

GROUP 22B

MANUAL TRANSMISSION OVERHAUL

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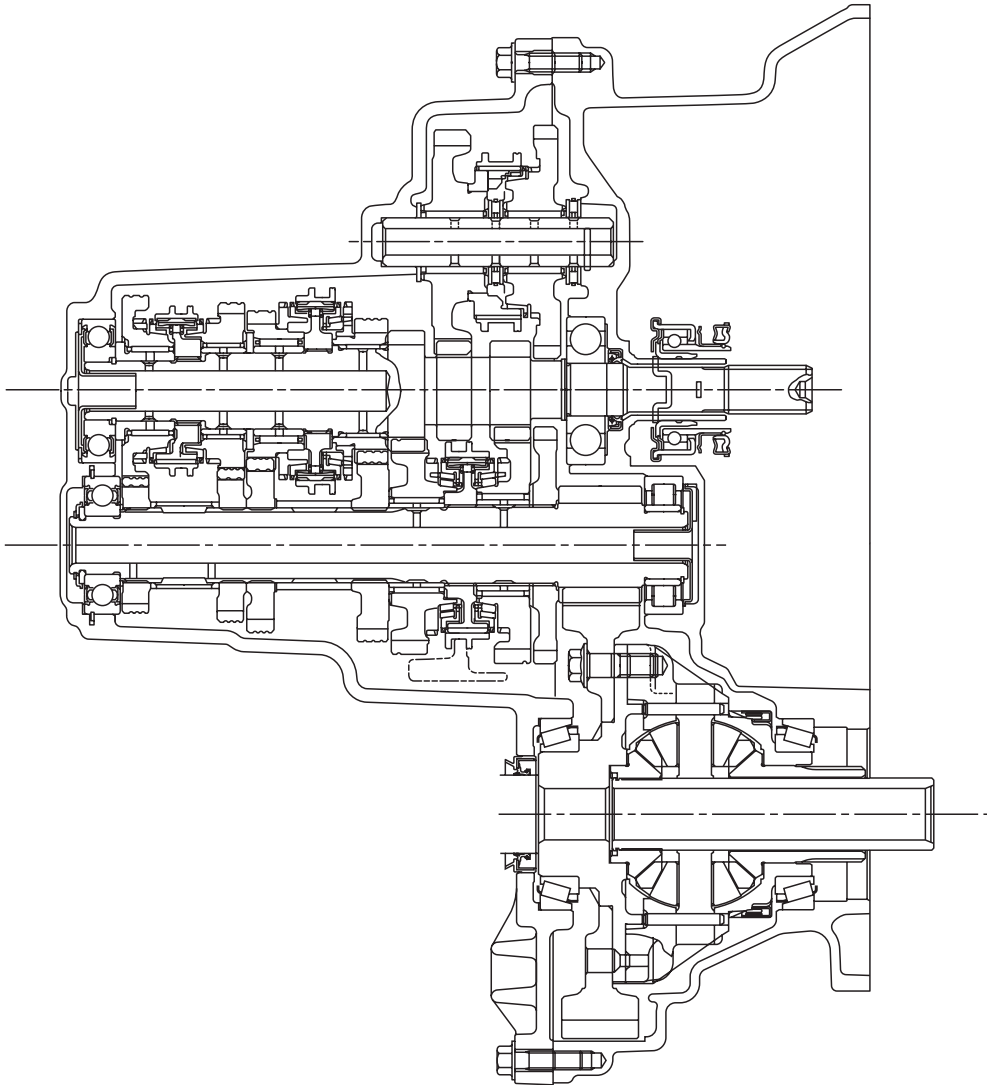
GENERAL INFORMATION

M1222000100142

TRANSMISSION MODEL

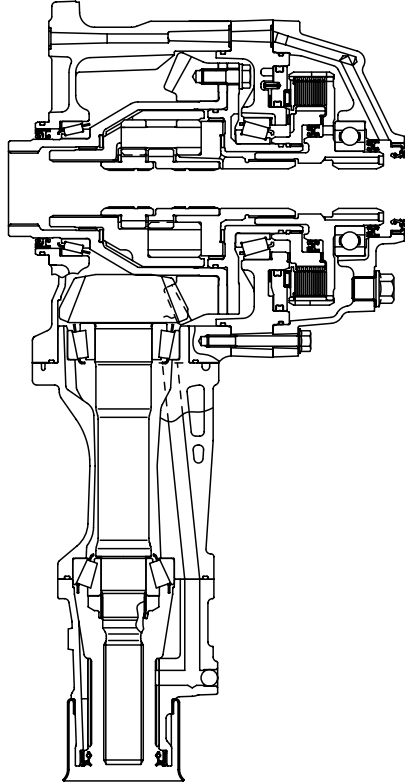
Transmission model	Combined engine	Vehicle model
W6MAA-1-GFNF	4G63	CT9A

TRANSMISSION SECTIONAL VIEW



AK204394

TRANSFER SECTIONAL VIEW



AK204401

GENERAL SPECIFICATIONS

M1222000200194

Item		Specifications
Transmission model		W6MAA-1-GFNF
Applicable engine		4G63
Transmission type		6-speed transmission
Transmission gear ratio	1st	2.909
	2nd	1.944
	3rd	1.434
	4th	1.100
	5th	0.868
	6th	0.693
	Reverse	2.707
Speedometer gear ratio		Not applicable
Final gear ratio		4.583
Transfer type		Constant mesh

SERVICE SPECIFICATIONS

M1222000300168

Item	Standard mm	Limit mm
Differential side bearing preload	0.15 – 0.20	–
Input shaft end play	0 – 0.06	–
Main shaft end play	0 – 0.06	–
Reverse idler gear end play	0.04 – 0.10	–
Distance between input shaft front bearing and thrust washer	167.6 – 167.7	–
Input shaft 6th gear bushing end play	0 – 0.1	–
Wear on one side of shift fork pawl	–	0.2
Clearance between synchronizer ring and gear	–	0.7
Clearance between synchronizer ring and synchronizer cone	–	0.2
Backlash between differential side gear and pinion	0.025 – 0.150	–

SEALANTS

M1222000500151

Item	Brand
Clutch housing and transaxle case contact surface	MITSUBISHI GENUINE PART MD997740 or equivalent
Reverse switch	
Air breather	3M 8513 or equivalent
Differential drive gear bolt	3M STUD Locking No. 4170 or equivalent

FORM-IN-PLACE GASKET (FIPG)

This transmission 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 can cause leaks. Too thick a bead, on the other hand, can 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.

REMOVAL OF FIPG SEALED PARTS

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

CLEANING FIPG APPLICATION SURFACE

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

APPLICATION OF FIPG

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 into position while the FIPG is still wet (in less than 10 minutes after application). Do not allow FIPG to spread beyond the sealing areas during installation. Avoid operating the transmission 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 instructions for each particular case described later in this manual.

LUBRICANTS

M1222000400121

Item	Brand
Transfer oil seal lip	Shell Sunlight Grease 2, Retinax A, or equivalent
O-rings	

SNAP RING, SPACER AND THRUST PLATE FOR ADJUSTMENT

M1222012000175

Adjustment shims (for differential side bearing preload adjustment)

Thickness mm	Thickness mm
0.48	0.72
0.52	0.76
0.56	0.80
0.60	0.84
0.64	0.88
0.68	0.92

Adjustment shims (for input shaft end play adjustment)

Thickness mm	Thickness mm
0.44	1.00
0.48	1.04
0.52	1.08
0.56	1.12
0.60	1.16
0.64	1.20
0.68	1.24
0.72	1.28
0.76	1.32
0.80	1.36
0.84	1.40
0.88	1.44
0.92	1.48
0.96	1.52

Adjustment shims (for main shaft end play adjustment)

Thickness mm	Thickness mm
0.44	0.80
0.48	0.84
0.52	0.88
0.56	0.92
0.60	0.96
0.64	1.00
0.68	1.04
0.72	1.08
0.76	

Adjustment shims (for reverse idler gear end play adjustment)

Thickness mm	Thickness mm
1.76	2.24
1.80	2.28
1.84	2.32
1.88	2.36
1.92	2.40
1.96	2.44
2.00	2.48
2.04	2.52
2.08	2.56
2.12	2.60
2.16	2.64
2.20	

Thrust washers (for adjustment of distance between input shaft front bearing and thrust washer)

Thickness mm	Thickness mm
3.84	4.02
3.90	4.08
3.96	4.14

Snap rings (for input shaft 6th gear bushing end play adjustment)

Thickness mm	Thickness mm
1.71	2.01
1.76	2.06
1.81	2.11
1.86	2.16
1.91	2.21
1.96	2.26

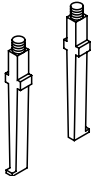
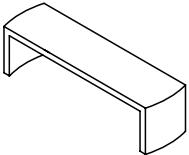
TORQUE SPECIFICATIONS

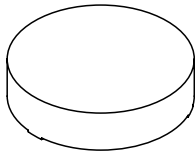
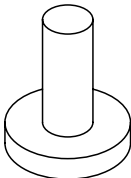
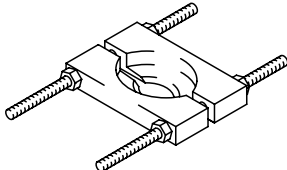
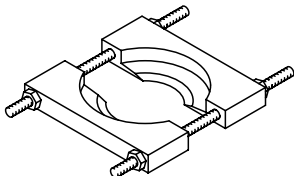
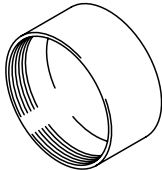
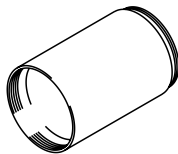
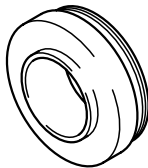
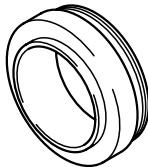
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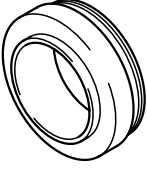
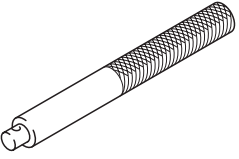
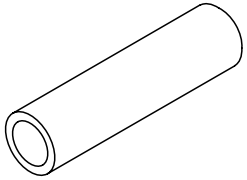
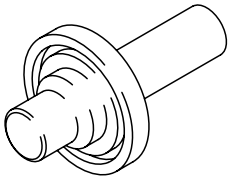
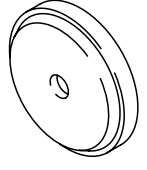
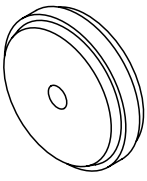
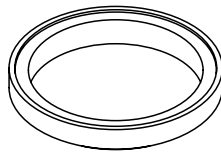
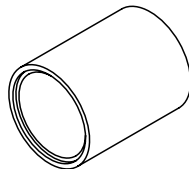
Item	Torque N·m
Transfer bolts	70 ± 10
Roll stopper bracket bolts	69 ± 9
Vehicle speed sensor bolts	11 ± 1
Reverse switch	28 ± 5
Stopper bolts	29 ± 1
Shift check plugs	15 ± 2
Transaxle case bolts (with sealant)	63 ± 1
Transaxle case bolts	52 ± 1
Shift check plugs	15 ± 2
Reverse lever assembly	14 ± 1
Main shaft bearing retainer bolts	7.3 ± 1.0
Drain plugs	35 ± 4
Filler plugs	35 ± 4
Differential drive gear bolts	158 ± 7
Transfer cover case bolts	23 ± 3
Plugs	30 ± 2
Magnet plugs	30 ± 2

SPECIAL TOOLS

M1222000600170

Tool	Number	Name	Use
 MB990810	MB990810	Side bearing puller	Use with claws
	MB991967	Claws	Removal of differential side bearing outer race
	MB991968	Bridge	Removal of differential side bearing outer race

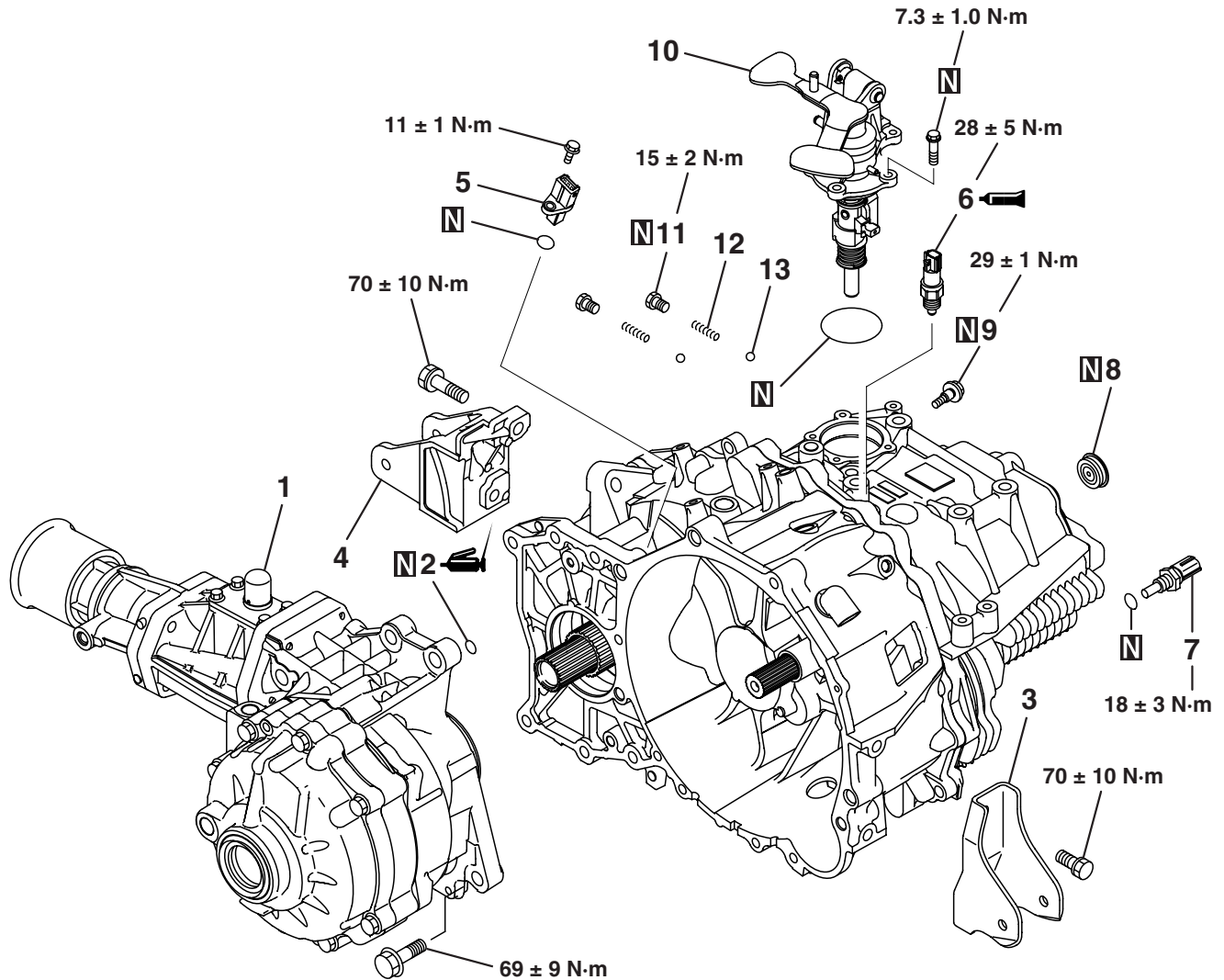
Tool	Number	Name	Use
	MB991969	Measurement adapter	Measurement of differential side bearing preload
	MB991966	Bearing outer race installer	Installation of differential side bearing outer race
	MD998801	Bearing remover	Installation and removal of a gear, bearing, and sleeve
	MD998917	Bearing remover	Installation and removal of a gear, bearing, and sleeve
	MD998812	Installer cap	Use with installer and installer adapter
	MD998813	Installer 100	Use with installer cap and installer adapter
	MD998818	Installer adapter (38)	Installation of input shaft rear bearing and roller bearing inner race
	MD998823	Installer adapter (48)	Installation of 3rd-4th synchronizer assembly

Tool	Number	Name	Use
	MD998822	Installer adapter (46)	Installation of 1st gear sleeve and 1st-2nd synchronizer hub
	MB990938	Handle	Use with installer adapter
	MD998323	Bearing installer	Installation of input shaft oil seal
	MD998800	Oil seal installer	Installation of differential oil seal and transfer oil seal
	MB990936	Installer adapter	Installation of transfer taper roller bearing and transfer oil seal
	MB990937	Installer adapter	Installation of transfer oil seal
	MB990887	Arm bushing adapter and installer ring	Installation of transfer oil seal
	MB990891	Bushings remover and installer base	Use with arm bushing adapter and installer ring

