

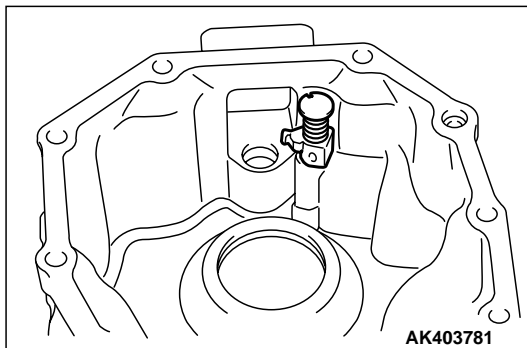
⚠ CAUTION

Do not damage to the oil seal lip during the installation.

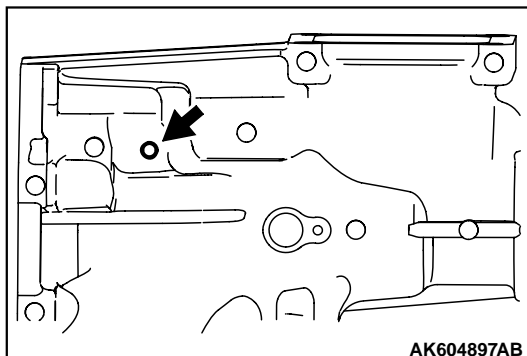
56. Apply sealant to the threads. Install the front bearing retainer to the transmission case sub-assembly and tighten the bolts to the specified torque of 16.5 ± 5.0 N·m.

Special sealant: Mitsubishi genuine sealant Part No. MD974421 or equivalent

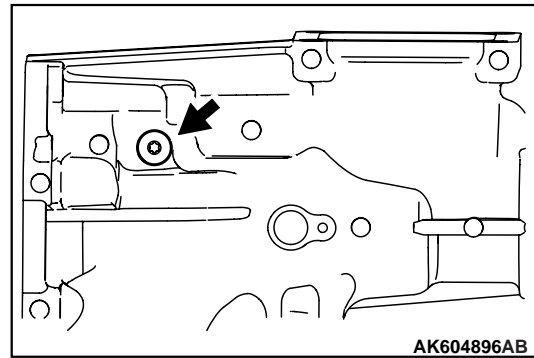
NOTE: The new bolt does not require sealant application as it is precoated with sealant.



57. Install the reverse restrict pin assembly to the extension housing sub-assembly.



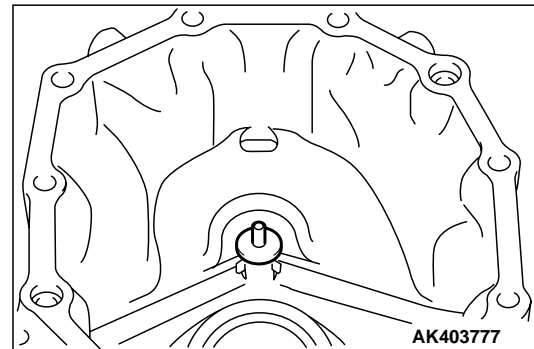
58. Install the slotted spring pin to the reverse restrict pin assembly.



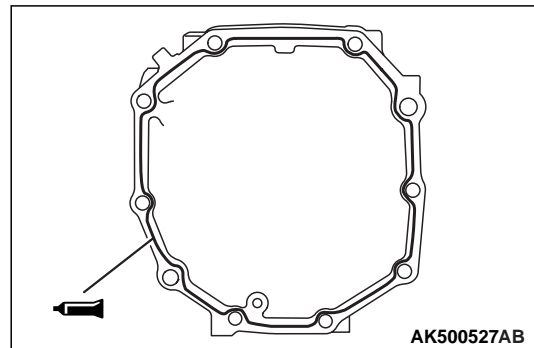
59. Apply sealant to the threads. Tighten the straight screw plug with head to the specified torque of 18.5 ± 5.5 N·m.

Special sealant: Mitsubishi genuine sealant Part No. MD974421 or equivalent

NOTE: The new bolt does not require sealant application as it is precoated with sealant.



60. Install the oil receiver pipe into the extension housing sub-assembly.

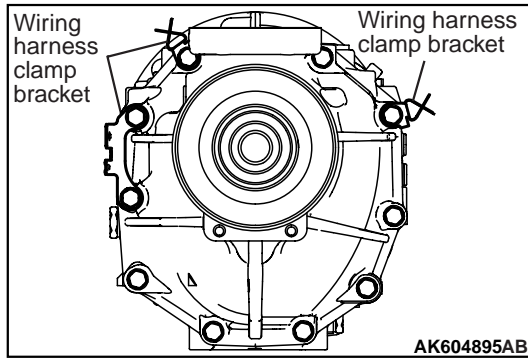


61. Completely degrease the FIPG-applied surface so that water and oil including the old sealant cannot adhere to the surface coated with the sealant.

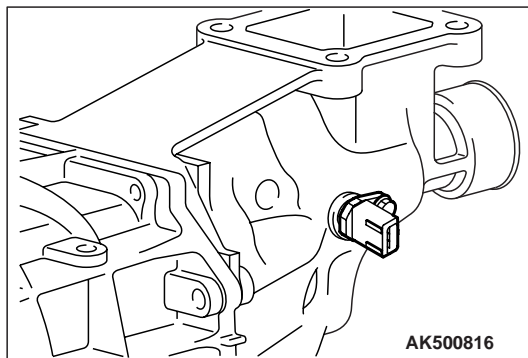
Never touch the degreased surface by hand.

62. Apply a 1.2 mm diameter bead of liquid gasket to the intermediate plate mounting surface of the extension housing sub-assembly.

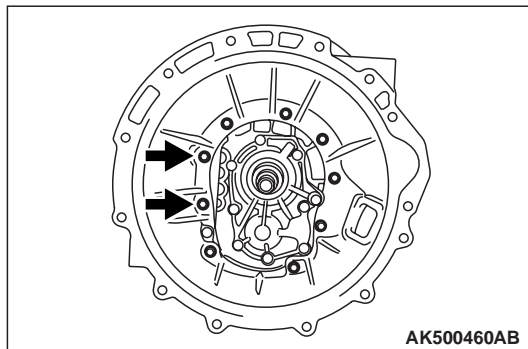
Special sealant: Mitsubishi genuine sealant Part No. MD974421 or equivalent



63. Install the extension housing sub-assembly. Install the wiring harness clamp bracket (3 places) and tighten the bolts to the specified torque of 37 ± 11 N·m.



