

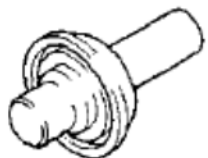
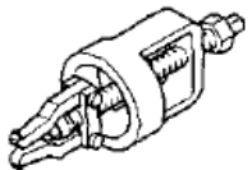
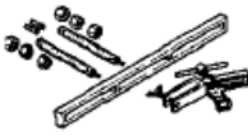
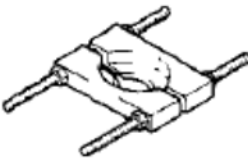


Chapter II

QR523 Transmission Service Manual



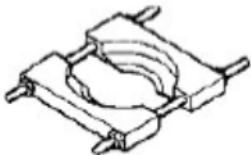
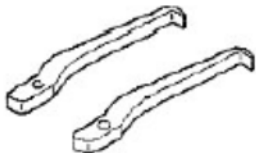
Section I Special Service Tools

Tool	Symbol	Name	Application
	MB990926	Installer Connector	To install the oil seal of input shaft
	MB990934	Installer Connector	To install the outer race of bearing
	MB990935	Installer Connector	To install the outer race of front/rear bearing of the differential
	MB990938	Handle	Apply this handle together with the installer connector
	MB998325	Oil seal/differential installer	To install the oil seal of differential
	MB998346	Bearing outer race detacher	To uninstall the outer race of bearing
	MB998772	Valve spring compressor	To uninstall the outer race of bearing
	MB998801	Bearing detacher	To install/uninstall the gears, bearings and sleeves



Tool	Symbol	Name	Application
	MB998812	Installer Cap	Apply this cap together with the installer and the installer connector
	MB998813	Installer (100)	Apply this installer together with the installer cap and the installer connector
	MB998814	Installer connector (200)	Apply this installer together with the installer cap and the installer connector
	MB998816	Installer connector (30)	To install the front bearing of input shaft
	MB998817	Installer connector (34)	To install the rear bearing of output shaft
	MB998818	Installer connector (38)	To uninstall the bearing of input shaft, inner race of bearing, reverse gear, needle bearing and bush – the bearing of reverse gear
	MB998819	Installer connector (40)	To install the bush- 5 th -reverse gear synchronizer, front/rear bearing of differential, and bush – 4 th gears and bush – 5 th gears
	MB998822	Installer connector (46)	To install the bush – the 1 st gears and bush – the 2 nd gears and 3 rd gears
	MB998823	Installer connector (48)	To install the inner race of differential's bearings and the bearing of differential

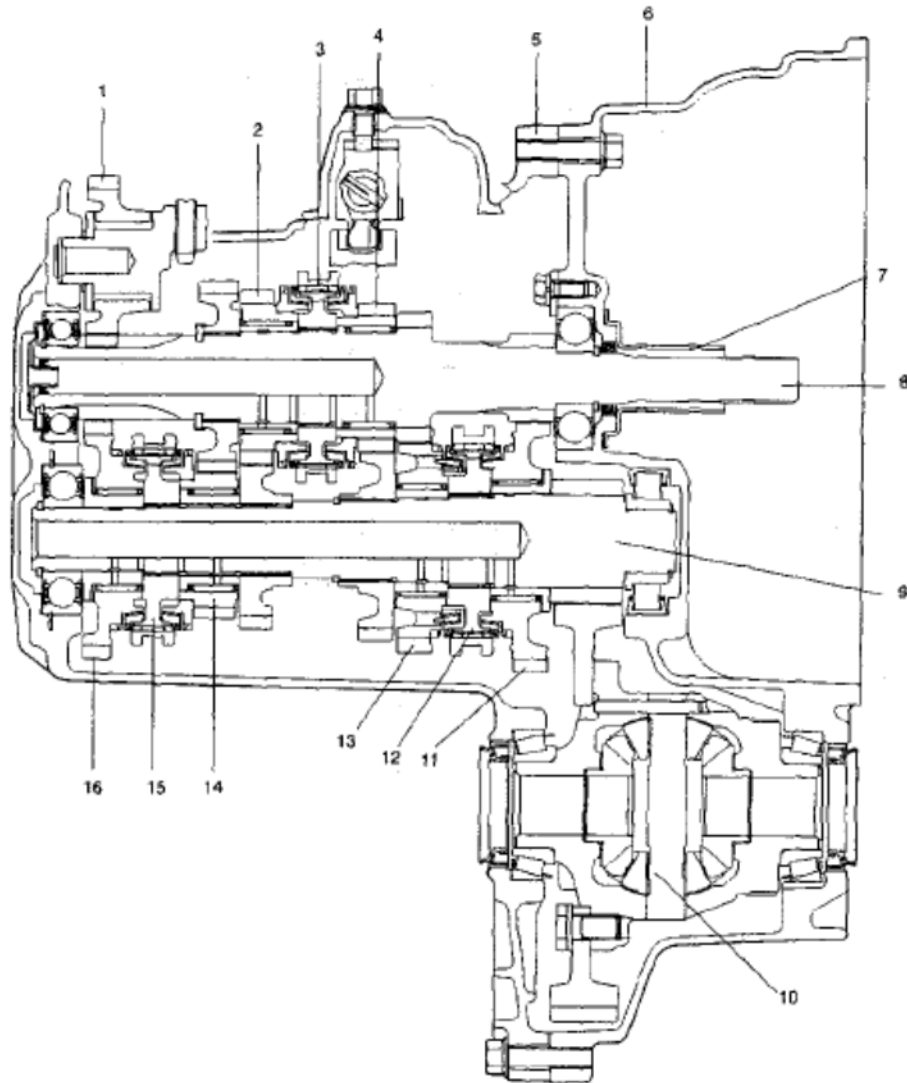


Tool	Symbol	Name	Application
	MB998824	Installer connector (50)	To install the bush – the 4 th gears and 5 th gears
	MB998825	Installer connector (52)	To install the bush – 1 st -2 nd gear synchronizer, bush, 3 rd -4 th gear synchronizer and bush – the 1 st gears
	MB998917	Bearing detacher	To install/uninstall gears, bearings and sleeves
	MB999566	Hook	To uninstall the outer race of front/rear bearing of differential

Section II Technical Data and Precautions

1. Schematic Diagram

Schematic Diagram



- | | |
|---|--|
| 1. Idler Assembly | 9. Output Shaft |
| 2. Pinion Gear, 4 th Gear | 10. Differential Assembly |
| 3. 3 rd -4 th Gear Synchronizer | 11. Driven Gear of 1 st Gear |
| 4. Pinion Gear, 3 rd Gear | 12. 1 st -2 nd Gear Synchronizer |
| 5. Transmission Housing | 13. Driven Gear, 2 nd Gear |
| 6. Clutch Box | 14. Driven Gear, 5 th Gear |
| 7. Release Bearing Saddle | 15. Synchronizer of 5 th -Gear and Reserve Gear |
| 8. Input Shaft | 16. Gear, Reverse Gear |



2. Maintenance Specifications

Item	Allowable Range	Limit Value
Axial clearance of input shaft front bearing (mm)	-0.01 ~ 0.21	—
Axial clearance of input shaft rear bearing (mm)	-0.01 ~ 0.12	—
Axial clearance of input shaft fifth gear (mm)	-0.01 ~ 0.09	—
Axial clearance of output shaft front bearing (mm)	-0.01 ~ 0.12	—
Axial clearance of output shaft rear bearing (mm)	-0.01 ~ 0.09	—
Axial clearance of output shaft third gear (mm)	-0.01 ~ 0.09	—
Back clearance of differential case planetary gear (mm)	0.025 ~ 0.150	—
Pretension of differential case (mm)	0.05 ~ 0.11	—
Clearance between the gear and the back of Synchro Ring (mm)	—	0.05

3. Sealants and Adhesives

Item	Specified Sealants and Adhesives
The fitting surface of clutch box–transmission housing	Three Arrow 1216E
The fitting surface of control case–transmission housing	
The fitting surface of lower head–transmission housing	

4. Disassembly

These parts assembled with sealants are easy to be disassembled without special methods. But, on some occasions, it is necessary to tap these parts slightly with wooden mallet or similar tools in order to break the sealants on the junction surface, or to use a flat, smooth and thin sealant scraper to insert into the junction surface slightly while you shall pay more attention to the junction surface and not damage it.

5. Cleanness of Sealing Surface

Apply the sealant scraper or steel brush to clean the foreign materials on the sealing surface, and confirm that the sealing surface is flat and smooth, without oil stains and foreign materials. Do not forget to remove the old sealants which enter into the transmission through the fitting holes or screwed holes.

6. Highlights for Applying Sealants

Precautions that shall be paid more attention when assembling parts.

Uniformly apply the sealant in the specified diameter, and fully enclose the surroundings of the fitting hole. Remove the sealants that are not hardened yet, and install the part on the specified position. After the completion of the part installation, you shall wait for till the sealants harden completely (approx. 1 hour required). Do not add the oil to the smeared part or make the engine wet or start up the engine.