TRANSMISSION

DISASSEMBLY AND REASSEMBLY

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Disassembly steps

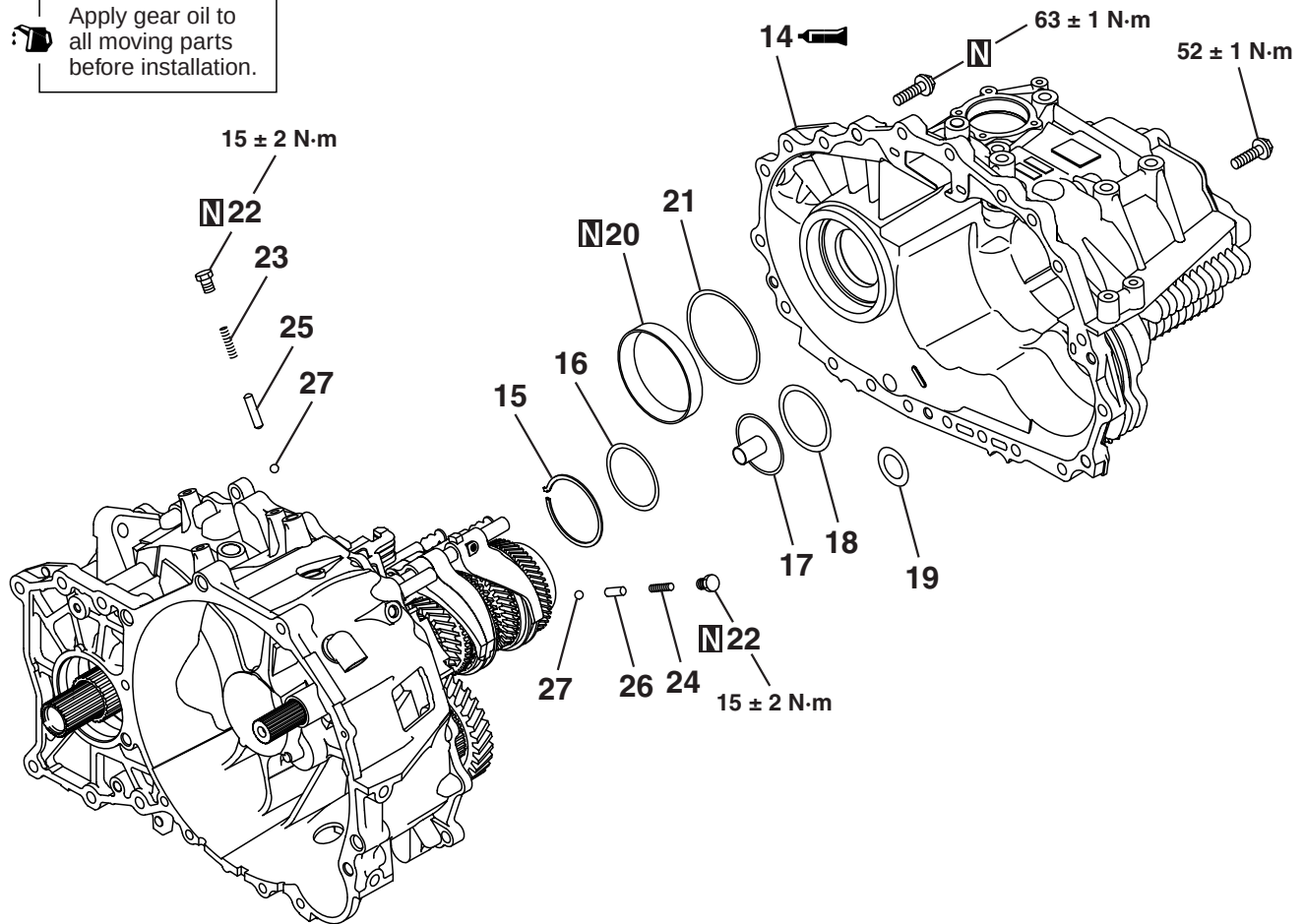
1. Transfer
2. O-ring
3. Front roll stopper bracket
4. Rear roll stopper bracket
5. Vehicle speed sensor
- >>P<< 6. Back light switch
7. Oil temperature sensor

Disassembly steps (Continued)

8. Bore plug
9. Stopper bolt
- >>O<< 10. Control assembly
11. Shift check plug
12. Shift check spring
13. Check ball



Apply gear oil to
all moving parts
before installation.



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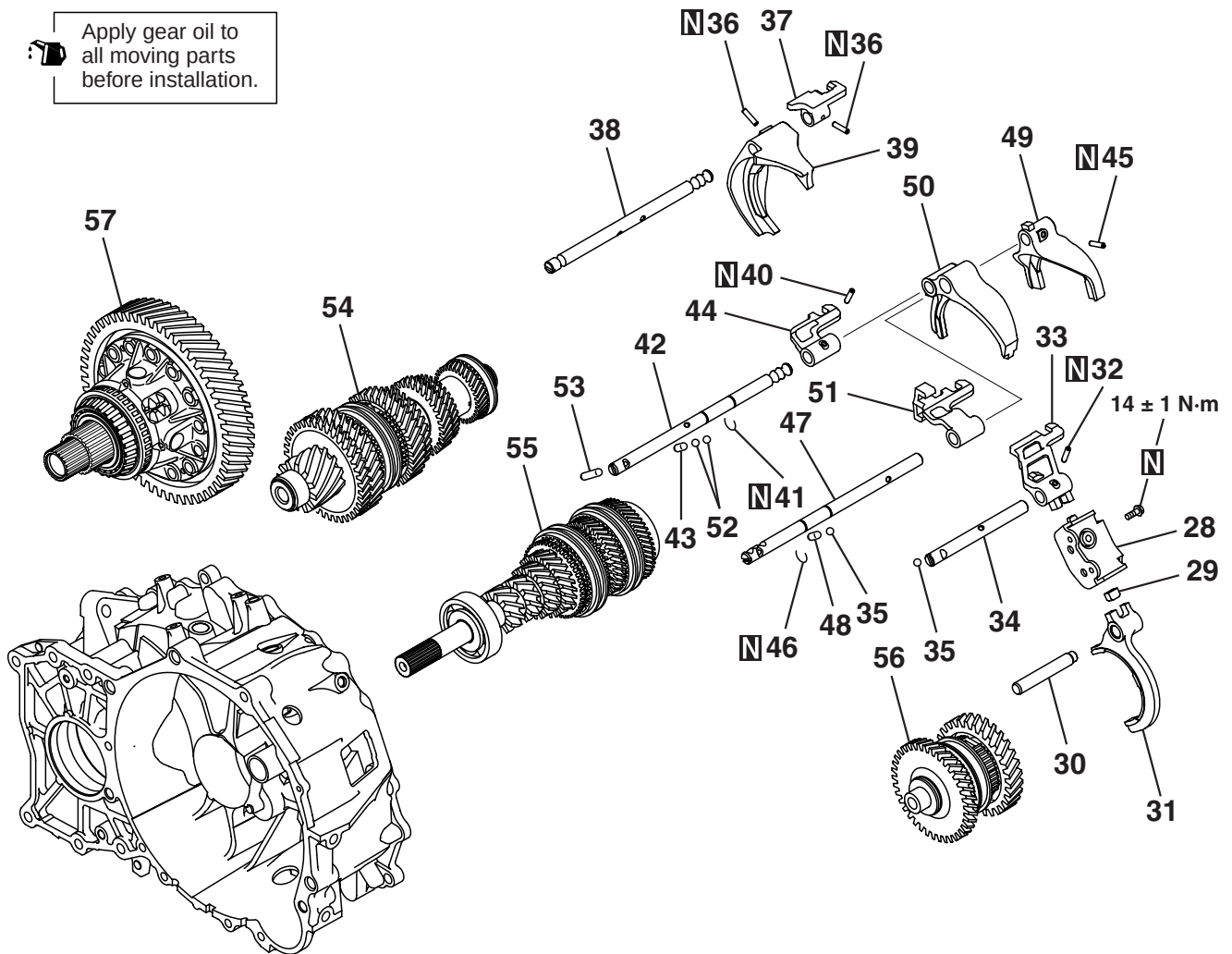
Disassembly steps

- >>N<< 14. Transmission case
- 15. Snap ring
- >>M<< 16. Main shaft rear bearing adjustment shim
- 17. Oil channel
- >>M<< 18. Input shaft rear bearing adjustment shim
- >>M<< 19. Reverse idler gear adjustment shim
- <<A>> >>L<< 20. Differential side bearing outer race

Disassembly steps (Continued)

- >>K<< 21. Differential side bearing adjustment shim
- >>J<< 22. Shift check plug
- >>J<< 23. 5th-6th shift check spring
- >>J<< 24. Shift check spring
- >>J<< 25. Shift check sleeve
- >>J<< 26. Reverse shift check sleeve
- >>J<< 27. Check ball

 Apply gear oil to
all moving parts
before installation.



AK204166AF

Disassembly steps

28. Reverse lever assembly
29. Shifter cap
30. Reverse fork rod
31. Reverse shift fork
32. Retaining pin
33. Reverse bracket
34. Reverse bracket fork rod
35. Interlock ball
36. Retaining pin
37. 1st-2nd bracket
38. 1st-2nd fork rod
39. 1st-2nd shift fork
40. Retaining pin
41. C-ring
42. 3rd-4th fork rod
43. Interlock pin
44. 3rd-4th bracket
45. Retaining pin
46. C-ring
47. 5th-6th fork rod
48. Interlock pin
49. 5th-6th shift fork

Disassembly steps (Continued)

50. 3rd-4th shift fork
51. 5th-6th bracket
52. Interlock ball
53. Shift check sleeve
54. Main shaft assembly
55. Input shaft assembly
56. Reverse idler gear assembly
57. Center differential

Reassembly steps

57. Center differential
- >>A<< 56. Reverse idler gear assembly
- >>A<< 55. Input shaft assembly
- >>A<< 54. Main shaft assembly
38. 1st-2nd fork rod
37. 1st-2nd bracket
36. Retaining pin
- >>B<< 39. 1st-2nd shift fork
- >>C<< 53. Shift check sleeve
- >>D<< 42. 3rd-4th fork rod
43. Interlock pin
- >>D<< 44. 3rd-4th bracket
- >>D<< 50. 3rd-4th shift fork

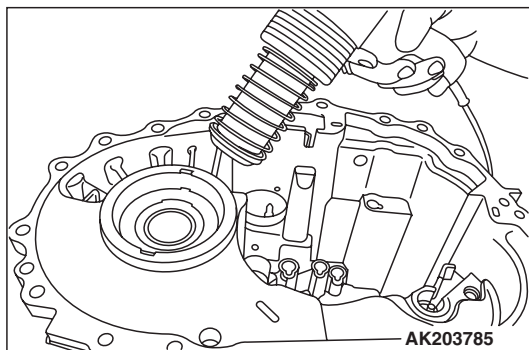
Reassembly steps (Continued)

- >>D<< 41. C-ring
- >>D<< 40. Retaining pin
- >>E<< 52. Interlock ball
- >>F<< 47. 5th-6th fork rod
- 48. Interlock pin
- >>F<< 51. 5th-6th bracket
- >>F<< 49. 5th-6th shift fork
- >>F<< 46. C-ring

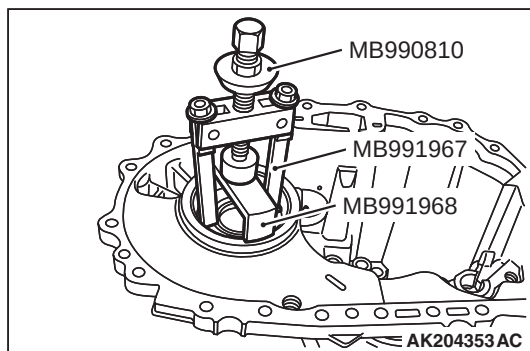
Reassembly steps (Continued)

- >>F<< 45. Retaining pin
- >>G<< 35. Interlock ball
- >>H<< 34. Reverse bracket fork rod
- >>H<< 33. Reverse bracket
- 32. Retaining pin
- 31. Reverse shift fork
- 30. Reverse fork rod
- >>I<< 28. Reverse lever assembly
- 29. Shifter cap

DISASSEMBLY SERVICE POINTS

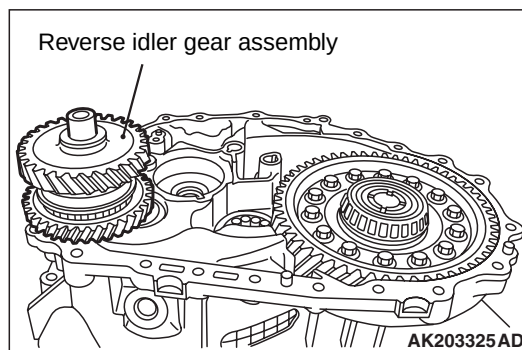
<<A>> DIFFERENTIAL SIDE BEARING
OUTER RACE REMOVAL

1. Heat the transmission case to about 100 °C (maximum temperature: 120 °C).

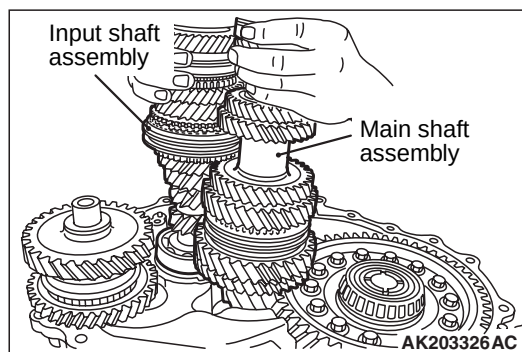


2. Using the following special tools, remove the differential side bearing outer race.
 - Side bearing puller (MB990810)
 - Claw (MB991967)
 - Bridge (MB991968)

REASSEMBLY SERVICE POINTS

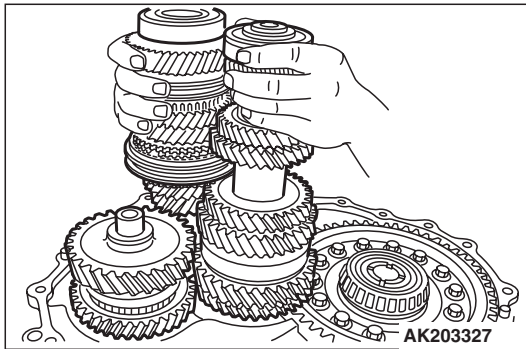
>>A<< INPUT SHAFT ASSEMBLY / MAIN
SHAFT ASSEMBLY / REVERSE IDLER
GEAR ASSEMBLY INSTALLATION

1. Place the reverse idler gear assembly at the installation location without actually inserting it into the clutch housing.

**CAUTION**

Be careful not to scratch the input shaft oil seal. (Protect it from scratches by wrapping vinyl tape around the splined portion of the input shaft assembly.)

2. Insert the input shaft assembly and then the main shaft assembly into the clutch housing, leaving some space between each assembly and the housing.

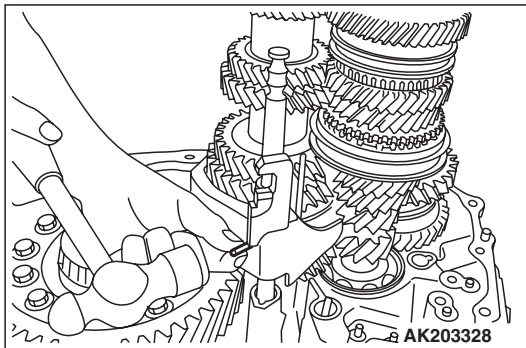


CAUTION

Make sure to fit the lock pin at the end of the reverse idler gear assembly into the groove in the clutch housing.

3. Move the reverse idler gear assembly so that its parts fit into the spaces between the housing and the partially inserted shaft assemblies, and then insert the three assemblies together into the clutch housing.

>>B<< 1ST-2ND FORK ROD / 1ST-2ND SHIFT FORK INSTALLATION

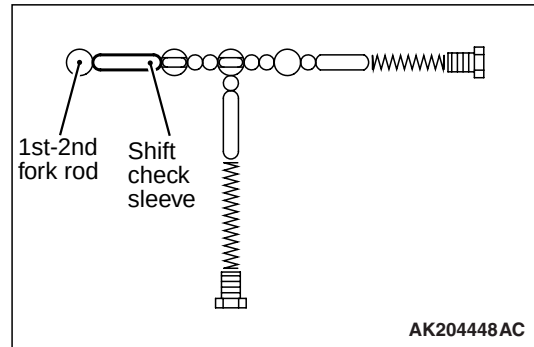


CAUTION

- The retaining pin is not reusable.
- When installing the retaining pin, insert an Allen wrench into the hole on the other side of the fork rod to keep the fork from slipping down.

Install the 1st-2nd fork rod in the clutch housing and then install the 1st-2nd shift fork on the fork rod by hammering in the retaining pin.

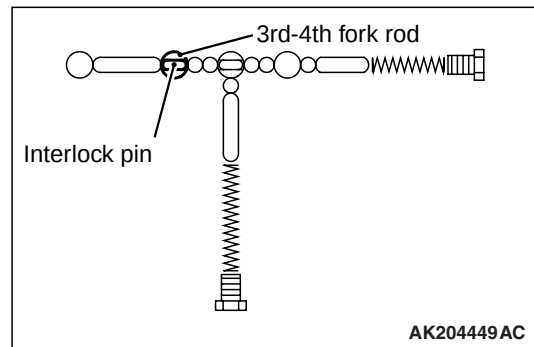
>>C<< SHIFT CHECK SLEEVE INSTALLATION



CAUTION

The transmission assembly contains parts that resemble shift check sleeves. Make sure not to mistakenly install a similar part instead of the shift check sleeve (length: 36.25 mm). Install the shift check sleeve.

>>D<< 3RD-4TH BRACKET / 3RD-4TH SHIFT FORK / 3RD-4TH FORK ROD INSTALLATION



CAUTION

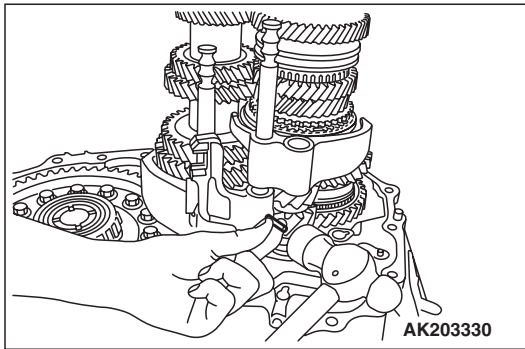
Apply Vaseline to the interlock pin and be careful not to drop it during installation.

1. Install the interlock pin on the 3rd-4th fork rod.
2. Install the 3rd-4th bracket, 3rd-4th shift fork, and 3rd-4th fork rod.

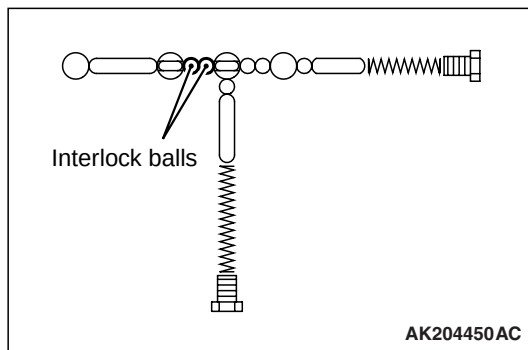
CAUTION

The C-ring is not reusable.

