Tightening torque: 40 ± 12 N·m (30 ± 8 ft-lb)**



48. Install the new clamp to the transaxle case and tighten the bolt to the specified torque.
- Tightening torque: 12 ± 4 N·m (102 ± 40 in-lb)**
49. Connect the backup light switch harness connector to the control cable bracket.



50. Install the vehicle speed sensor to the clutch housing.

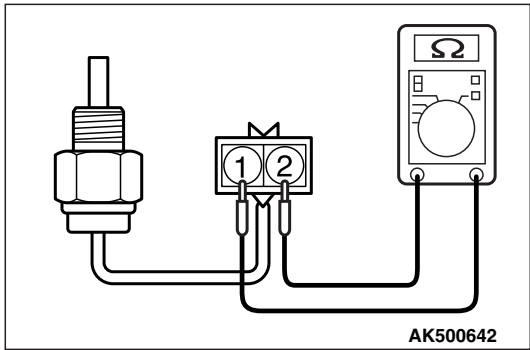
INSPECTION

M1222016600038

BACKUP LIGHT SWITCH

Check for continuity between terminals.

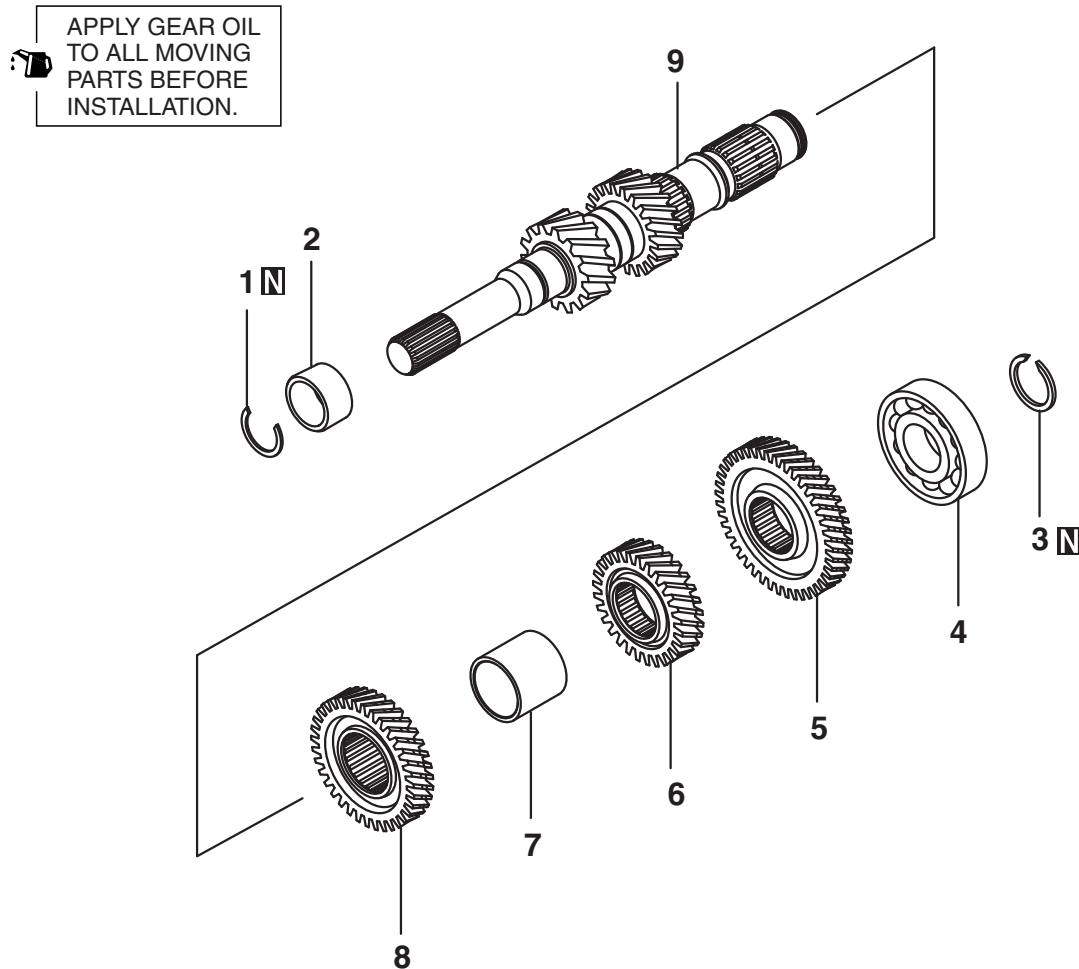
SWITCH CONDITION	CONTINUITY
Pressed	Open
Released	Conductive



INPUT SHAFT

DISASSEMBLY AND ASSEMBLY

M1222001600418



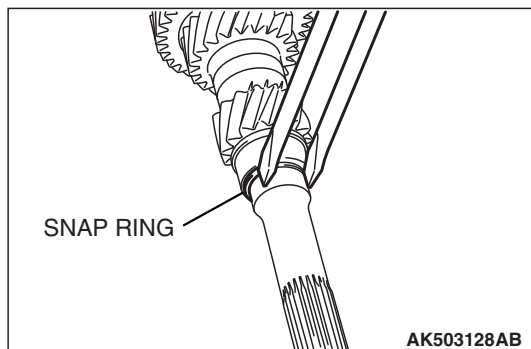
AK502950AE

Required Special Tools:

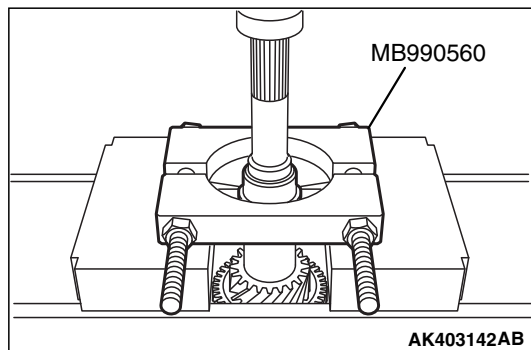
- MB990560: Rear axle shaft bearing remover
- MD998812: Installer cap
- MD998813: Installer-100
- MD998818: Installer adapter
- MD998820: Installer adapter
- MD998823: Installer adapter
- MD998917: Bearing remover

DISASSEMBLY

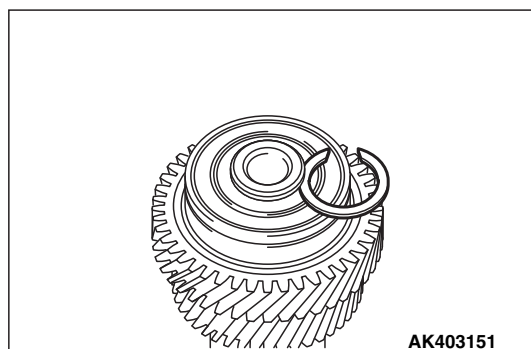
1. Remove the snap ring



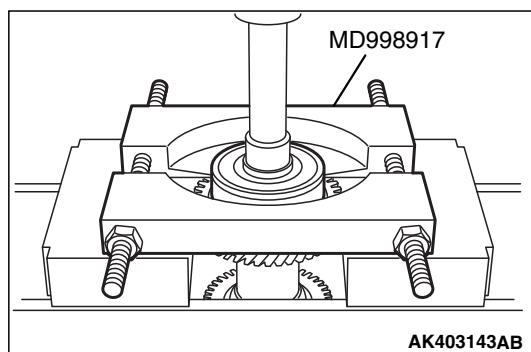
2. Using special tool MB990560, support the cylindrical roller bearing and remove the cylindrical roller bearing.

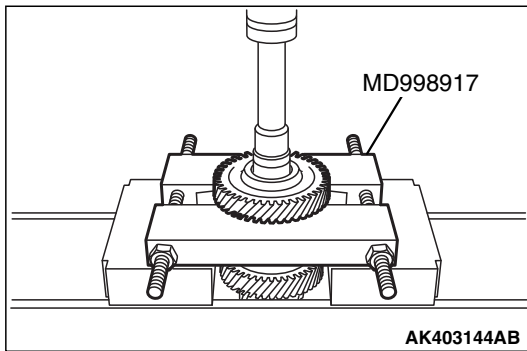


3. Remove the shaft snap ring.

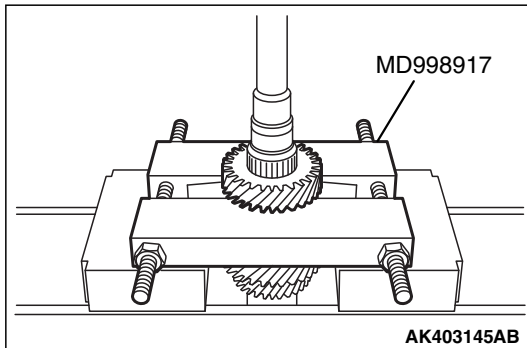


4. Using special tool MD998917, support the radial ball bearing and remove the radial ball bearing.

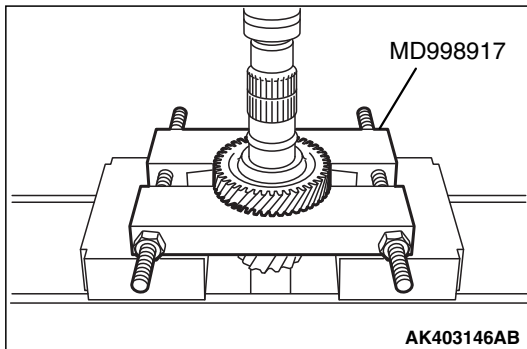




5. Using special tool MD998917, support the 6th drive gear and remove the 6th drive gear.

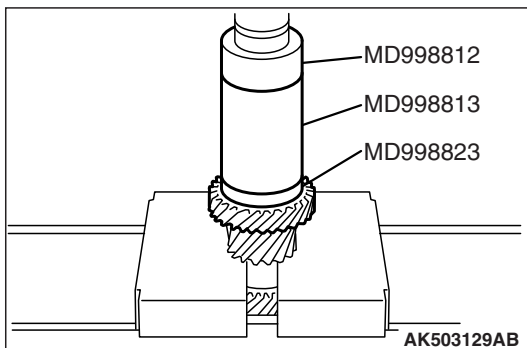


6. Using special tool MD998917, support the 3rd drive gear and remove the 3rd drive gear.
7. Remove the spacer.

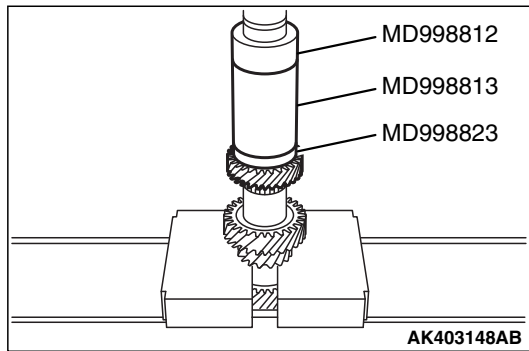


8. Using special tool MD998917, support the 4th drive gear and remove the 4th drive gear.

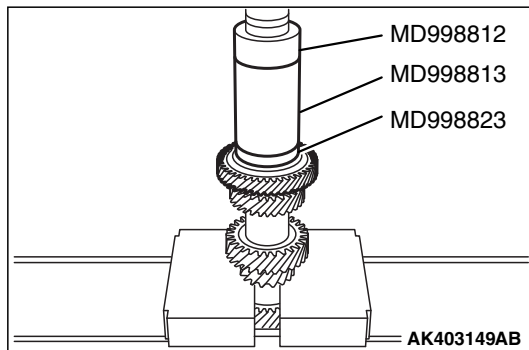
ASSEMBLY



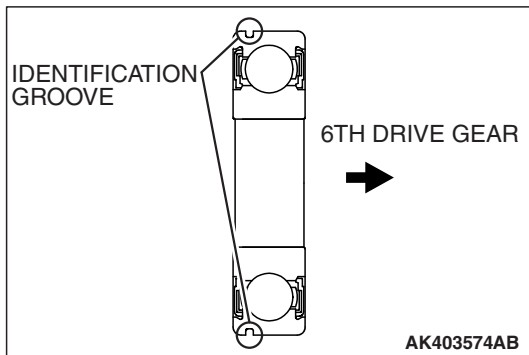
1. Using special tools MD998812, MD998813 and MD998823, install the 4th drive gear.
2. Install the spacer to input shaft.



3. Using special tools MD998812, MD998813 and MD998823, install the 3rd drive gear.



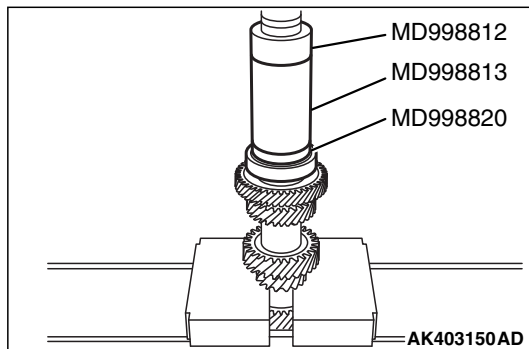
4. Using special tools MD998812, MD998813 and MD998823, install the 6th drive gear.



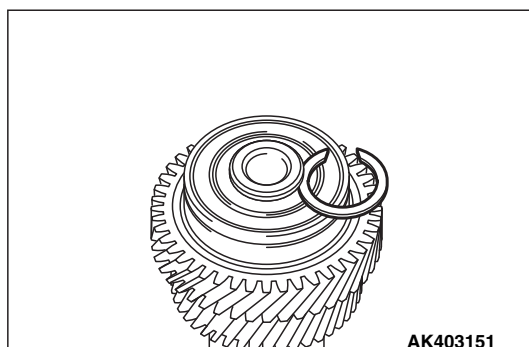
CAUTION

Never push the sealing area at the press fit.

5. Check the installation direction of the radial ball bearing.

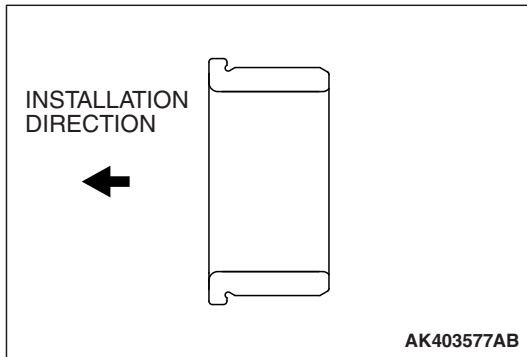


6. Using special tools MD998812, MD998813 and MD998820, install the radial ball bearing.

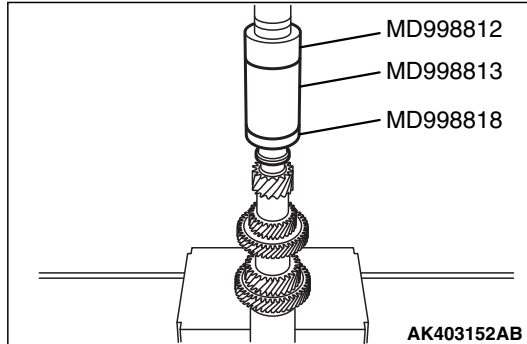


7. Select a shaft snap ring that allows distance of the thrust crevice of radial ball bearing to fall within the standard value range.

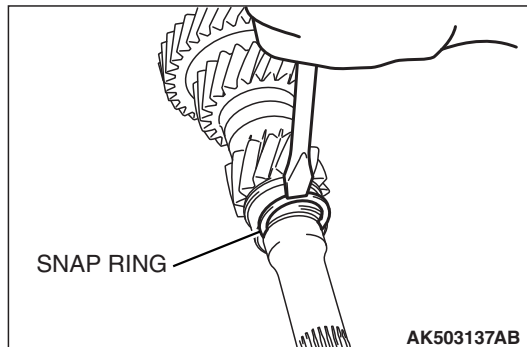
Standard value: 0 – 0.1 mm (0 – 0.0039 inch)



8. Check the installation direction of the cylindrical roller bearing.



9. Using special tools MD998812, MD998813 and MD998818, install the cylindrical roller bearing.



10. Install the snap ring

OUTPUT SHAFT

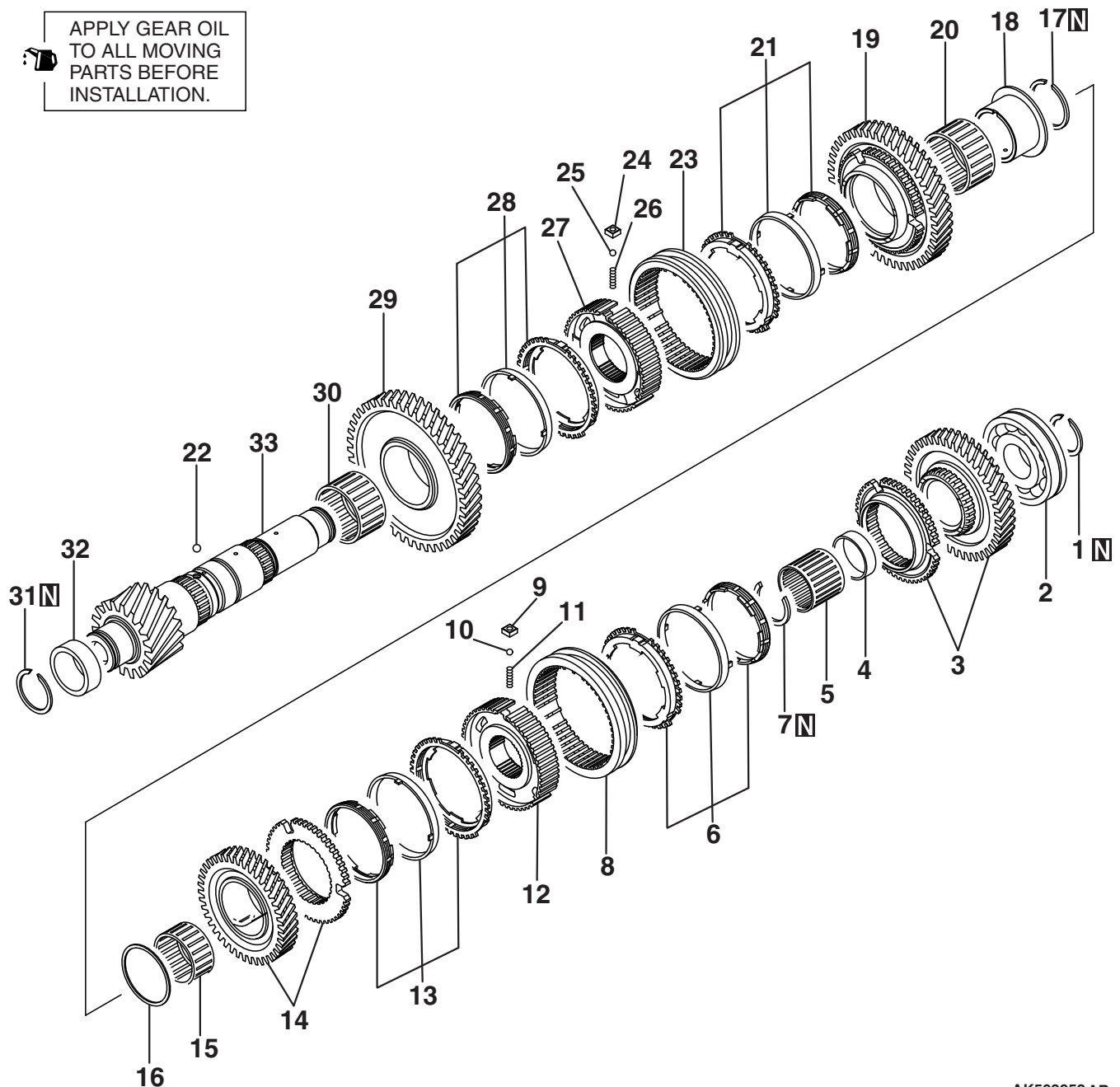
DISASSEMBLY AND ASSEMBLY

M1222002200424

<OUTPUT SHAFT No.1>



APPLY GEAR OIL
TO ALL MOVING
PARTS BEFORE
INSTALLATION.