7. Lubricating Grease

Item	Specified Lubricating Grease
Drive shaft seal lip	Mobilux Ep2
Input shaft seal lip	
Selector lever support cushion	

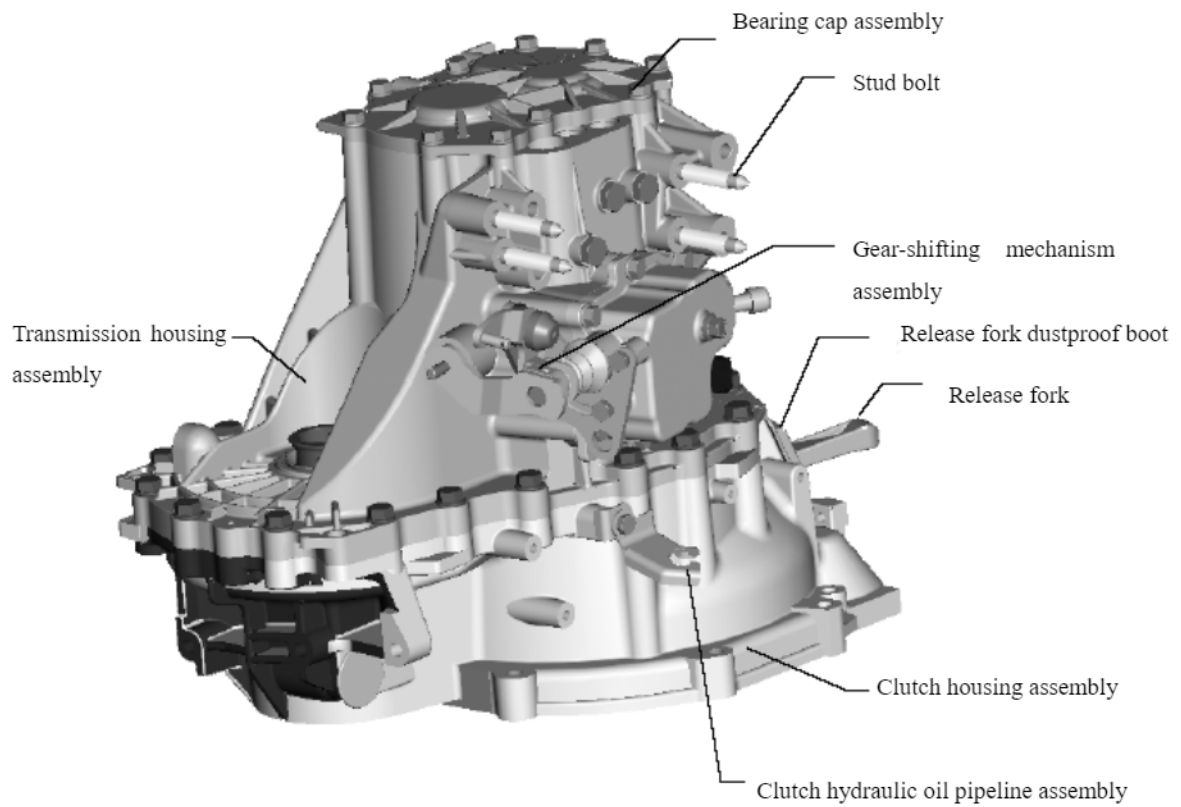
8. Torque Specification

Item	Torque N.m (kgf)
Bottom cap-Transmission installation bolts	6.2~7.6
Clutch box-Transmission housing installation bolts	39.5~48.5
Clutch release bearing saddle retainer installation bolts	8.8~10.8
Gear-shifting mechanism assembly installation bolts	16.1~19.9
Gear-shifting staying wire bracket installation bolts	16.1~19.9
Speedometer gear installation bolts	3.5~4.3
Main gearbox driven gear installation bolts	118.5~145.5
Backup lamp switch	28.7~35.3
Idling gear assembly installation bolts	43.1~52.9



Section III Removal and Installation

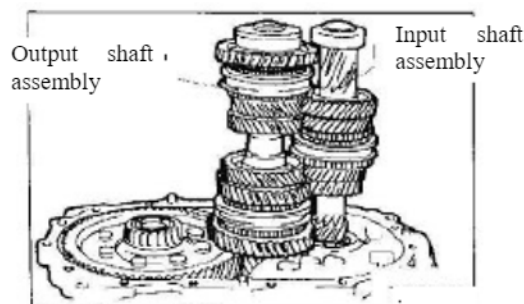
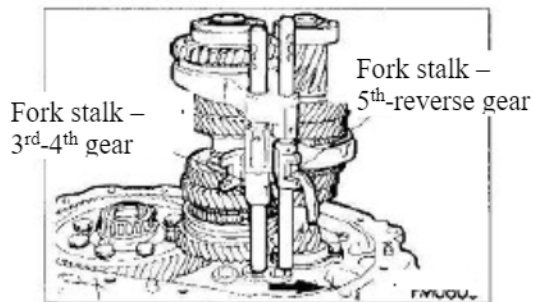
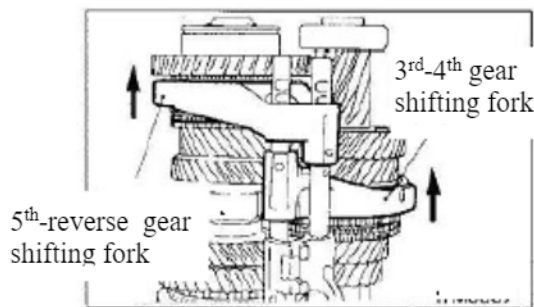
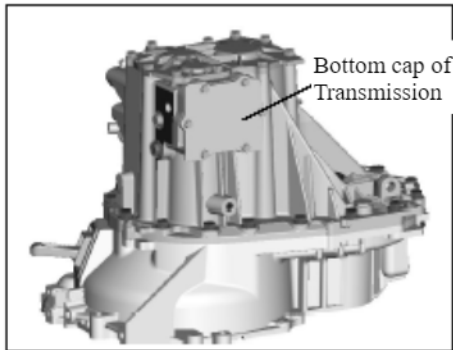
1. External Structural Diagram of QR523 Transmission





2. Removal and Installation of Main Parts

(1) Removal



1) Removal of transmission housing

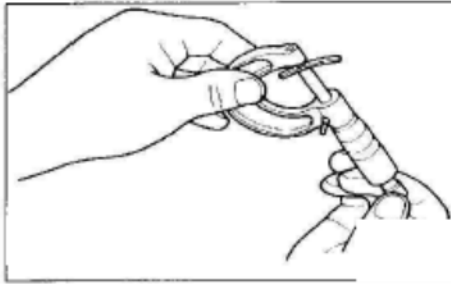
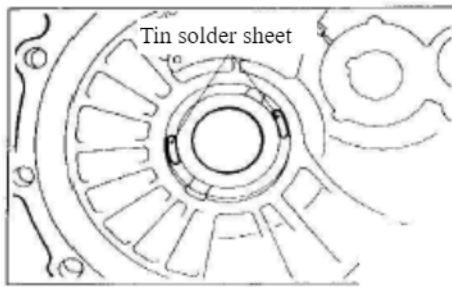
Remove the gear-shifting mechanism assy., bearing cap assy., snap ring-output shaft front bearing, bottom cap-transmission and reverse gear idling gear assembly, and then remove the transmission housing.

2) Removal of 3rd-4th gear shifting fork rail/3rd-4th gear shifting fork/5th-reverse gear shifting fork rail/5th-reverse gear shifting fork

- Move the 3rd-4th gear-shifting fork and 5th-reverse gear-shifting fork in the directions shown in the left figure.
- Slide the fork stalk–3rd-4th gear and fork stalk–5th-reverse gear in the directions shown in the left figure, and disassemble them together with the shift fork.

2) Removal of input/output shaft

Remove the input shaft together with the output shaft.

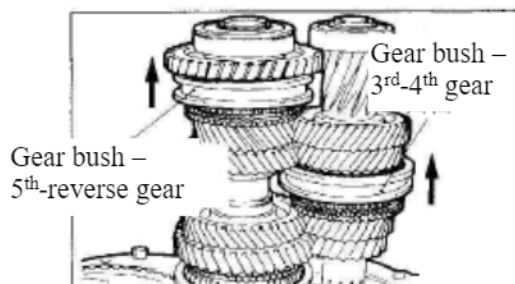
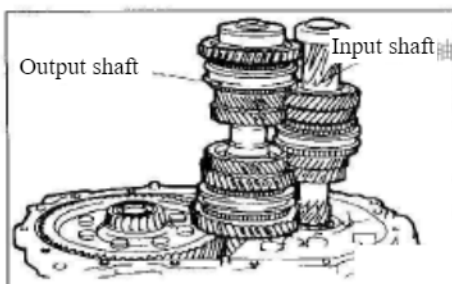
**(2) Adjustment before Installation**

Select the thickness of washer to adjust the differential pretension

- 1) Place the tin solder sheet (approx. 10 mm long and 1.6 mm diameter) on the specified part of transmission housing, and then install the outer race of bearing and the differential.
- 2) Install the clutch box, and tighten the bolt to the specified torque.
- 3) Replace these tin solder sheets with thicker tin solder sheets if these sheets aren't flattened. And then repeat these steps (1) and (2).
- 4) Apply a micrometer calipers to measure the thickness (T) of the flattened tin solder sheet.
- 5) Select the thickness of washer that shall be installed according to the following equation.