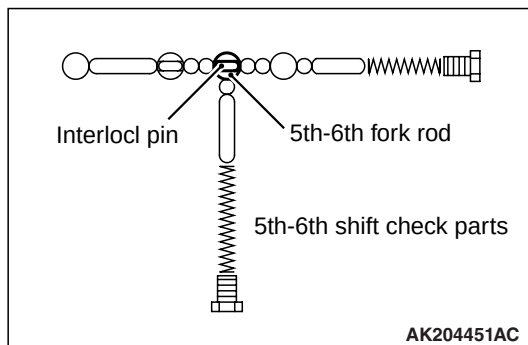
3. Install the C-ring on the 3rd-4th shift fork

**CAUTION**

- The retaining pin is not reusable.
 - When installing the retaining pin, insert an Allen wrench into the hole on the other side of the fork rod to keep the fork from slipping down.
4. Hammer the retaining pin into the 3rd-4th bracket.

>>E<< INTERLOCK BALL INSTALLATION**CAUTION**

Make sure that the interlock balls do not fall out of their locations.
Install the two interlock balls.

>>F<< 5TH-6TH BRACKET / 5TH-6TH SHIFT FORK / 5TH-6TH FORK ROD INSTALLATION**CAUTION**

Apply Vaseline to the interlock pin and be careful not to drop it during installation.

1. Install the interlock pin in the 5th-6th fork rod.

CAUTION

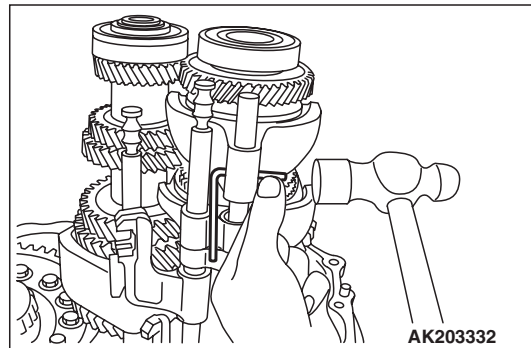
Install the 5th-6th fork rod with its three grooves facing the 5th-6th shift check parts.

2. Install the 5th-6th bracket, 5th-6th shift fork, and 5th-6th fork rod.

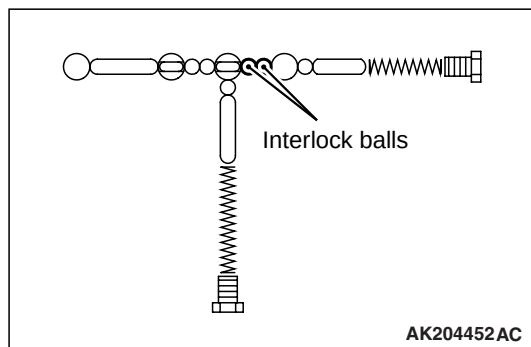
CAUTION

The C-ring is not reusable.

3. Install the C-ring on the 5th-6th bracket.

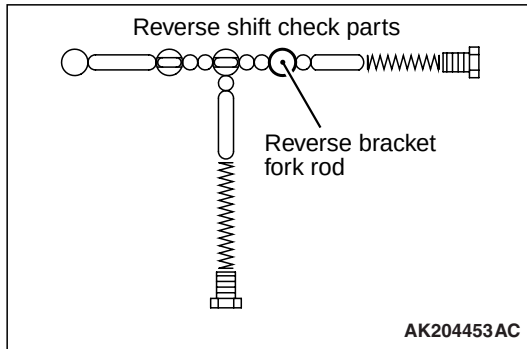
**CAUTION**

- The retaining pin is not reusable.
 - When installing the retaining pin, insert an Allen wrench into the hole on the other side of the fork rod to keep the fork from slipping down.
4. Hammer the retaining pin into the 5th-6th shift fork.

>>G<< INTERLOCK BALL INSTALLATION**CAUTION**

Make sure that the interlock steel balls do not fall out of their locations.
Install the two interlock steel balls.

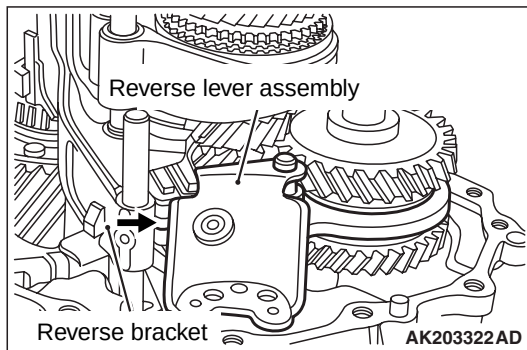
>>H<< REVERSE BRACKET FORK ROD / REVERSE BRACKET INSTALLATION



⚠ CAUTION

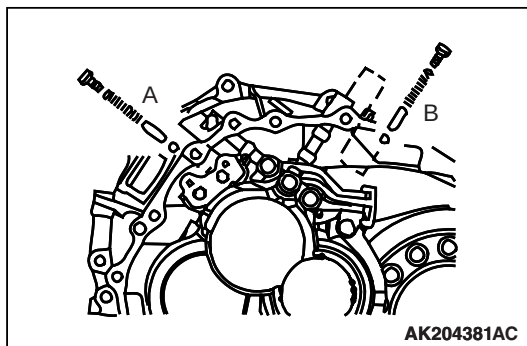
Install the reverse bracket fork rod with its two grooves facing the reverse shift check parts. Install the reverse bracket fork rod and reverse bracket.

>>I<< REVERSE LEVER ASSEMBLY INSTALLATION



1. Install the shifter cap on the cam of the reverse lever assembly, and then install the reverse shift fork.
2. Raise the reverse shift fork and fit its cam in the reverse bracket.

>>J<< SHIFT CHECK SLEEVE / CHECK BALL / CHECK SPRING / CHECK BALL PLUG INSTALLATION



⚠ CAUTION

- The check balls are not reusable.
- Confirm the lengths of the shift check sleeves and check springs before installing them. (A: short, B: long)
- Be careful not to let the check balls drop into the air breathing grooves in the clutch housing.

Install the two shift check sleeves, two check balls, two check springs and two check ball plugs into position.

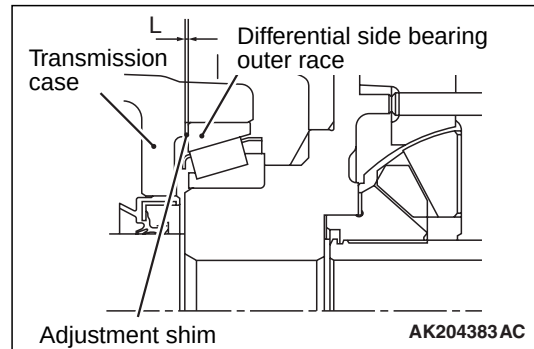
>>K<< DIFFERENTIAL SIDE BEARING ADJUSTMENT SHIM INSTALLATION

⚠ CAUTION

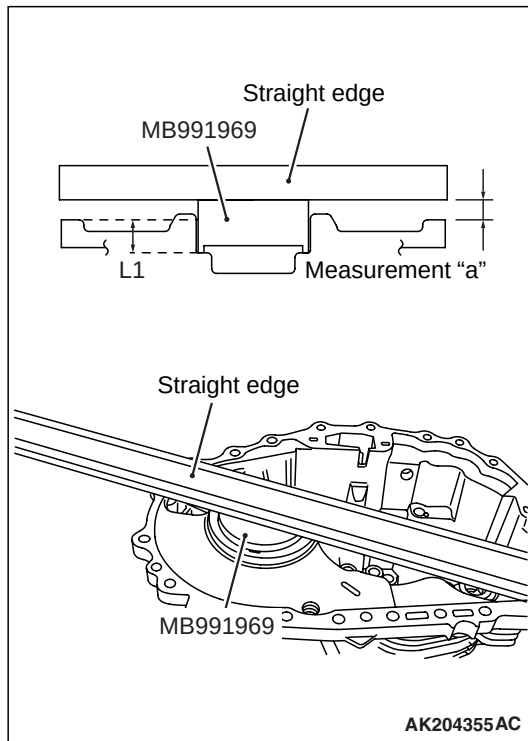
Do not use more than two shims.

Install the appropriate adjustment shims that will provide the differential side bearing with a preload within the standard value range.

Standard value: 0.15 – 0.21 mm



1. Selecting appropriate shims
 - (1) Measure the distance between the end surface and the adjustment shim fitting surface on the transmission case (L1). Next, measure the distance between the clutch housing end surface and the differential side bearing end surface (L2).
 - (2) Use the following equation to calculate the clearance L between the transmission case and the differential side bearing outer race:
$$L = L1 - L2$$
 - (3) Select an adjustment shim (or a set of adjustment shims) with a thickness of L plus 0.15 mm to 0.21 mm (standard value range).



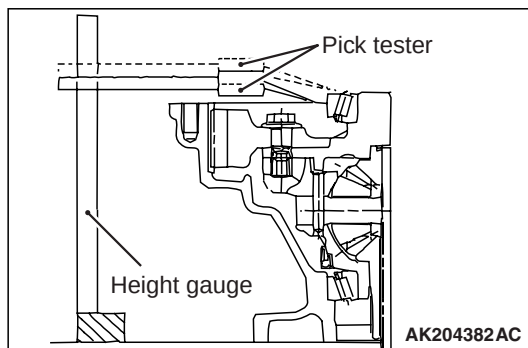
2. Measuring distances L1 and L2

- (1) Install the special tool Adjustment adapter (MB991969) into the differential side rear bearing hole in the transmission case. Use the following equation to calculate the distance L1 (see the illustration above):

$$L1 = 25.00 \text{ (height of MB991969)} - \text{measurement "a"}$$

- (2) Attach the outer race onto the differential side bearing on the final gear side, and rotate the final gear set five or more times by hand while holding the outer race down lightly to keep it from tilting.

NOTE: Rotating the final gear in this way will help the bearing rollers to seat completely against their races.

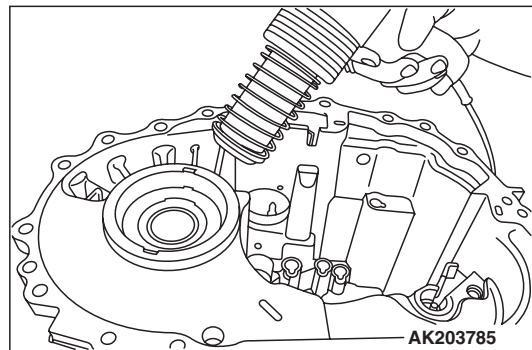


⚠ CAUTION

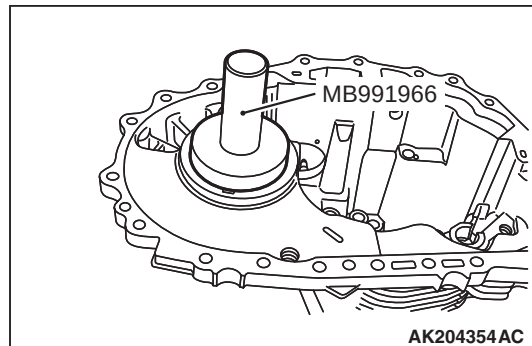
Before making the following measurement, make sure to confirm that the outer race is level by measuring the height of the outer race surface at three different points.

- (3) Use a height gauge to measure the distance between the differential side bearing outer race and the transmission mounting surface of the clutch housing (L2).

>>L<< DIFFERENTIAL SIDE BEARING OUTER RACE INSTALLATION



1. Heat the transmission case to about 100°C (maximum temperature: 120°C).



2. Using the special tool Bearing outer race installer (MB991966) to install the differential side bearing outer race.

>>M<< ADJUSTMENT SHIM INSTALLATION (INPUT SHAFT REAR BEARING / MAIN SHAFT REAR BEARING / REVERSE IDLER GEAR)

⚠ CAUTION

Use only one shim each for the main shaft rear bearing, input shaft rear bearing and reverse idler gear.

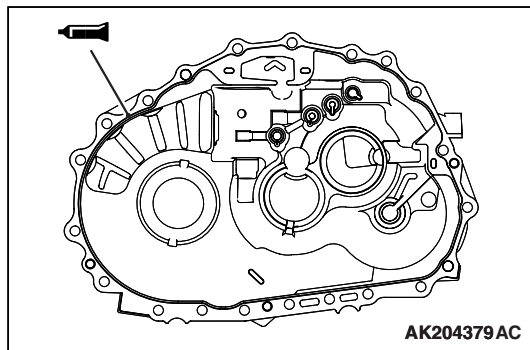
Install the selected shims into the relevant locations. (Refer to adjustment of transmission - shim selection for adjustment of input shaft rear bearing end play, main shaft rear bearing end play and reverse idler gear end play) [P.22B-23](#))

>>N<< TRANSMISSION CASE INSTALLATION

⚠ CAUTION

The snap ring is not reusable.

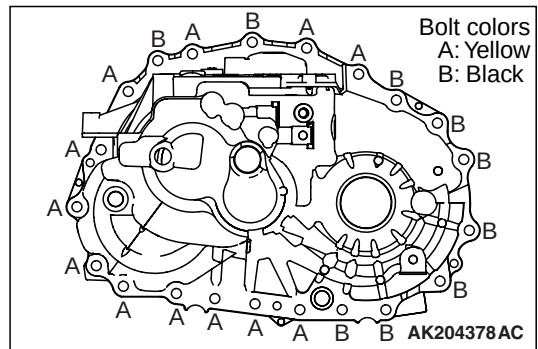
1. Install the snap ring temporarily in the main shaft rear bearing location in the transmission case.



2. Apply sealant as indicated in the above illustration.

**Specified sealant: MITSUBISHI GENUINE
PART MD997740 or equivalent**

3. Expand the snap ring in the main shaft rear bearing location through the bore plug mounting hole and place the transmission case over the clutch housing.



⚠ CAUTION

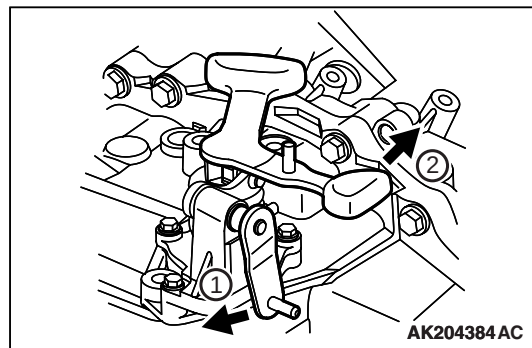
Bolts (B) are not reusable.

4. Tighten all the bolts to the specified torque.

>>O<< CONTROL ASSEMBLY INSTALLATION

⚠ CAUTION

The O-ring is not reusable.



1. Install the control assembly and tighten the bolts to the specified torque.
2. With the gear shifted into 2nd, raise the main shaft and install the snap ring tightly on the main shaft rear bearing.

NOTE:

To shift the gear into 2nd, move the lever in the order of the numbers indicated in the illustration.

>>P<< REVERSE SWITCH INSTALLATION

1. Apply sealant to the threads on the reverse switch.

**Specified sealant: MITSUBISHI GENUINE
PART MD997740 or equivalent**

2. Install the reverse switch on the transmission case.

ADJUSTMENT OF TRANSMISSION

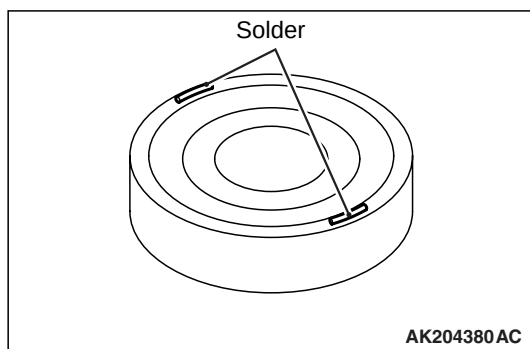
M1222013800011

SHIM SELECTION FOR ADJUSTMENT OF
INPUT SHAFT REAR BEARING END
PLAY, MAIN SHAFT REAR BEARING END
PLAY AND REVERSE IDLER GEAR END
PLAY

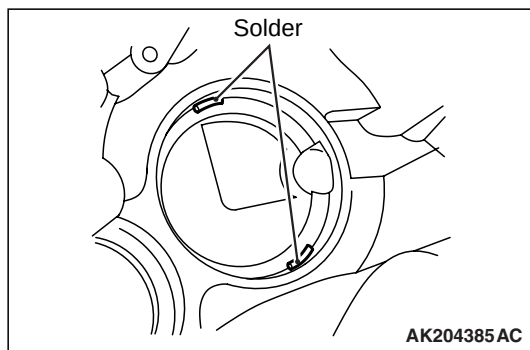
<Measurement using Solder>

CAUTION

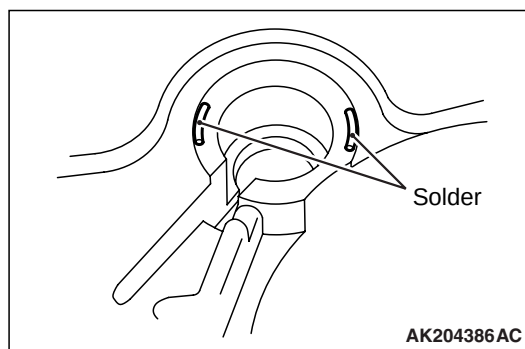
- If solder is not available, select the thrust washer in accordance with Plastigage method.
- If the thrust washer appropriate for the standard value cannot be selected using solder, select the thrust washer in accordance with Plastigage method.



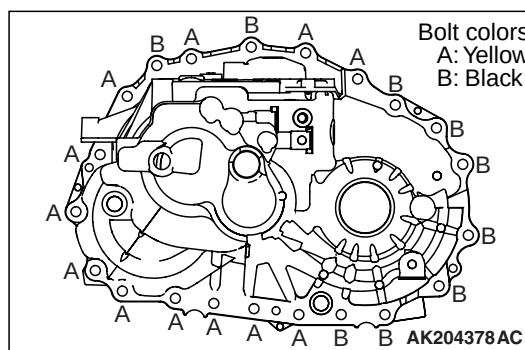
1. Put the solder (1.0 mm diameter, about 10 mm long) on the input shaft rear bearing as indicated in the illustration.



2. Put the solder (1.0 mm diameter, about 10 mm long) on the main shaft rear bearing fitting surface in the transmission case as indicated in the illustration.