64. Install the vehicle speed sensor and tighten the bolts to the specified torque of 11 ± 1 N·m.

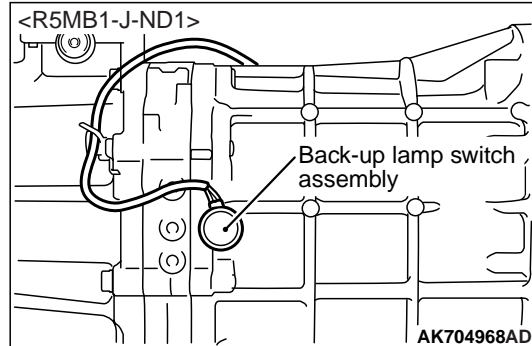
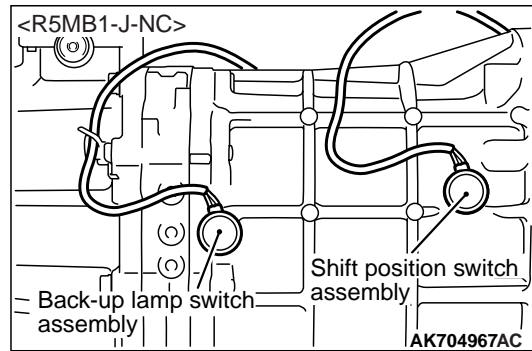


CAUTION

Install the bolt and washer (with sealant) to the position having the arrow as shown in the illustration.

65. Install the clutch housing into the transmission case sub-assembly. Tighten the bolt with washer to the specified torque of 36 ± 7 N·m (7 places). Tighten the bolt with washer (with sealant) to the specified torque of 34 ± 6 N·m (2 places).

Special sealant: Mitsubishi genuine sealant Part No. MD974421 or equivalent



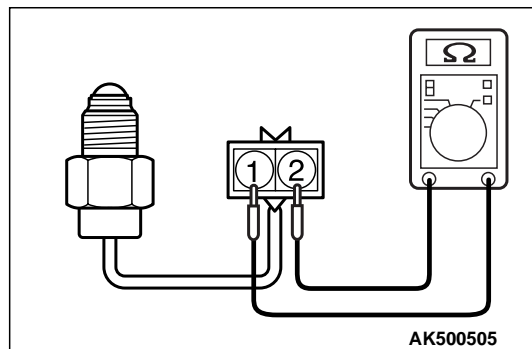
66. Tighten the shift position switch assembly of 34 ± 5 N·m. <R5MB1-J-NC>

67. Tighten the back-up lamp switch assembly and of 44 ± 9 N·m.

INSPECTION

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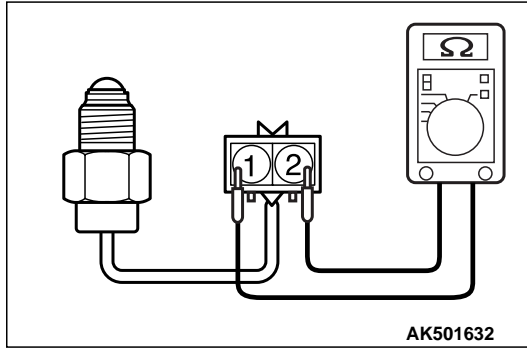
BACK-UP LAMP SWITCH



Check for the continuity between the connector terminals.

Switch condition	Connector terminals	Continuity
Switch end pressed	1 - 2	Conductive
Switch end released	1 - 2	Open

SHIFT POSITION SWITCH



Check for the continuity between the connector terminals.

Switch condition	Connector terminals	Continuity
Switch end pressed	1 – 2	Open
Switch end released	1 – 2	Conductive

SYNCHRONIZER SLEEVE AND HUB

1. Combine the synchronizer sleeve and hub, and check that they slide smoothly.
2. Check that the sleeve is free from damage at its inside splines ends.
3. Using the thickness gauge, check the clearance between the synchronizer ring and the gear.

Standard value: 0.52 – 1.88 mm
Limit: 0.52 mm

NEEDLE ROLLER BEARING

1. Combine the needle roller bearing with the shaft and gear, and check that it rotates smoothly without noise or play.

2. Check the needle roller bearing cage for deformation.

COUNTER SHAFT GEAR No.5

THRUST CLEARANCE

Inspect the thrust clearance of counter shaft gear No.5.

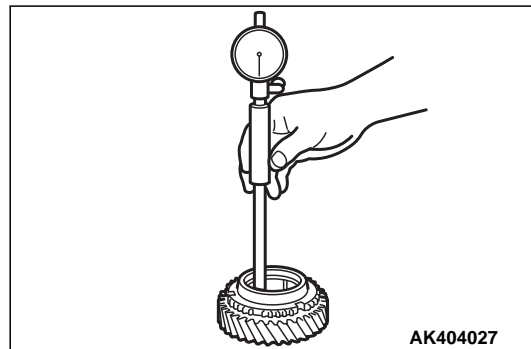
Standard value: 0.10 – 0.35 mm
Limit: 0.35 mm

RADIAL CLEARANCE

1. Fix the output shaft in a vice.
2. Inspect the radial clearance of counter shaft gear No.5.

Standard value: 0.015 – 0.068 mm
Limit: 0.068 mm

INSIDE DIAMETER




Using the cylinder gauge, check the inside diameter of the counter shaft gear No.5.

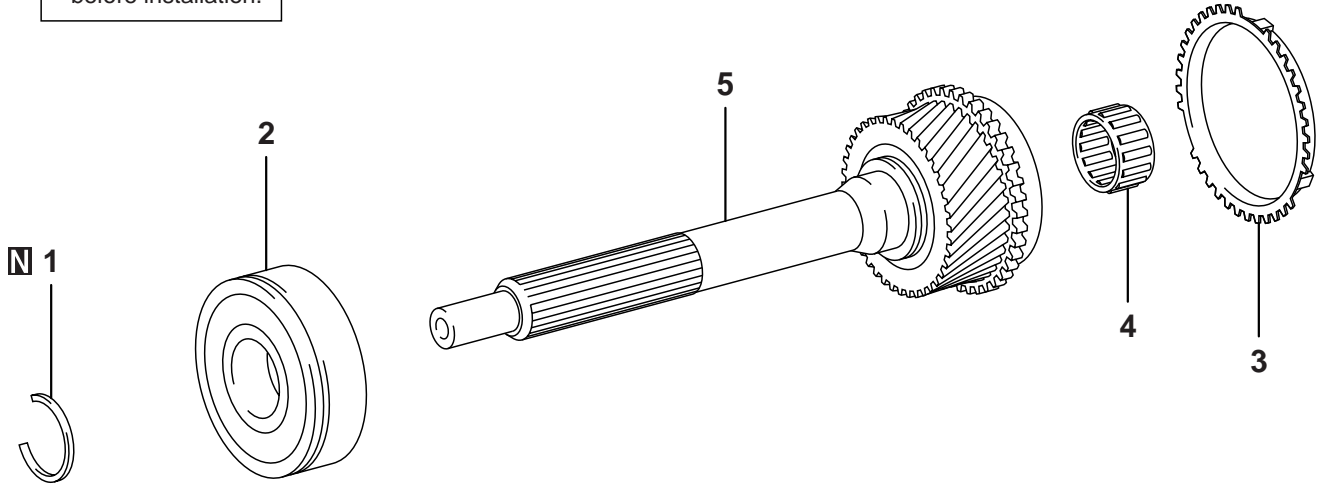
Standard value: 38.015 – 38.040 mm
Limit: 38.040 mm

INPUT SHAFT

DISASSEMBLY AND REASSEMBLY

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 Apply gear oil to all moving parts before installation.