Thickness of washer:

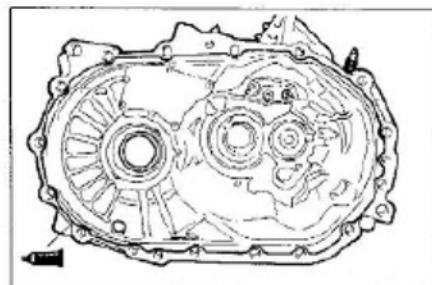
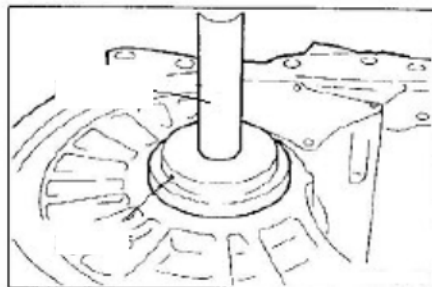
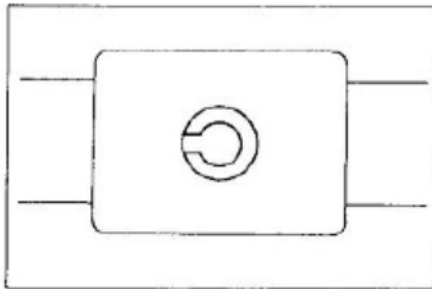
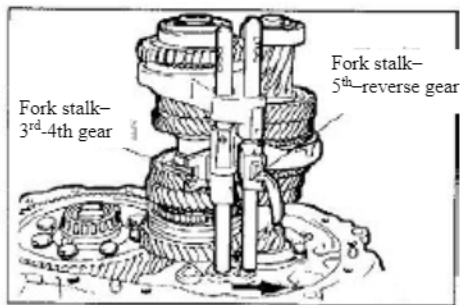
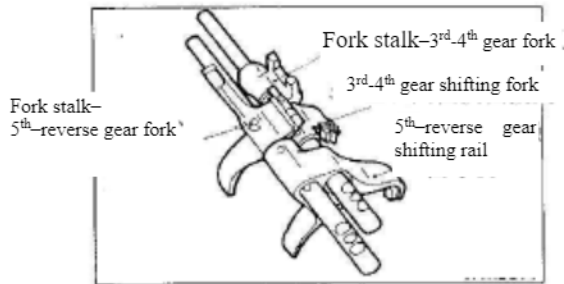
$$(T+0.005 \text{ mm}) \sim (T+0.11 \text{ mm})$$

(3) Installation

- 1) Installation of input/output shaft

Install the input shaft together with the output shaft.

- 2) Installation of the 5th-reverse gear shifting fork/fork stalk-5th-reverse gear fork/3rd-4th gear shifting fork/fork stalk-3rd-4th fork
 - a. Move the gear bush-3rd-4th gear and the gear bush-5th-reverse gear in this direction shown in the left figure.



b. Install the 3rd-4th gear shifting fork and its fork stalk and the 5th-reverse gear shifting fork and its stalk.

c. Install all gear shifting fork into the gear hub, and, at the same time, move the fork stalks in the direction shown in the left figure.

3) Installation of the locking pin

4) Installation of the outer race of bearing

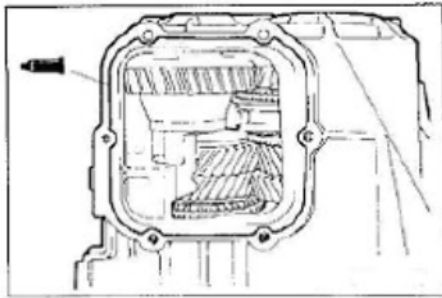
5) Installation of the transmission housing

a. Apply the 1mm to 1.2 mm diameter sealants on the specified position of transmission housing, shown in left figure

CAUTION:

The sealant line applied shall be uniform and continuous, without break or over-paint.

After the completion of the housing installation, screw up the bolts to the specified torque.



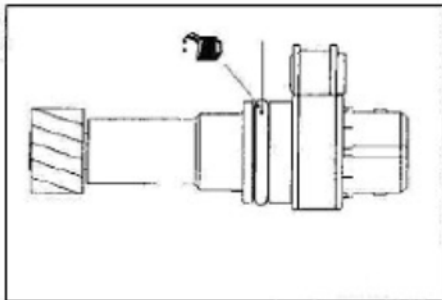
6) Installation of bottom cap-transmission

Apply the 1mm to 1.2 mm diameter sealants on the specified position of transmission housing, shown in left figure.

The specified sealants:

CAUTION:

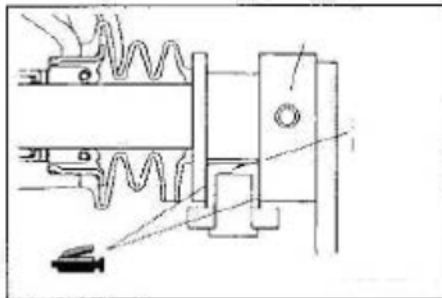
The sealant line applied shall be uniform and continuous, without break or over-paint.



7) Installation of speedometer

Apply the transmission oil on the O-ring of speedometer gear.

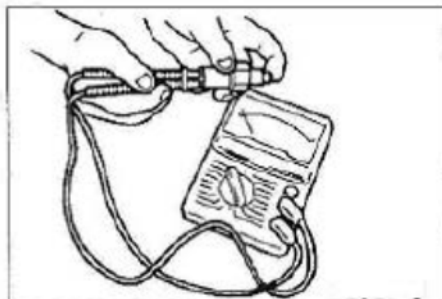
Transmission oil: **75W-90**



8) Installation of the gear shifting arm assembly

Apply the lubricating oil on the contact surface of the gear shifting drive slider and the gear shifting arm assembly.

The specified lubricating oil: **Mobilux Ep2**



9) Examination of reverse lamp switch

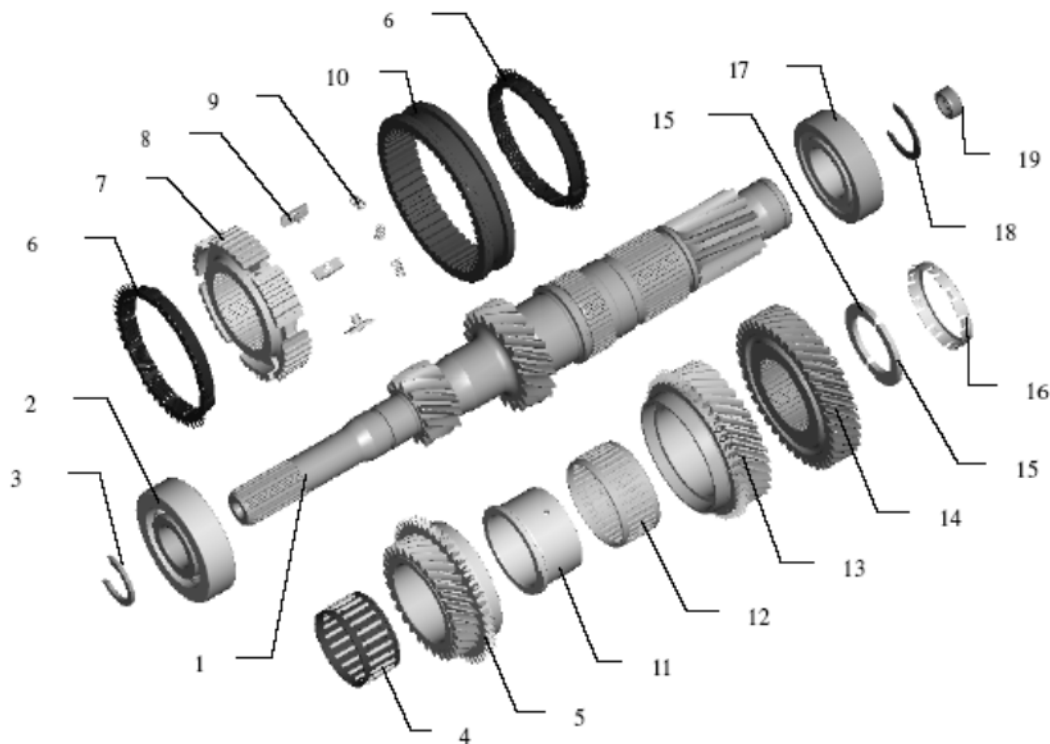
Examine there is no broken circuit between the terminals.

Status of Switch	Circuit
Pressed	OFF
Released	ON

Section IV Input Shaft

1. Disassembly

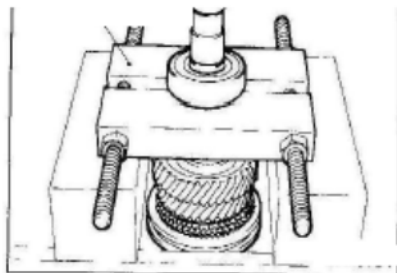
- 1) Apply the gear oil when assembling.
- 2) Lubricate all interior components.