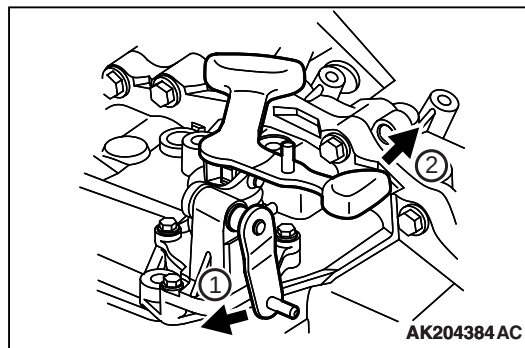


3. In the case of the reverse idler gear:
 - (1) Put the solder (1.0 mm diameter, about 10 mm long) on the surface of the reverse idler gear mounting boss in the transmission case as indicated in the Illustration.
 - (2) Install the adjusting shim having minimum thickness.
4. Install the snap ring temporarily in the main shaft rear bearing location in the transmission case.
5. Expand the snap ring in the main shaft rear bearing location through the bore plug mounting hole, and place the transmission case over the clutch housing.

**CAUTION**

In the following step, use the same transmission case bolts that were removed during disassembly.

6. Install and tighten the transmission case bolts to the specified torque.



CAUTION

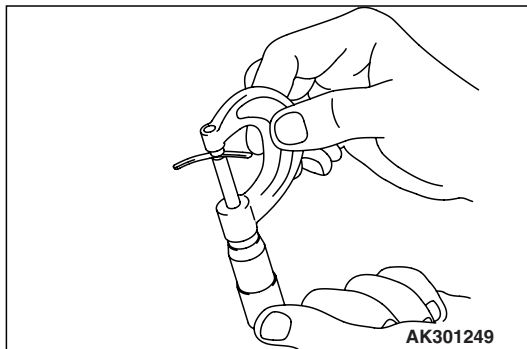
In the following steps, make sure to use the same O-rings that were removed during disassembly.

7. Install the control assembly and tighten its bolts to the specified torque.
8. With the gear shifted into 2nd gear, raise the main shaft and install the snap ring tightly on the main shaft rear bearing.

NOTE: Refer to CONTROL ASSEMBLY INSTALLATION for the method for shifting the gear into 2nd.

9. Return the control assembly to the neutral position and remove its mounting bolts. Remove the control assembly.
10. Remove the transmission case.
11. Remove the snap ring from the main shaft rear bearing, then remove the transmission case.
12. Remove the crushed pieces of solder.
13. If the solder has not been crushed at all:

- (1) In the case of the input shaft rear bearing and the main shaft rear bearing, use the thicker solder (1.6 mm diameter, about 10 mm long) and repeat steps 4 to 12.
- (2) In the case of the reverse idler gear, use the thicker shim and repeat steps 4 to 12.



14. Use a micrometer to measure the thickness of the each crushed solder beads and record the each measured value.
 15. Select each shim with the thickness calculated by the following formula that will adjust each end play to a value within the standard value range.
- (1) In the case of the input shaft rear bearing and the main shaft rear bearing:

Shim thickness: $(T1 - 0 \text{ mm})$ to $(T1 - 0.06 \text{ mm})$

T1: The crushed solder thickness mm

Standard input shaft end play: $0 \text{ mm} - 0.06 \text{ mm}$

Standard main shaft end play: $0 \text{ mm} - 0.06 \text{ mm}$

- (2) In the case of the reverse idler gear:

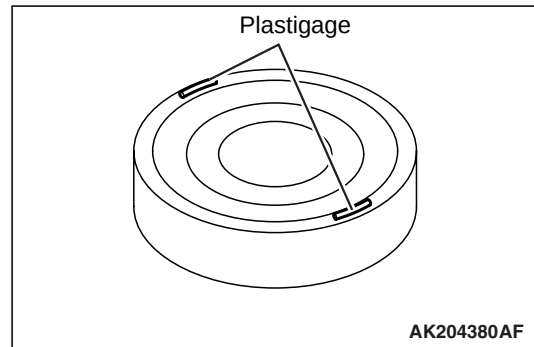
Shim thickness: $(T1 + T2 - 0.04 \text{ mm})$ to $(T1 + T2 - 0.10 \text{ mm})$

T1: The crushed solder thickness mm

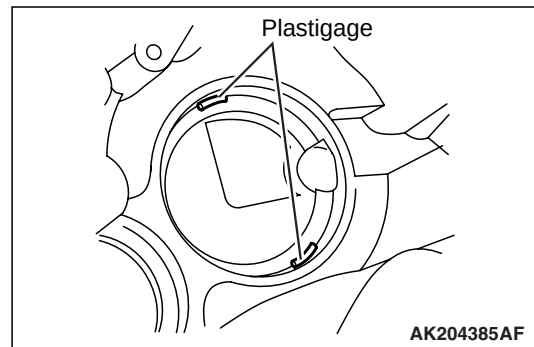
T2: The shim thickness used for measurement mm

Standard reverse idler gear end play: $0.04 \text{ mm} - 0.10 \text{ mm}$

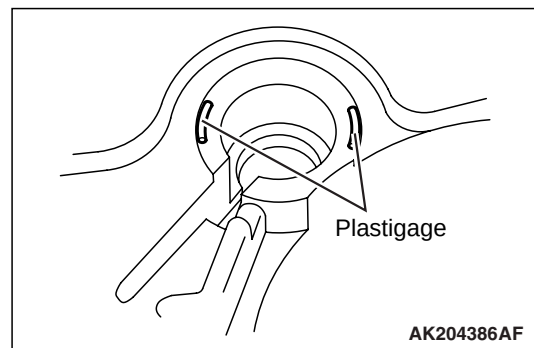
<Measurement using Plastigage>



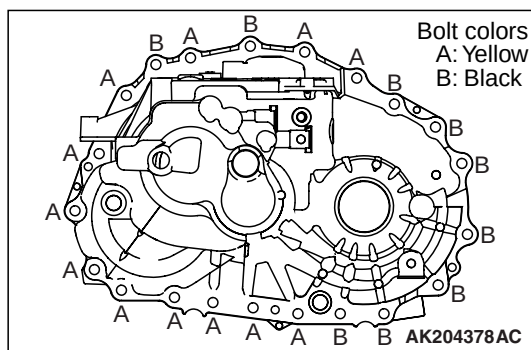
1. Put the plastigage (about 10 mm long) on the input shaft rear bearing as indicated in the illustration. Install the adjusting shim having minimum thickness.



2. Put the plastigage (about 10 mm long) on the main shaft rear bearing fitting surface in the transmission case as indicated in the illustration. Install the adjusting shim having minimum thickness.



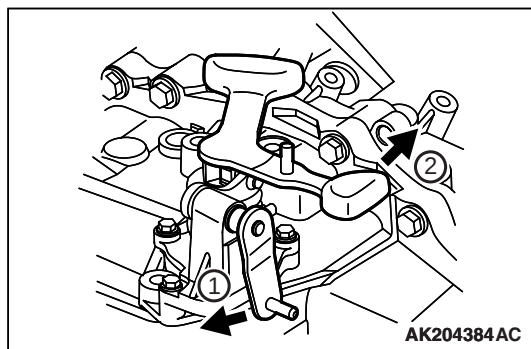
3. Put the plastigage (about 10 mm long) on the surface of the reverse idler gear mounting boss in the transmission case as indicated in the Illustration. Install the adjusting shim having minimum thickness.
4. Install the snap ring temporarily in the main shaft rear bearing location in the transmission case.
5. Install the adjusting thrust washer having the minimum thickness.
6. Expand the snap ring in the main shaft rear bearing location through the bore plug mounting hole, and place the transmission case over the clutch housing.



CAUTION

In the following step, use the same transmission case bolts that were removed during disassembly.

7. Install and tighten the transmission case bolts to the specified torque.



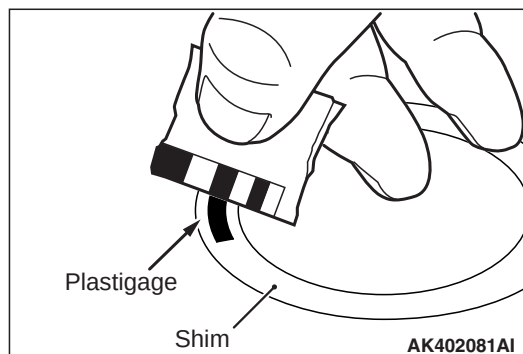
CAUTION

In the following steps, make sure to use the same O-rings that were removed during disassembly.

8. Install the control assembly and tighten its bolts to the specified torque.
9. With the gear shifted into 2nd gear, raise the main shaft and install the snap ring tightly on the main shaft rear bearing.

NOTE: Refer to CONTROL ASSEMBLY INSTALLATION for the method for shifting the gear into 2nd.

10. Return the control assembly to the neutral position and remove its mounting bolts. Remove the control assembly.
11. Remove the transmission case.
12. Remove the snap ring from the main shaft rear bearing, then remove the transmission case.
13. Remove the crushed pieces of plastigage.
14. If the plastigage has not been crushed at all, use thicker adjusting shim and repeat steps 4 to 13.



15. Measure the width of the each crushed plastigage at its widest part using a scale printed on the plastigage package and record the each measured value.

16. Select each shim with the thickness calculated by the following formula that will adjust each end play to a value within the standard value range.

- (1) In the case of the input shaft rear bearing and the main shaft rear bearing:

Shim thickness: $(T2 + T3 - 0 \text{ mm})$ to $(T2 + T3 - 0.06 \text{ mm})$

T2: The shim thickness used for measurement mm

T3: The crushed plastigage thickness mm

Standard input shaft end play: 0 mm – 0.06 mm

Standard main shaft end play: 0 mm – 0.06 mm

- (2) In the case of the reverse idler gear:

Shim thickness: $(T2 + T3 - 0.04 \text{ mm})$ to $(T2 + T3 - 0.10 \text{ mm})$

T2: The shim thickness used for measurement mm

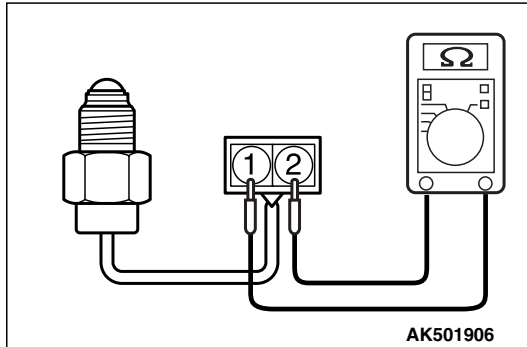
T3: The crushed plastigage thickness mm

Standard reverse idler gear end play: 0.04 mm – 0.10 mm

INSPECTION

BACK LIGHT SWITCH

M1222001100156

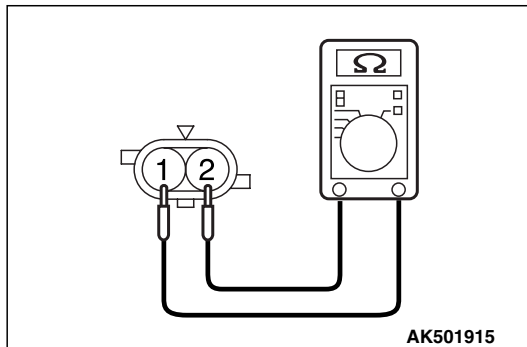


1. Check the back light switch for proper continuity between the terminals.

Item	Continuity
Press switch	Yes
Release switch	No

2. Replace the backlight switch if the continuity is not as indicated above.

OIL TEMPERATURE SENSOR

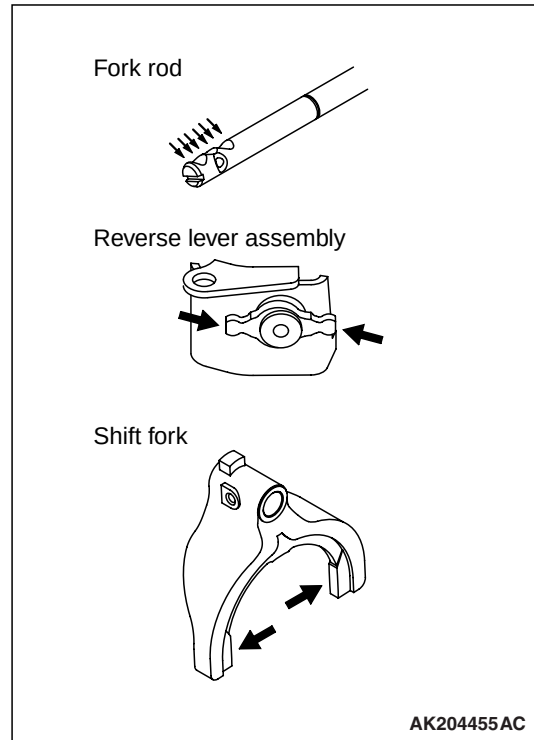


1. Measure the resistance of the oil temperature sensor in order to check of operation of it.

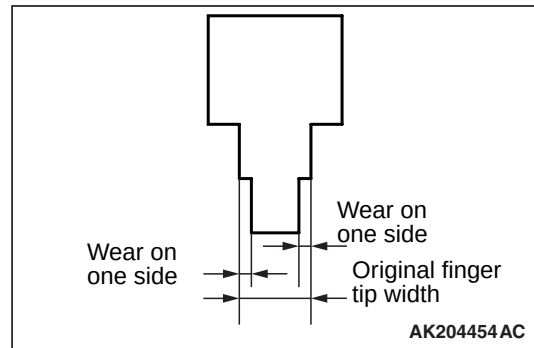
Temperature (°C)	Resistance (kΩ)
0	5.790
20	2.45 ± 0.14
40	1.148
60	0.5865
80	0.3222
100	0.1884

2. Replace the oil temperature sensor if the continuity is not as indicated above.

FORK ROD / REVERSE LEVER ASSEMBLY / SHIFT FORK



1. Inspect contacting and rubbing surfaces for excessive wear, damage, bend, or other defects. Replace if necessary. (Parts with slight contact marks need not be replaced.)



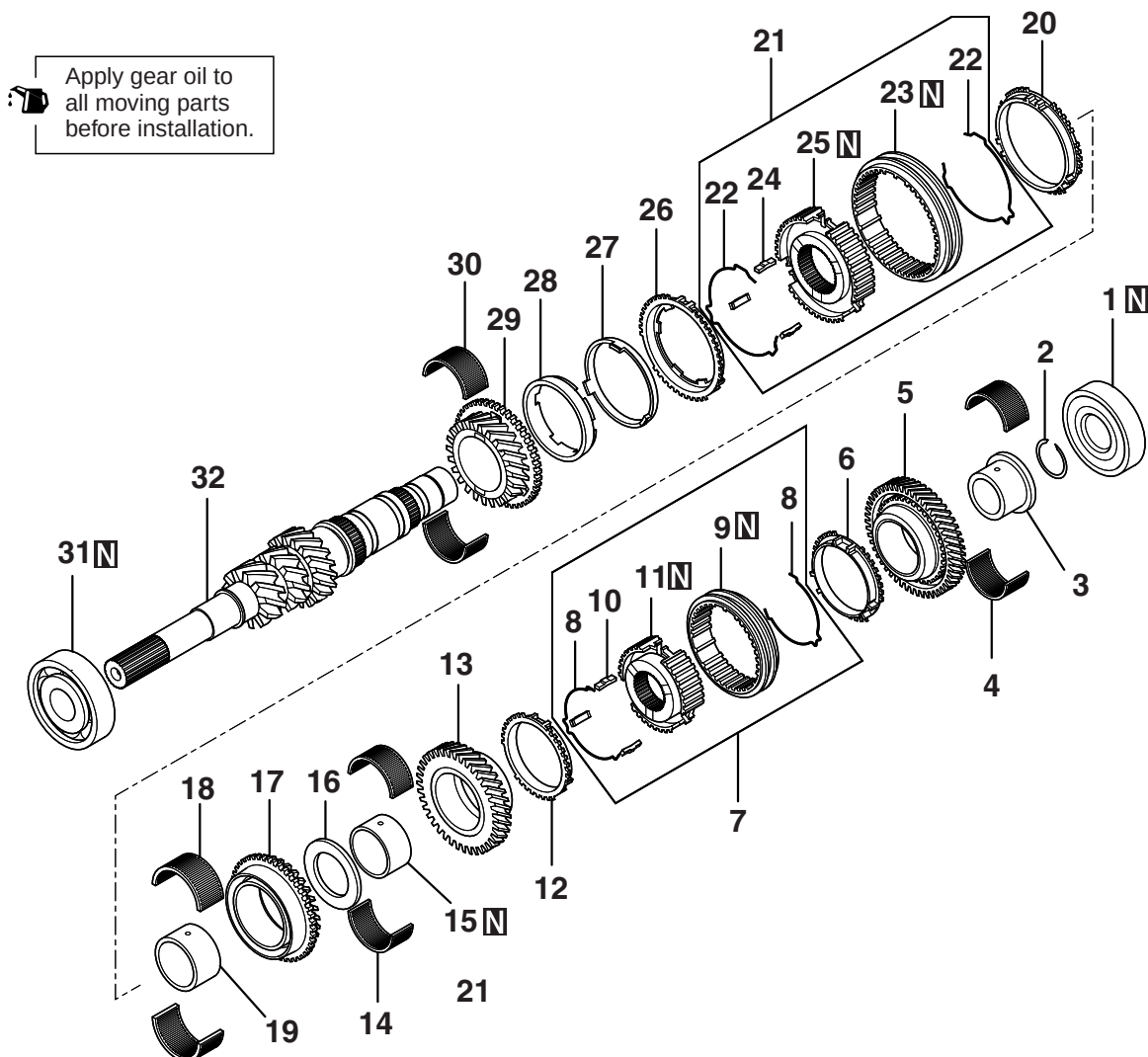
2. Check if the width of each shift fork finger tip (which rubs against the coupling sleeve) is greater than the limit.