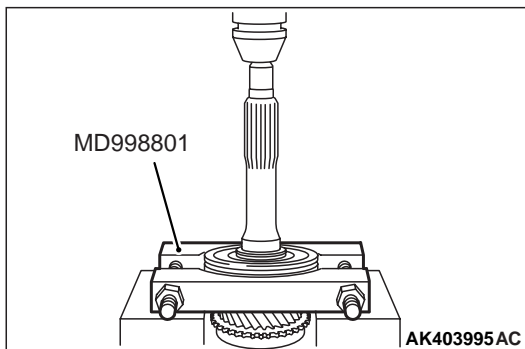
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Disassembly steps

- >>B<< 1. Shaft snap ring
<<A>> >>A<< 2. Radial ball bearing
3. Synchronizer ring No.2
4. Needle roller bearing
5. Input shaft sub-assembly

DISASSEMBLY SERVICE POINT

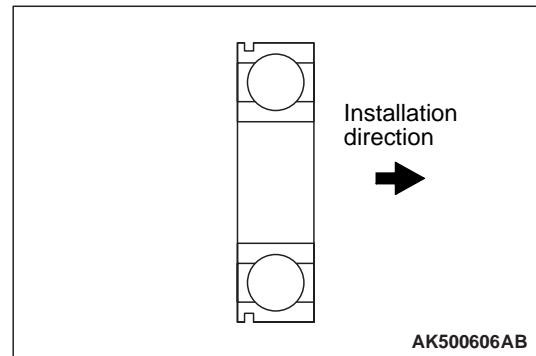
<<A>> RADIAL BALL BEARING REMOVAL



Using special tool Bearing remover (MD998801), support the radial ball bearing and remove it.

REASSEMBLY SERVICE POINTS

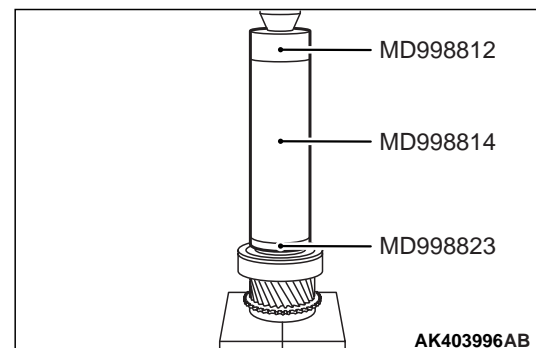
>>A<< RADIAL BALL BEARING INSTALLATION



1. Check the installation direction of the radial ball bearing, and put it on the input shaft.

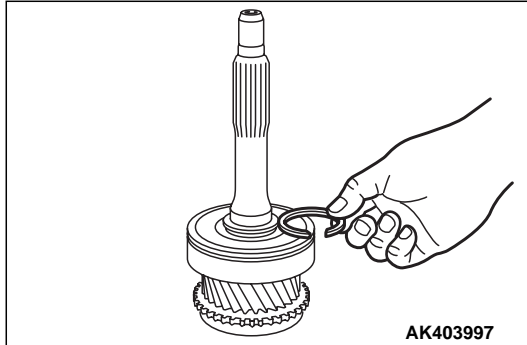
CAUTION

Never push on the sealing area when installing.



2. Using special tools to install the radial ball bearing.
 - Installer cap (MD998812)
 - Installer-200 (MD998814)
 - Installer adapter (48) (MD998823)

>>B<< SNAP RING INSTALLATION



1. Select a snap ring to secure the standard clearance between the radial ball bearing and the input shaft sub-assembly.

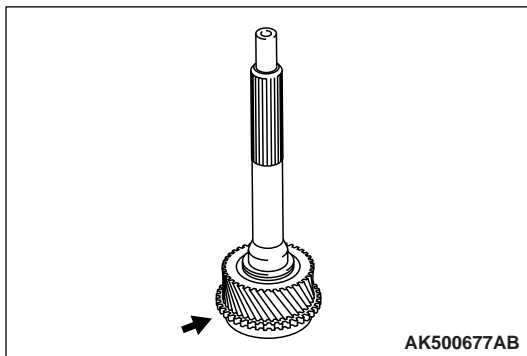
Standard value: 0 – 0.1 mm

2. Install the selected snap ring.

INSPECTION

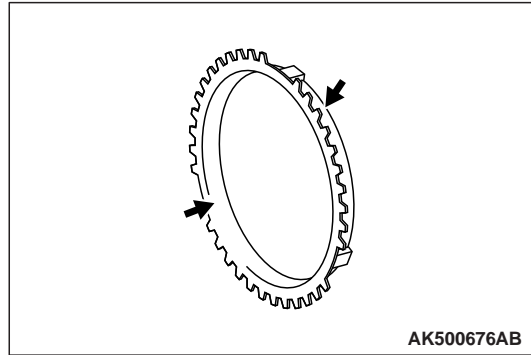
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INPUT SHAFT SUB-ASSEMBLY

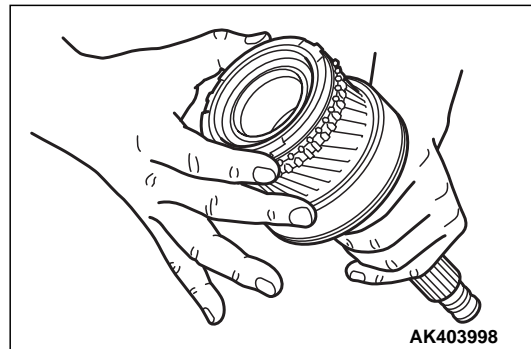


1. Check the helical gear teeth and clutch gear teeth of each input shaft sub-assembly for damage and excessive wear.
2. Check the synchronizer cone surface of each input shaft sub-assembly for roughness, damage, and excessive wear.
3. Check the inside surface and front and back sides of each input shaft sub-assembly for damage and excessive wear.