AK502952 AB

- | | |
|-------------------------------|---------------------------------|
| 1. SNAP RING | 11. SYNCHRO SHIFTING KEY SPRING |
| 2. RADIAL BALL BEARING | 12. SYNCHRONIZER HUB |
| 3. 3RD GEAR SUB-ASSEMBLY | 13. SYNCHRONIZER RING SET NO.4 |
| 4. SPACER | 14. 4TH GEAR SUB-ASSEMBLY |
| 5. NEEDLE ROLLER BEARING | 15. NEEDLE ROLLER BEARING |
| 6. SYNCHRONIZER RING SET NO.1 | 16. SPACER |
| 7. SNAP RING | 17. SNAP RING |
| 8. SYNCHRONIZER SLEEVE | 18. 2ND GEAR BEARING INNER RACE |
| 9. SYNCHRO SHIFTING KEY NO.1 | 19. 2ND GEAR |
| 10. BALL | 20. NEEDLE ROLLER BEARING |

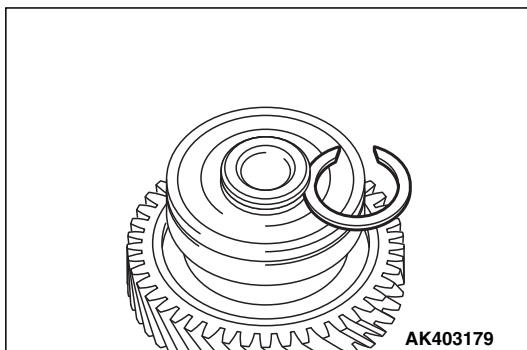
- | | |
|---------------------------------|--------------------------------|
| 21. SYNCHRONIZER RING SET NO.1 | 28. SYNCHRONIZER RING SET NO.1 |
| 22. BALL | 29. 1ST GEAR |
| 23. SYNCHRONIZER SLEEVE | 30. NEEDLE ROLLER BEARING |
| 24. SYNCHRO SHIFTING KEY NO.1 | 31. SNAP RING |
| 25. BALL | 32. CYLINGRICAL ROLLER BEARING |
| 26. SYNCHRO SHIFTING KEY SPRING | 33. OUTPUT SHAFT NO.1 |
| 27. SYNCHRONIZER HUB | |

Required Special Tools:

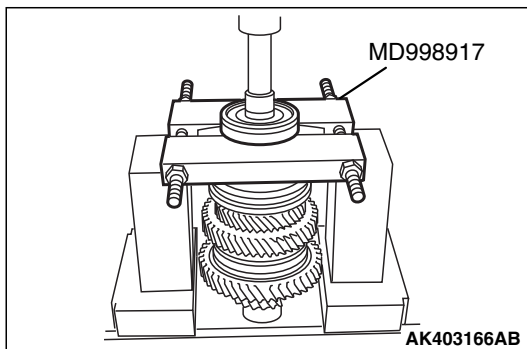
- MB990560: Rear axle shaft bearing remover
- MD998812: Installer cap
- MD998813: Installer-100
- MD998814: Installer-200
- MD998820: Installer adapter
- MD998824: Installer adapter
- MD998917: Bearing remover

DISASSEMBLY

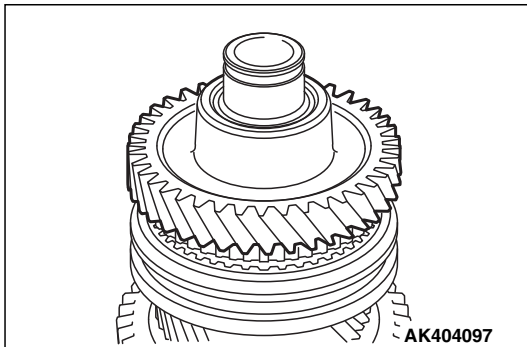
1. Remove the shaft snap ring.

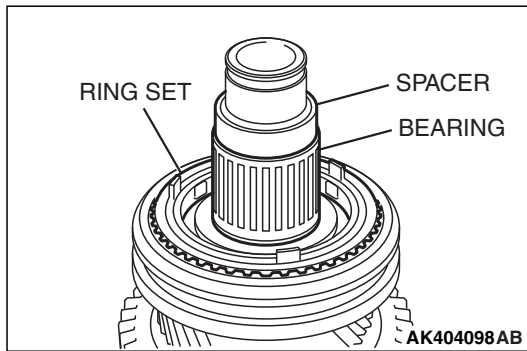


2. Using special tool MD998917, support the radial ball bearing and remove the radial ball bearing.

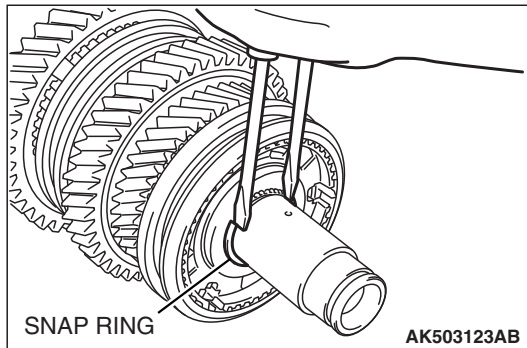


3. Remove the 3rd gear sub-assembly.

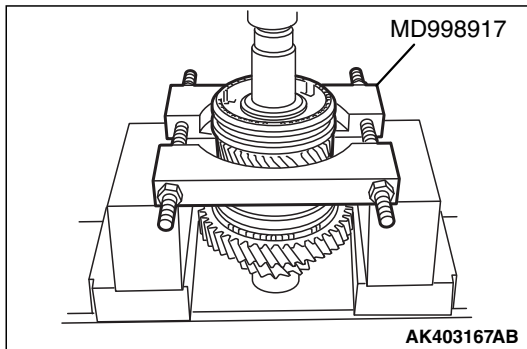




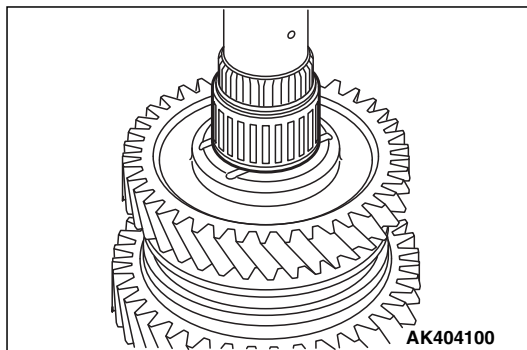
4. Remove the spacer, needle roller bearing and synchronizer ring set No.1.



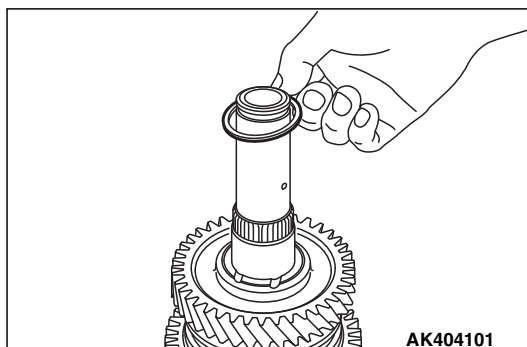
5. Remove the shaft snap ring.



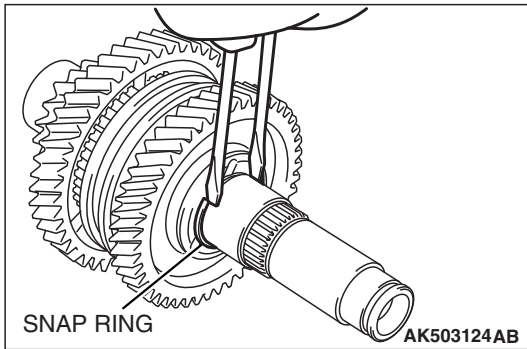
6. Using special tool MD998917, support the 4th gear sub-assembly and remove the synchronizer hub, synchronizer sleeve, synchronizer ring set No.4, synchro shifting key No.1, ball, synchro shifting key spring and 4th gear sub-assembly.



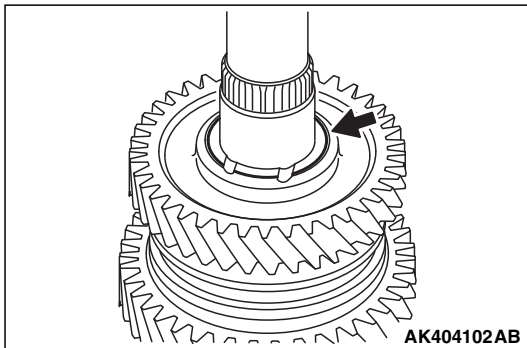
7. Remove the needle roller bearing.



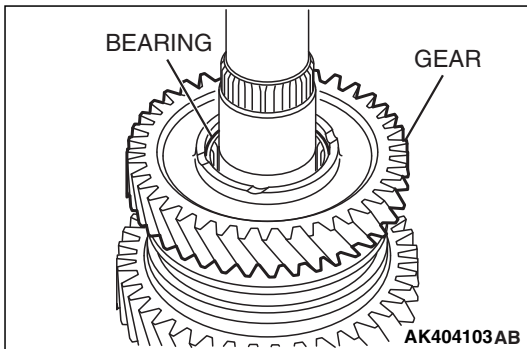
8. Remove the spacer.



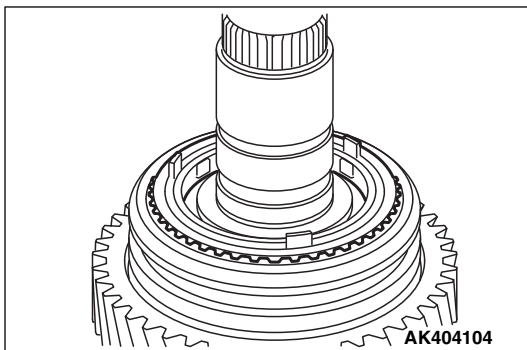
9. Remove the shaft snap ring.



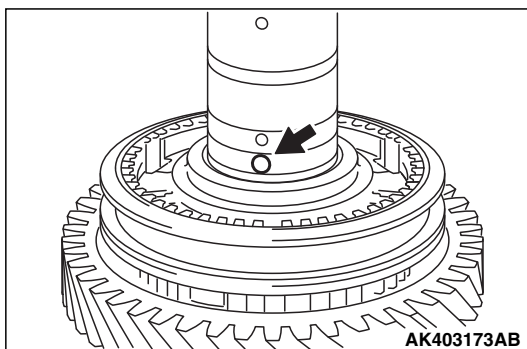
10. Remove the 2nd gear bearing inner race.



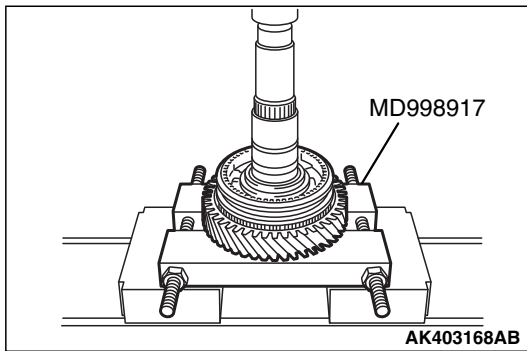
11. Remove the 2nd gear and needle roller bearing.



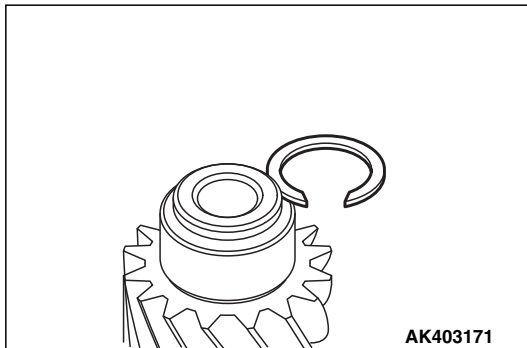
12. Remove the synchronizer ring set No.1.



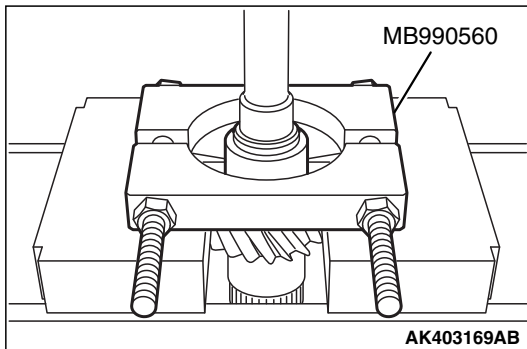
13. Remove the ball.



14. Using special tool MD998917, support the 1st gear and remove the synchronizer hub, synchronizer sleeve, synchro shifting key No.1, ball, synchro shifting key spring, synchronizer ring set No.1 and 1st gear.
15. Remove the needle roller bearing.



16. Remove the shaft snap ring.

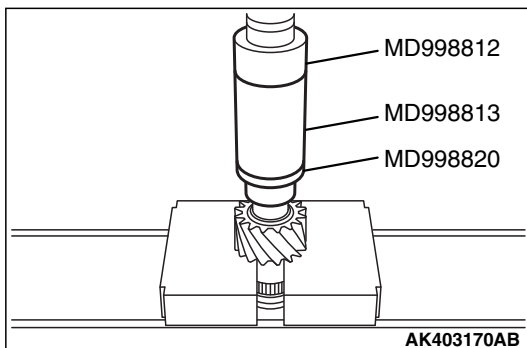


17. Using special tool MB990560, support the cylindrical roller bearing and remove the cylindrical roller bearing.

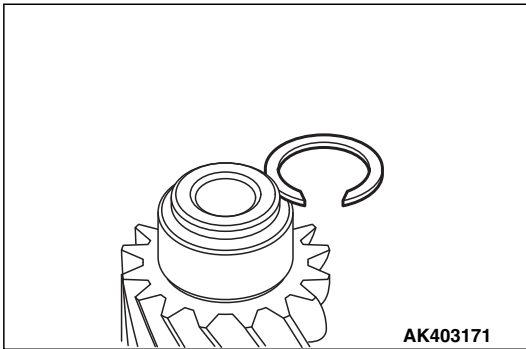
ASSEMBLY

1. Using special tools MD998812, MD998813 and MD998820, install the cylindrical roller bearing.

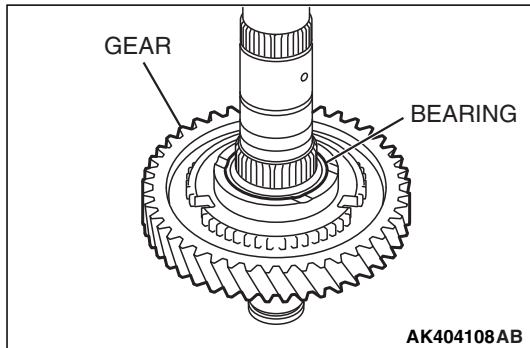
NOTE: Apply the gear oil sufficiently on the sliding surface.



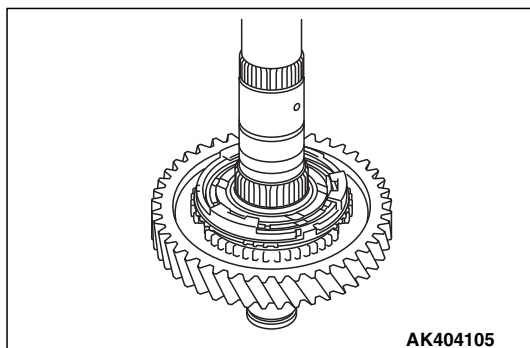
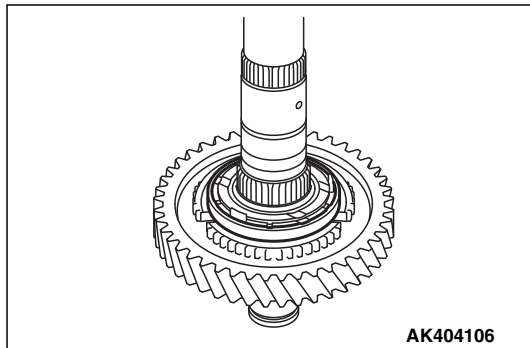
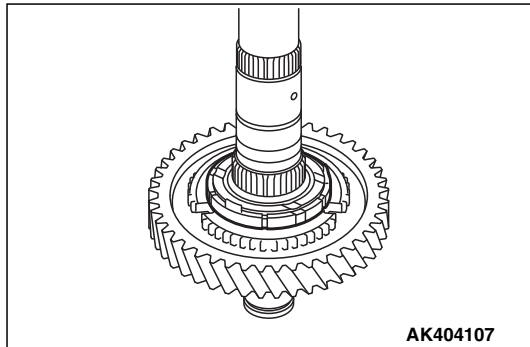
2. Install the shaft snap ring to output shaft No.1.