Item	Limit for wear on one side mm	Original finger tip width mm
1st-2nd shift fork	0.2	7.80 – 7.93
3rd-4th shift fork	0.2	7.80 – 7.93
5th-6th shift fork	0.2	6.10 – 6.23
Reverse shift fork	0.2	12.80 – 12.93

INPUT SHAFT

DISASSEMBLY AND REASSEMBLY

M1222001600162



AK204089AC

Disassembly steps

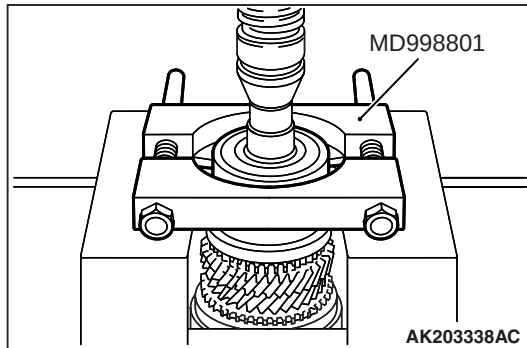
- | | | |
|-------|-------|----------------------------------|
| <<A>> | >>K<< | 1. Input shaft rear bearing |
| | >>J<< | 2. Snap ring |
| <> | >>I<< | 3. 6th gear sleeve |
| <> | | 4. Needle roller bearing |
| <> | | 5. 6th gear |
| | | 6. Synchronizer ring |
| <<C>> | >>H<< | 7. 5th-6th synchronizer assembly |
| | >>G<< | 8. Synchronizer spring |
| | >>G<< | 9. Synchronizer sleeve |
| | >>G<< | 10. Synchronizer key |
| | >>G<< | 11. 5th-6th synchronizer hub |
| <<C>> | | 12. Synchronizer ring |
| <<C>> | | 13. 5th gear |
| | | 14. Needle roller bearing |
| <<D>> | >>F<< | 15. 5th gear sleeve |
| <<D>> | >>E<< | 16. Thrust washer |

Disassembly steps (Continued)

- | | | |
|-------|-------|-----------------------------------|
| <<D>> | | 17. 4th gear |
| <<D>> | | 18. Needle roller bearing |
| <<D>> | >>D<< | 19. 4th gear sleeve |
| <<D>> | | 20. Synchronizer ring |
| <<D>> | >>C<< | 21. 3rd-4th synchronizer assembly |
| | >>B<< | 22. Synchronizer spring |
| | >>B<< | 23. Synchronizer sleeve |
| | >>B<< | 24. Synchronizer key |
| | >>B<< | 25. 3rd-4th synchronizer hub |
| <<D>> | | 26. Synchronizer outer ring |
| <<D>> | | 27. Synchronizer cone |
| <<D>> | | 28. Synchronizer inner ring |
| <<D>> | | 29. 3rd gear |
| | | 30. Needle roller bearing |
| <<E>> | >>A<< | 31. Ball bearing |
| | | 32. Input shaft |

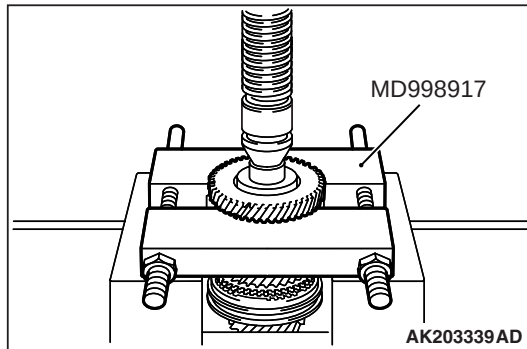
DISASSEMBLY SERVICE POINTS

<<A>> INPUT SHAFT REAR BEARING REMOVAL



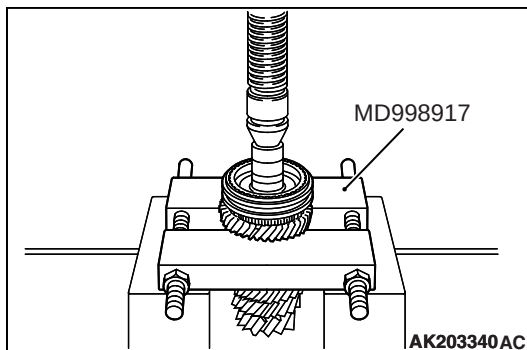
Using the special tool Bearing remover (MD998801) to support the input shaft rear bearing, remove the bearing.

<> 6TH GEAR SLEEVE / NEEDLE BEARING / 6TH GEAR REMOVAL



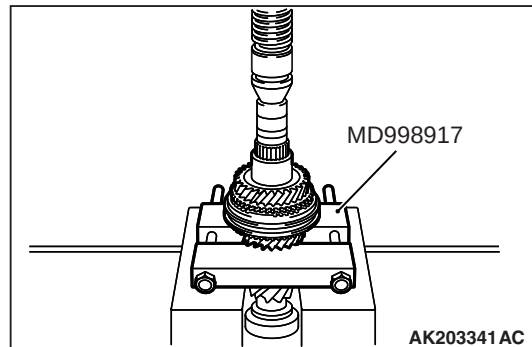
Using the special tool Bearing remover (MD998917) to support the 6th gear, remove the 6th gear sleeve, needle bearing, and 6th gear.

<<C>> 5TH-6TH SYNCHRONIZER ASSEMBLY / SYNCHRONIZER RING / 5TH GEAR REMOVAL



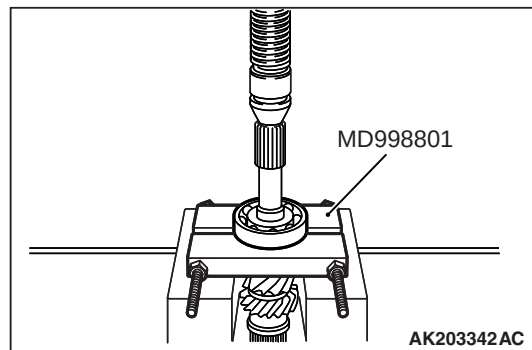
Using the special tool Bearing remover (MD998917) to support the 5th gear, remove the 5th-6th synchronizer assembly, synchronizer ring, and 5th gear.

<<D>> 5TH GEAR SLEEVE / THRUST WASHER / 4TH GEAR / NEEDLE BEARING / 4TH GEAR SLEEVE / 3RD-4TH SYNCHRONIZER ASSEMBLY / SYNCHRONIZER OUTER RING / SYNCHRONIZER CONE / SYNCHRONIZER INNER RING / 3RD GEAR REMOVAL



Using the special tool Bearing remover (MD998917) to support the 3rd gear, remove the 5th gear sleeve, thrust washer, 4th gear, needle bearing, 4th gear sleeve, 3rd-4th synchronizer assembly, synchronizer outer ring, synchronizer cone, synchronizer inner ring, and 3rd gear.

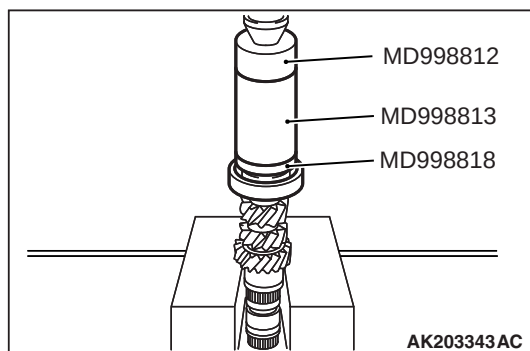
<<E>> BALL BEARING REMOVAL



Using the special tool Bearing remover (MD998801) to support the ball bearing, remove the bearing.

REASSEMBLY SERVICE POINTS

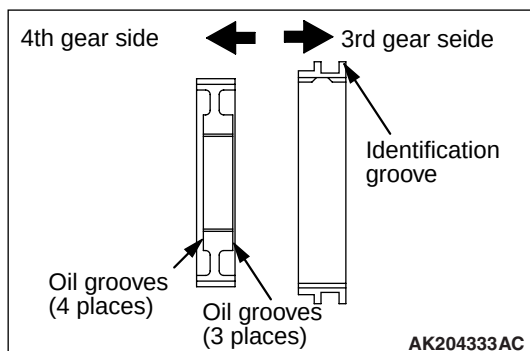
>>A<< BALL BEARING INSTALLATION



Using the following special tools, install the ball bearing.

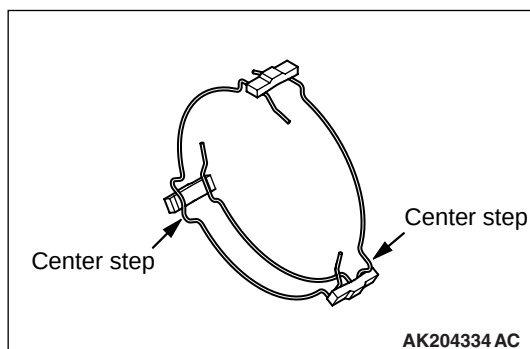
- Installer cap (MD998812)
- Installer 100 (MD998813)
- Installer adapter (MD998818)

>>B<< 3RD-4TH SYNCHRONIZER HUB / SYNCHRONIZER KEY / SYNCHRONIZER SLEEVE / SYNCHRONIZER SPRING INSTALLATION

**CAUTION**

The synchronizer hub is not reusable.

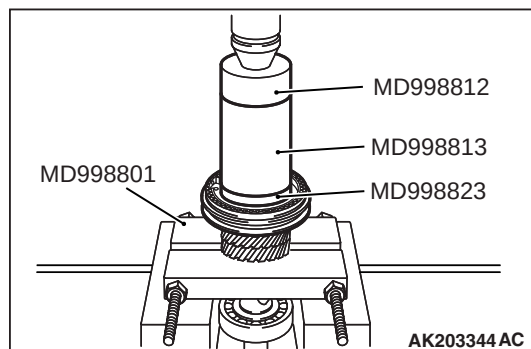
1. Assemble the 3rd-4th synchronizer hub and synchronizer sleeve together as shown in the illustration.

**CAUTION**

Install the synchronizer springs on the synchronizer keys so that the center steps on both springs are not positioned on the same key.

2. Install the synchronizer keys and synchronizer springs as shown in the illustration.

>>C<< 3RD-4TH SYNCHRONIZER ASSEMBLY INSTALLATION

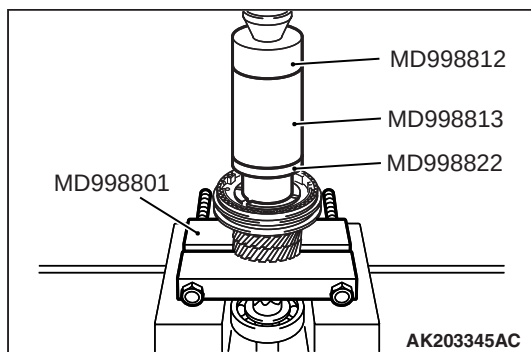
**CAUTION**

When press fitting the synchronizer assembly onto the main shaft, make sure that the synchronizer rings do not get caught in the hub.

Using the following special tools, install the 3rd-4th synchronizer assembly.

- Bearing remover (MD998801)
- Installer cap (MD998812)
- Installer 100 (MD998813)
- Installer adapter (MD998823)

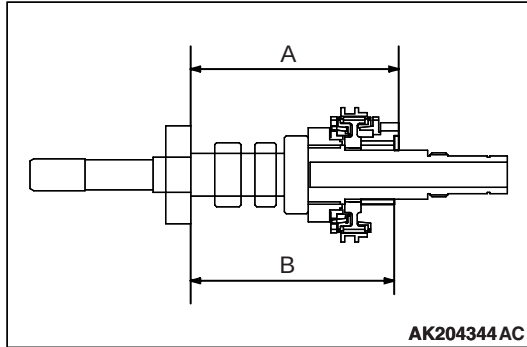
>>D<< 4TH GEAR SLEEVE INSTALLATION



Using the following special tools, install the 4th gear sleeve.

- Bearing remover (MD998801)
- Installer cap (MD998812)
- Installer 100 (MD998813)
- Installer adapter (MD998822)

>>E<< THRUST WASHER INSTALLATION



CAUTION

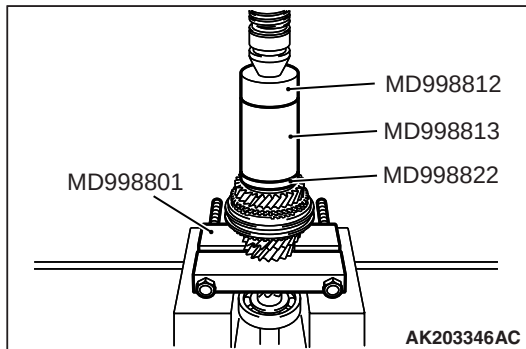
Do not use more than one thrust washer.

1. Select a washer that allows distance A in the illustration to fall within the standard value range.

Standard value: 167.6 – 167.7 mm

Selecting appropriate washer

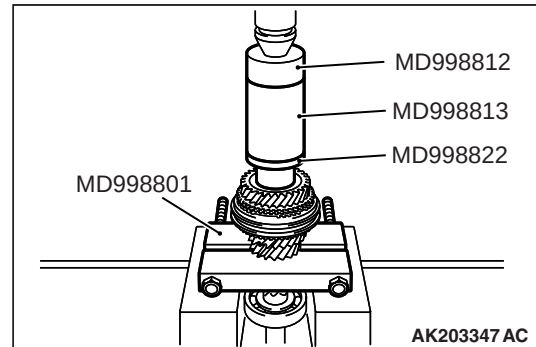
- a. Use a dial gauge to measure the distance between the 4th bearing sleeve and the front bearing (distance B in the illustration).
- b. Select a washer that allows distance A to fall within the standard value range when the thickness of the washer is added to the distance B measurement.



2. Using the following special tools, install the thrust washer.

- Bearing remover (MD998801)
- Installer cap (MD998812)
- Installer 100 (MD998813)
- Installer adapter (MD998822)

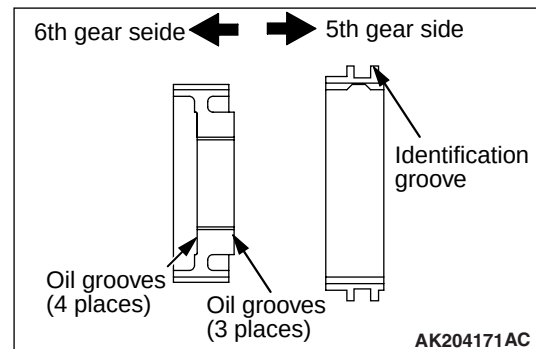
>>F<< 5TH GEAR SLEEVE INSTALLATION



Using the following tools, install the 5th gear sleeve.

- Bearing remover (MD998801)
- Installer cap (MD998812)
- Installer 100 (MD998813)
- Installer adapter (MD998822)

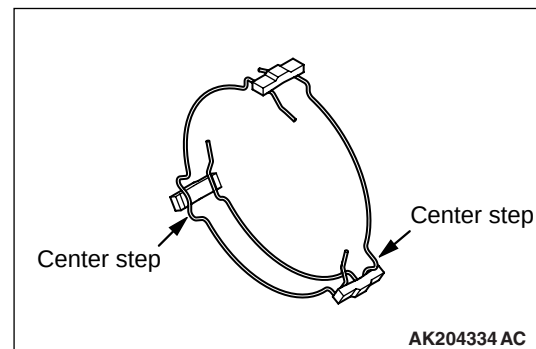
>>G<< 5TH-6TH SYNCHRONIZER HUB / SYNCHRONIZER KEYS / SYNCHRONIZER SLEEVE INSTALLATION



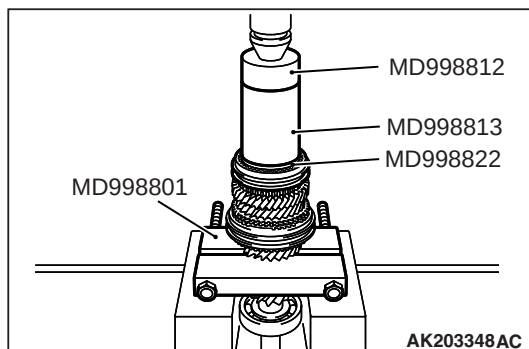
CAUTION

The synchronizer hub is not reusable.

1. Assemble the 5th-6th synchronizer hub and synchronizer sleeve together as shown in the illustration.



2. Install the synchronizer keys and synchronizer springs as shown in the illustration.

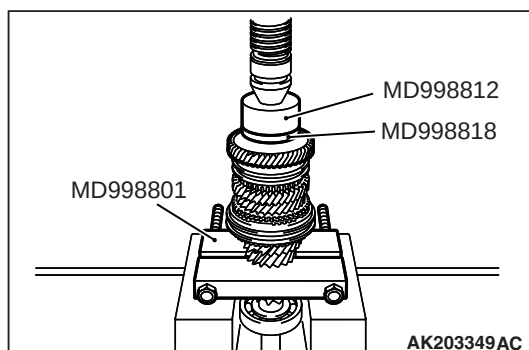
>>H<< 5TH-6TH SYNCHRONIZER
ASSEMBLY INSTALLATION**CAUTION**

When press fitting the synchronizer assembly onto the main shaft, make sure that the synchronizer rings do not get caught in the hub.

Using the following special tools, install the 5th-6th synchronizer assembly.

- Bearing remover (MD998801)
- Installer cap (MD998812)
- Installer 100 (MD998813)
- Installer adapter (MD998822)

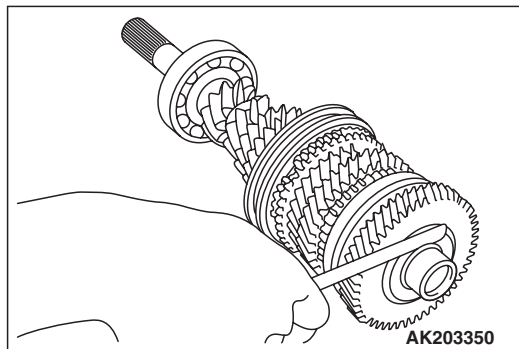
>>I<< 6TH GEAR SLEEVE INSTALLATION



Using the following special tools, install the 6th gear sleeve.