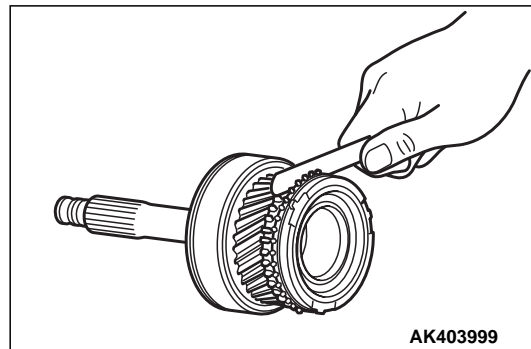
SYNCHRONIZER RING No.2



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. After applying oil to the taper portion on gear, press and fit the synchronizer ring by hand. Confirm the synchronizer ring cannot be rotated.



4. Using the thickness gauge, check the clearance between the synchronizer ring and the 4th gear.

Standard value: 0.70 – 1.70 mm
Minimum limit: 0.70 mm

NEEDLE ROLLER BEARING

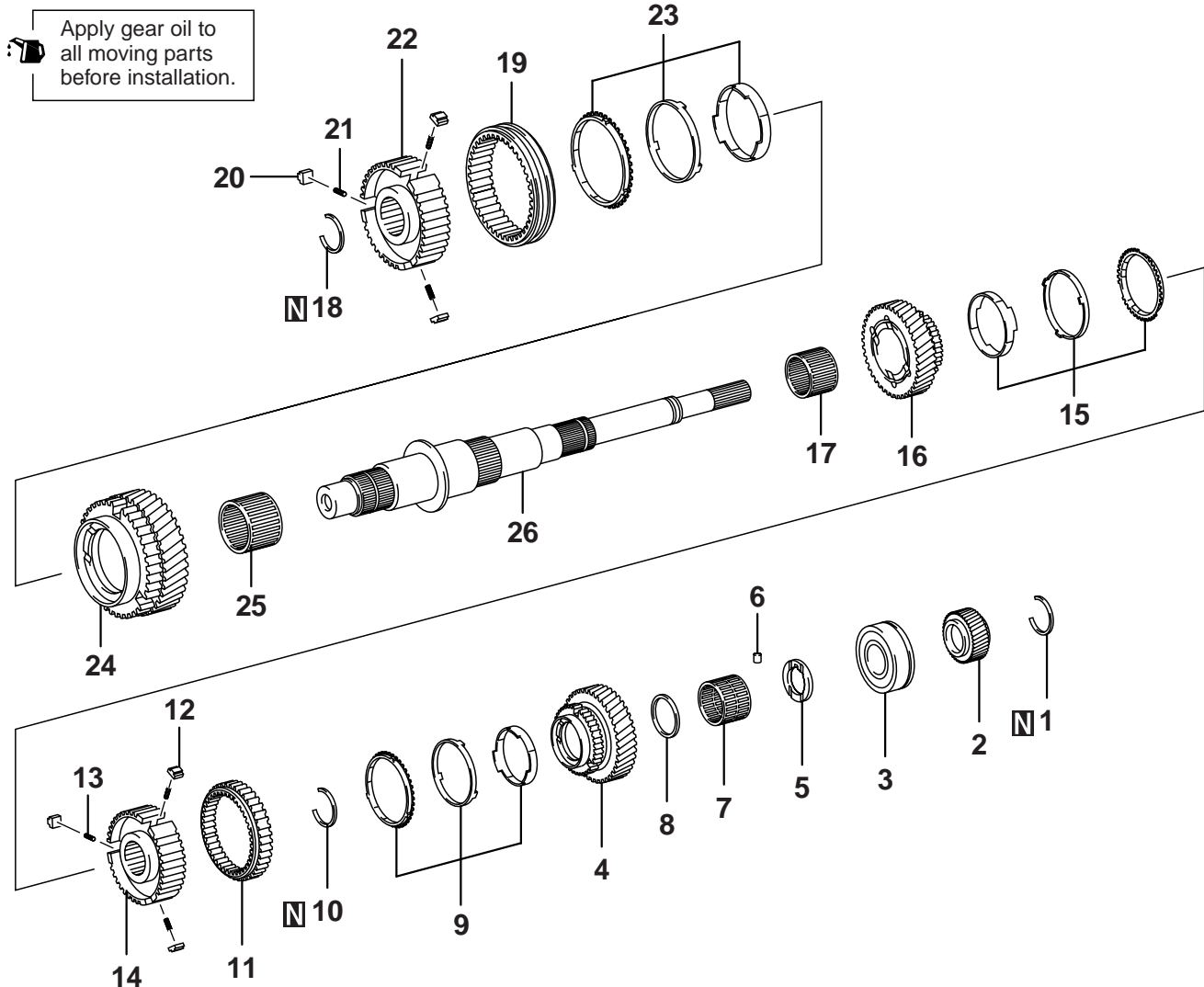
1. Combine the needle roller bearing with the input shaft, and check that it rotates smoothly without noise or play.

2. Check the needle roller bearing for deformation.

OUTPUT SHAFT

DISASSEMBLY AND REASSEMBLY

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Disassembly steps

- | | | | |
|-------|-------|-----|--------------------------------|
| <<A>> | >>G<< | 1. | Shaft snap ring |
| <> | >>F<< | 2. | 5th gear |
| <> | >>E<< | 3. | Radial ball bearing |
| <> | >>E<< | 4. | 1st gear sub-assembly |
| | | 5. | 1st gear thrust washer |
| | | 6. | Straight pin |
| | | 7. | Needle roller bearing |
| | | 8. | D spacer |
| | | 9. | Synchronizer ring set No.1 |
| <<C>> | >>D<< | 10. | Shaft snap ring |
| <<C>> | >>C<< | 11. | Reverse gear |
| <<C>> | >>C<< | 12. | Synchronizer shifting key No.1 |

Disassembly steps (Continued)

- | | | | |
|-------|-------|-----|--------------------------------|
| <<C>> | >>C<< | 13. | Compression spring |
| <<C>> | >>C<< | 14. | Transmission clutch No.1 hub |
| <<C>> | >>C<< | 15. | Synchronizer ring set No.1 |
| <<C>> | >>C<< | 16. | 2nd gear sub-assembly |
| | | 17. | Needle roller bearing |
| | >>B<< | 18. | Shaft snap ring |
| <<D>> | >>A<< | 19. | Transmission hub sleeve No.2 |
| <<D>> | >>A<< | 20. | Synchronizer shifting key No.2 |
| <<D>> | >>A<< | 21. | Compression spring |
| <<D>> | >>A<< | 22. | Transmission clutch No.2 hub |
| <<D>> | >>A<< | 23. | Synchronizer ring set No.2 |
| <<D>> | >>A<< | 24. | 3rd gear sub-assembly |