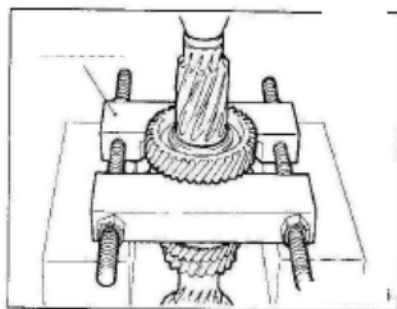
- | | |
|--|--|
| 1. Input shaft | 11. Gear bush-4 th gear |
| 2. Input shaft front bearing | 12. Needle bearing-2 nd -4 th gear |
| 3. Snap ring | 13. 4 th driving gear assembly |
| 4. Needle bearing-3 rd gear | 14. 5 th driving gear |
| 5. 3 rd driving gear assembly | 15. Thrust ring-5 th driving gear |
| 6. Synchronizer ring-3 rd -4 th gear | 16. Clip-5 th driving gear thrust plate |
| 7. Gear hub-3 rd -4 th gear | 17. Input shaft rear bearing |
| 8. Guide block | 18. Snap ring-input shaft rear bearing |
| 9. Spring-3 rd -4 th gear synchronizer | 19. Seal-input shaft oil-collecting hole |
| 10. Gear bush-3 rd -4 th gear | |

2. Disassembly

- 1) Disassembly of input shaft rear bearing.

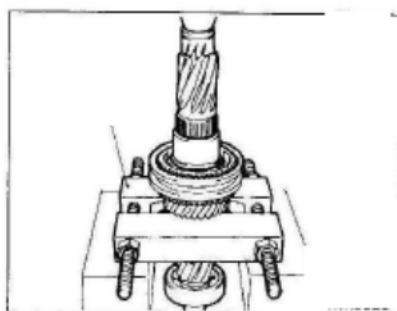


- 2) Disassembly of 5th driving gear.

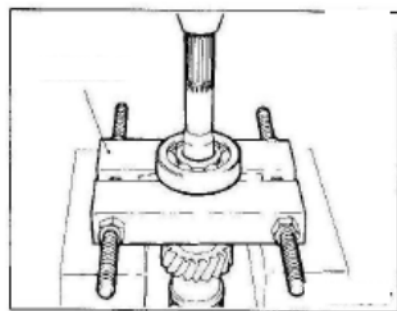


- 3) Disassembly of sleeve-4th gear

Mount the special tool on the 3rd driving gear to disassemble the sleeve-4th gear.

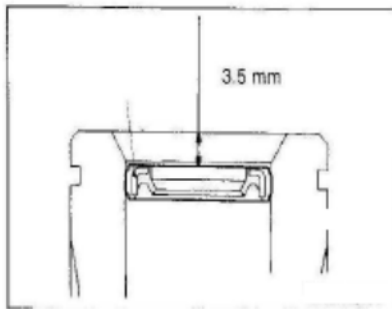


- 4) Disassembly of input shaft front bearing.



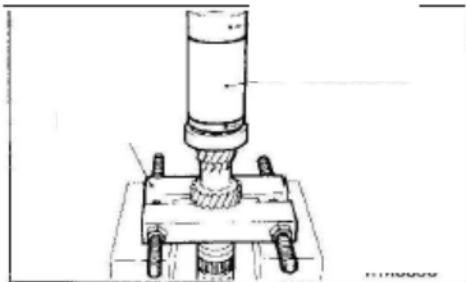


3. Assembly

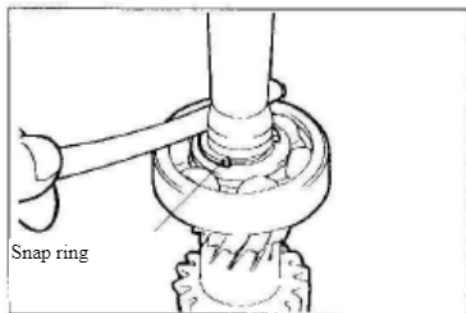


- 1) Installation of seal-input shaft oil-collecting hole

Press in the seal till the dimension shown in the left figure is obtained.



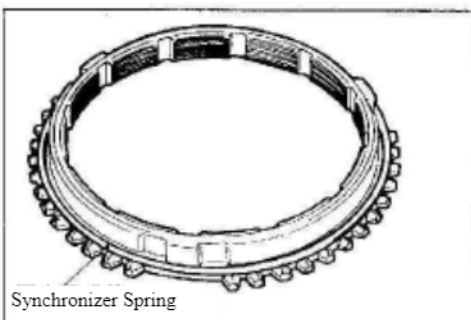
- 2) Installation of input shaft front bearing



- 3) Installation of snap ring-input shaft front shaft

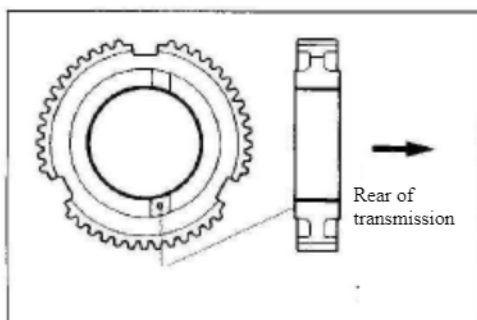
Select the thickness of snap ring to make the axial clearance of input shaft front bearing conform to the standard.

The standard value: 0.01 mm to 0.12 mm



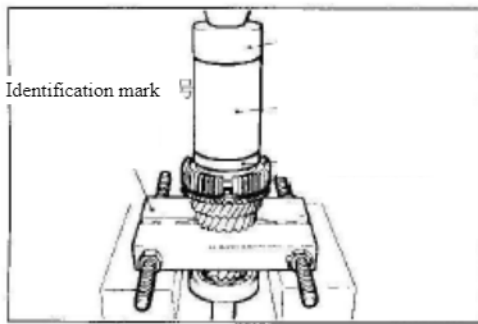
- 4) Installation of synchronizer spring

Install the synchronizer spring on the specified position of the synchronizer ring, shown in the left figure.



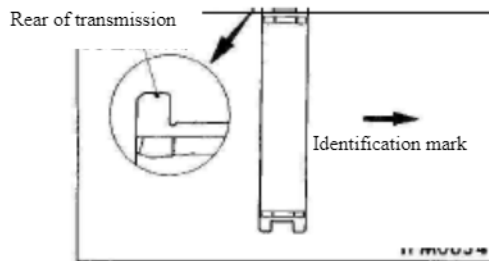
- 5) Installation of gear hub-3rd-4th gear

Install the gear hub-3rd-4th gear in the direction shown in the left figure.



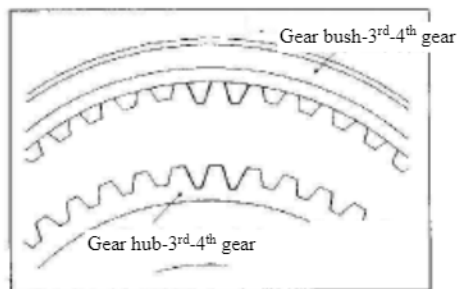
CAUTION:

Confirm that the synchronizer ring is not locked when the installation of gear hub.

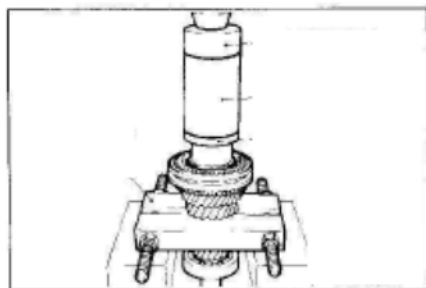


6) Installation of gear bush-3rd-4th gear

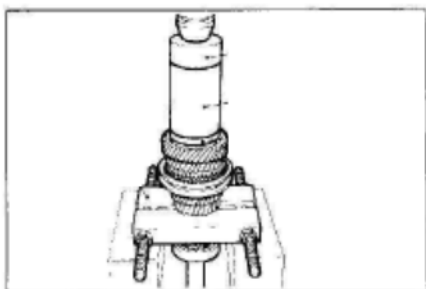
- a. Install the gear bush in the direction shown in the left figure.



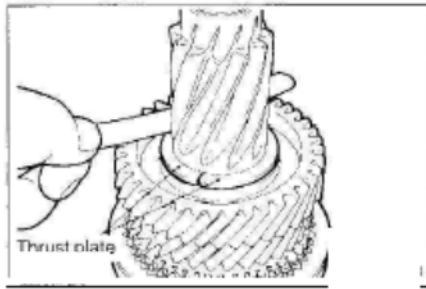
- b. Confirm that these two deep tooth spaces of gear hub are correctly aligned with these two high racks of the gear bush during the installation of gear bush.



7) Installation of sleeve-4th gear.



8) Installation of 5th driving gear.