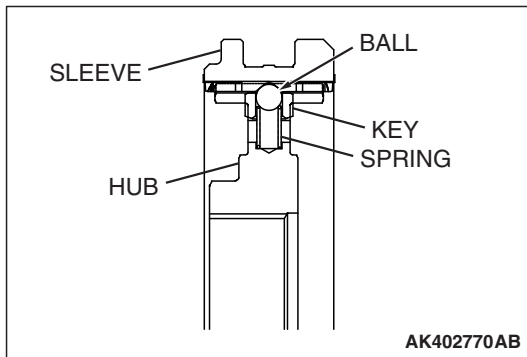


3. Install the 1st gear and needle roller bearing to output shaft No.1.



4. Install the synchronizer ring set No.1 to 1st gear.
NOTE: Apply the gear oil sufficiently on the sliding surface.





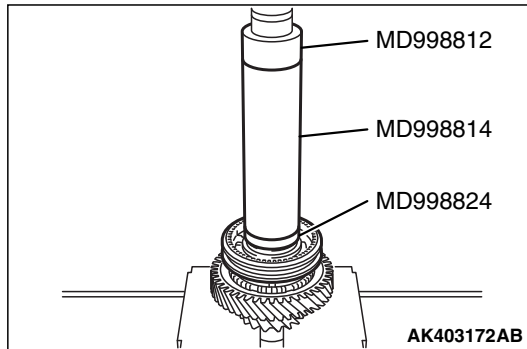
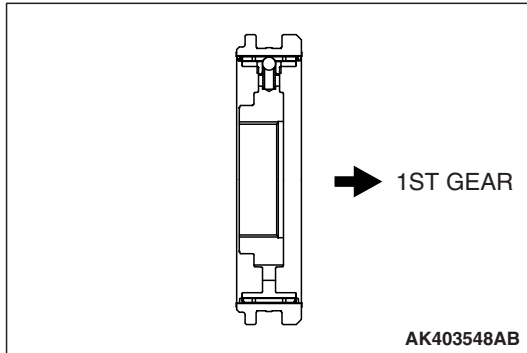
5. As shown in the illustration, set the synchronizer hub and synchronizer sleeve.

NOTE:

- Apply gear oil to the caulked area between the sleeve and the hub.
- After installation, confirm the sleeve and the hub slide smoothly.

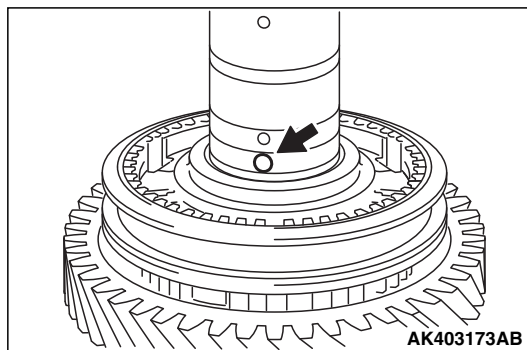
CAUTION

- Pay attention to the direction of inserting the synchronizer hub and synchronizer sleeve.
 - During press fit, confirm correct positions of the hub and the synchronizer ring.
 - Check for smooth rotation of the gear after installation.
 - The synchronizer ring must not bind.
6. Install the synchronizer hub and synchronizer sleeve to the output shaft No.1 in the direction as shown in the illustration.



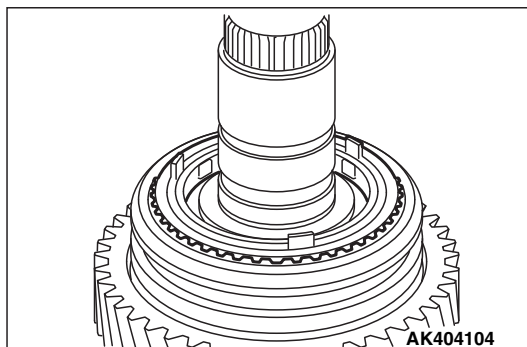
7. Using special tools MD998812, MD998814 and MD998824, install the synchronizer hub and synchronizer sleeve.

NOTE: Install synchronizer hub and synchronizer sleeve securely into the stopper of the output shaft No.1.

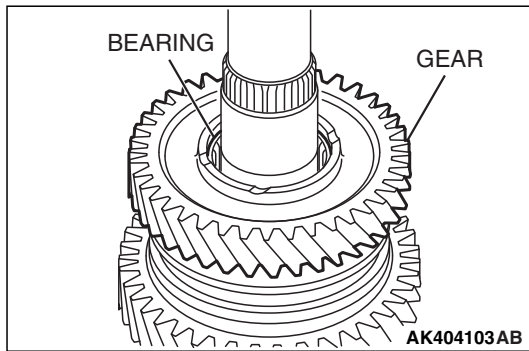


8. Insert the ball to the output shaft No.1.

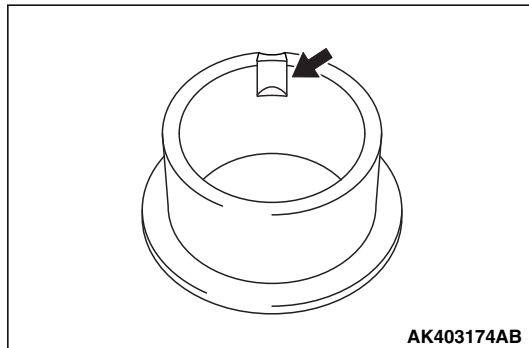
NOTE: Do not forget to attach the ball.



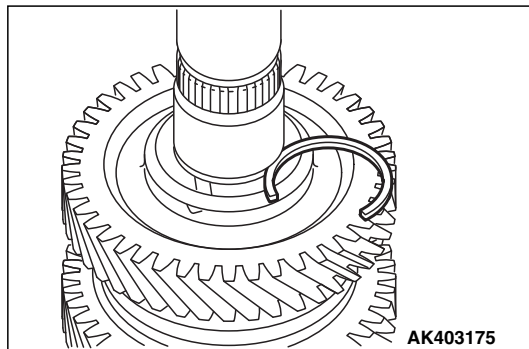
9. Install the synchronizer ring set No.1 to synchronizer hub and synchronizer sleeve.



10. Insert the 2nd gear and needle roller bearing to the output shaft No.1.

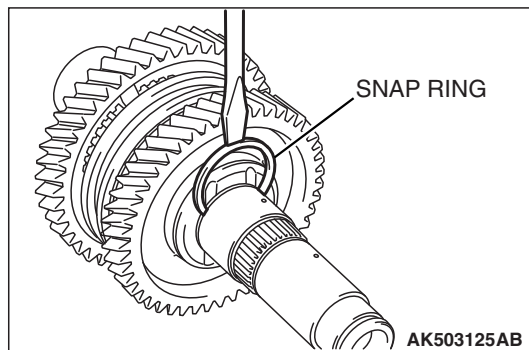


11. Fit the ball into groove as shown in the illustration.

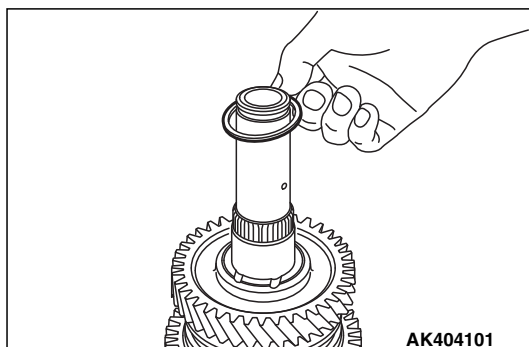


12. Select a shaft snap ring that allows distance of the thrust crevice of 2nd gear bearing inner race to fall within the standard value range.

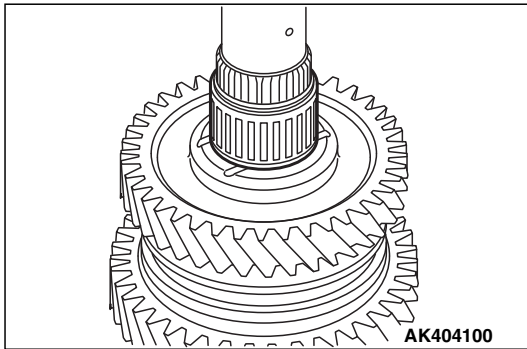
Standard value: 0 – 0.1 mm (0 – 0.0039 inch)



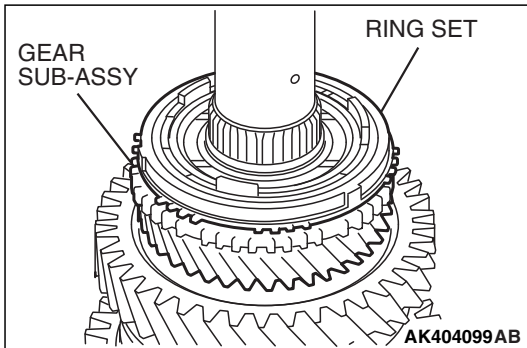
13. Install the snap ring.



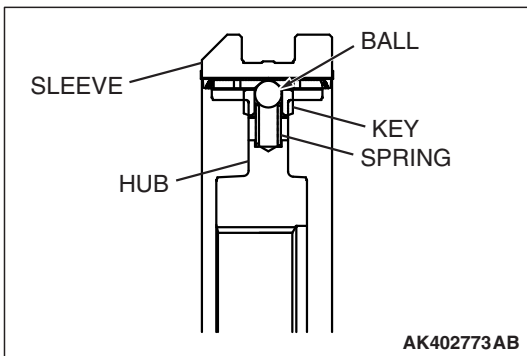
14. Insert the spacer to the output shaft No.1.



15. Insert the needle roller bearing to the output shaft No.1.



16. Insert the 4th gear sub-assembly and synchronizer ring set No.4 to the output shaft No.1.



17. As shown in the illustration, set the synchronizer hub and synchronizer sleeve.

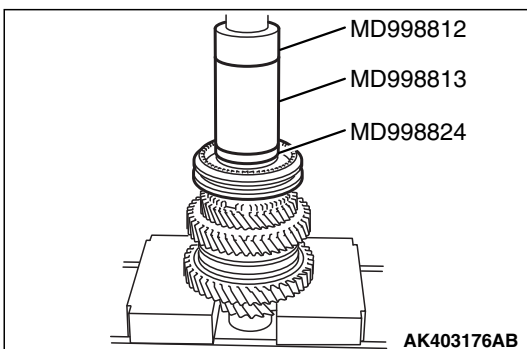
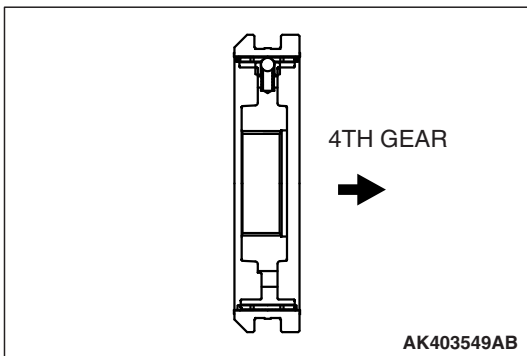
NOTE:

- Apply gear oil to the caulked area between the sleeve and the hub.
- After installation, confirm the sleeve and the hub slide smoothly.

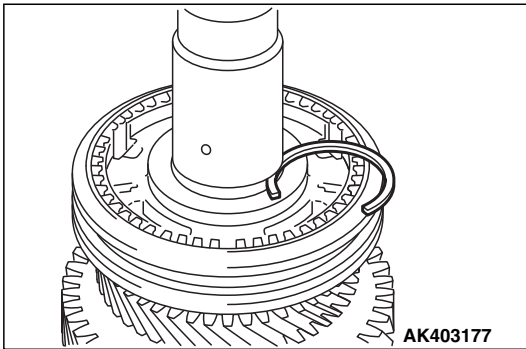
⚠ CAUTION

- Pay attention to the direction of inserting the synchronizer hub and synchronizer sleeve.
- During press fit, confirm correct positions of the hub and the synchronizer ring.
- Check for smooth rotation of the gear after the installation.
- The synchronizer ring must not bind.

18. Set the synchronizer hub and synchronizer sleeve to the output shaft No.1 in the direction as shown in the illustration.

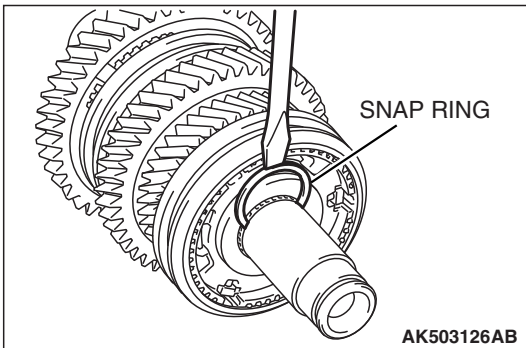


19. Using special tools MD998812, MD998813 and MD998824, install the synchronizer hub and synchronizer sleeve.

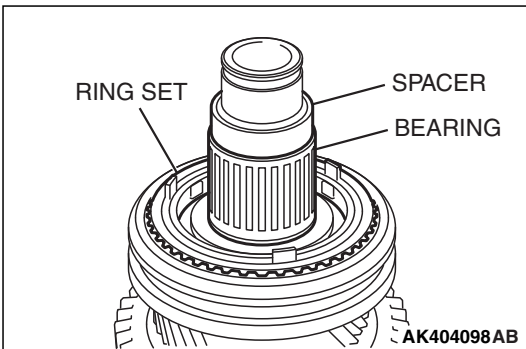


20. Select a shaft snap ring that allows distance of the thrust crevice of synchronizer hub to fall within the standard value range.

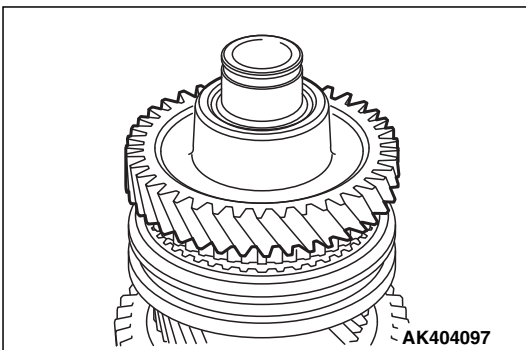
Standard value: 0 – 0.1 mm (0 – 0.0039 inch)



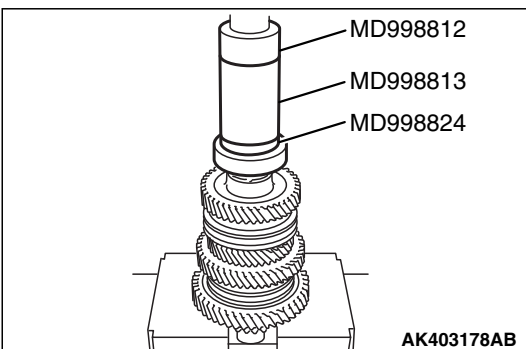
21. Install the snap ring.



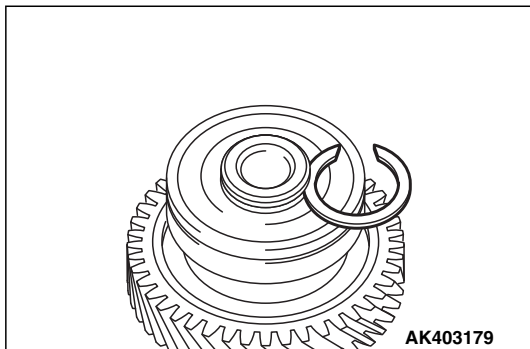
22. Insert the synchronizer ring set No.1, needle roller bearing and spacer to the synchronizer hub and synchronizer sleeve.



23. Insert the 3rd gear sub-assembly to the output shaft No.1.



24. Using special tools MD998812, MD998813 and MD998824, install the radial ball bearing.



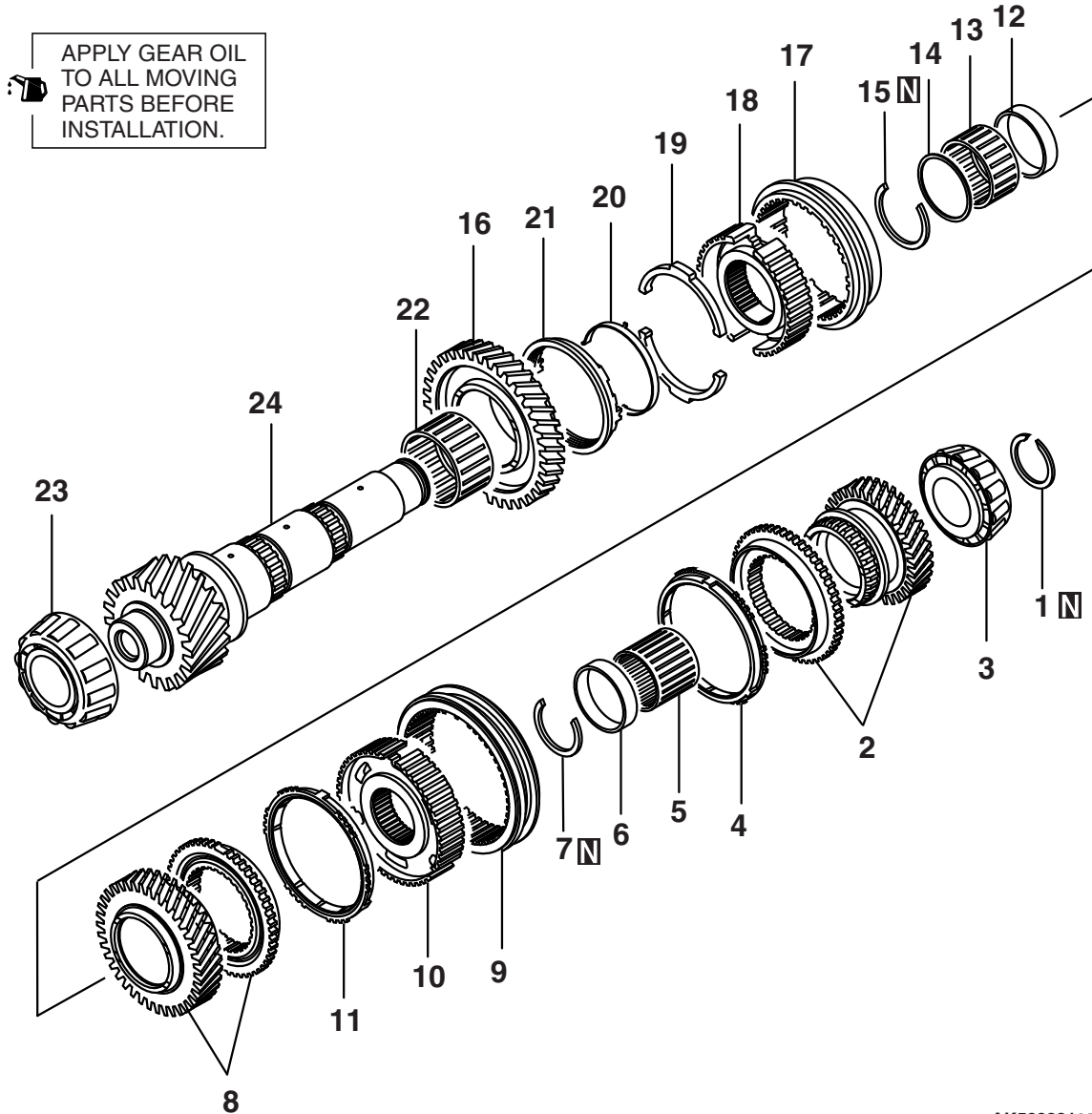
25. Select a shaft snap ring that allows distance of the thrust crevice of bearing to fall within the standard value range.