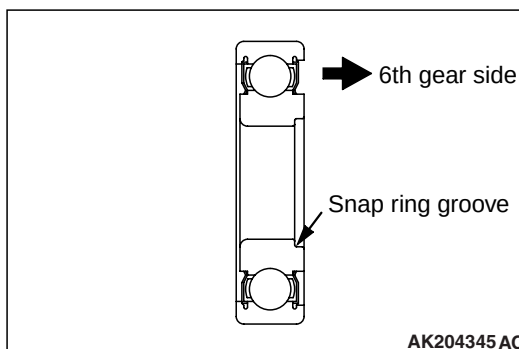
- Bearing remover (MD998801)
- Installer cap (MD998812)
- Installer adapter (MD998818)

>>J<< SNAP RING INSTALLATION

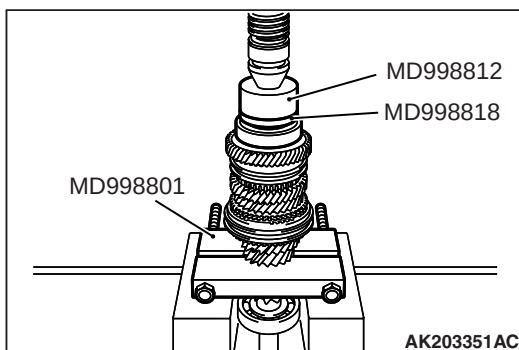


Select a snap ring that allows the clearance between the snap ring and snap ring groove to fall within the standard value range.

Standard value: 0 – 0.1 mm

>>K<< INPUT SHAFT REAR BEARING
INSTALLATION**CAUTION**

Install the input shaft rear bearing with its snap ring groove facing the side shown in the illustration.



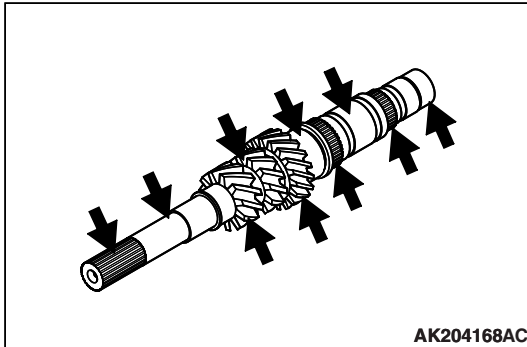
Using the following special tools, install the input shaft rear bearing onto the input shaft.

- Bearing remover (MD998801)
- Installer cap (MD998812)
- Installer adapter (MD998818)

INSPECTION

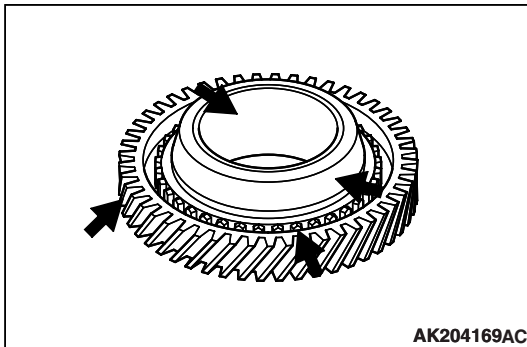
INPUT SHAFT

M1222001700147



Check the input shaft for damage, flaking, dents, uneven wear, bend, and other defects.

SPEED GEARS



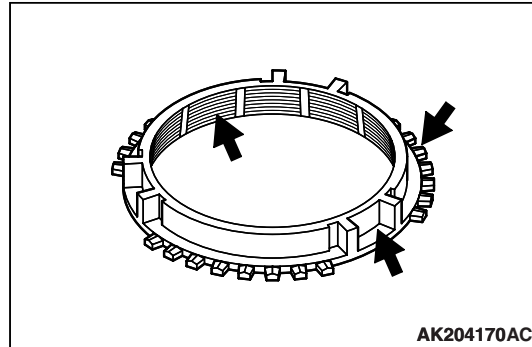
1. Check the helical gear teeth and clutch gear teeth of each speed gear for damage and excessive wear.
2. Check the synchronizer cone surface of each speed gear for roughness, damage, and excessive wear (3rd gear excepted).
3. Check the inside surface and front and back sides of each speed gear for damage and excessive wear.

NEEDLE ROLLER BEARINGS

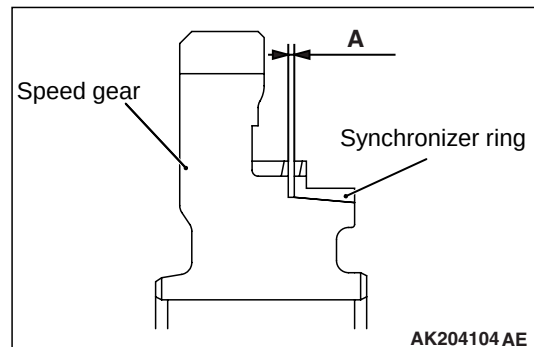
1. Combine each needle roller bearing with the input shaft, corresponding sleeve, and gear. Rotate the assembly, checking for smooth rotation, looseness, and noise.

2. Check the retainer for deformation.

SINGLE CONE SYNCHRONIZER RING

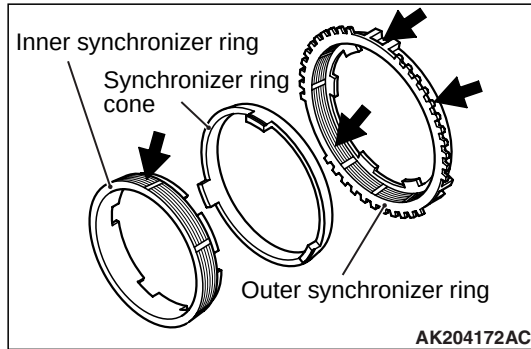


1. Check the clutch gear on the synchronizer ring for damaged and missing teeth.
2. Check the synchronizer ring inner cone surface for damage or wear. Also check that the inside ridges are intact.
3. Check the synchronizer key contact surfaces of the synchronizer ring for damage, and excessive wear.

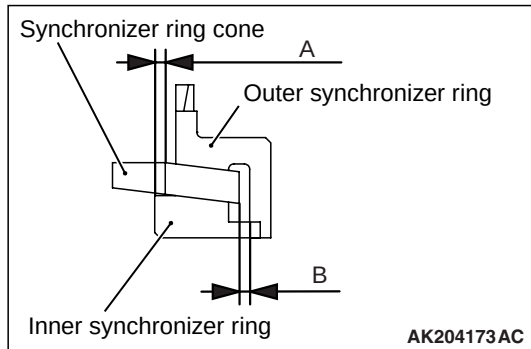


4. Press the synchronizer ring against the cone of the adjacent speed gear, and check clearance A. Replace the synchronizer ring if the clearance is below the limit.

Limit: 0.7 mm

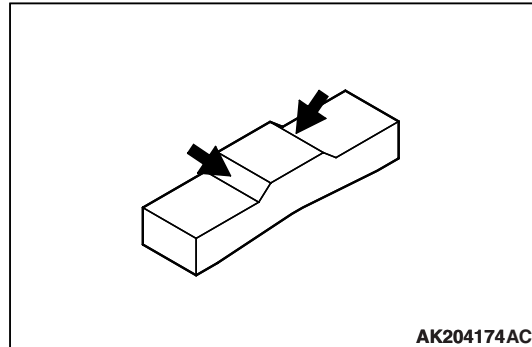
DOUBLE CONE SYNCHRONIZER RING

1. Check the clutch gear on the outer synchronizer ring for damaged and missing teeth.
2. Check the contact surfaces between each synchronizer ring and synchronizer cone for damage and wear. Also check that the cone ridges are intact.
3. Check the synchronizer key contact surfaces of the outer synchronizer ring for damage and excessive wear.



4. Combine the synchronizer rings and synchronizer cone, and check clearances A and B shown in the illustration. Replace them if either of the clearances is greater than the limit.

Limit: 0.2 mm

SYNCHRONIZER KEYS

Check the synchronizer hub contact surfaces of each synchronizer key for damage and excessive wear.

SYNCHRONIZER SPRINGS

Check the synchronizer springs for loss of tension, deformation, and breakage.

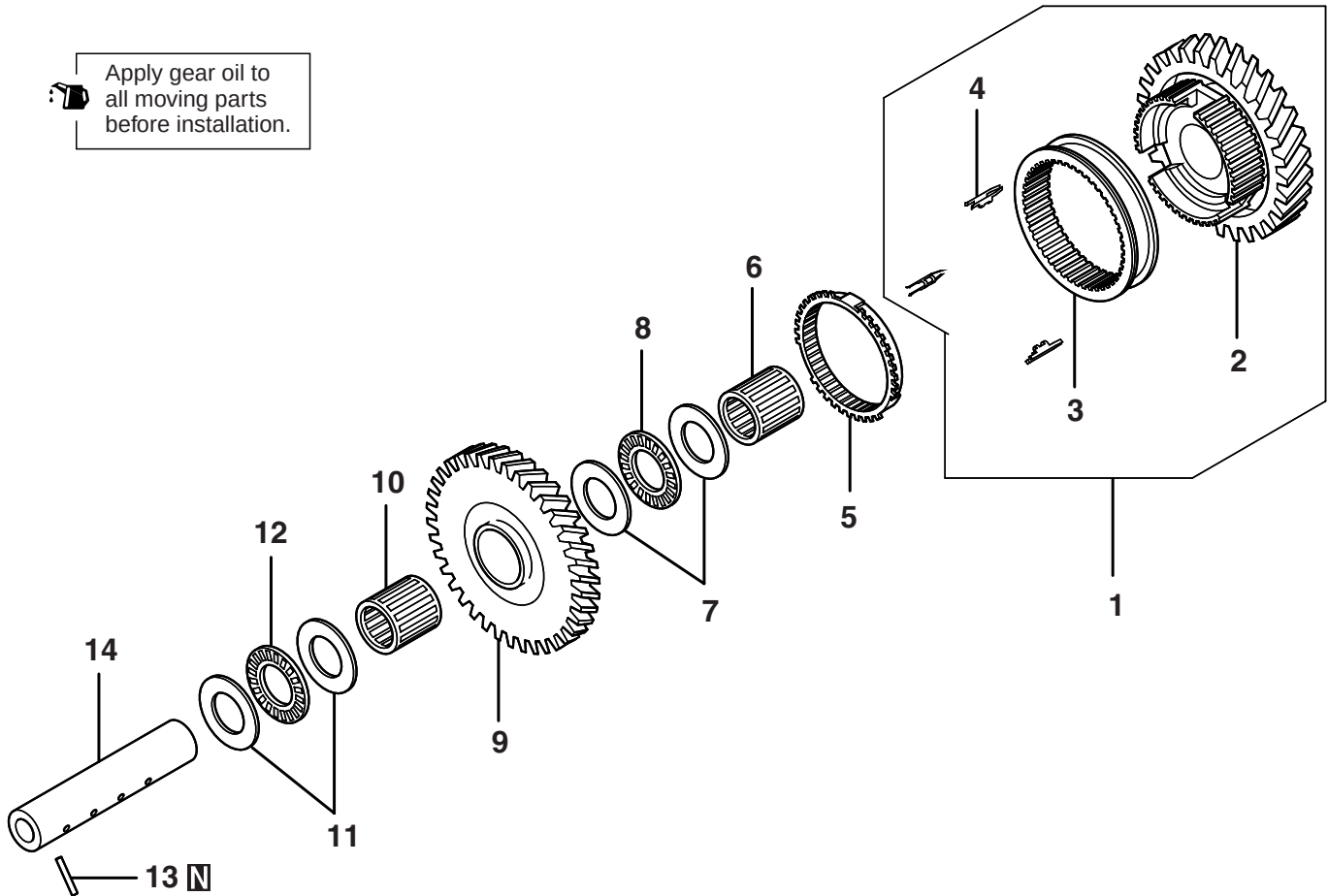
REVERSE IDLER GEAR

DISASSEMBLY AND REASSEMBLY

M1222012500125



Apply gear oil to
all moving parts
before installation.



AK204079AC

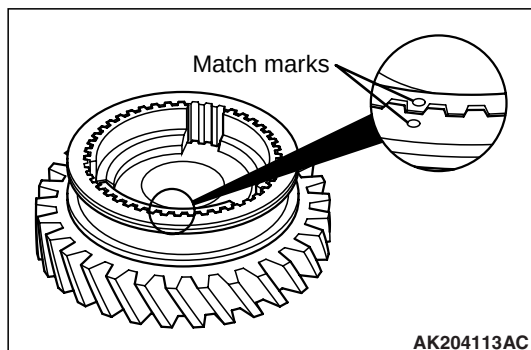
Disassembly steps

- <<A>> >>B<<
>>A<<
1. Rear reverse idler gear assembly
 2. Rear reverse idler gear
 3. Reverse idler gear sleeve
 4. Insert spring
 5. Synchronizer ring
 6. Needle bearing
 7. Washer
 8. Thrust bearing

Disassembly steps (Continued)

9. Front reverse idler gear
10. Needle bearing
11. Washer
12. Thrust bearing
13. Pin
14. Reverse idler gear shaft

DISASSEMBLY SERVICE POINTS

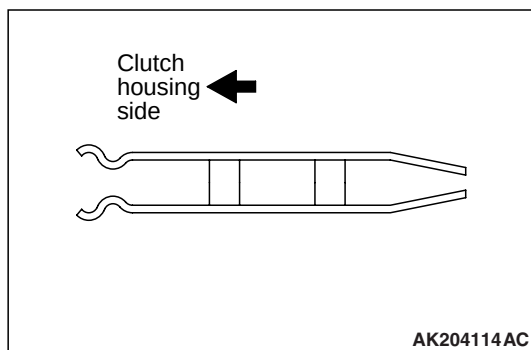
<<A>> REVERSE IDLER GEAR SLEEVE
REMOVAL**CAUTION**

Meshing problems may occur if the original spline engagement phase is changed during reassembly.

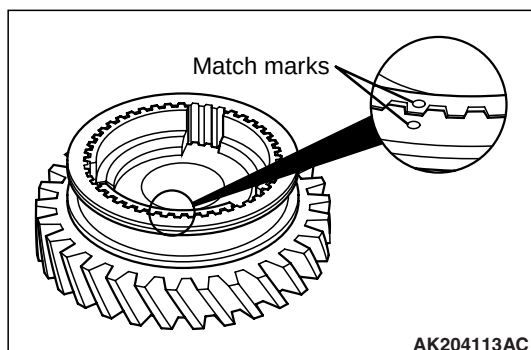
Make match marks on the reverse idler gear sleeve and reverse idler gear hub.

REASSEMBLY SERVICE POINTS

>>A<< INSERT SPRING INSTALLATION



Install each insert spring on the reverse idler gear sleeve, making sure to insert it in the right direction.

>>B<< REVERSE IDLER GEAR SLEEVE
INSTALLATION**CAUTION**

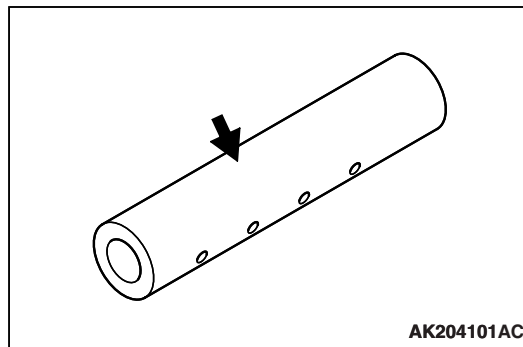
Meshing problems may occur if the spline engagement phase is changed during reassembly.

Align the match marks when engaging the splines.

INSPECTION

M1222012400043

REVERSE IDLER SHAFT



Check the reverse idler shaft for damage, flaking, dents, uneven wear, bend, and other defects.

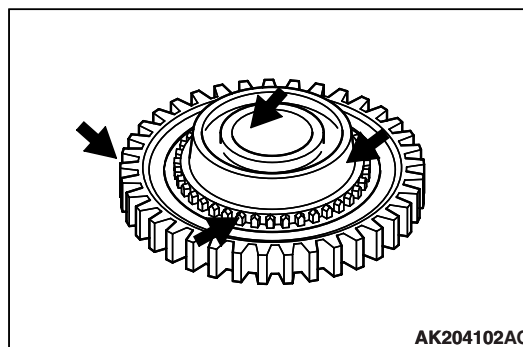
THRUST BEARING

1. Check the thrust bearing for smooth rotation, without looseness or noise, when rotated together with the washers.
2. Check the retainer for deformation.

NEEDLE BEARING

1. Check the needle bearing for smooth rotation, without looseness or noise, when rotated together with the reverse idler gear and shaft.
2. Check the retainer for deformation.

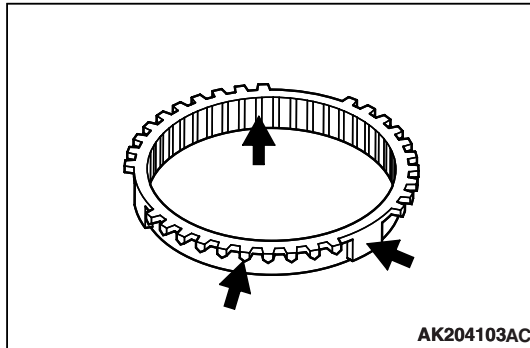
FRONT REVERSE IDLER GEAR



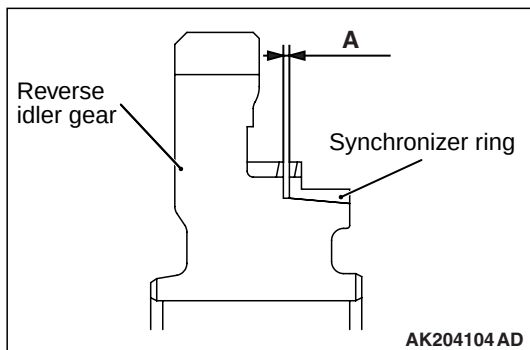
1. Check the helical gear teeth and clutch gear teeth of the reverse idler gear for damage and excessive wear.

2. Check the synchronizer cone surface of the reverse idler gear for roughness, damage and excessive wear.
3. Check the inside surface and front and back sides of the reverse idler gear for damage and excessive wear.

SYNCHRONIZER RING



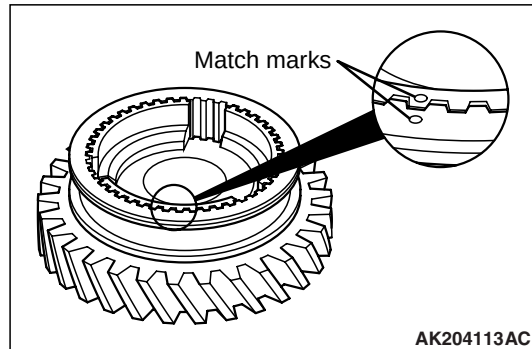
1. Check the clutch gear on the synchronizer ring for damaged and missing teeth.
2. Check the inner surface of the synchronizer ring cone for damage and excessive wear. Also check that the inside ridges are intact.
3. Check the synchronizer key contact surface of the synchronizer ring for damage and excessive wear.