Disassembly steps (Continued)

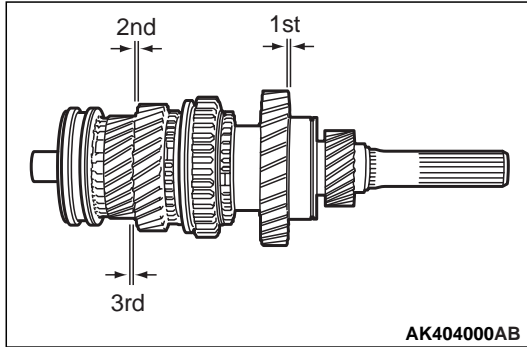
- 25. Needle roller bearing
- 26. Output shaft

DISASSEMBLY SERVICE POINTS

<<A>> 5TH GEAR REMOVAL

INSPECTION BEFORE DISASSEMBLY

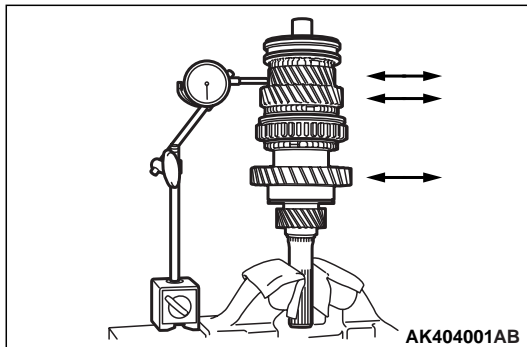
THRUST CLEARANCE FOR EACH GEAR



Inspect the thrust clearance of each gear.

Gear	Standard value mm	Limit mm
1st	0.20 – 0.45	0.45
2nd	0.10 – 0.25	0.25
3rd	0.10 – 0.25	0.25

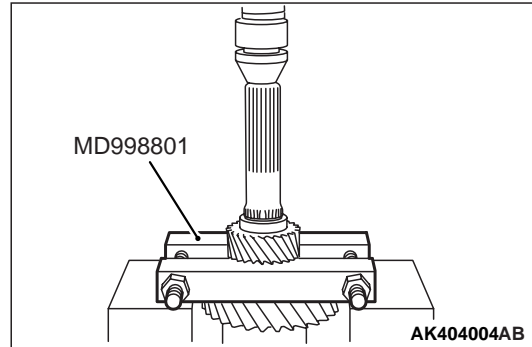
RADIAL CLEARANCE FOR EACH GEAR



1. Fix the output shaft by a vice.
2. Inspect the radial clearance of each gear.

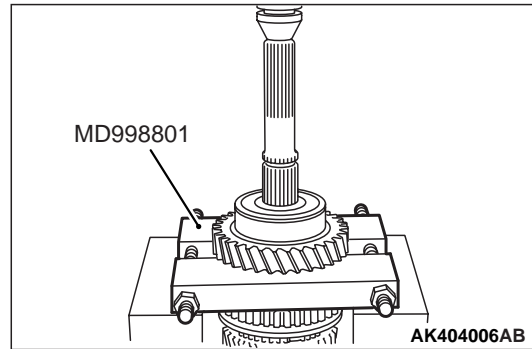
Gear	Standard value mm	Limit mm
1st	0.020 – 0.073	0.073
2nd	0.015 – 0.068	0.068
3rd	0.015 – 0.068	0.068

Using special tool Bearing remover (MD998801), support the 2nd gear sub-assembly and remove the reverse gear, synchronizer shifting key No.1, compression spring, the transmission clutch No.1 hub, synchronizer ring set No.1 and the 2nd gear sub-



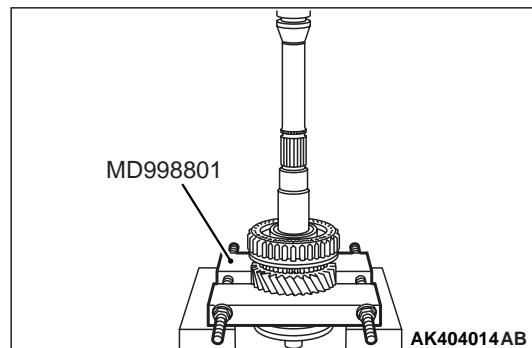
Using special tool Bearing remover (MD998801), support the 5th gear and remove it.

<> RADIAL BALL BEARING / 1ST GEAR SUB-ASSEMBLY REMOVAL



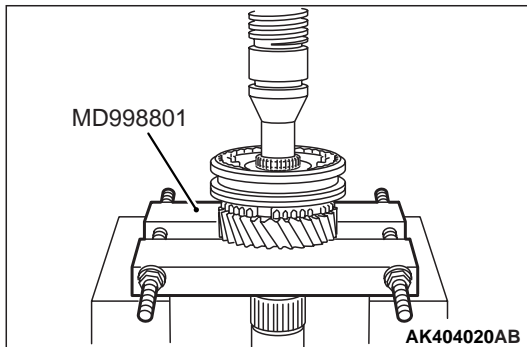
Using special tool Bearing remover (MD998801), support the 1st gear sub-assembly and remove the radial ball bearing and the 1st gear sub-assembly.

<<C>> REVERSE GEAR / SYNCHRONIZER SHIFTING KEY No.1 / COMPRESSION SPRING / TRANSMISSION CLUTCH No.1 HUB / SYNCHRONIZER RING SET No.1 / 2ND GEAR SUB-ASSEMBLY REMOVAL



assembly.

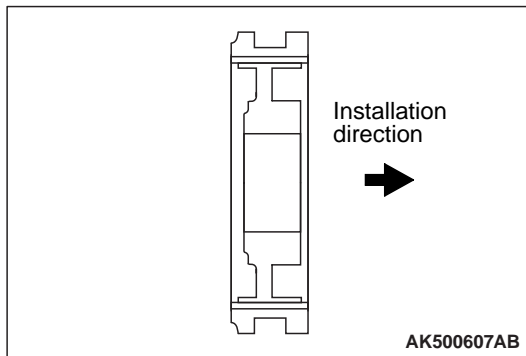
<<D>> TRANSMISSION CLUTCH HUB No.2 /
SYNCHRONIZER SHIFTING KEY No.2 /
COMPRESSION SPRING / TRANSMISSION HUB
SLEEVE No.2 / SYNCHRONIZER RING SET No.2 /
3RD GEAR SUB-ASSEMBLY REMOVAL



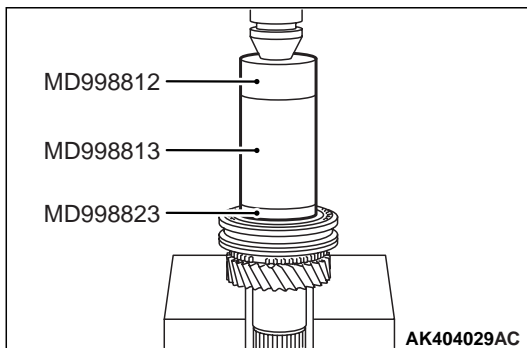
Using special tool Bearing remover (MD998801), support the 3rd gear sub-assembly and remove the transmission clutch hub No.2, synchronizer shifting key No.2, compression spring, the transmission hub sleeve No.2, synchronizer ring set and the 3rd gear sub-assembly.