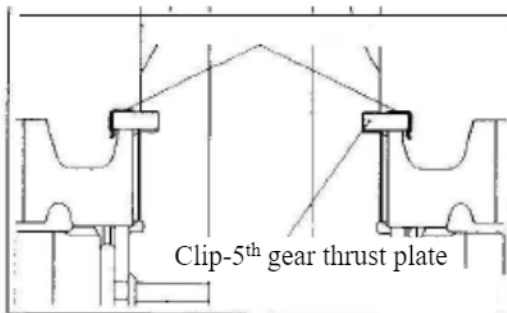


- 9) Installation of transmission housing assembly

Select the thickness of the thrust plate-5th driving gear to make the axial clearance of input shaft 5th driving gear shaft.

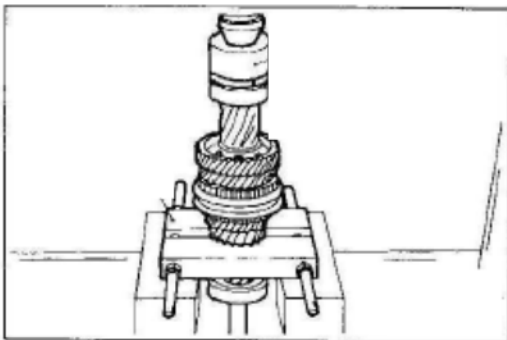
The Standard Value:

-0.01 mm to 0.09 mm

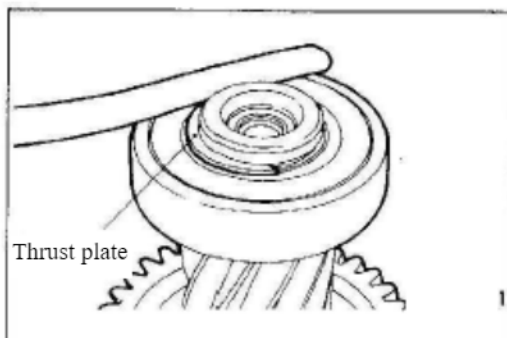


- 10) Installation of clip-5th driving gear thrust plate

Confirm that the thrust plate doesn't tilt when the installation of clip.



- 11) Installation of input shaft rear bearing



- 12) Installation of snap ring

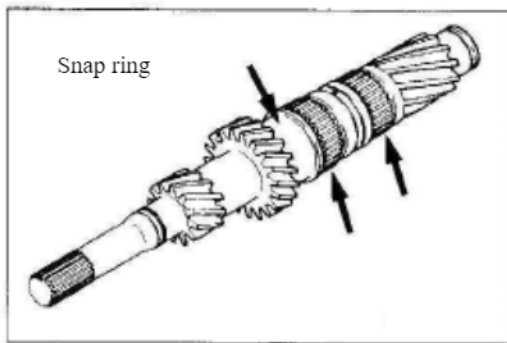
Select the thickness of snap ring to make the axial clearance of input shaft rear bearing conforms to the standard.

Installation of snap ring

The Standard Value: 0.01 mm to 0.12 mm



4. Inspection

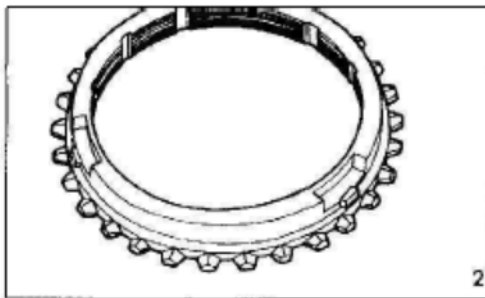


1) Input Shaft

- a. Examine that the external surface of installation part of needle bearing isn't damaged, abnormally worn or locked, and hasn't other faults.
- b. Examine that the spline isn't damaged or worn.

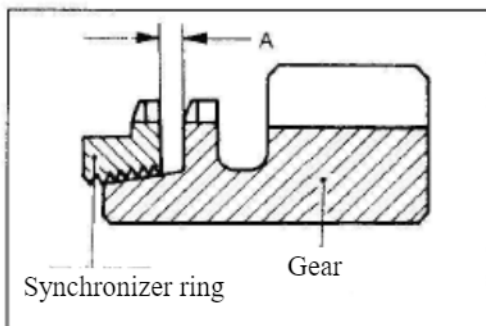
2) Needle Bearing

- a. Examine that the assembly of input shaft and gear is correct and this shaft turns smoothly, without loose or noise and etc.



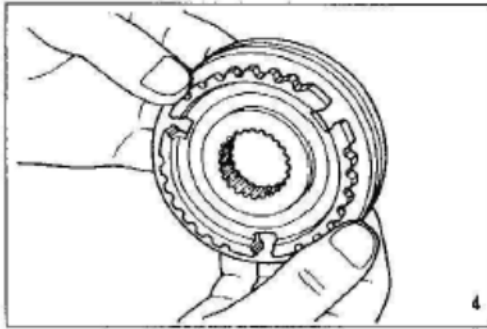
3) Synchronizer Ring

- a. Examine there is no damage or breakage in the surface of synchronizer ring.
- b. Examine there is no damage or wearing in the minor diameter part of conical components, without the crushing damage of screw threads.
- c. Press down the synchronizer ring-3rd-4th gear, and then examine the clearance "A".



If the "A" is less than the limit value, the synchronizer ring-3rd-4th gear shall be replaced.

The Limit Value: 0.5 mm



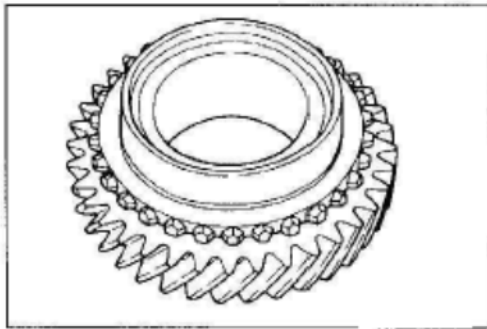
- 4) Gear bush and hub of synchronizer
 - a. Assemble the gear bush together with the gear hub of synchronizer, and then examine they can slide smoothly without lock.
 - b. Examine there is no damage in the front/rear end of the interior surface of gear bush.

CAUTION:

If it is necessary to replace the gear bush and gear hub of the synchronizer, they shall be replaced with a new complete set.

The spring of synchronizer

Examine there is no sagging, deformation or breakage on the spring.

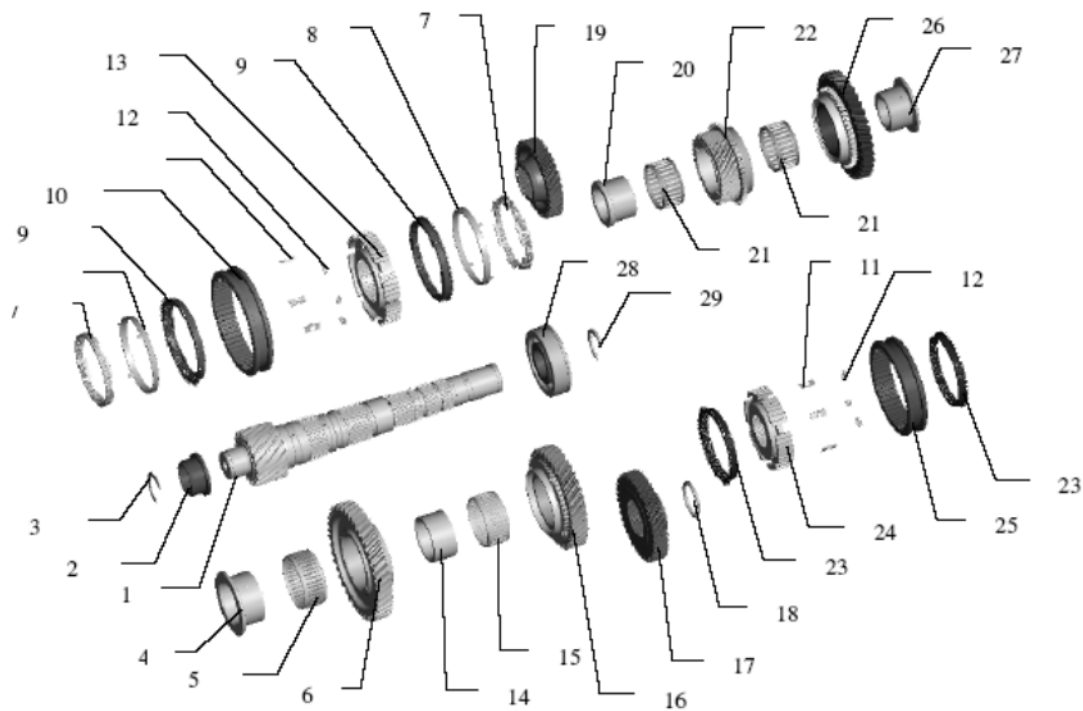


- 5) 3rd-4th driven gear
 - a. Examine there is no damage or wearing on the gear surface of the skew gear and clutch gear.
 - b. Examine there is no thickening, damage or wearing on the conical surface of synchronizer.
 - c. Examine there is no damage or wearing inside the internal diameter of gear and on the front/rear end surface of gear.