Standard value: 0 – 0.1 mm (0 – 0.0039 inch)

DISASSEMBLY AND ASSEMBLY

M1222002200413

<OUTPUT SHAFT No.2>



AK503231AB

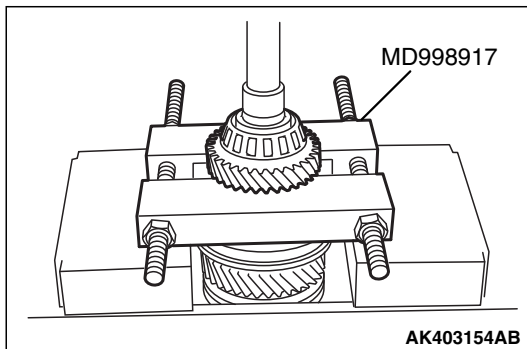
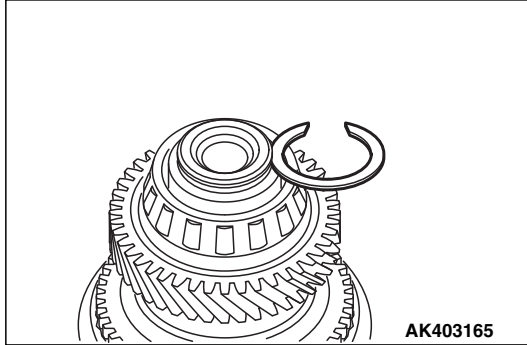
- | | |
|----------------------------------|--|
| 1. SNAP RING | 14. SPACER |
| 2. 6TH GEAR SUB-ASSEMBLY | 15. SNAP RING |
| 3. TAPERED ROLLER BEARING NO.2 | 16. REVERSE GEAR |
| 4. SYNCHRONIZER OUTER RING NO.3 | 17. SYNCHRONIZER SLEEVE |
| 5. NEEDLE ROLLER BEARING | 18. SYNCHRONIZER HUB |
| 6. SPACER | 19. SYNCHROMESH SHIFTING KEY NO.3 |
| 7. SNAP RING | 20. SYNCHROMESH SHIFTING KEY SPRING NO.3 |
| 8. 5TH GEAR SUB-ASSEMBLY | 21. SYNCHRONIZER OUTER RING NO.4 |
| 9. SYNCHRONIZER SLEEVE | 22. NEEDLE ROLLER BEARING |
| 10. SYNCHRONIZER HUB | 23. TAPERED ROLLER BEARING NO.2 |
| 11. SYNCHRONIZER OUTER RING NO.3 | 24. OUTPUT SAFT NO.2 |
| 12. SPACER | |
| 13. NEEDLE ROLLER BEARING | |

Required Special Tools:

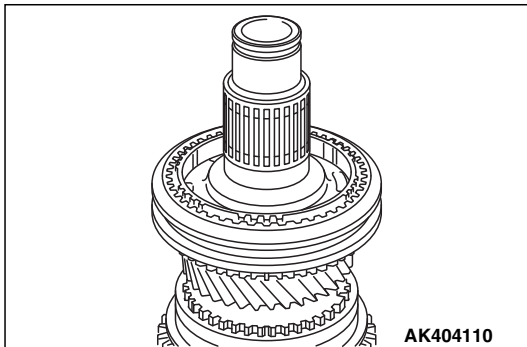
- MD998812: Installer cap
- MD998813: Installer-100
- MD998814: Installer-200
- MD998819: Installer adapter
- MD998827: Installer adapter
- MD998917: Bearing remover

DISASSEMBLY

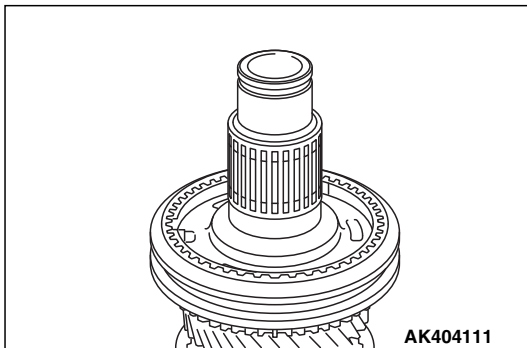
1. Remove the shaft snap ring.



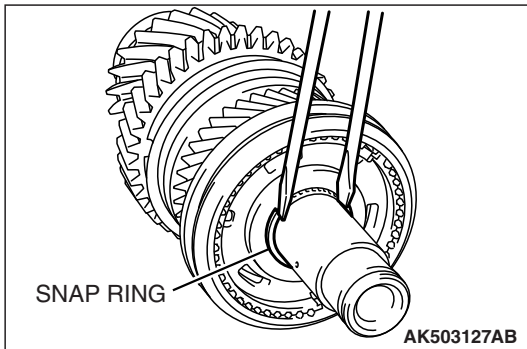
2. Using special tool MD998917, support the 6th gear sub assembly and remove the tapered roller bearing No.2 and 6th gear sub-assembly.



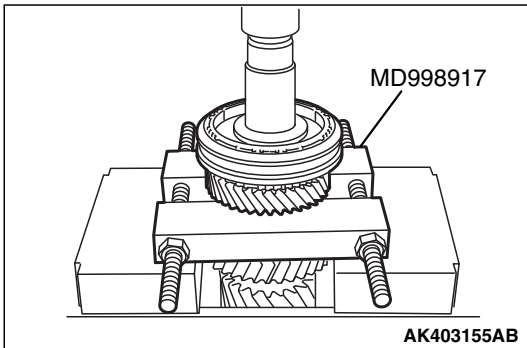
3. Remove the synchronizer outer ring No.3.



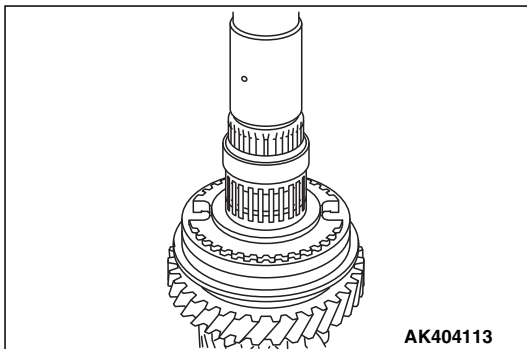
4. Remove the needle roller bearing and spacer.



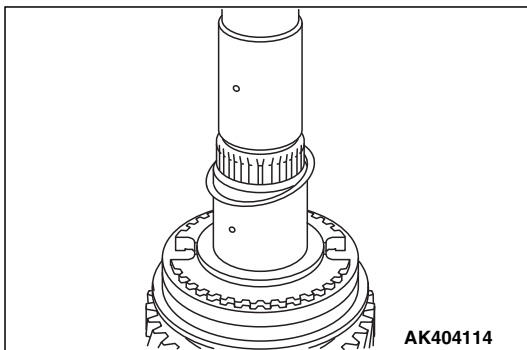
5. Remove the shaft snap ring.



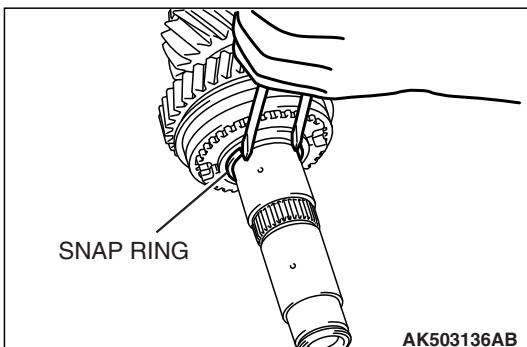
6. Using special tool MD998917, support the 5th gear sub-assembly and remove the synchronizer hub, synchronizer sleeve, synchronizer outer ring No.3 and 5th gear sub-assembly.



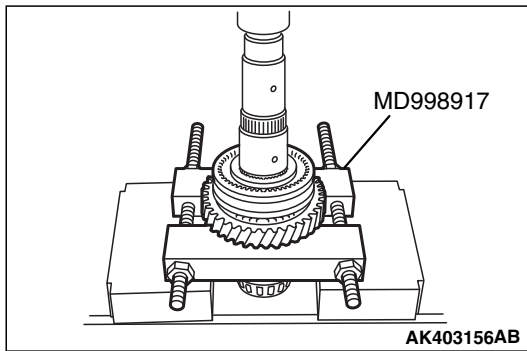
7. Remove the spacer and needle roller bearing.



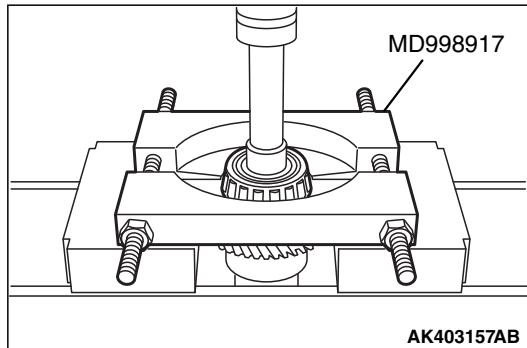
8. Remove the spacer.



9. Remove the shaft snap ring.



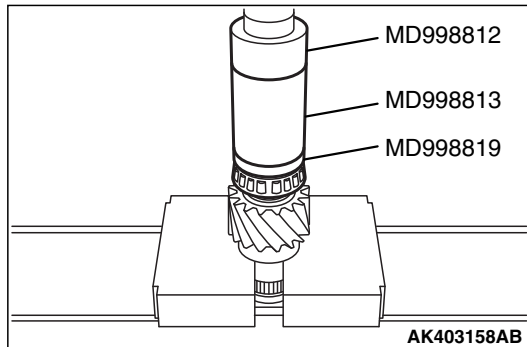
10. Using special tool MD998917, support the reverse gear and remove the synchronizer sleeve, synchronizer hub, synchromesh shifting key No.3, synchromesh shifting key spring No.3, synchronizer outer ring No.4 and reverse gear.
11. Remove the needle roller bearing.



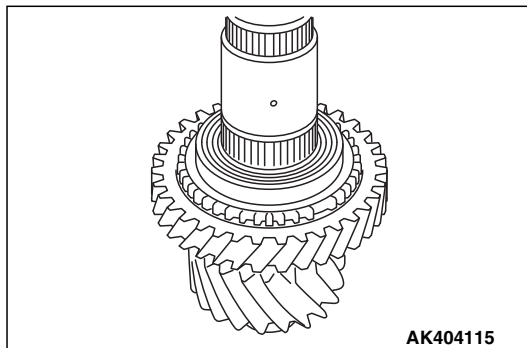
12. Using special tool MD998917, support the tapered roller bearing No.2 and remove the tapered roller bearing No.2.

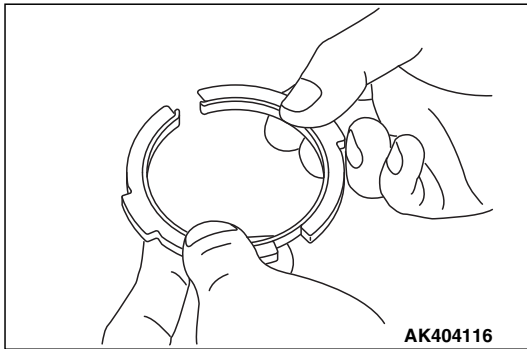
ASSEMBLY

1. Using special tools MD998812, MD998813, and MD998819, install the tapered roller bearing No.2.

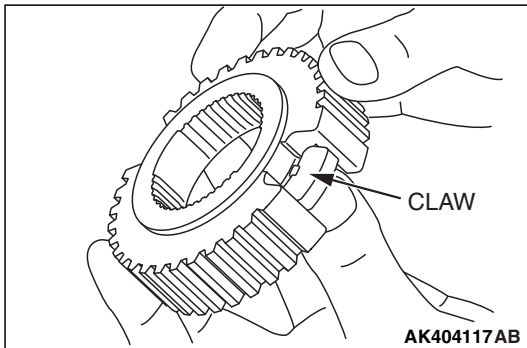


2. Install the needle roller bearing and reverse gear to output shaft No.2.
3. Install the synchronizer outer ring No.4.

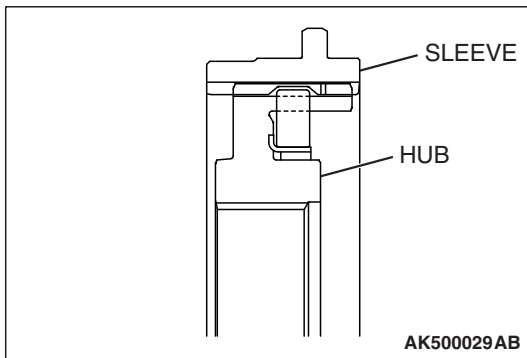




4. As shown in the illustration, install the synchromesh shifting key No.3 and the synchromesh shifting key spring No.3.



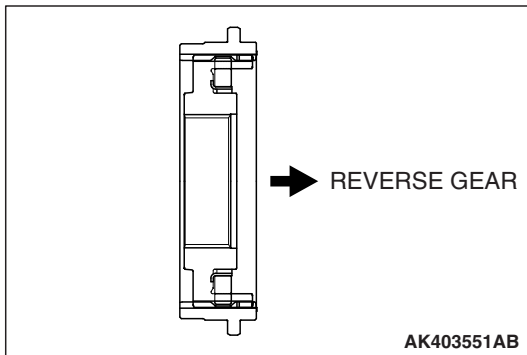
5. Install the synchromesh shifting key No.3 and synchromesh shifting key spring No.3 to the synchronizer hub so that the claw is positioned as shown in the illustration.



6. Combine the synchronizer hub with the synchronizer hub and synchronizer sleeve in the direction as shown in the illustration.

NOTE:

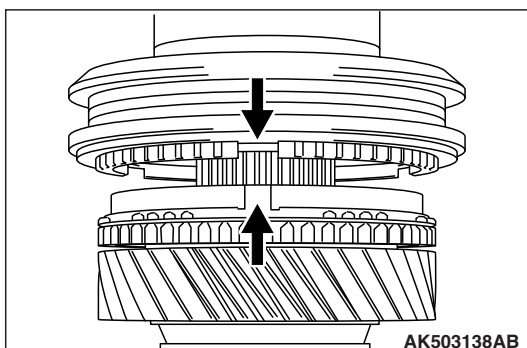
- Apply gear oil to the caulked area between the sleeve and the hub.
- After installation, confirm the sleeve and the hub slide smoothly.



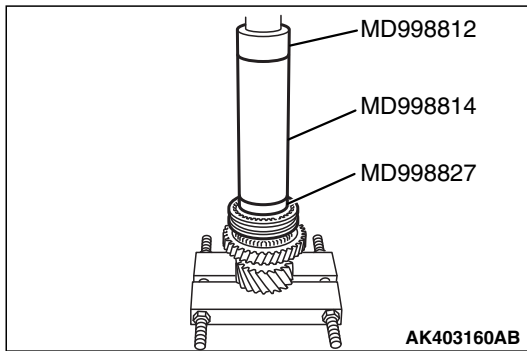
7. Set the synchronizer hub to the output shaft No.2 in the direction as shown in the illustration.

NOTE:

- Install the synchronizer hub securely into the stopper of the output shaft No.2.
- Check for smooth rotation of the gear after the installation.



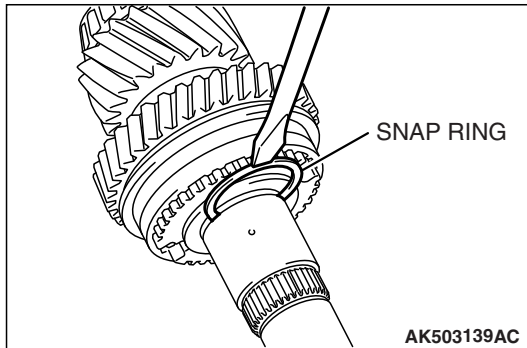
8. Install the synchronizer ring No.4, aligning the projection in the synchronizer hub with the groove in position shown in the illustration.



9. Using special tools MD998812, MD998814 and MD998827, install the synchronizer hub.

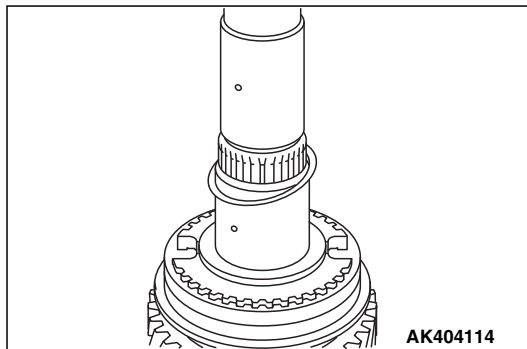
NOTE:

- Confirm correct position as shown.
- The synchronizer ring must not bind.

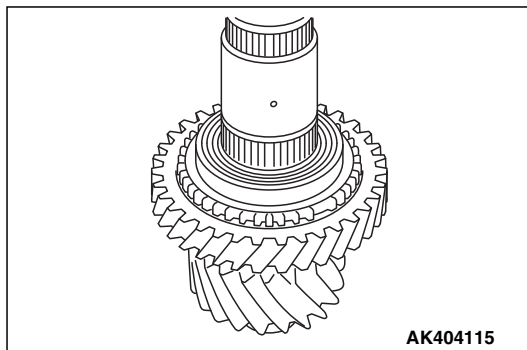


10. Select a shaft snap ring that allows distance of the thrust crevice of reverse hub to fall within the standard value range.

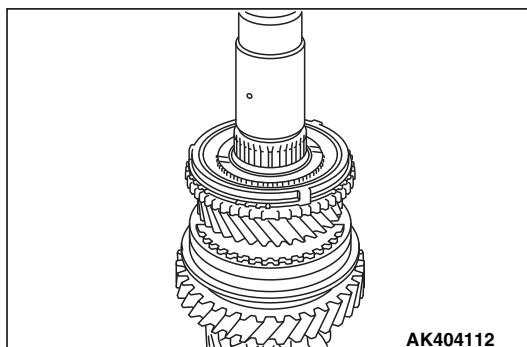
Standard value: 0 – 0.1 mm (0 – 0.0039 inch)



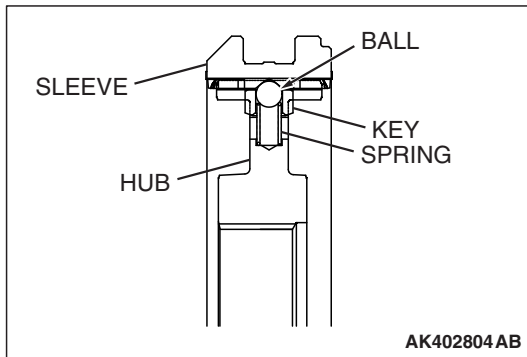
11. Install the spacer to output shaft No.2.