4. Press the synchronizer ring against the cone of the reverse idler gear and check clearance A. Replace the synchronizer ring if the clearance is less than the limit.

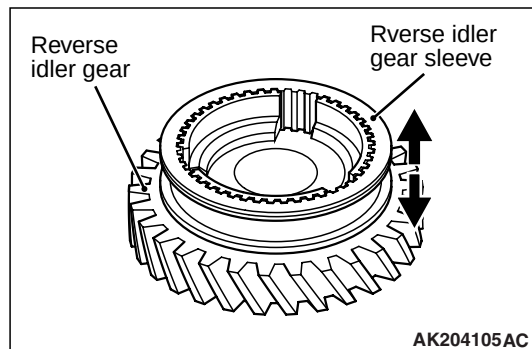
Limit: 0.7 mm

REAR REVERSE IDLER GEAR AND REVERSE IDLER GEAR SLEEVE

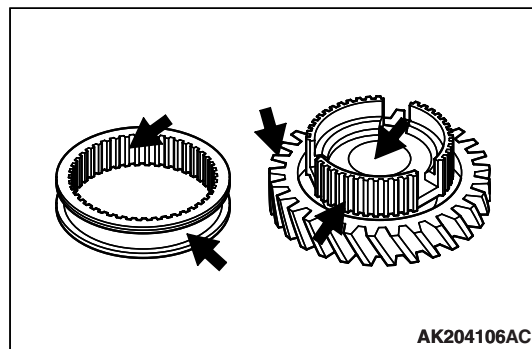


⚠ CAUTION

When assembling the reverse idler gear and reverse idler gear sleeve, align the match marks that were made during disassembly.



1. Check that the reverse idler gear sleeve slides smoothly on the reverse idler gear hub when they are combined.

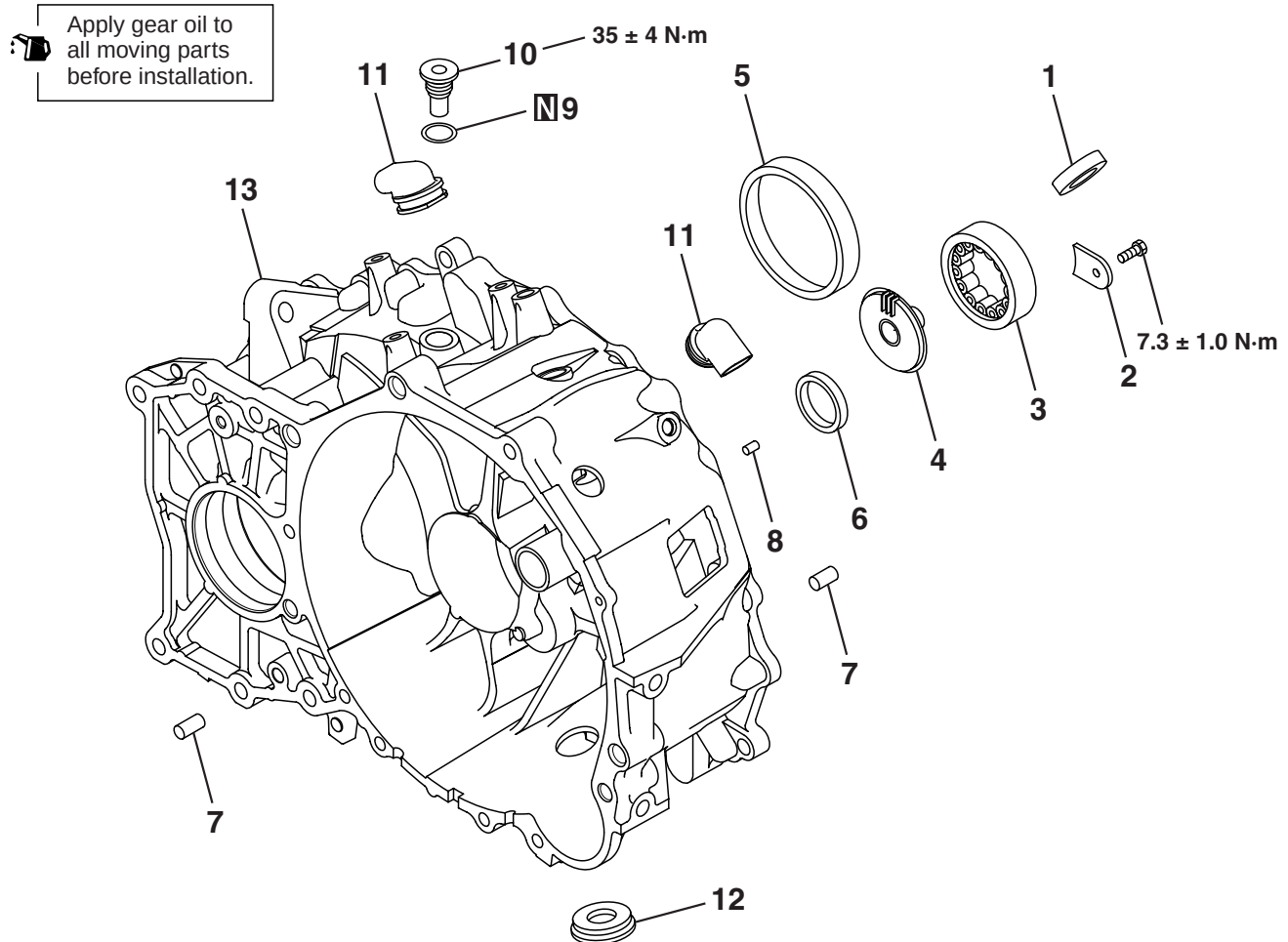


2. Check the front and back ends of the inner splines of the reverse idler gear sleeve for damage.
3. Check the helical gear teeth and clutch gear teeth of the reverse idler gear for damage and excessive wear.
4. Check the front, back, and inner surfaces of the reverse idler gear for damage and excessive wear.

CLUTCH HOUSING

DISASSEMBLY AND REASSEMBLY

M1222003700165

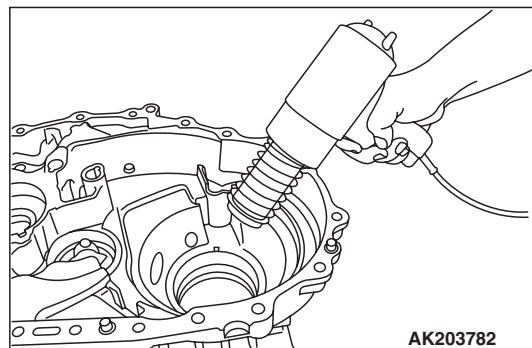


AK204363AC

Disassembly steps

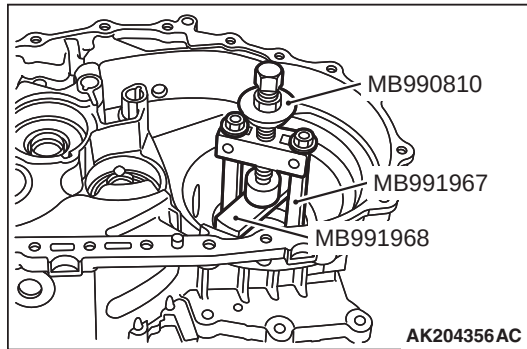
- >>C<< 1. Magnet
2. Main shaft bearing retainer
3. Main shaft front bearing
>>B<< 4. Oil channel
<<A>> >>D<< 5. Differential side bearing outer race
>>A<< 6. Input shaft oil seal
7. Dowel pin
8. Knock pin
9. Drain plug gasket
10. Drain plug
11. Cover A
12. Maintenance hole cover
13. Clutch housing

DISASSEMBLY SERVICE POINTS

<<A>> DIFFERENTIAL SIDE BEARING
OUTER RACE REMOVAL

AK203782

1. Heat the clutch housing to about 100 °C (maximum temperature: 120 °C).

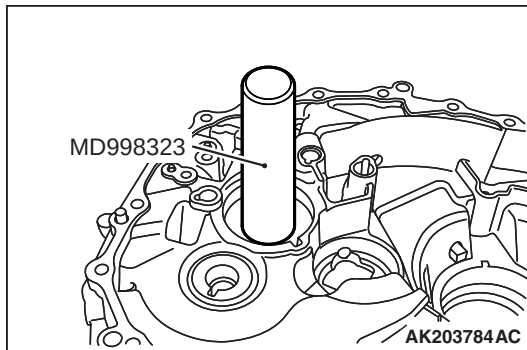


2. Using the following special tools, remove the differential side bearing outer race.

- Side bearing puller (MB990810)
- Claw (MB991967)
- Bridge (MB991968)

REASSEMBLY SERVICE POINTS

>>A<< INPUT SHAFT OIL SEAL INSTALLATION

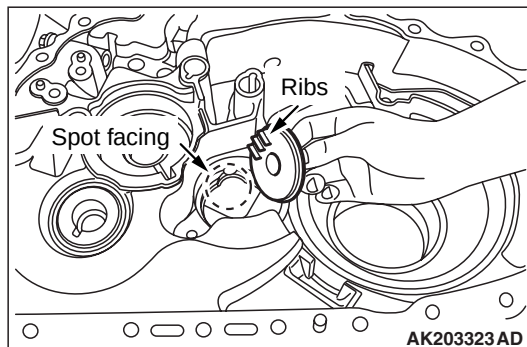


CAUTION

The oil seal is not reusable.

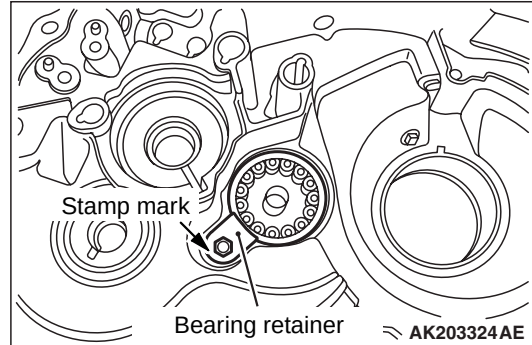
Using the special tool Bearing installer (MD998323), install the input shaft oil seal into the clutch housing.

>>B<< OIL CHANNEL INSTALLATION



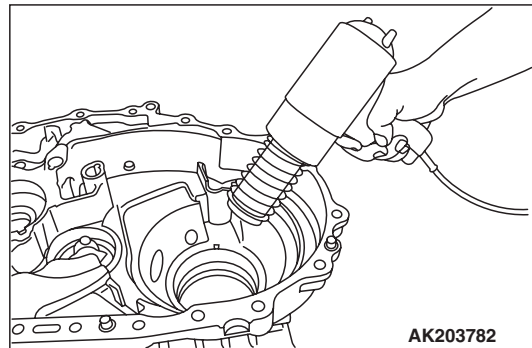
Install the oil channel so that the ribs located on the channel's main shaft side are fitted into the spot faced portion on the clutch housing.

>>C<< BEARING RETAINER INSTALLATION

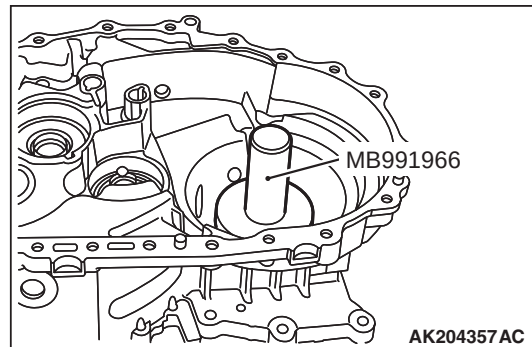


Install the bearing retainer so that the stamp mark is visible, and tighten the mounting bolt to the specified torque.

>>D<< DIFFERENTIAL SIDE BEARING OUTER RACE INSTALLATION



1. Heat the clutch housing to about 100 °C (maximum temperature: 120 °C).

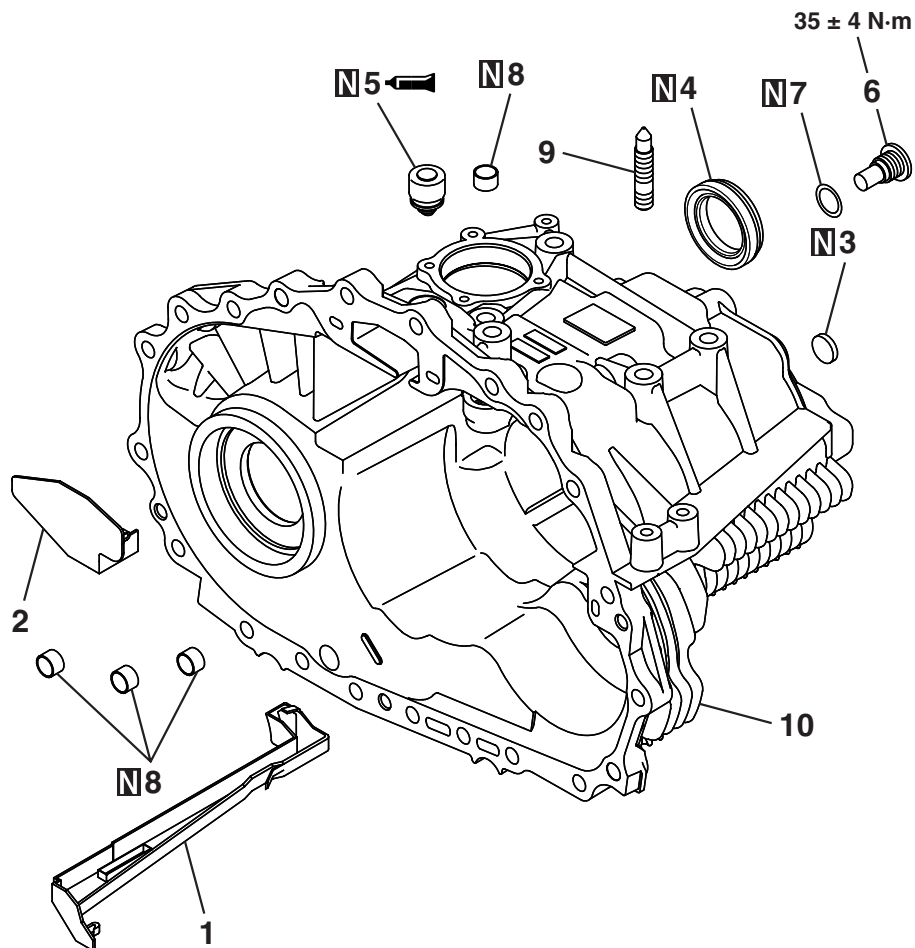


2. Using the special tool Bearing outer race installer (MB991966) to install the differential side bearing outer race in the clutch housing.

TRANSMISSION CASE

DISASSEMBLY AND REASSEMBLY

M1222013400121



AK204369AC

Disassembly steps

- >>C<< 1. Oil gutter
 >>C<< 2. Baffle plate
 3. Welch plug
 >>B<< 4. Differential oil seal
 >>A<< 5. Air breather

Disassembly steps (Continued)

6. Filler plug
 7. Drain plug gasket
 8. Rod bushing
 9. Stud
 10. Transaxle case

REASSEMBLY SERVICE POINTS

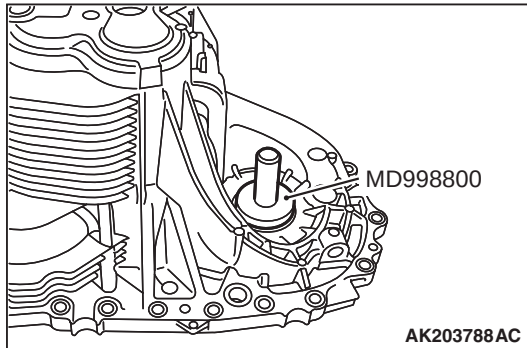
>>A<< AIR BREATHER INSTALLATION

1. Apply sealant to the entire air breather fitting surface of the transaxle case.

Specified sealant: 3M 8513 or equivalent

2. Install the air breather on the transaxle case.

>>B<< DIFFERENTIAL OIL SEAL INSTALLATION



CAUTION

The oil seal is not reusable.

Using the special tool Oil seal installer (MD998800), install the differential oil seal into the transaxle case.

>>C<< BAFFLE PLATE / OIL GUTTER INSTALLATION

CAUTION

Apply Vaseline to the claws of the baffle plate and oil gutter to prevent both parts from falling off.

Install the baffle plate and oil gutter on the transaxle case.