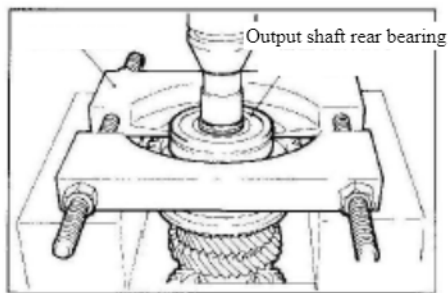
Section V Output Shaft

1. Disassembly

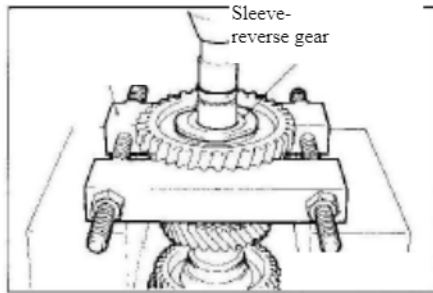
- a. Apply the gear oil when assembling.
- b. Lubricate all interior components.



- | | |
|---|--|
| 1. Output shaft | 14. Sleeve-2 nd gear |
| 2. Output shaft front bearing | 15. Needle bearing-2 nd gear |
| 3. Snap ring-output shaft front bearing | 16. 2 nd driven gear assembly |
| 4. Sleeve-1 st gear | 17. 3 rd driven gear |
| 5. Needle bearing-1 st gear | 18. Snap ring-3 rd driven gear |
| 6. 1 st driven gear assembly | 19. 4 th driven gear |
| 7. Inner ring-1 st -2 nd synchronization ring | 20. Gear bush-5 th gear |
| 8. Steel ring-1 st -2 nd synchronization ring | 21. Needle bearing-reverse gear |
| 9. Outer ring-1 st -2 nd synchronization ring | 22. 5 th driven gear assembly |
| 10. Gear bush-1 st -2 nd synchronizer | 23. Synchronization ring-3 rd -4 th gear and 5 th -reverse gear |
| 11. Guide block | 24. Gear hub-5 th -reverse gear |
| 12. Spring-1 st -2 nd gear and 5 th -reverse gear synchronizer | 25. Gear bush-5 th -reverse gear |
| 13. Gear bush-1 st -2 nd gear | 26. Reverse driven gear assembly |
| | 27. Sleeve-reverse gear |
| | 28. Output shaft rear bearing |
| | 29. Snap ring-output shaft rear bearing |

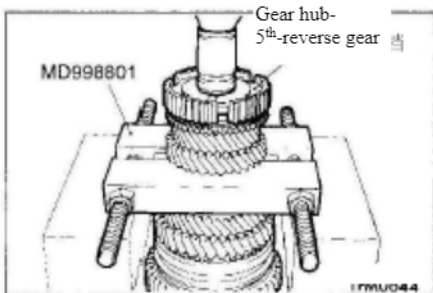


1) Disassembly of output shaft rear bearing



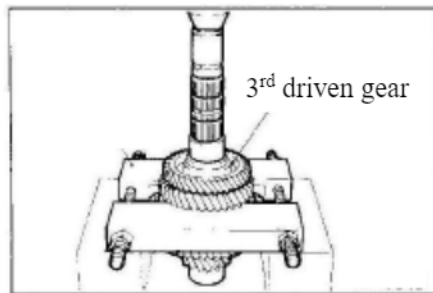
2) Disassembly of sleeve-reverse gear

Install the special tool on the reverse driven gear, and then disassemble the sleeve.



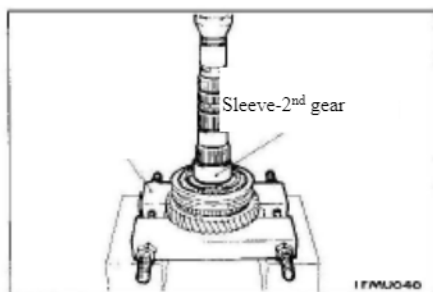
3) Disassembly of 5th-reverse gear synchronizer hub

Install the special tool on the 4th driven gear, and then disassemble the gear hub-5th-reverse gear.



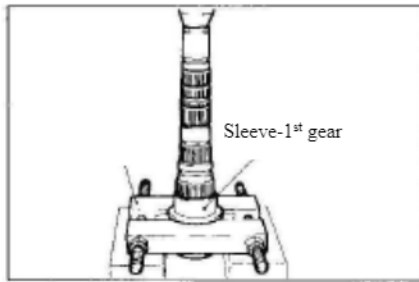
4) Disassembly of 3rd driven gear

Install the special tool on the 2nd driven gear, and then disassemble the 3rd driven gear.

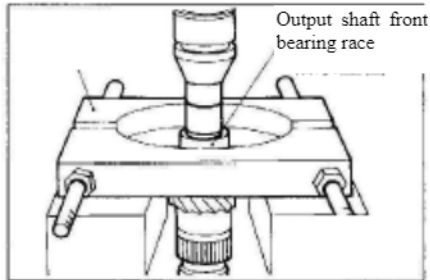


5) Disassembly of sleeve-2nd gear

Install the special tool on the 1st driven gear, and then disassemble the sleeve-2nd gear.

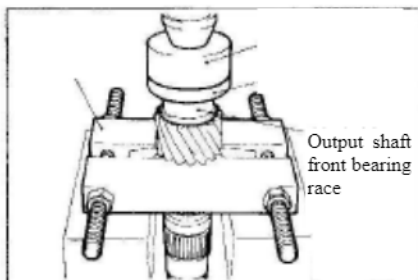


6) Disassembly of sleeve-1st gear

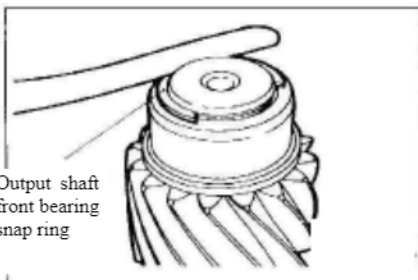


7) Disassembly of output shaft front bearing race

2. Assembly



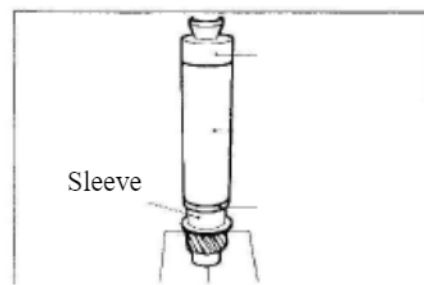
1) Installation of output shaft front bearing race



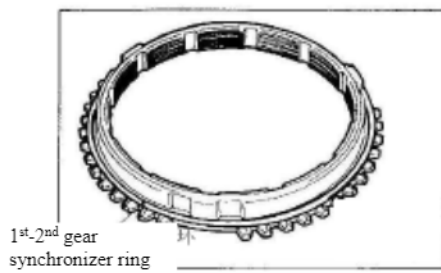
2) Installation of snap ring-output shaft front bearing

Select the snap ring and install it to make the axial clearance of output shaft front bearing conform to the standard value.

The Standard Value: 0.01 mm to 0.12 mm

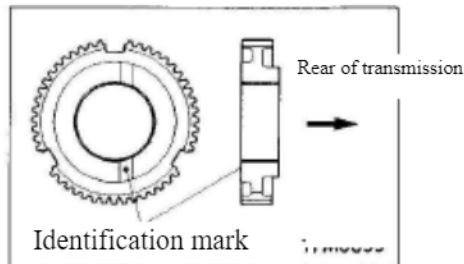


3) Installation of sleeve-1st gear



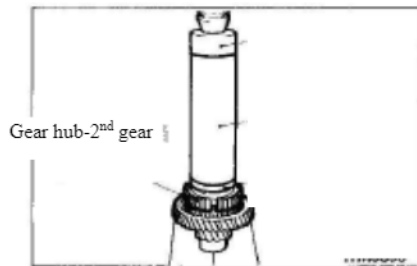
- 4) Installation of the 1st-2nd gear synchronization ring

Install the 1st-2nd gear synchronizer ring correctly on the specified position of synchronizer ring shown in the left figure.



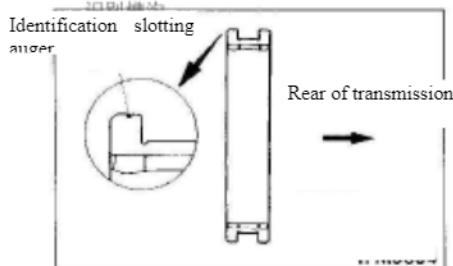
- 5) Installation of the gear hub-1st-2nd gear

Install the gear hub-1st-2nd gear on the position shown in the left figure.



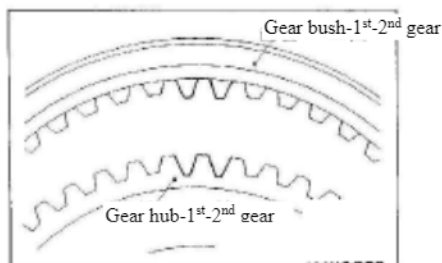
CAUTION:

Confirm that the synchronization ring isn't locked when the installation of gear hub.