12. Install the needle roller bearing and spacer to output shaft No.2.



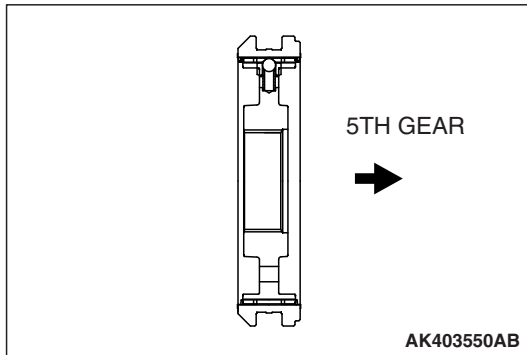
13. Install the 5th gear sub-assembly to output shaft No.2, and synchronizer outer ring No.3 to 5th gear sub-assembly.



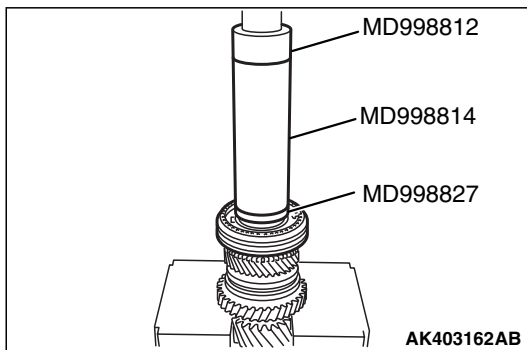
14. As shown in the illustration, set the synchronizer sleeve and synchronizer hub.

NOTE:

- Apply gear oil to the caulked area between the sleeve and the hub.
- After the installation, confirm the sleeve and the hub slide smoothly.



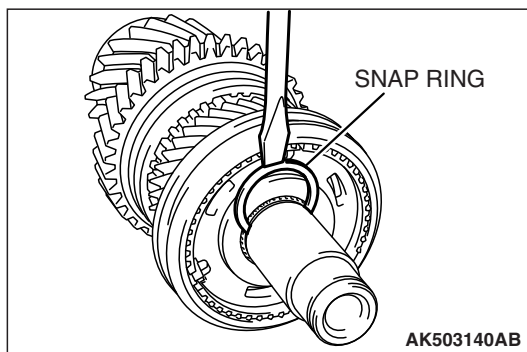
15. Set the synchronizer sleeve and synchronizer hub to the output shaft No.2 in the direction as shown in the illustration.



16. Using special tools MD998812, MD998814 and MD998827, install the synchronizer sleeve and synchronizer hub.

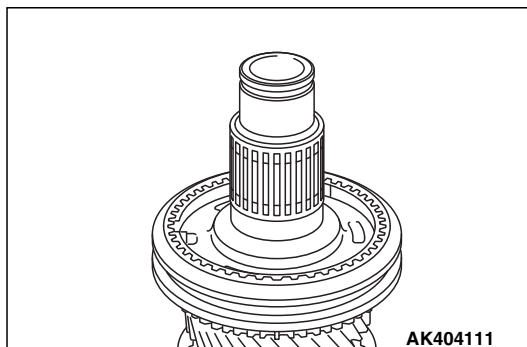
NOTE:

- During press fit, confirm correct positions of the hub and the synchronizer ring.
- Install the synchronizer sleeve and synchronizer hub securely into the stopper of the output shaft No.2.
- After installation, confirm the sleeve and the hub slide smoothly.
- The synchronizer ring must not bind.

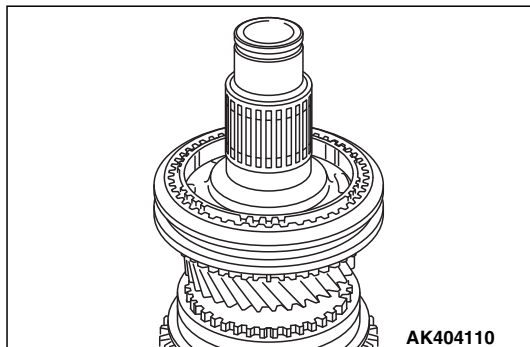


17. Select a shaft snap ring that allows distance of the thrust crevice of 5th-6th hub to fall within the standard value range.

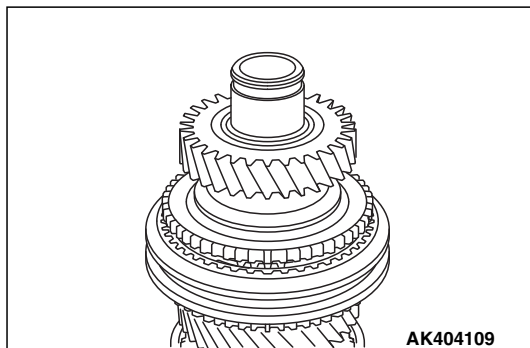
Standard value: 0 – 0.1 mm (0 – 0.0039 inch)



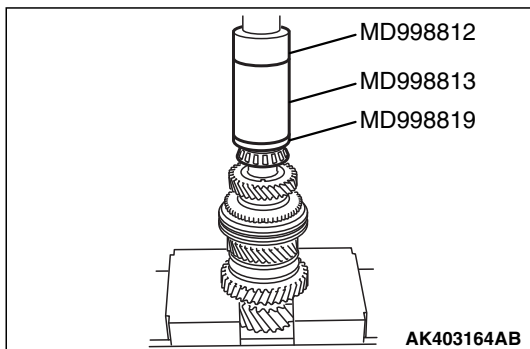
18. Install the spacer and needle roller bearing to output shaft No.2.



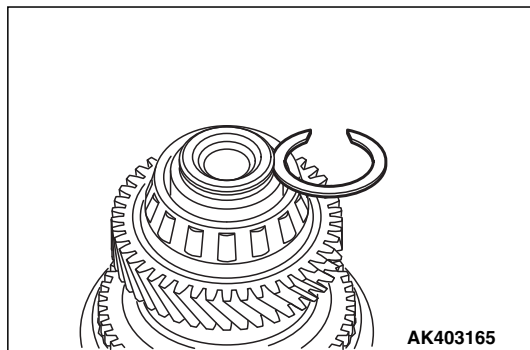
19. Install the synchronizer outer ring No.3 to synchronizer sleeve.



20. Install the 6th gear sub-assembly to output shaft No.2.



21. Using special tools MD998812, MD998813 and MD998819, install the tapered roller bearing No.2.

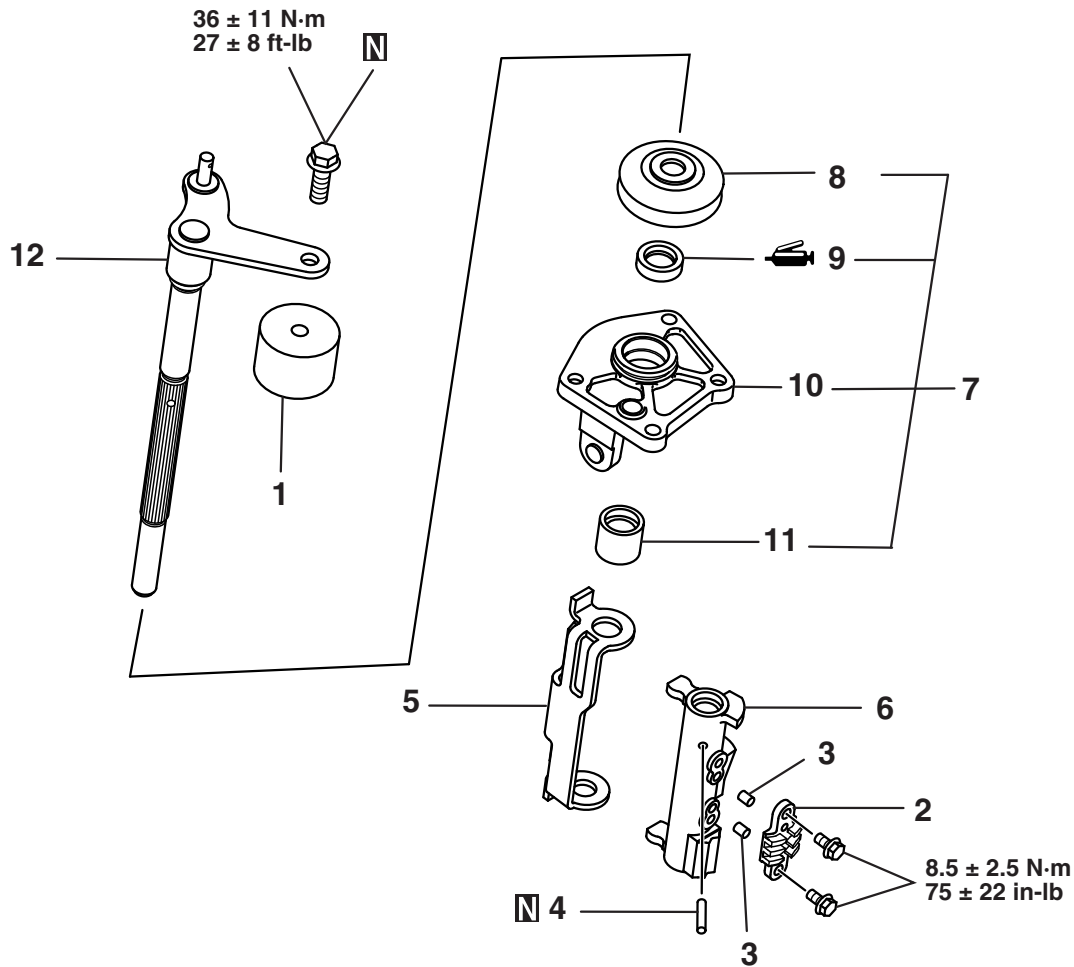


22. Install the shaft snap ring to output shaft No.2.
Standard value: 0 – 0.1 mm (0 – 0.0039 inch)

SELECT LEVER

DISASSEMBLY AND ASSEMBLY

M1222012800201



AK502945 AB

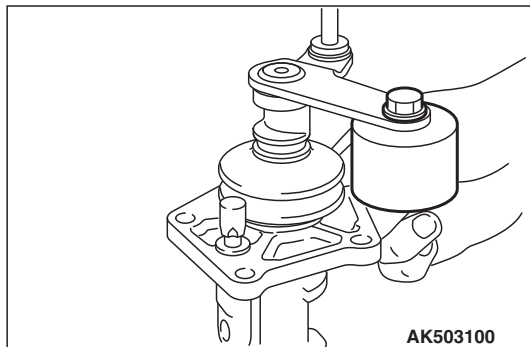
- | | |
|-------------------------------|------------------------------|
| 1. SHIFT LEVER DAMPER | 8. SHIFT LEVER BOOTS |
| 2. SHIFT GUIDE PLATE | 9. TYPE S OIL SEAL |
| 3. STRAIGHT PIN | 10. CONTROL SHAFT COVER NO.1 |
| 4. SLOTTED SPRING PIN | 11. BEARING |
| 5. SHIFT INTERLOCK PLATE NO.1 | 12. SHIT AND SELECT LEVER |
| 6. SHIHFT LEVER INNNER NO.1 | SHAFT |
| 7. CONTROL SHAFT COVER | |
| SUB-ASSEMBLY | |

Required Special Tools:

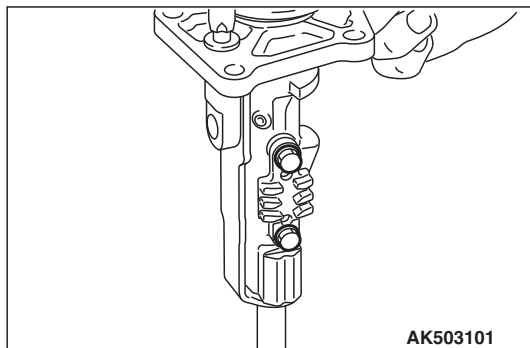
MD998368: Bearing installer

DISASSEMBLY

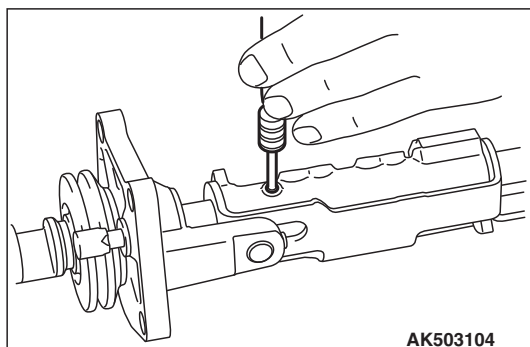
1. Remove the shift lever damper.



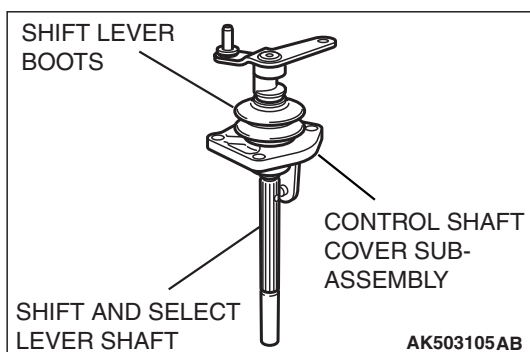
2. Remove the shift guide plate and straight pin.

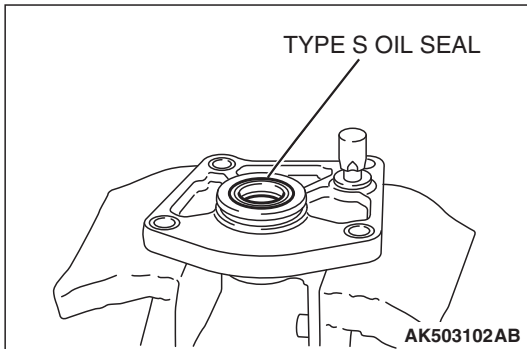


3. Remove the slotted spring pin and pull out the shift and select lever shaft with control shaft cover assembly.

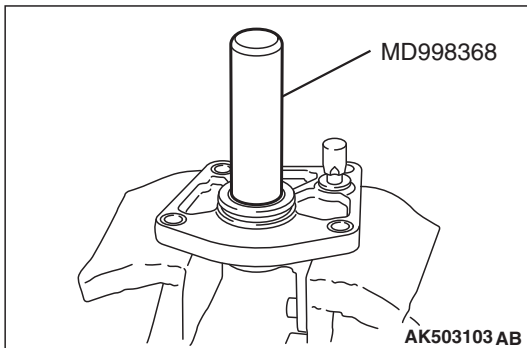


4. Remove the shift lever boots and then pull out the shift and select lever shaft from control shaft cover sub-assembly.



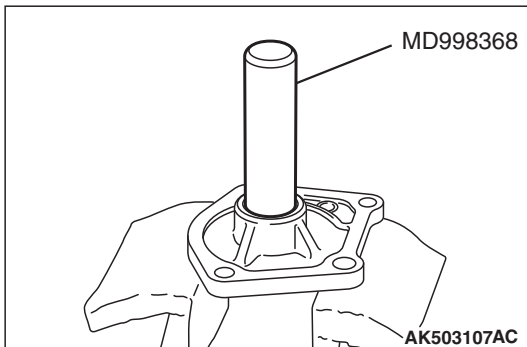


5. Remove the type S oil seal.

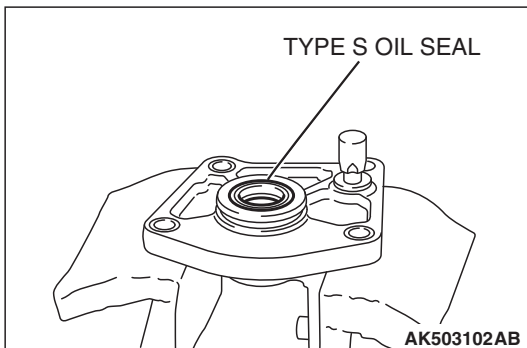


6. Using special tool MD998368, remove the bearing.

ASSEMBLY



1. Using special tool MD998368, install the bearing.

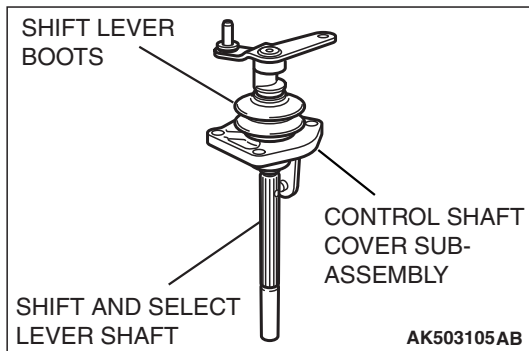


2. Install the type S oil seal.

3. Pack grease to the type S oil seal lip area.

Specified grease:

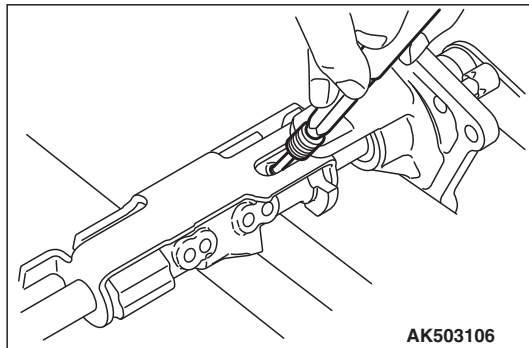
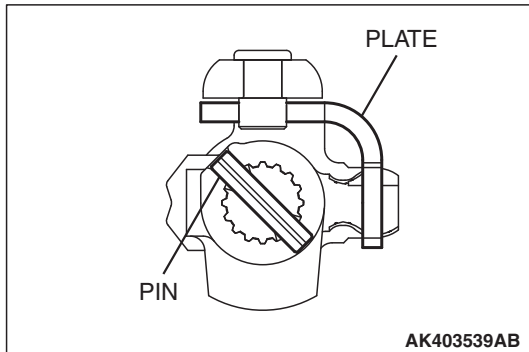
Mitsubishi Part No. 0101011 or equivalent



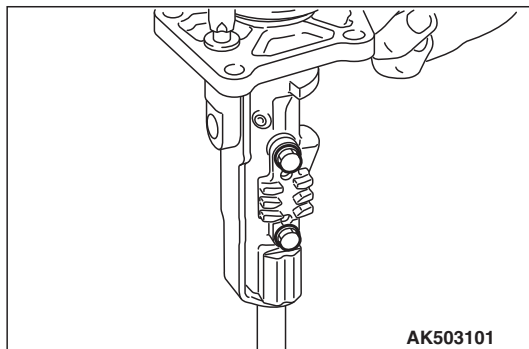
4. Install the shift lever boots to shift and select lever shaft and then install the control shaft cover No.1
5. Install the shift interlock plate No.1 and shift lever inner No.1

⚠ CAUTION

As shown in the illustration, remove the slotted spring pin, not touching the shift interlock plate No.1.