REASSEMBLY SERVICE POINTS

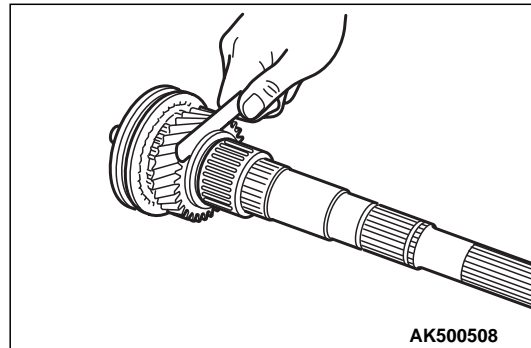
>>A<< TRANSMISSION CLUTCH HUB No. 2 /
SYNCHRONIZER SHIFTING KEY No. 2 / COM-
PRESSION SPRING / TRANSMISSION HUB
SLEEVE No. 2 / SYNCHRONIZER RING SET No. 2
/ 3RD GEAR SUB-ASSEMBLY INSTALLATION



1. Check the installation direction of the transmission clutch hub No. 2, and put it on the output shaft.



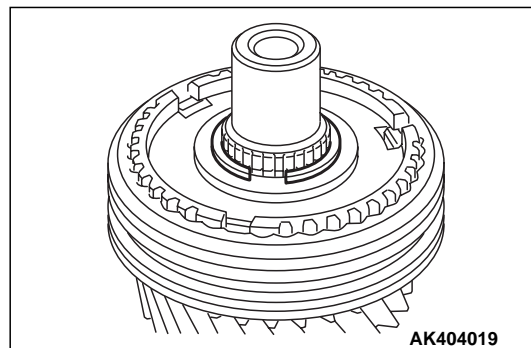
2. Using special tools to install the transmission clutch hub No. 2, synchronizer shifting key No. 2, compression spring, the transmission hub sleeve No. 2, synchronizer ring set No. 2 and the 3rd gear sub-assembly.
 - Installer cap (MD998812)
 - Installer-100 (MD998813)
 - Installer adapter (48) (MD998823)



3. Confirm the thrust clearance of the 3rd gear sub-assembly is within the standard value.

Standard value: 0.10 – 0.25 mm
Limit: 0.25 mm

>>B<< SHAFT SNAP RING INSTALLATION

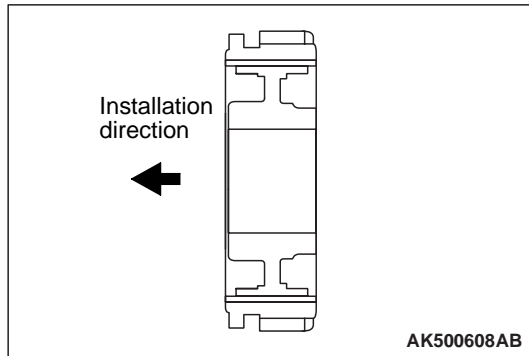


1. Select a shaft snap ring to secure the standard clearance between the transmission clutch hub No.2 and the output shaft.

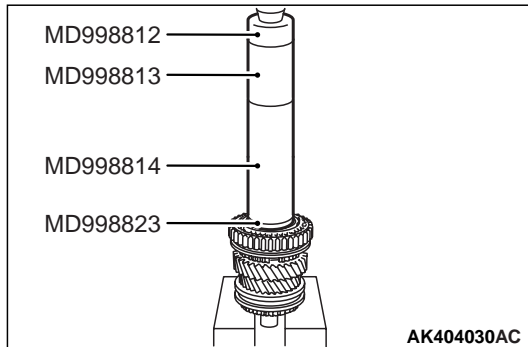
Standard value: 0 – 0.1 mm

2. Install the selected snap ring.

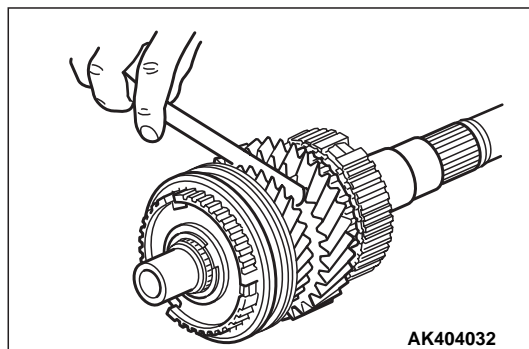
>>C<< REVERSE GEAR / SYNCHRONIZER
SHIFTING KEY No. 1 / COMPRESSION SPRING /
TRANSMISSION CLUTCH No. 1 HUB /
SYNCHRONIZER RING SET No. 1 / 2ND GEAR
SUB-ASSEMBLY INSTALLATION



1. Check the installation direction of the reverse gear, and put it on the output shaft.



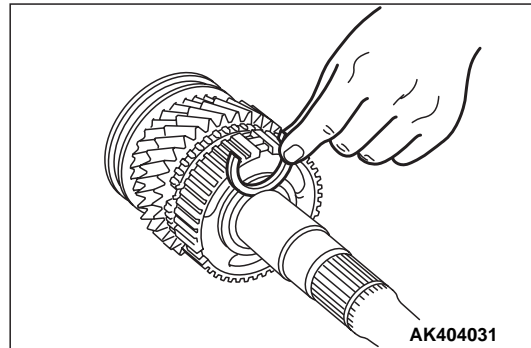
2. Using special tools to install the reverse gear, synchronizer shifting key No. 1, compression spring, the transmission clutch No. 1 hub, synchronizer ring set No. 1 and the 2nd gear sub-assembly.
 - Installer cap (MD998812)
 - Installer-100 (MD998813)
 - Installer-200 (MD998814)
 - Installer adapter (48) (MD998823)



3. Confirm the thrust clearance of the 2nd gear sub-assembly is within the standard value.

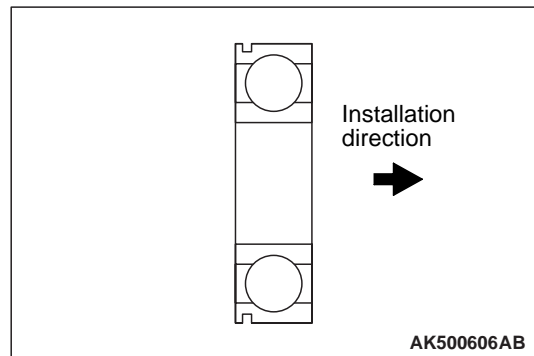
Standard value: 0.10 – 0.25 mm
Limit: 0.25 mm

>>D<< SHAFT SNAP RING INSTALLATION



1. Select a snap ring to secure the standard clearance between the transmission clutch No. 1 hub and the output shaft.
Standard value: 0 – 0.1 mm
2. Install the selected snap ring.