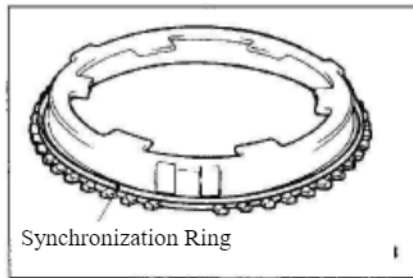


- 6) Installation of the gear bush-1st-2nd gear synchronizer

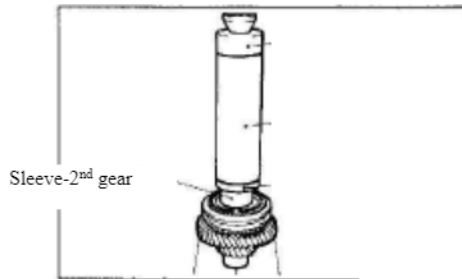
- a. Install the gear bush on the position shown in the left figure.



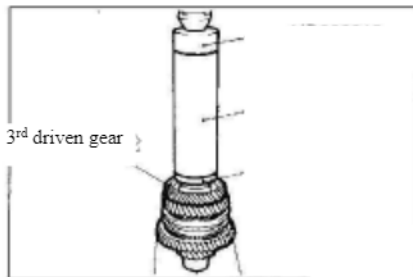
- b. Confirm that these two deep tooth spaces of gear hub are correctly aligned with these two high racks of the gear hub during the installation of gear bush.



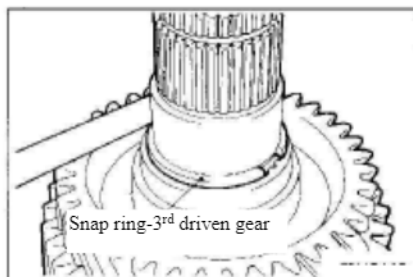
7) Installation of Synchronization Ring



8) Installation of sleeve-2nd gear



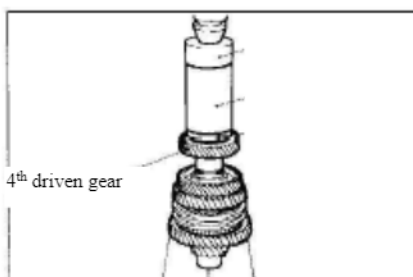
9) Installation of the 3rd driven gear



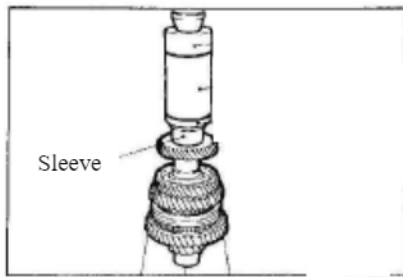
10) Installation of the snap ring- 3rd driven gear

Install the snap ring to make the axial clearance of the output shaft 3rd driven gear conform to the standard value.

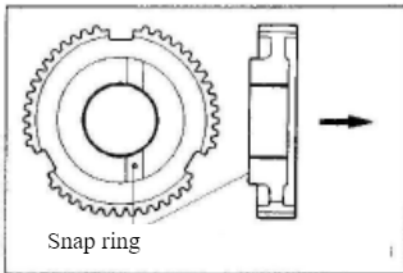
The Standard Value: -0.01 mm to 0.09 mm



11) Installation of 4th driven gear

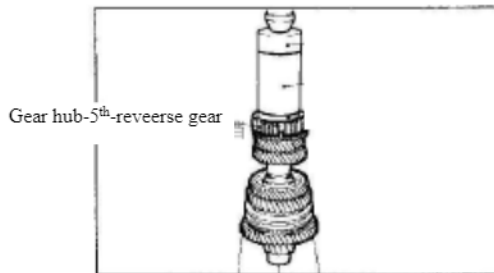


12) Installation of sleeve-5th gear



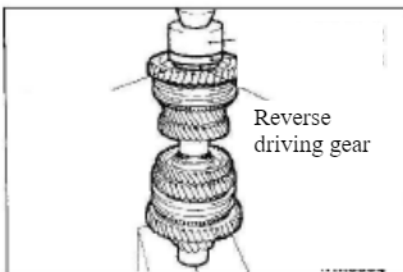
13) Installation of gear hub-5th-reverse gear

Install the gear hub-5th-reverse gear on the position shown in the left figure.

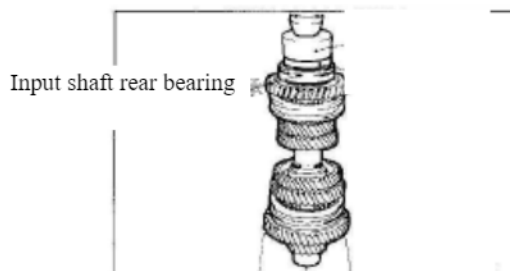


CAUTION:

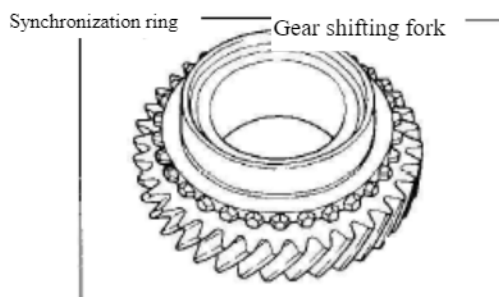
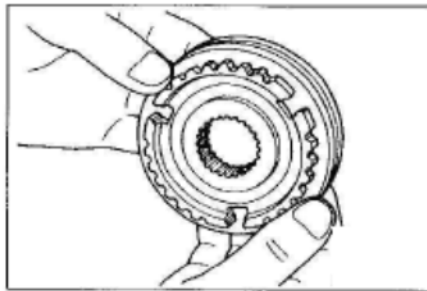
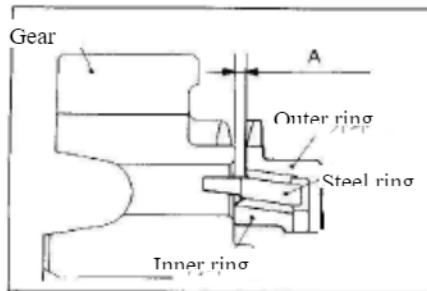
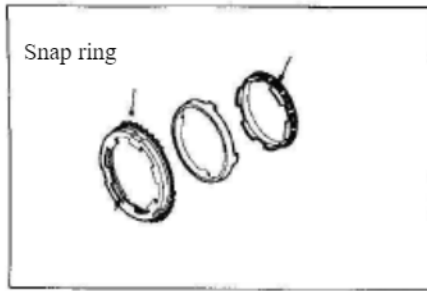
Confirm that the synchronizer ring is not locked during the installation of gear hub-5th-reverse gear.



14) Installation of reverse driven gear/needle bearing-reverse gear/sleeve-reverse gear



15) Installation of input shaft rear bearing



16) Outer ring-1st-2nd gear synchronization ring/steel ring-1st-2nd gear synchronization ring/inner ring-1st-2nd gear synchronization ring

(1) Examine there is no damage or breakage on the gear surface and conical surface of the clutch gear.

(2) Install the outer ring and inner ring, and then press them down to the gear to measure the clearance "A". If the "A" is less than the limit value, these rings shall be replaced.

The limit value: 0.5 mm

CAUTION: If it is necessary to replace the outer ring, inner ring or steel, they shall be replaced with a new complete set.

17) Gear bush and hub of synchronizer

(1) Assemble the gear bush together with the gear hub of synchronizer, and then examine they can slide smoothly.

(2) Examine there is no damage in the front/rear end of the interior surface of gear bush.

CAUTION: If it is necessary to replace the gear bush or gear hub of the synchronizer, they shall be replaced with a new complete set.

The spring of synchronizer

Examine there is no sagging, deformation or breakage on the spring.

18) Transmission gear

(1) Examine there is no damage or wearing on the gear surface of the skew gear and clutch gear.

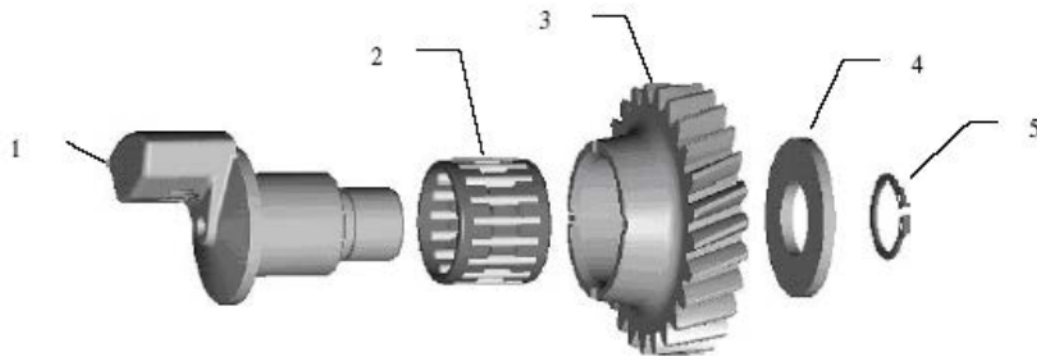
(2) Examine there is no thickening, damage or wearing on the steel ring-synchronization ring.