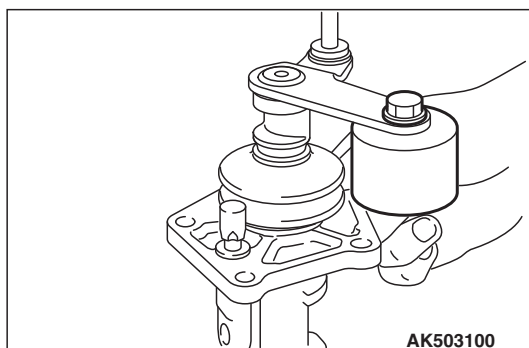


6. Stick the slotted spring pin in the shift and select lever shaft.



7. Install the straight pin and shift guide plate and tighten to the specified torque.

Tightening torque: 8.5 ± 2.5 N·m (75 ± 22 in-lb)



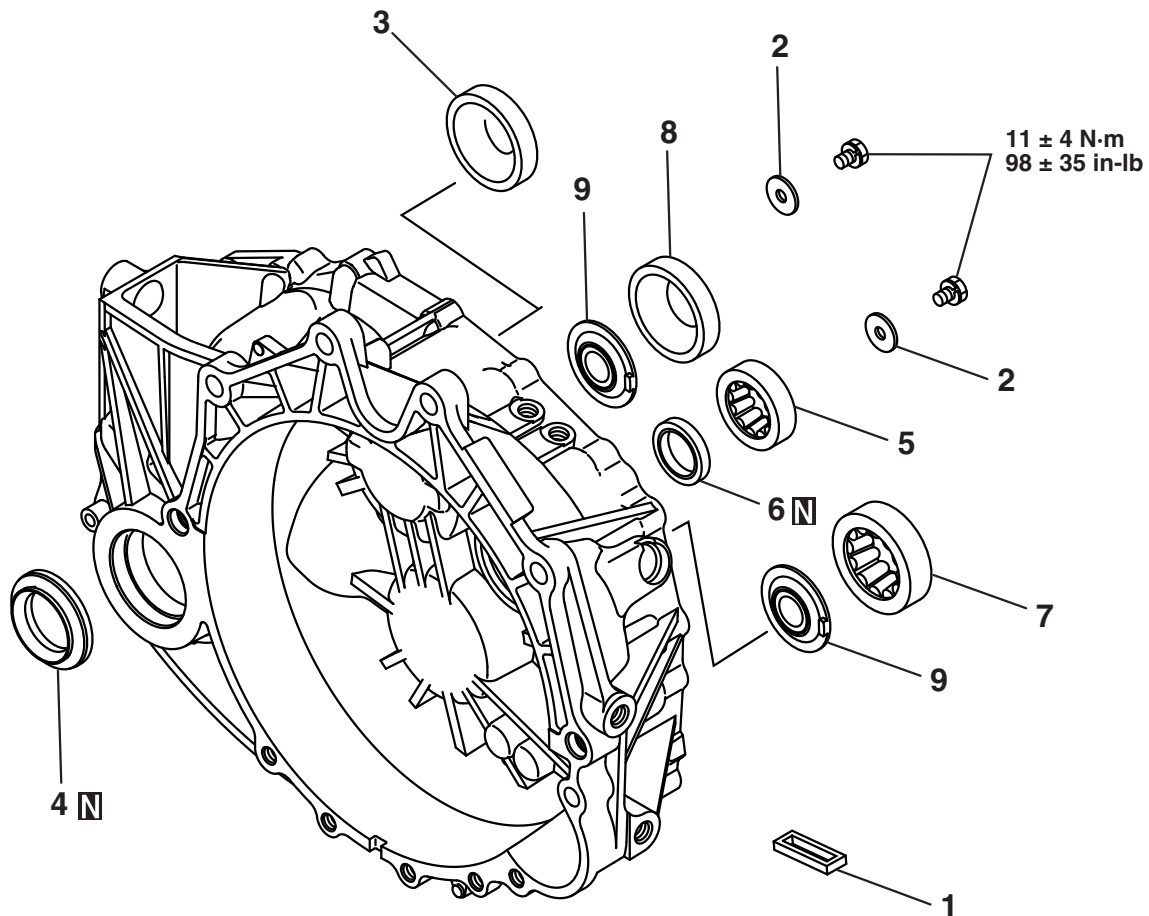
8. Install the shift lever damper and tighten to the specified torque.

Tightening torque: 36 ± 11 N·m (27 ± 8 ft-lb)

CLUTCH HOUSING

DISASSEMBLY AND ASSEMBLY

M1222003700499



AK502991AB

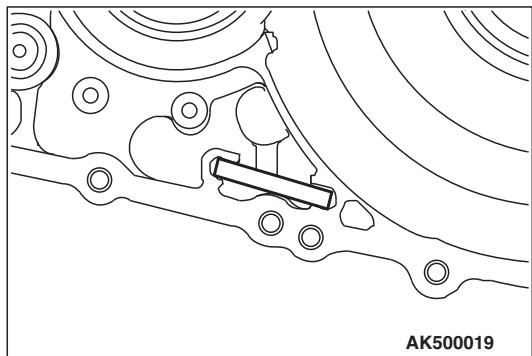
- | | |
|--------------------------------|--------------------------------|
| 1. MAGNET | 6. TYPE T OIL SEAL |
| 2. BEARING LOCK PLATE | 7. CYLINDRICAL ROLLER BEARING |
| 3. TAPERED ROLLER BEARING NO.1 | 8. TAPERED ROLLER BEARING NO.1 |
| 4. OIL SEAL | 9. OUTPUT SHAFT COVER |
| 5. CYLINDRICAL ROLLER BEARING | |

Required Special Tools:

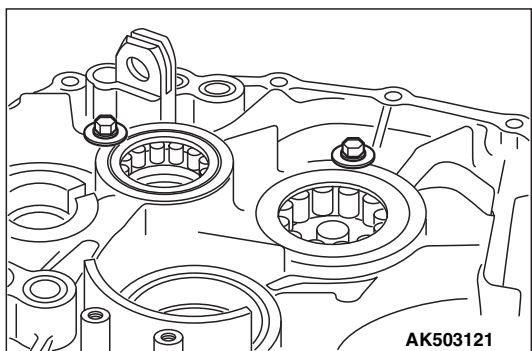
- MB990211: Slide hammer
- MB990699: Differential oil seal installer
- MB990938: Installer bar
- MB991168: Differential oil seal installer
- MB991445: Bush remover & installer base
- MB991448: Bush remover & installer base
- MB992037: Input shaft oil seal installer
- MB992039: Slide hammer puller
- MD998550: Extension HSG seal installer

DISASSEMBLY

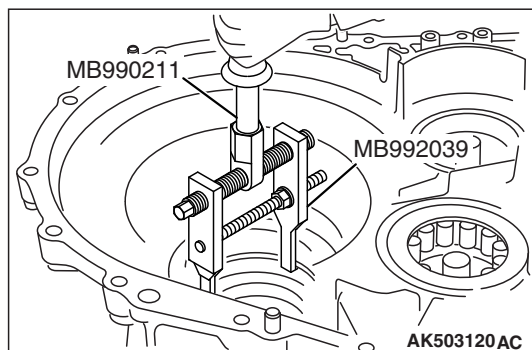
1. Remove the magnet.



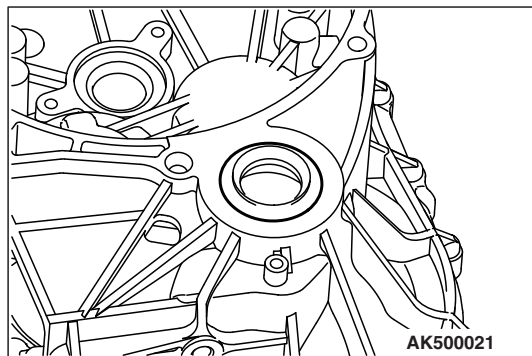
2. Remove the bolt with washer and bearing lock plate.

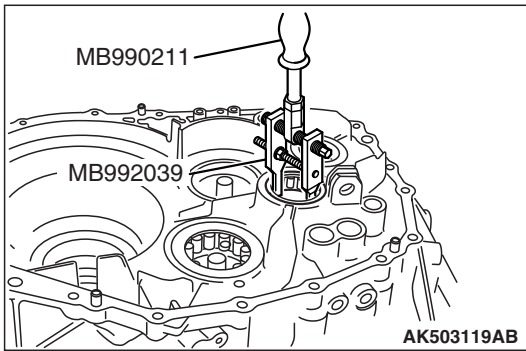


3. Using special tools MB990211 and MB992039, remove the tapered roller bearing No.1.

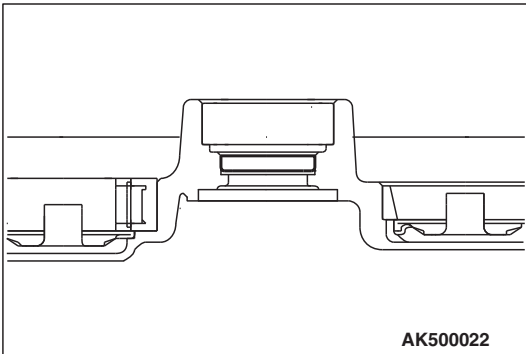


4. Remove the type T oil seal.

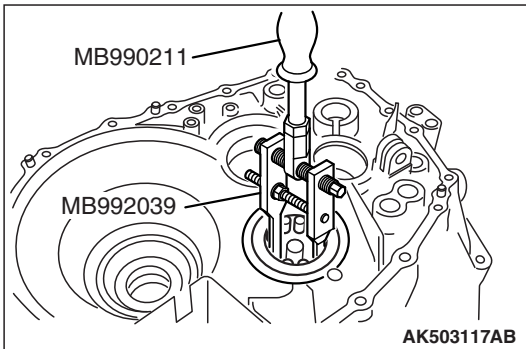




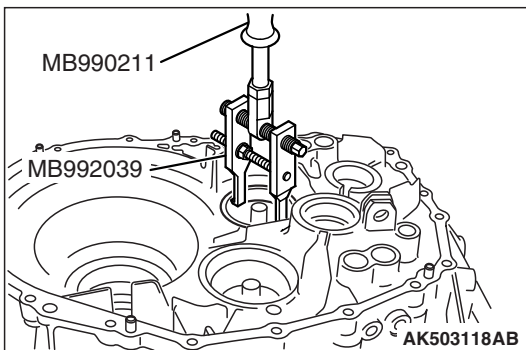
5. Using special tools MB990211 and MB992039, remove the cylindrical roller bearing.



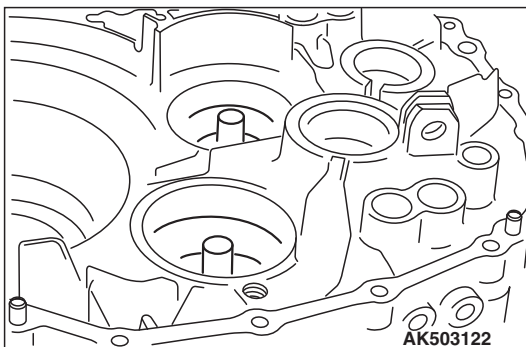
6. Remove the type T oil seal.



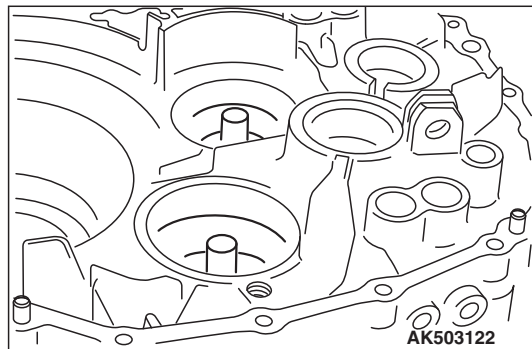
7. Using special tools MB990211 and MB992039, remove the cylindrical roller bearing.



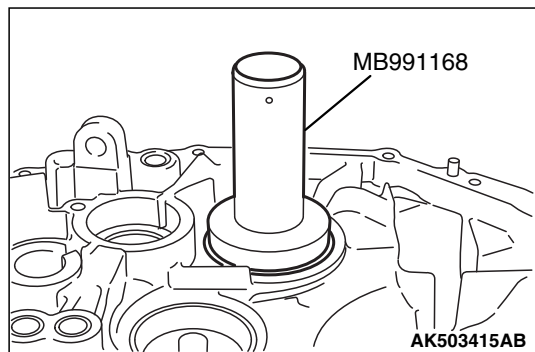
8. Using special tools MB990211 and MB992039, remove the tapered roller bearing No.1.



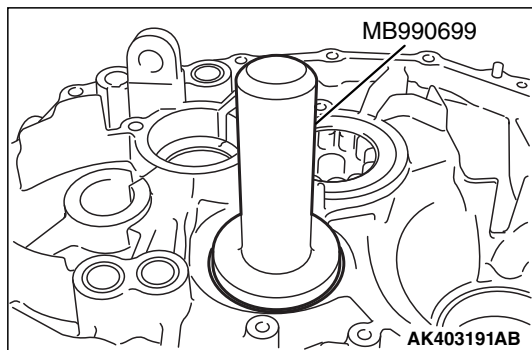
9. Remove the output shaft cover (two pieces).

ASSEMBLY

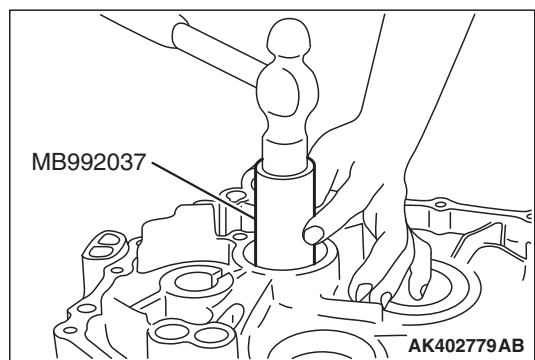
1. Install the output shaft cover (two pieces) in the clutch housing.



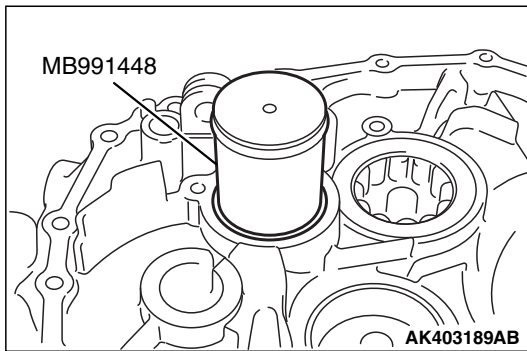
2. Using special tool MB991168, install the tapered roller bearing No.1 in the clutch housing.



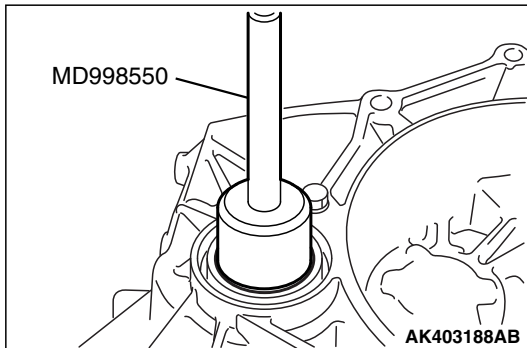
3. Using special tool MB990699, install the cylindrical roller bearing in the clutch housing.



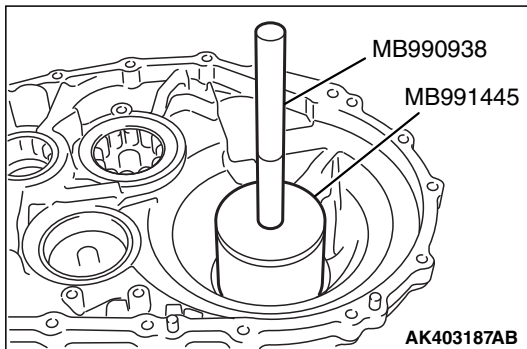
4. Using special tool MB992037, install the type T oil seal in the clutch housing.



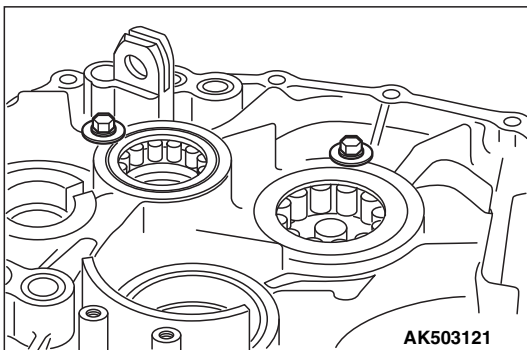
5. Using special tool MB991448, install the cylindrical roller bearing in the clutch housing.



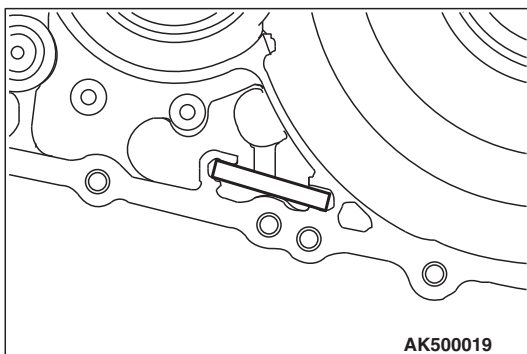
6. Using special tool MD998550, install the type T oil seal in the clutch housing.