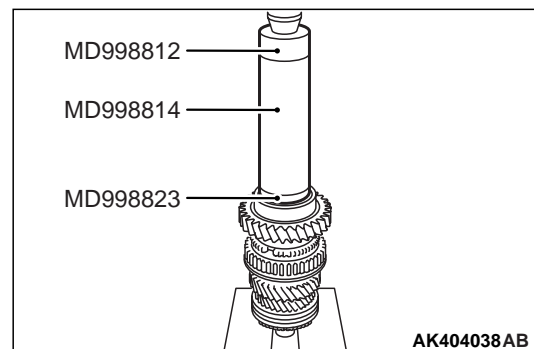
>>E<< RADIAL BALL BEARING / 1ST GEAR SUB-ASSEMBLY INSTALLATION



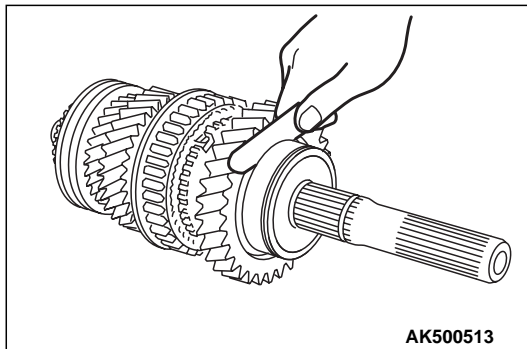
1. Check the installation direction of the radial ball bearing, and put it on the output shaft.

CAUTION

Never push on the sealing area when installing.



2. Using special tools to install the radial ball bearing and the 1st gear sub-assembly.
 - Installer cap (MD998812)
 - Installer-200 (MD998814)
 - Installer adapter (48) (MD998823)

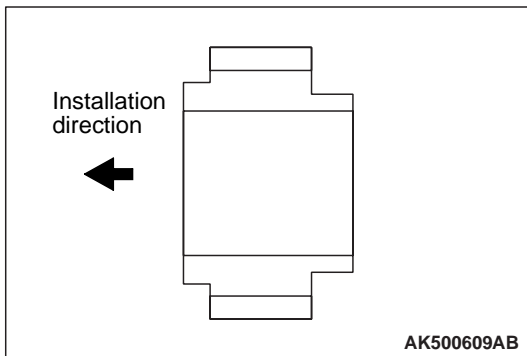


3. Confirm the thrust clearance of the 1st gear sub-assembly is within the standard value.

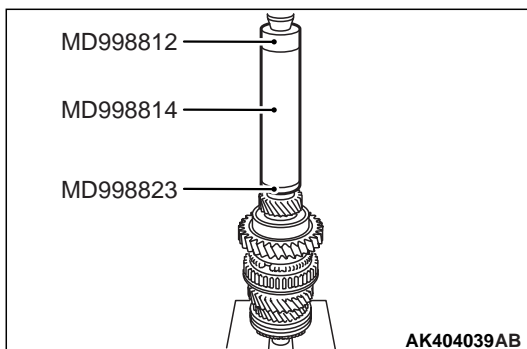
Standard value: 0.20 – 0.45 mm

Limit: 0.45 mm

>>F<< 5TH GEAR INSTALLATION



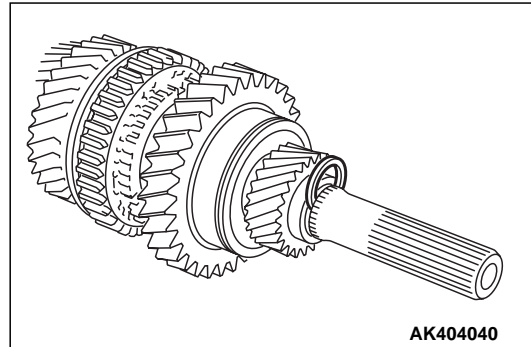
1. Check the installation direction of the 5th gear, and put it on the output shaft.



2. Using special tools to install the 5th gear.

- Installer cap (MD998812)
- Installer-200 (MD998814)
- Installer adapter (48) (MD998823)

>>G<< SHAFT SNAP RING INSTALLATION



1. Select a shaft snap ring to secure the standard clearance between the 5th gear and the output shaft

Standard value: 0 – 0.1 mm

2. Install the selected snap ring.

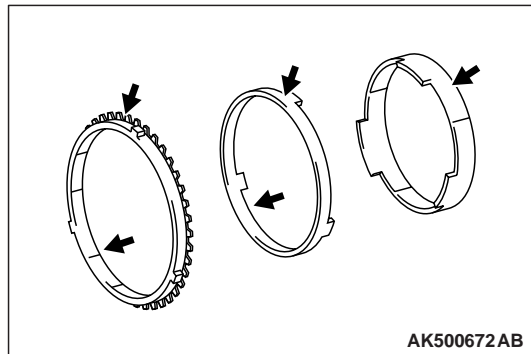
INSPECTION

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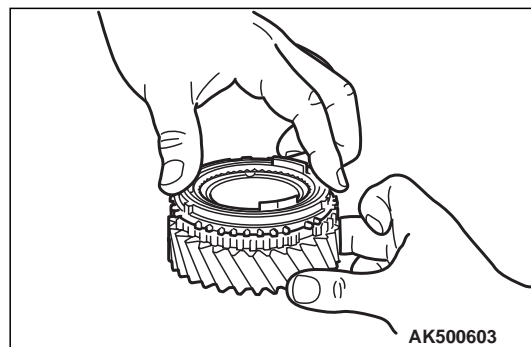
SYNCHRONIZER RING

CAUTION

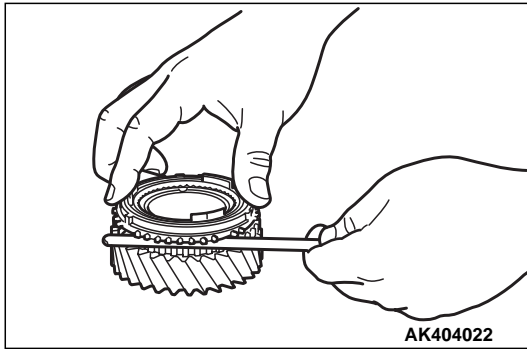
When any of the outer ring, inner ring or cone has to be replaced, replace them as a set.