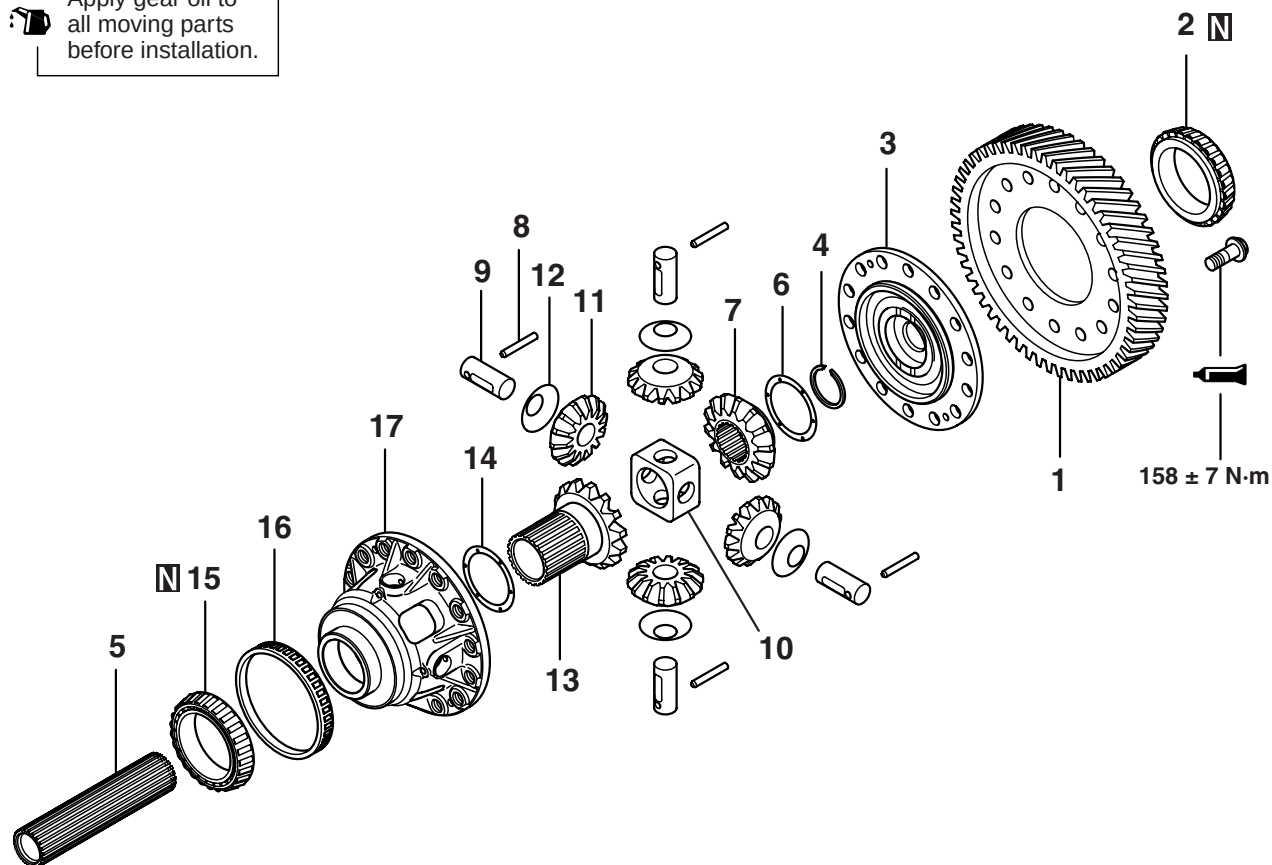
CENTRE DIFFERENTIAL

DISASSEMBLY AND REASSEMBLY

M1222010600030



Apply gear oil to
all moving parts
before installation.



AK204087AC

Disassembly steps

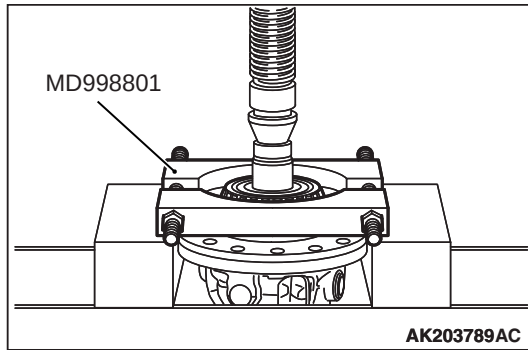
- <<A>> >>D<< 1. Center differential drive gear
>>C<< 2. Taper roller bearing
>>B<< 3. Center differential flange
>>B<< 4. Snap ring
>>B<< 5. Front output shaft
>>B<< 6. Spacer
>>B<< 7. Side gear
>>B<< 8. Lock pin
>>B<< 9. Pinion shaft

Disassembly steps (Continued)

- >>B<< 10. Pinion shaft holder
>>B<< 11. Pinion
>>B<< 12. Washer
>>B<< 13. Side gear
>>B<< 14. Spacer
<> >>A<< 15. Taper roller bearing
16. Speedometer drive gear
17. Differential case

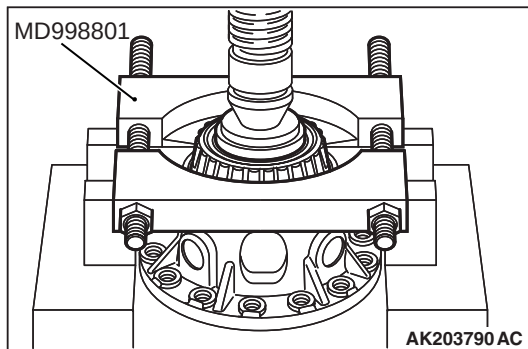
DISASSEMBLY SERVICE POINTS

<<A>> TAPER ROLLER BEARING REMOVAL



Using the special tool Bearing remover (MD998801), remove the taper roller bearing.

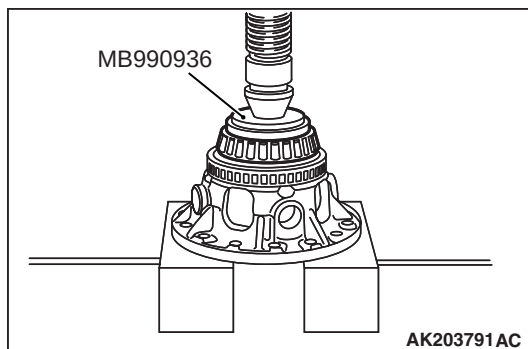
<> TAPER ROLLER BEARING REMOVAL



Using the special tool Bearing remover (MD998801), remove the taper roller bearing.

REASSEMBLY SERVICE POINTS

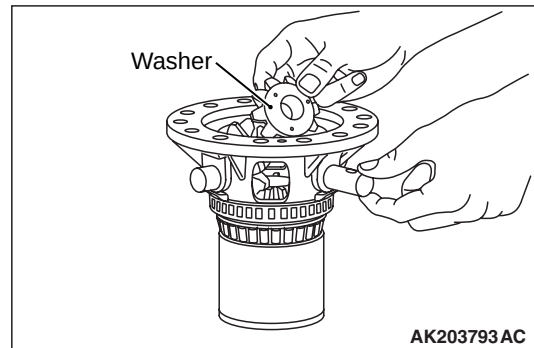
>>A<< TAPER ROLLER BEARING INSTALLATION



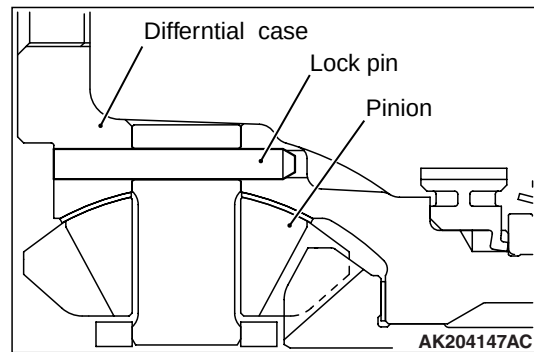
Using the special tool installer adapter (MB990936), install the taper roller bearing.

>>B<< SPACER / SIDE GEAR / WASHER / PINION / PINION SHAFT HOLDER / PINION SHAFT / LOCK PIN / FRONT OUTPUT SHAFT / SNAP RING / CENTER DIFFERENTIAL FLANGE INSTALLATION

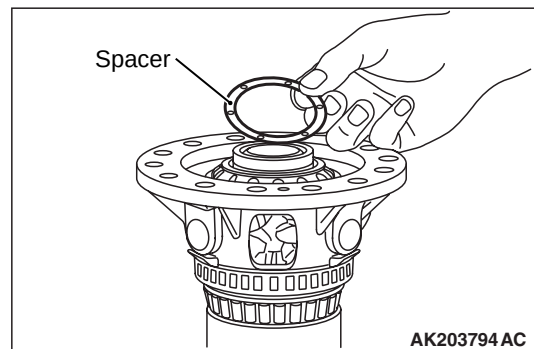
1. Install the spacer on each side gear, then install the side gears into the center differential case.
NOTE: When installing new side gears, use spacers of a medium thickness (0.66 – 0.73 mm).



2. Install a washer on the backside of each pinion. Simultaneously engage all four pinions with the side gears, and install them into position while rotating, then install the pinion shaft holder.
3. Insert the pinion shafts into the pinions.

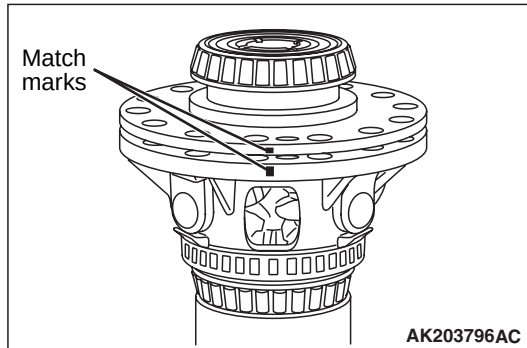


4. Install the lock pins as indicated in the illustration.

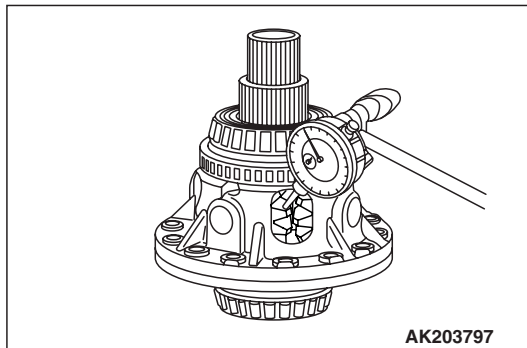


5. Insert the front output shaft into each side gear, then install the snap ring.
6. Install the spacer on each side gear. Next, install the side gears into the center differential case.

NOTE: When installing new side gears, use spacers of a medium thickness (0.66 – 0.73 mm).



7. Install the center differential flange on the differential case while aligning the match marks. Secure it temporarily in place using machine screws in four places.



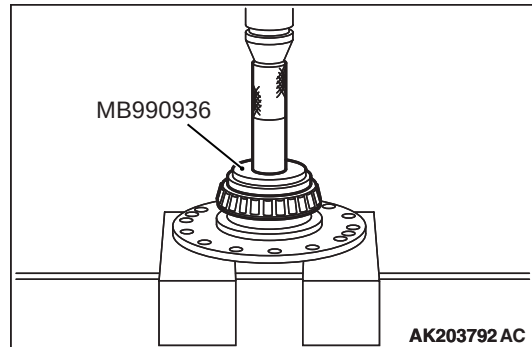
8. Measure the backlash between the side gears and pinions.

Standard value: 0.025 – 0.150 mm

9. If the backlash does not fall within the standard value range, select other appropriate spacers, replace the existing spacers with them, and measure the backlash once again.

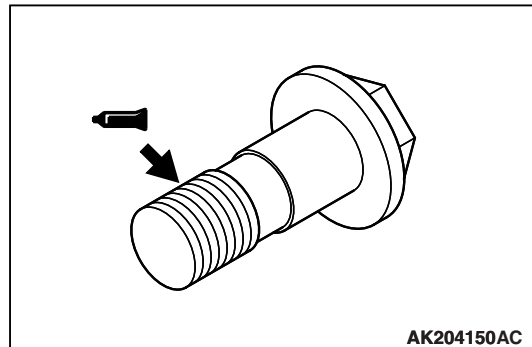
NOTE: Adjust the backlash on each side so that it is equal to the backlash on the other side.

>>C<< TAPER ROLLER BEARING INSTALLATION



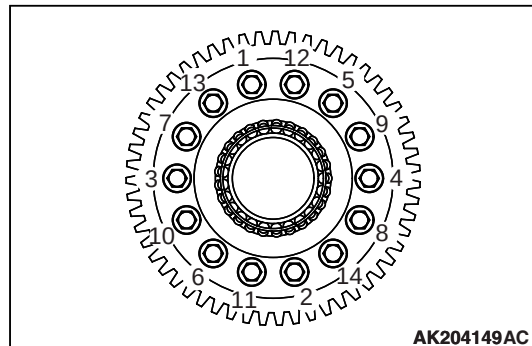
Using the special tool Installer adapter (MB9900936), install the taper roller bearing.

>>D<< CENTER DIFFERENTIAL DRIVE GEAR INSTALLATION



1. Apply sealant to the entire threaded part on the bolts.

Specified sealant: 3M STUD Locking No. 4170 or equivalent

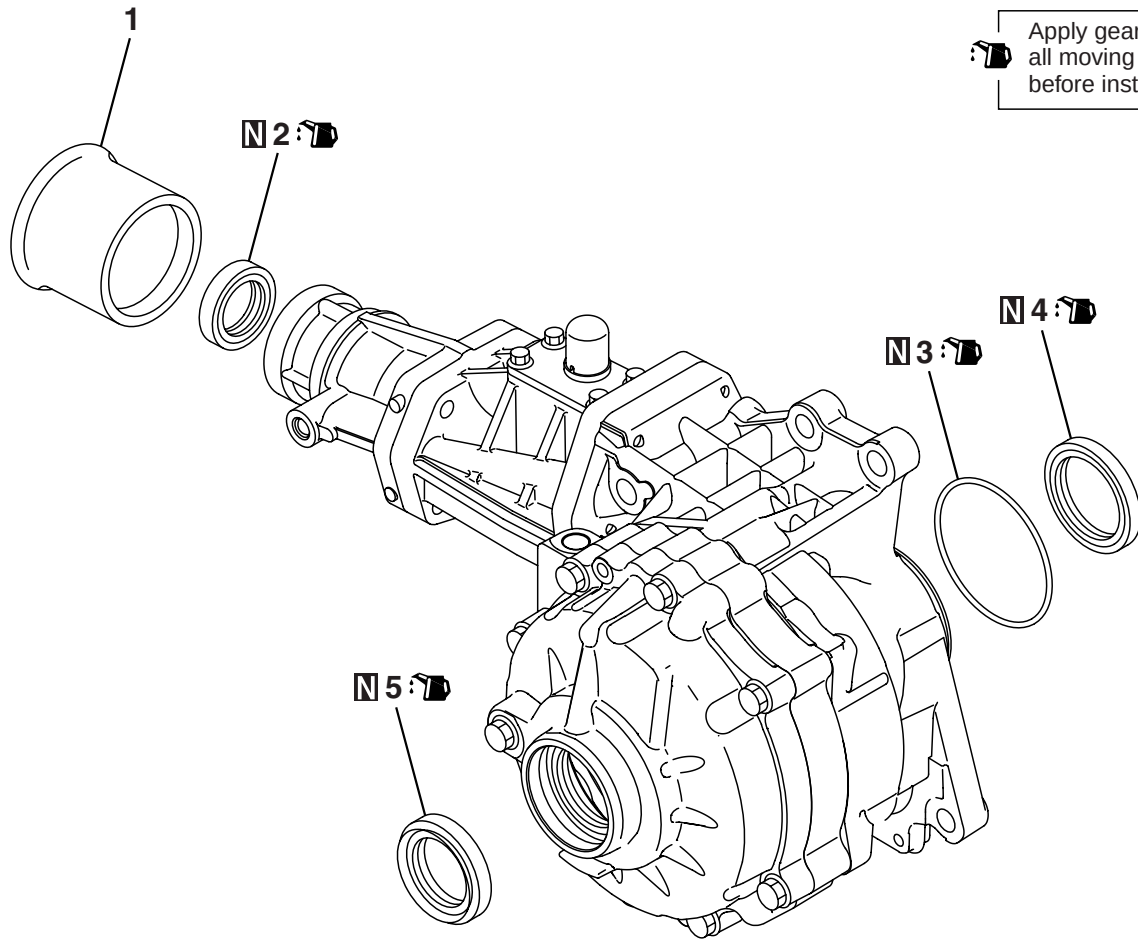


2. Tighten bolts to the specified torque of 158 ± 7 N·m in the order indicated in the illustration.

TRANSFER

DISASSEMBLY AND REASSEMBLY

M1222004000095



Apply gear oil to all moving parts before installation.

AK402153AC

Disassembly steps

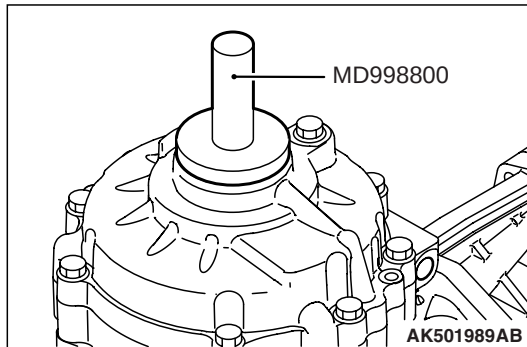
- >>D<< 1. Dust seal guide
- >>C<< 2. Oil seal
- >>C<< 3. O-ring

Disassembly steps (Continued)

- >>B<< 4. Oil seal
- >>A<< 5. Oil seal

REASSEMBLY SERVICE POINTS**>>A<< OIL SEAL INSTALLATION**

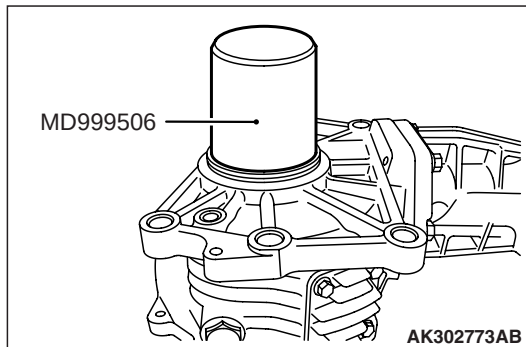
1. Apply gear oil (Hypoid gear oil API classification GL-5 SAE 90).



2. Using special tool Oil seal installer (MD998800), press fit the oil seal into the transfer cover.

>>B<< OIL SEAL INSTALLATION

1. Apply gear oil (Hypoid gear oil API classification GL-5 SAE 90).



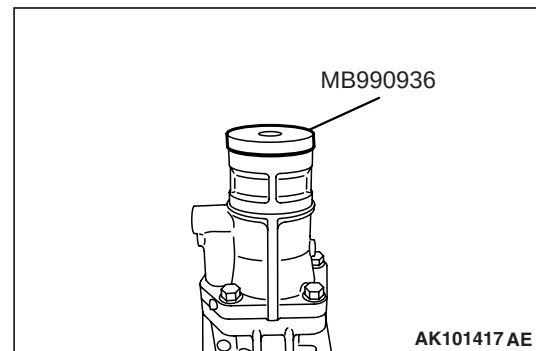
2. Using special tool Crankshaft installer (MD999506), press fit the oil seal into the transfer.

>>C<< O-RING INSTALLATION

Install a O-ring to the transfer, and apply gear oil (Hypoid gear oil API classification GL-5 SAE 90) to the O-ring.

>>D<< OIL SEAL INSTALLATION

1. Apply gear oil (Hypoid gear oil API classification GL-5 SAE 90).



2. Using special tool Installer adapter (MB990936), press fit the oil seal into the transfer.