7. Using special tools MB990938 and MB991445, install the tapered roller bearing No.1 in the clutch housing.



8. Install the bearing lock plate.
9. Tighten the bolt with washer to the specified torque.
Tighten torque: 11 ± 4 N·m (98 ± 35 in-lb)

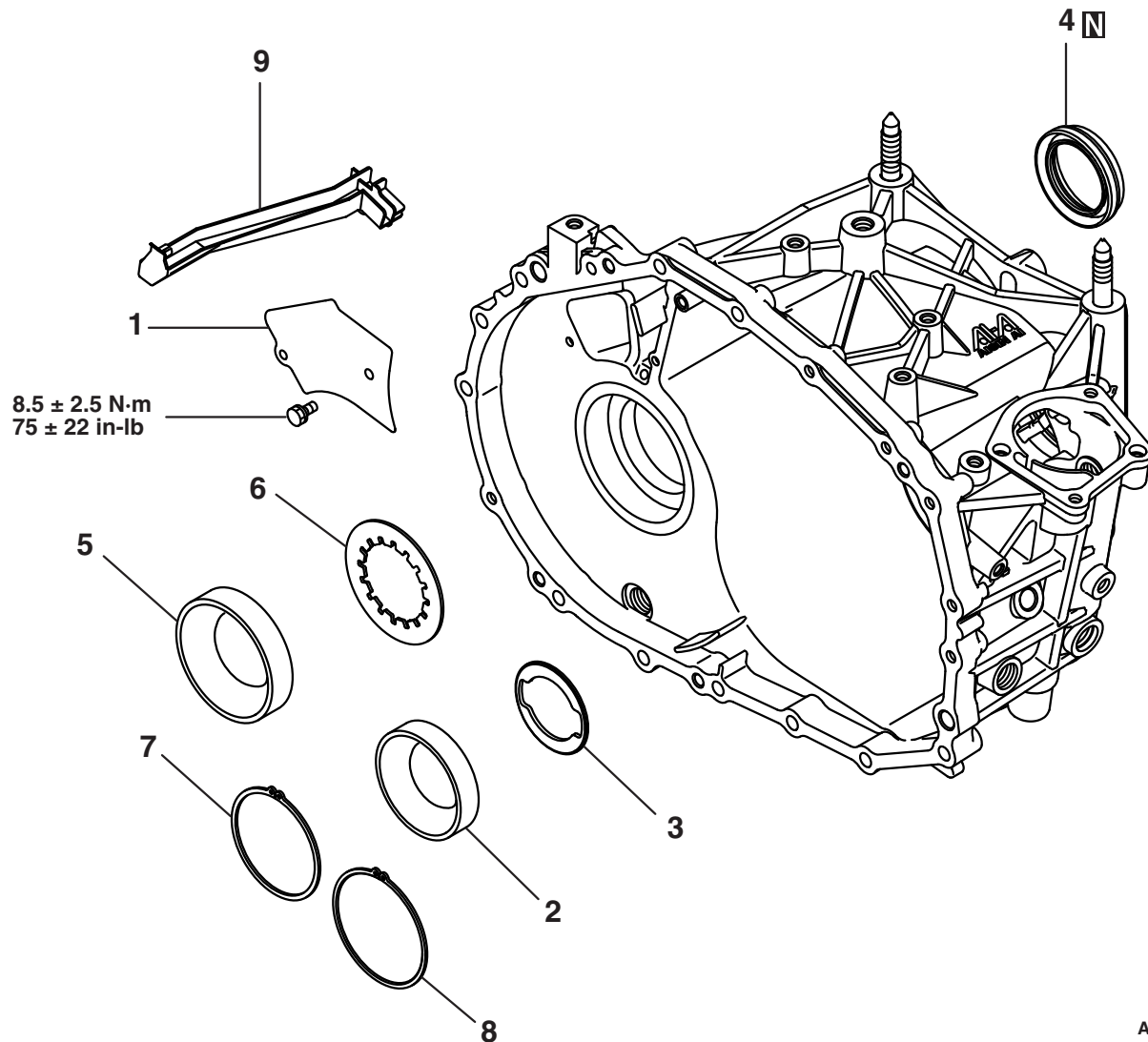


10. Install the magnet in the clutch housing.

TRANSAXLE CASE

DISASSEMBLY AND ASSEMBLY

M1222016300037



AK502974AD

1. TRANSMISSION OIL SEPARATOR
2. TAPERED ROLLER BEARING NO.1
3. SHIM
4. OIL SEAL
5. TAPERED ROLLER BEARING NO.1

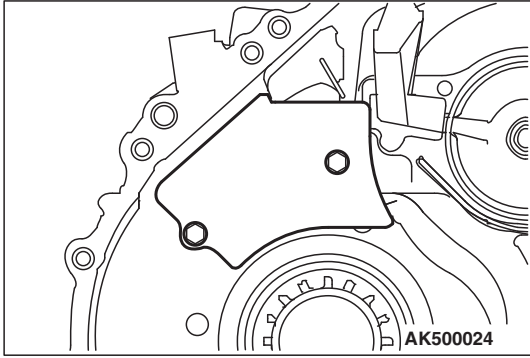
6. SHIM
7. HOLE SNAP RING
8. HOLE SNAP RING
9. OIL RECEIVER PIPE

Required Special Tools:

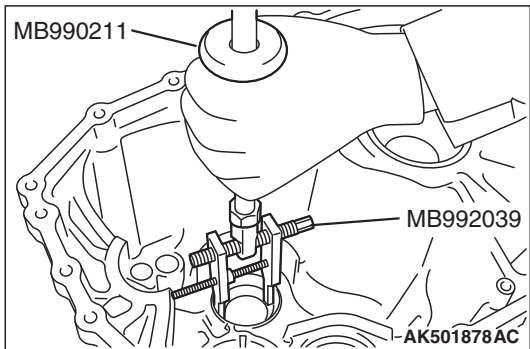
- MB990211: Slide hammer
- MB990938: Installer bar
- MB991015: Knuckle oil seal installer
- MB991966: Bearing outer race installer
- MB992039: Slide hammer puller
- MB991168: Differential oil seal installer

DISASSEMBLY

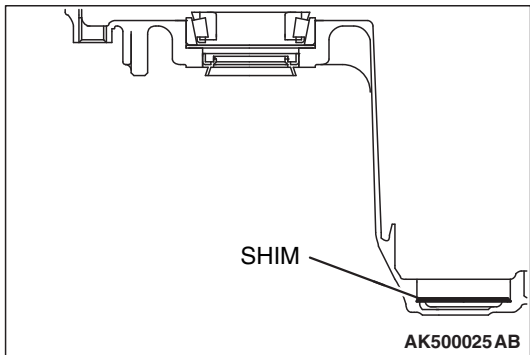
1. Remove the transmission oil separator.



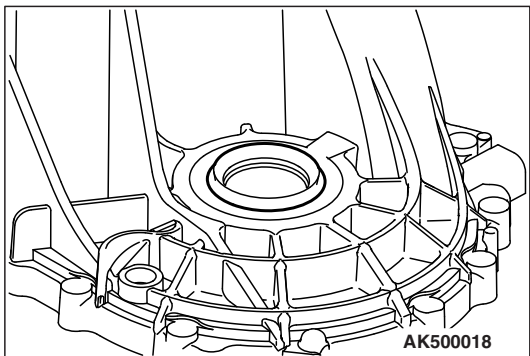
2. Using special tools MB990211 and MB992039, remove the tapered roller bearing No.1.

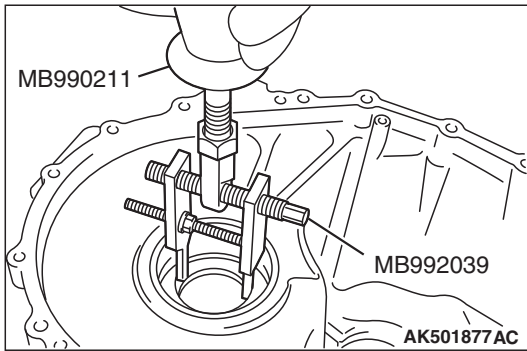


3. Remove the shim.

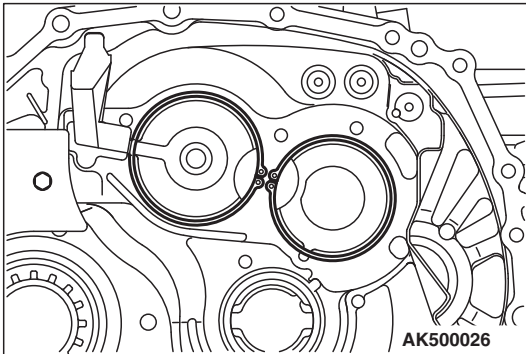


4. Remove the type T oil seal.

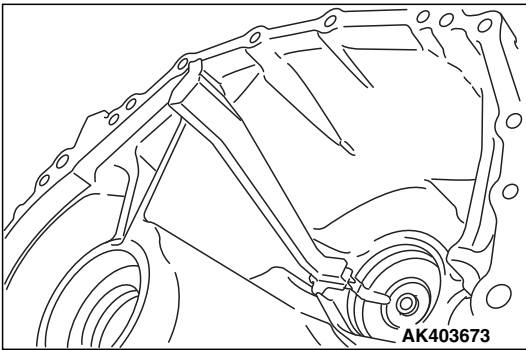




5. Using special tools MB990211 and MB992039, remove the tapered roller bearing No.1 and shim.



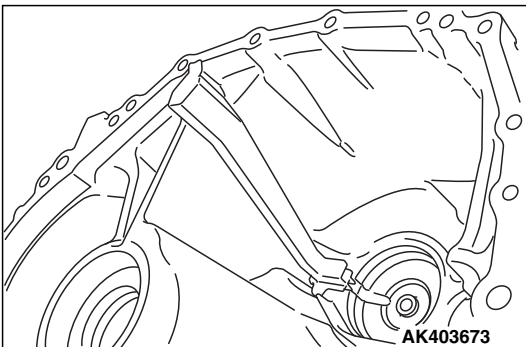
6. Remove the hole snap ring (two pieces).

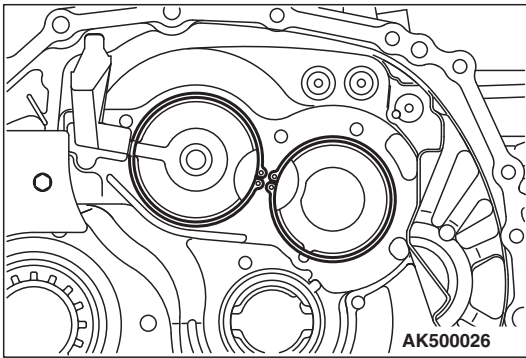


7. Remove the oil receiver pipe.

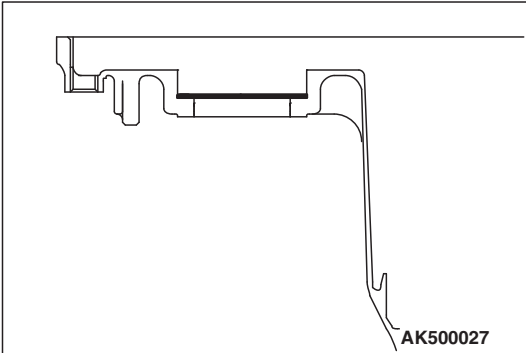
ASSEMBLY

1. install the oil receiver pipe in the transaxle case.

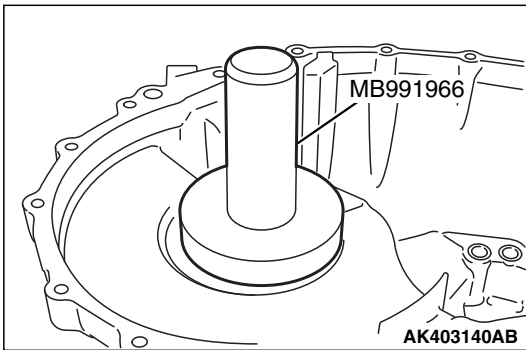




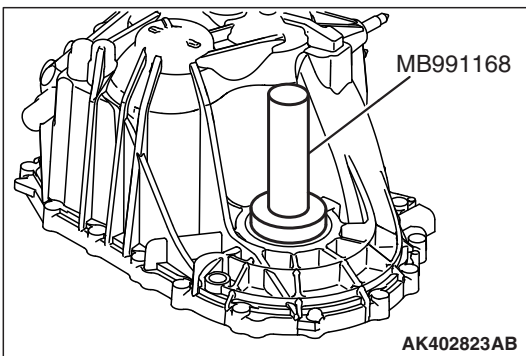
2. install the hole snap ring (two pieces) in the transaxle case.



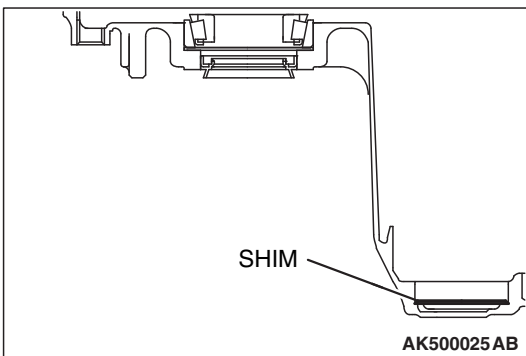
3. install the shim in the transaxle case.



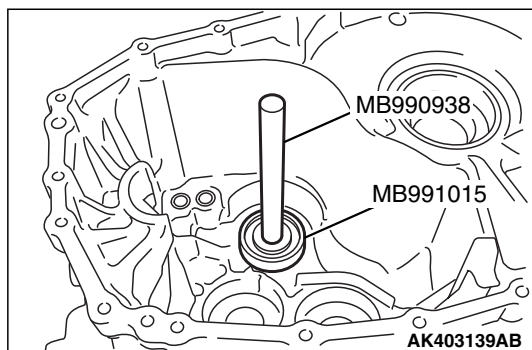
4. Using special tool MB991966, install the tapered roller bearing No.1 in the transaxle case.



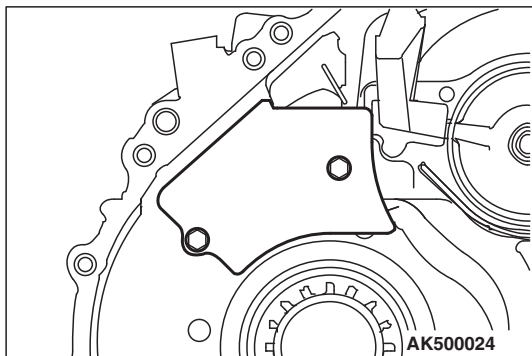
5. Using special tool MB991168, install the type T oil seal in the transaxle case.



6. Install the shim in the transaxle case.



7. Using special tools MB990938 and MB991015, install the tapered roller bearing No.1 in the transaxle case.



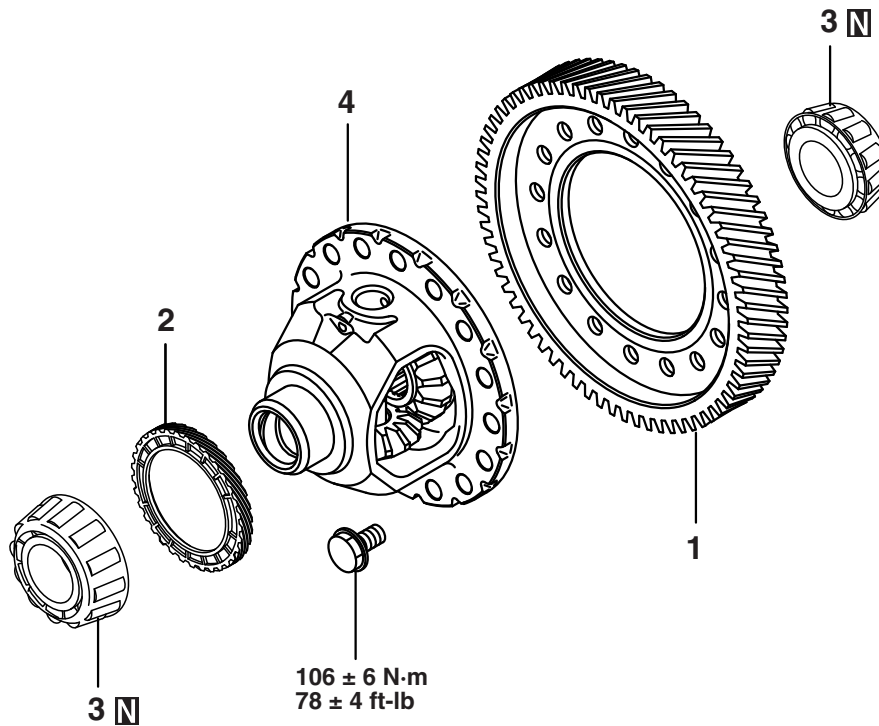
8. Install the transmission oil separator and tighten to the specified torque.

Tighten torque: 8.5 ± 2.5 N·m (75 ± 25 in-lb)

DIFFERENTIAL

DISASSEMBLY AND ASSEMBLY

M1222002500276



AK502941 AB

1. RING GEAR
2. SPEEDOMETER DRIVE GEAR

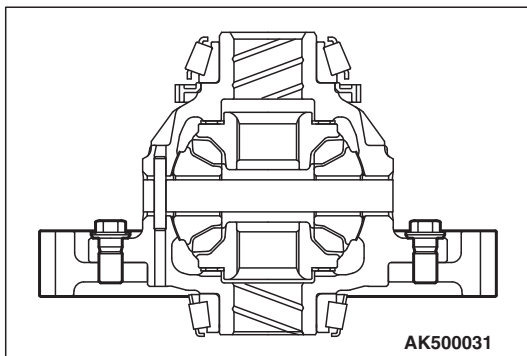
3. TAPERED ROLLER BEARINGS
4. DIFFERENTIAL CASE ASSEMBLY

Required Special Tools:

- MD998812: Installer cap
- MD998813: Installer-100
- MD998827: Installer adapter
- MD998917: Bearing remover

DISASSEMBLY

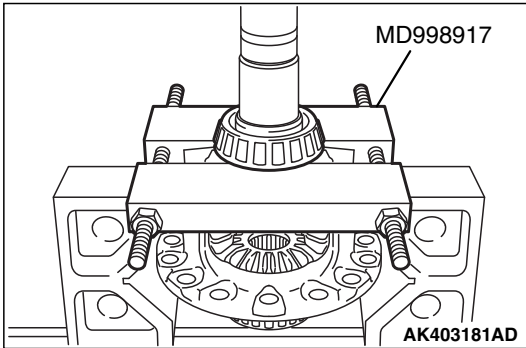
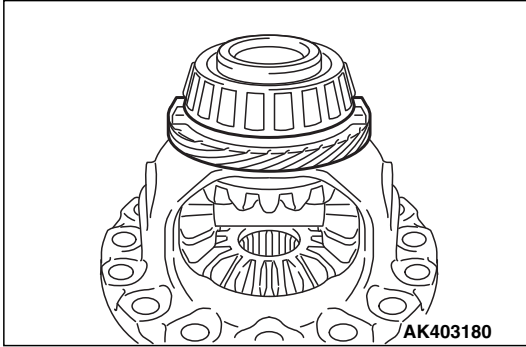
1. Remove the differential ring gear.



⚠ CAUTION

Do not damage the case and the gear.