1. Check to ensure that the clutch gear tooth surface and cone surface are not damaged and broken.



2. After applying oil to the taper portion on each gear, press and fit the synchronizer ring by hand. Confirm the synchronizer ring cannot be rotated.



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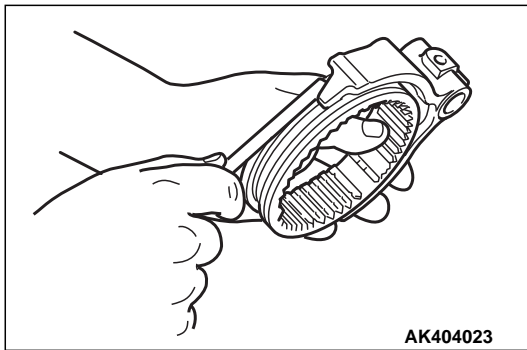
3. Using the thickness gauge, check the clearance between the synchronizer ring and the gear.

Gear	Standard value mm	Limit mm
1st	0.65 – 1.75	0.65
2nd	0.65 – 1.75	0.65
3rd	0.65 – 1.75	0.65

HUB SLEEVE AND SHIFT FORK

CAUTION

When any of the hub sleeve or shift fork has to be replaced, replace them as a set.



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Using the thickness gauge, check the clearance between the sleeve and the shift fork.

sleeve	Standard value mm	Limit mm
No.1	0.15 – 0.41	0.41
No.2	0.15 – 0.35	0.35
No.3	0.26 – 0.84	0.84

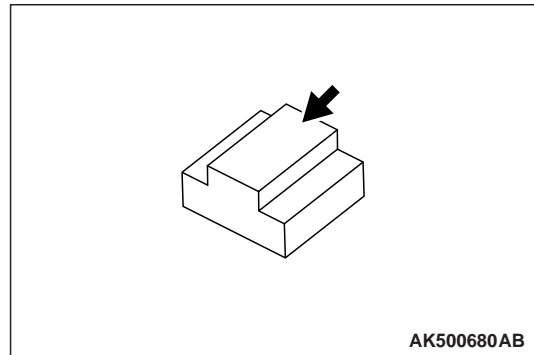
SYNCHRONIZER SLEEVE AND HUB

- Combine the synchronizer sleeve and hub, and check that they slide smoothly.
- Check that the sleeve is free from damage at its inside splines ends.

NEEDLE ROLLER BEARING

- Combine the needle roller bearing with the output shaft and gear, and check that it rotates smoothly without noise or play.
- Check the needle roller bearing cage for deformation.

SYNCHRONIZER KEYS



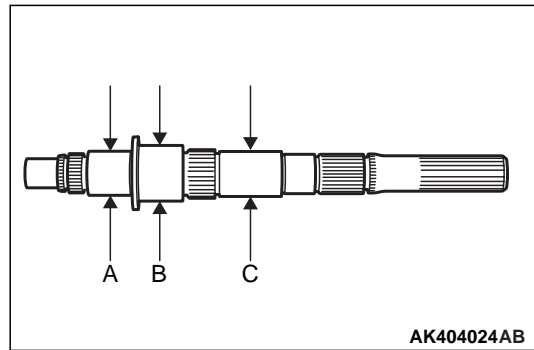
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Check the synchronizer hub contact surfaces of each synchronizer key for damage and excessive wear.

COMPRESSION SPRINGS

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

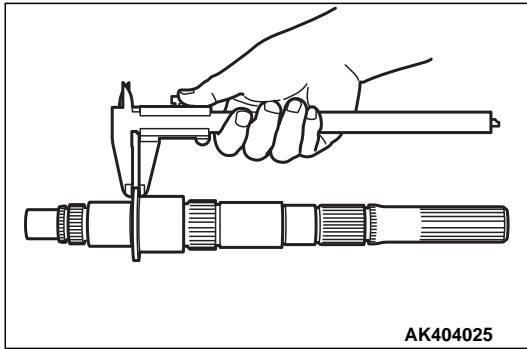
OUTPUT SHAFT



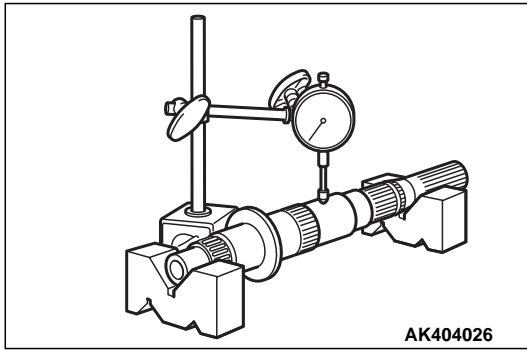
AK404024AB

- Using the micrometer, check the outer shape of the needle roller bearing race.

Measurement part	Standard value mm	Limit mm
A	37.984 – 38.000	37.984
B	46.984 – 47.000	46.984
C	38.979 – 38.995	38.979

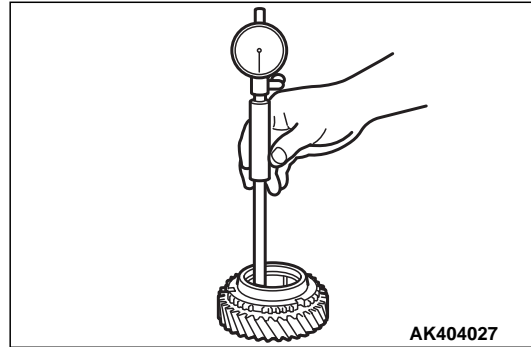


2. Using the slide gauge, check the flange thickness.
Minimum limit: 4.800 mm



3. Using the dial gauge and V-block, check the output shaft runout.

Limit: 0.015 mm




4. Using the cylinder gauge, check the inside diameter of each gear.

Gear	Standard value mm	Limit mm
1st	46.015 – 46.040	46.040
2nd	53.015 – 53.040	53.040
3rd	44.015 – 44.040	44.040

COUNTERSHAFT

DISASSEMBLY AND REASSEMBLY

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 Apply gear oil to all moving parts before installation.