2. Loosen and remove the speedometer drive gear.

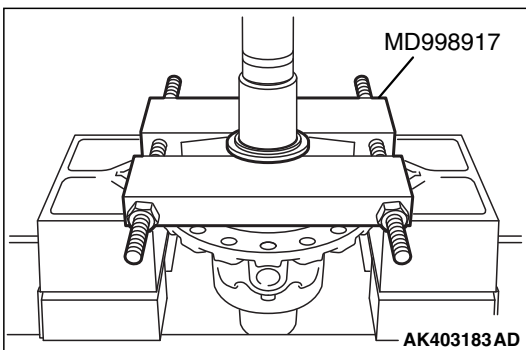
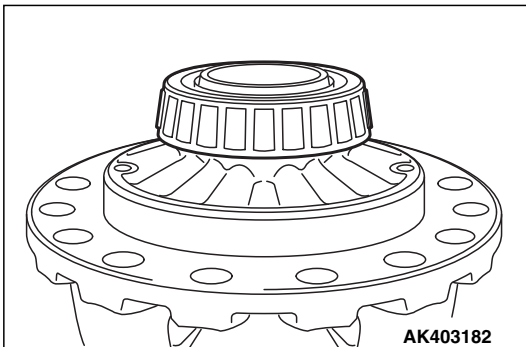


3. Place special tool MD998917 in the speedometer drive gear location, and remove the tapered roller bearing No.2.

⚠ CAUTION

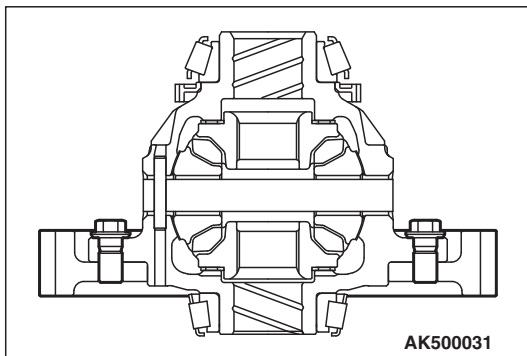
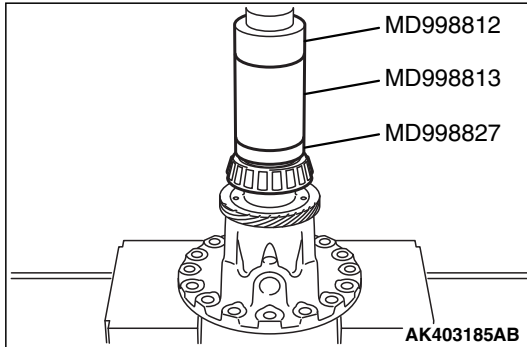
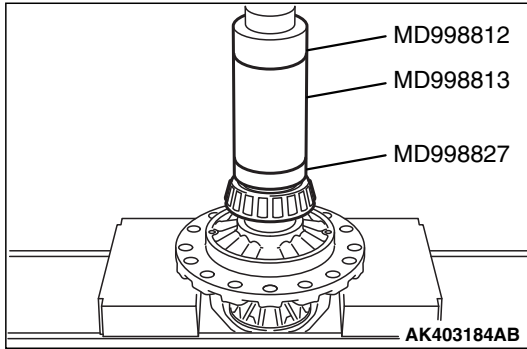
Do not damage the case and the gear.

4. Loosen and remove the tapered roller bearing No.2 (roller).



5. Place special tool MD998917 in the tapered roller bearing No.2 (roller) location, and remove the tapered roller bearing No.2 (inner race).

ASSEMBLY



1. Using special tools MD998812, MD998813 and MD998827, install the tapered roller bearing No.2.
2. Install the speedometer drive gear to the differential case sub-assembly.

3. Using special tools MD998812, MD998813 and MD998827, install the tapered roller bearing No.2.

4. Install the differential ring gear to the differential case sub-assembly and tighten the bolts to the specified torque.

Tightening torque: 106 ± 6 N·m (78 ± 4 ft-lb)

SPECIFICATIONS

FASTENER TIGHTENING SPECIFICATIONS

M1222012100633

ITEM	SPECIFICATION
TRANSAXLE CASE	
Transaxle case mounting bolt	30 ± 5 N·m (22 ± 4 ft-lb)
Backup light switch wiring harness clamp	12 ± 4 N·m (102 ± 40 in-lb)
Shift and selector lever assembly	19 ± 3 N·m (14 ± 2 ft-lb)
Selecting bell crank assembly and control bell crank dust cover mounting bolt	19 ± 3 N·m (14 ± 2 ft-lb)
Backup light switch	40 ± 12 N·m (30 ± 8 ft-lb)
Lock ball assembly (select detent)	39 ± 12 N·m (29 ± 9 ft-lb)
Lock ball assembly (shift detent)	30 ± 8 N·m (22 ± 6 ft-lb)
Straight pin	30 ± 9 N·m (22 ± 7 ft-lb)
Transaxle case hanger No.1	19 ± 3 N·m (14 ± 2 ft-lb)
Control cable bracket	19 ± 3 N·m (14 ± 2 ft-lb)
Straight screw plug (output shaft No.1 let hand)	23 ± 6 N·m (17 ± 4 ft-lb)
Straight screw plug (bearing hole snap)	55 ± 16 N·m (41 ± 12 ft-lb)
Drain plug	39 ± 12 N·m (29 ± 9 ft-lb)
Filler plug	39 ± 12 N·m (29 ± 9 ft-lb)
Reverse idler gear mounting bolt	80 ± 10 N·m (59 ± 7 ft-lb)
Transmission oil separator	8.5 ± 2.5 N·m (75 ± 22 in-lb)
CLUTCH HOUSING	
Wiring harness clamp bracket	9.0 ± 2.0 N·m (80 ± 17 in-lb)
Roll stopper bracket	90 ± 10 N·m (66 ± 7 ft-lb)
Heat protector to roll stopper bracket rear mounting bolt	10 ± 2 N·m (89 ± 18 in-lb)
Straight screw plug (four place)	23 ± 6 N·m (17 ± 4 ft-lb)
Gear shift fork assembly No.1	20 ± 4 N·m (15 ± 3 ft-lb)
Reverse shift fork	20 ± 4 N·m (15 ± 3 ft-lb)
Gear shift fork assembly No.3	20 ± 4 N·m (15 ± 3 ft-lb)
Bearing lock plate	11 ± 4 N·m (98 ± 35 in-lb)
SELECT LEVER	
Shift lever damper	36 ± 11 N·m (27 ± 8 ft-lb)
Shift guide plate	8.5 ± 2.5 N·m (75 ± 22 in-lb)
DIFFERENTIAL CASE	
Ring gear	106 ± 6 N·m (78 ± 4 ft-lb)

GENERAL SPECIFICATIONS

M1222000200406

ITEM	SPECIFICATION
Model	F6MBA-1-LKJA
Applicable engine	6G75
Type	6-speed transaxle floor shift

ITEM		SPECIFICATION
Gear ratio	1st	3.214
	2nd	2.238
	3rd	1.535
	4th	1.171
	5th	1.085
	6th	0.790
	Reverse	3.456
Final reduction ratio No.1		3.777
Final reduction ratio No.2		3.238
Speedometer gear ratio (driven/drive)		Not applicable

SERVICE SPECIFICATIONS

M1222000300395

ITEM	STANDARD VALUE
Rotational starting torque of differential case N·m (in·lb)	1.00 – 2.49 (8.85 – 22.04)
Output shaft No.2 bearing preload N·m (in·lb)	3.89 – 5.51 (34.43 – 48.77)
Input shaft radial ball bearing thrust crevice mm (in)	0 – 0.1 (0 – 0.0039)
2nd gear bearing inner race thrust crevice mm (in)	0 – 0.1 (0 – 0.0039)
3rd-4th hub thrust crevice mm (in)	0 – 0.1 (0 – 0.0039)
Output shaft No.1 radial ball bearing thrust crevice mm (in)	0 – 0.1 (0 – 0.0039)
Reverse hub thrust crevice mm (in)	0 – 0.1 (0 – 0.0039)
5th-6th hub thrust crevice mm (in)	0 – 0.1 (0 – 0.0039)
Output shaft No.2 tapered roller bearing thrust crevice mm (in)	0 – 0.1 (0 – 0.0039)

SEALANTS AND ADHESIVES

M1222000500560

ITEM	SPECIFIED SEALANT
Mating face for clutch housing and transaxle case	Mitsubishi Part No. MD974421 or equivalent
Mating face for transaxle case and control shaft cover	

FORM-IN-PLACE GASKET (FIPG)

This transaxle has several areas where the form-in-place gasket (FIPG) is used for sealing. To ensure that the FIPG fully serves its purpose, it is necessary to observe some precautions when applying it. Bead size, continuity and location are of paramount importance.

Too thin a bead could cause leaks. Too thick a bead, on the other hand, could be squeezed out of location, causing blocking or narrowing of fluid passages. To prevent leaks or blocking of passages, therefore, it is absolutely necessary to apply the FIPG evenly without a break, while observing the correct bead size.

FIPG hardens as it reacts with the moisture in the atmospheric air, and it is usually used for sealing metallic flange areas.

CAUTION

When re-applying liquid gasket (FIPG), be sure that:

- 1. Residues of FIPG are cleared from all the ins and outs of parts;**
- 2. Use Mitsubishi genuine parts cleaner (MZ100387) or equivalent to well degrease the FIPG-applied surface.**
- 3. FIPG is correctly applied in accordance with FIPG Application.**

Disassembly

Parts sealed with a FIPG can be easily removed without need for the use of a special method. In some cases, however, the FIPG in joints may have to be broken by tapping parts with a mallet or similar tool.

Surface Preparation

Thoroughly remove all substances deposited on the FIPG application surface, using a gasket scraper. Make sure that the FIPG application surfaces is flat and smooth. Also make sure that the surface is free from oils, greases and foreign substances. Do not fail to remove old FIPG that may remain in the fastener fitting holes.

FIPG Application

Applied FIPG bead should be of the specified size and free of any break. FIPG can be wiped away unless it has completely hardened. Install the mating parts in position while the FIPG is still wet. Do not allow FIPG to spread beyond the sealing areas during installation. Avoid operating the transaxle or letting oils or water come in contact with the sealed area before a time sufficient for FIPG to harden (approximately one hour) has passed. FIPG application method may vary from location to location. Follow the instruction for each particular case described later in this manual.

LUBRICANTS

M1222000400370

ITEM	SPECIFIED SEALANT
Gear oil	DiaQueen NEW MULTI GEAR OIL API GL-3, SAE 75W-80
Control bell crank dust cover	Mitsubishi part No. 0101011 or equivalent
Select lever oil seal	

ADJUSTING SNAP RINGS AND SPACERS

M1222012000432

Adjustment shims (for differential side LH tapered roller bearing preload adjustment)

THICKNESS mm (in)	IDENTIFICATION SYMBOL	THICKNESS mm (in)	IDENTIFICATION SYMBOL
2.00 ± 0.01 (0.0787 ± 0.0004)	0	2.45 ± 0.01 (0.0965 ± 0.0004)	9
2.05 ± 0.01 (0.0807 ± 0.0004)	1	2.50 ± 0.01 (0.0984 ± 0.0004)	A
2.10 ± 0.01 (0.0827 ± 0.0004)	2	2.55 ± 0.01 (0.1004 ± 0.0004)	B
2.15 ± 0.01 (0.0846 ± 0.0004)	3	2.60 ± 0.01 (0.1024 ± 0.0004)	C
2.20 ± 0.01 (0.0866 ± 0.0004)	4	2.65 ± 0.01 (0.1043 ± 0.0004)	D
2.25 ± 0.01 (0.0886 ± 0.0004)	5	2.70 ± 0.01 (0.1063 ± 0.0004)	E
2.30 ± 0.01 (0.0906 ± 0.0004)	6	2.75 ± 0.01 (0.1083 ± 0.0004)	F
2.35 ± 0.01 (0.0925 ± 0.0004)	7	2.80 ± 0.01 (0.1102 ± 0.0004)	G
2.40 ± 0.01 (0.0944 ± 0.0004)	8	2.85 ± 0.01 (0.1122 ± 0.0004)	H

Adjustment shims (for output shaft No.2 bearing preload adjustment)

THICKNESS mm (in)	IDENTIFICATION SYMBOL	THICKNESS mm (in)	IDENTIFICATION SYMBOL
1.80 ± 0.01 (0.0709 ± 0.0004)	A	2.25 ± 0.01 (0.0886 ± 0.0004)	K
1.85 ± 0.01 (0.0728 ± 0.0004)	B	2.30 ± 0.01 (0.0906 ± 0.0004)	L
1.90 ± 0.01 (0.0748 ± 0.0004)	C	2.35 ± 0.01 (0.0925 ± 0.0004)	M
1.95 ± 0.01 (0.0768 ± 0.0004)	D	2.40 ± 0.01 (0.0944 ± 0.0004)	N
2.00 ± 0.01 (0.0787 ± 0.0004)	E	2.45 ± 0.01 (0.0965 ± 0.0004)	P
2.05 ± 0.01 (0.0807 ± 0.0004)	F	2.50 ± 0.01 (0.0984 ± 0.0004)	Q

THICKNESS mm (in)	IDENTIFICATION SYMBOL	THICKNESS mm (in)	IDENTIFICATION SYMBOL
2.10 ± 0.01 (0.0827 ± 0.0004)	G	2.55 ± 0.01 (0.1004 ± 0.0004)	R
2.15 ± 0.01 (0.0846 ± 0.0004)	H	2.60 ± 0.01 (0.1024 ± 0.0004)	S
2.20 ± 0.01 (0.0866 ± 0.0004)	J	2.65 ± 0.01 (0.1043 ± 0.0004)	T

Shaft snap rings (for input shaft radial ball bearing preload adjustment)

THICKNESS mm (in)	IDENTIFICATION SYMBOL	THICKNESS mm (in)	IDENTIFICATION SYMBOL
1.80 – 1.85 (0.0709 – 0.0728)	A	2.20 – 2.25 (0.0867 – 0.0886)	3
1.85 – 1.90 (0.0728 – 0.0748)	B	2.25 – 2.30 (0.0886 – 0.0906)	4
1.90 – 1.95 (0.0748 – 0.0768)	C	2.30 – 2.35 (0.0906 – 0.0925)	5
1.95 – 2.00 (0.0768 – 0.0787)	D	2.35 – 2.40 (0.0925 – 0.0945)	6
2.00 – 2.05 (0.0787 – 0.0807)	E	2.40 – 2.45 (0.0945 – 0.0965)	F
2.05 – 2.10 (0.0807 – 0.0827)	0	2.45 – 2.50 (0.0965 – 0.0984)	G
2.10 – 2.15 (0.0827 – 0.0846)	1	2.50 – 2.55 (0.0984 – 0.1004)	H
2.15 – 2.20 (0.0846 – 0.0867)	2		

Washers (or adjustment of distance between differential side gear thrust pinion and differential side gear thrust pinion washer)

THICKNESS mm (in)	IDENTIFICATION SYMBOL	THICKNESS mm (in)	IDENTIFICATION SYMBOL
1.25 ± 0.02 (0.0492 ± 0.0008)	–	1.65 ± 0.02 (0.0650 ± 0.0008)	–
1.30 ± 0.02 (0.0512 ± 0.0008)	–	1.70 ± 0.02 (0.0670 ± 0.0008)	–
1.35 ± 0.02 (0.0532 ± 0.0008)	–	1.75 ± 0.02 (0.0689 ± 0.0008)	–
1.40 ± 0.02 (0.0551 ± 0.0008)	–	1.80 ± 0.02 (0.0709 ± 0.0008)	–
1.45 ± 0.02 (0.0571 ± 0.0008)	–	1.85 ± 0.02 (0.0728 ± 0.0008)	–
1.50 ± 0.02 (0.0591 ± 0.0008)	–	1.90 ± 0.02 (0.0748 ± 0.0008)	–
1.55 ± 0.02 (0.0610 ± 0.0008)	–	1.95 ± 0.02 (0.0768 ± 0.0008)	–
1.60 ± 0.02 (0.0630 ± 0.0008)	–		

Shaft snap rings (for output shaft No.1 2nd gear bushing end play adjustment)

THICKNESS mm (in)	IDENTIFICATION SYMBOL	THICKNESS mm (in)	IDENTIFICATION SYMBOL
2.25 – 2.30 (0.0886 – 0.0906)	A	2.45 – 2.50 (0.0965 – 0.0984)	E
2.30 – 2.35 (0.0906 – 0.0925)	B	2.50 – 2.55 (0.0984 – 0.1004)	F
2.35 – 2.40 (0.0925 – 0.0945)	C	2.55 – 2.60 (0.1004 – 0.1024)	G
2.40 – 2.45 (0.0945 – 0.0965)	D	2.60 – 2.65 (0.1024 – 0.1043)	H

Shaft snap rings (for output shaft No.1 3rd-4th synchronizer hub bushing end play adjustment)

THICKNESS mm (in)	IDENTIFICATION SYMBOL	THICKNESS mm (in)	IDENTIFICATION SYMBOL
2.25 – 2.30 (0.0886 – 0.0906)	1	2.40 – 2.45 (0.0945 – 0.0965)	4
2.30 – 2.35 (0.0906 – 0.0925)	2	2.45 – 2.50 (0.0965 – 0.0984)	5
2.35 – 2.40 (0.0925 – 0.0945)	3	2.50 – 2.55 (0.0984 – 0.1004)	6

Shaft snap rings (for output shaft No.2 reverse synchronizer hub bushing end play adjustment)

THICKNESS mm (in)	IDENTIFICATION SYMBOL	THICKNESS mm (in)	IDENTIFICATION SYMBOL
2.25 – 2.30 (0.0886 – 0.0906)	A	2.45 – 2.50 (0.0965 – 0.0984)	E
2.30 – 2.35 (0.0906 – 0.0925)	B	2.50 – 2.55 (0.0984 – 0.1004)	F
2.35 – 2.40 (0.0925 – 0.0945)	C	2.55 – 2.60 (0.1004 – 0.1024)	G
2.40 – 2.45 (0.0945 – 0.0965)	D	2.60 – 2.65 (0.1024 – 0.1043)	H

Shaft snap rings (for output shaft No.1 radial ball bearing adjustment)

THICKNESS mm (in)	IDENTIFICATION SYMBOL	THICKNESS mm (in)	IDENTIFICATION SYMBOL
1.85 – 1.90 (0.0709 – 0.0748)	B	2.05 – 2.10 (0.0807 – 0.0827)	0
1.90 – 1.95 (0.0748 – 0.0768)	C	2.10 – 2.15 (0.0827 – 0.0846)	1
1.95 – 2.00 (0.0768 – 0.0787)	D	2.15 – 2.20 (0.0846 – 0.0866)	2
2.00 – 2.05 (0.0787 – 0.0807)	E		

Shaft snap rings (for output shaft No.2 tapered roller bearing adjustment)

THICKNESS mm (in)	IDENTIFICATION SYMBOL	THICKNESS mm (in)	IDENTIFICATION SYMBOL
1.85 – 1.90 (0.0709 – 0.0748)	B	2.05 – 2.10 (0.0807 – 0.0827)	0
1.90 – 1.95 (0.0748 – 0.0768)	C	2.10 – 2.15 (0.0827 – 0.0846)	1
1.95 – 2.00 (0.0768 – 0.0787)	D	2.15 – 2.20 (0.0846 – 0.0866)	2
2.00 – 2.05 (0.0787 – 0.0807)	E		

Shaft snap rings (for output shaft No.2 5th-6th synchronizer hub bushing end play adjustment)

THICKNESS mm (in)	IDENTIFICATION SYMBOL	THICKNESS mm (in)	IDENTIFICATION SYMBOL
2.25 – 2.30 (0.0886 – 0.0906)	1	2.40 – 2.45 (0.0945 – 0.0965)	4
2.30 – 2.35 (0.0906 – 0.0925)	2	2.45 – 2.50 (0.0965 – 0.0984)	5
2.35 – 2.40 (0.0925 – 0.0945)	3	2.50 – 2.55 (0.0984 – 0.1004)	6