(3) Examine there is no damage or wearing inside the internal surface of gear and on the front/rear end surface of gear.

Section VI Intermediate Gear for Reverse Gear

1. Disassembly and Assembly

- a. Apply the gear oil (**75W-90**) when assembling
- b. Lubricate all interior components



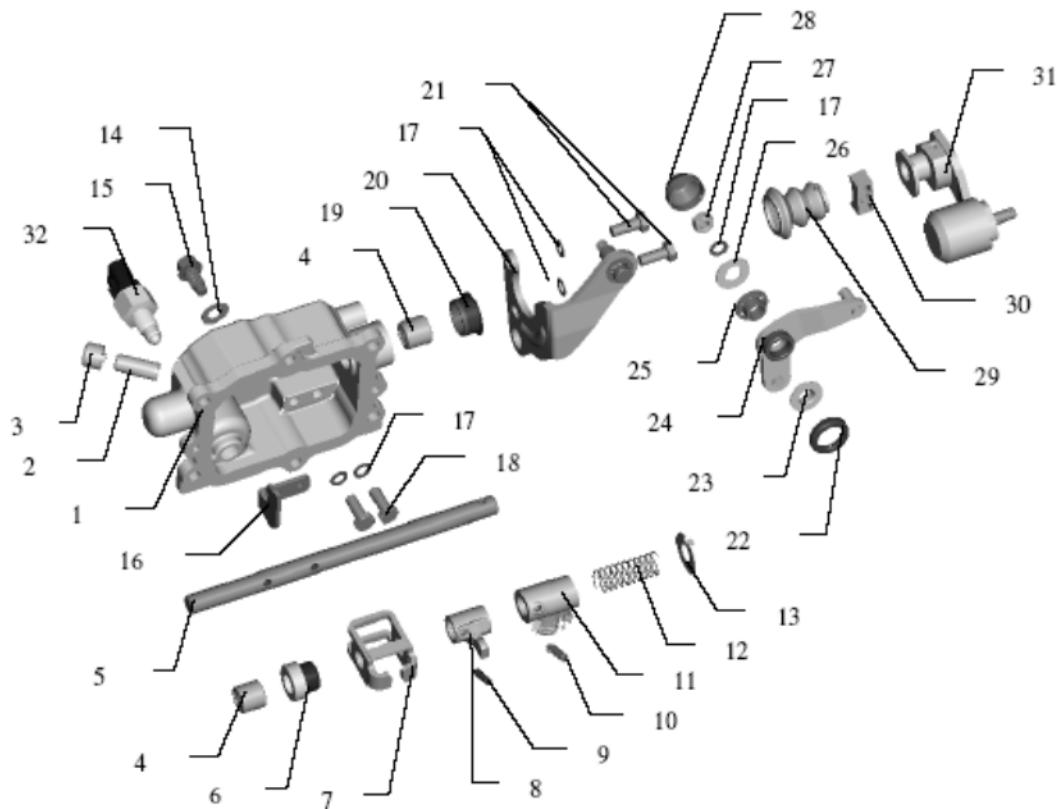
1. Idler shaft
2. Needle bearing-idler
3. Reverse gear idler
4. Thrust plate-idler
5. Snap ring-idler thrust plate

2. Inspection

1) Needle Bearing

- (1) Assemble the shaft together with the gear, and then examine they can slide smoothly without sagging or noise.
- (2) Examine there is no deformation in the bearing cage.

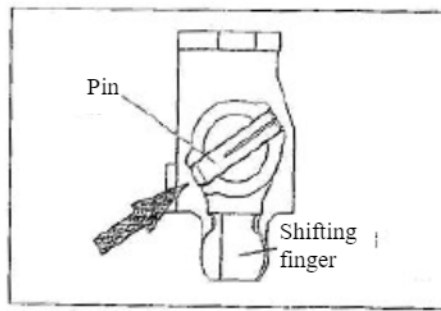
Section VII Gear Shifting Mechanism



- | | |
|--|---|
| 1. Gear shifting mechanism housing | 17. Washer GB938 |
| 2. Air guide pipe | 18. Bolt GB5783 M8X22 |
| 3. Air guide pipe cap | 19. Oil seal-gear shifting shaft |
| 4. Bearing-gear shifting mechanism | 20. Gear selecting arm support assembly |
| 5. Gear shifting shaft | 21. Bolt GB5783 M8X20 |
| 6. Front neutral position return spring assembly | 22. Lower dust cap-gear selecting arm |
| 7. Interlocking plate assembly | 23. Lower bush-gear selecting arm |
| 8. Gear shifting finger | 24. Gear selecting arm assembly |
| 9. Pin GB879 5X22 | 25. Upper bush-gear selecting arm |
| 10. Pin GB879 6X26 | 26. Plain washer-gear selecting arm nut |
| 11. Reverse gear locking mechanism assembly | 27. Nut GB6170 M8 |
| 12. Rear neutral position return spring | 28. Upper dust cap-gear selecting arm |
| 13. Baffle-rear neutral position return spring | 29. Dust cap-gear shifting shaft oil seal |
| 14. Plain washer-interlocking plate limit stop screw | 30. Gear shifting drive slider |
| 15. Limit stop screw-interlocking plate | 31. Gear shifting arm assembly |
| 16. Retainer plate-reverse gear locking mechanism | 32. Reverse lamp switch assembly |



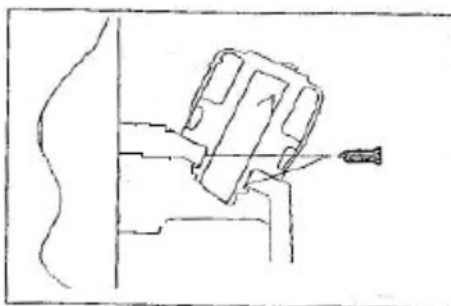
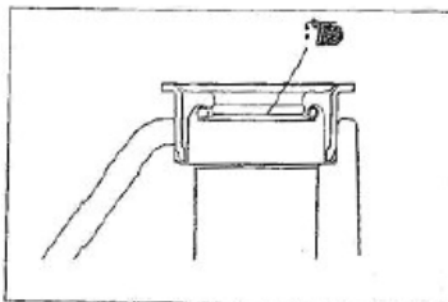
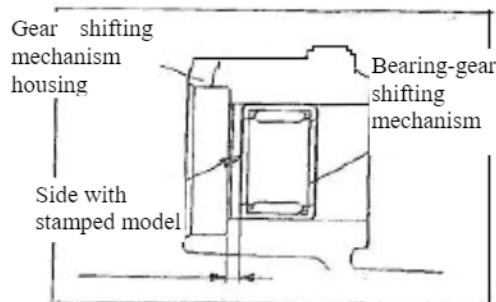
1. Disassembly



Disassembly of lock pin:

Punch out the lock pin in this direction shown in the left figure.

2. Assembly



1) Installation of the needle bearing

Press in the needle bearing to the dimension shown in the left figure. In this case, the side surface with the stamped model shall be in the side of controller housing.

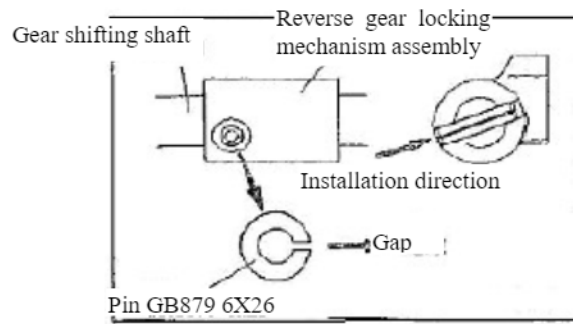
2) Installation of oil seal

Apply the transmission oil on the oil seal lip.

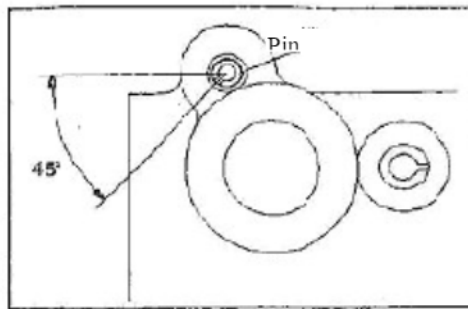
The transmission oil: 75W-90

3) Installation of vent

(1) Apply the sealants on the surface of the inserted part.

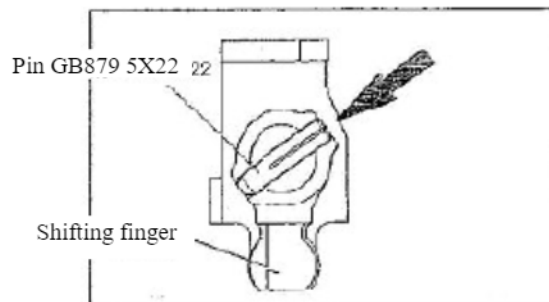


4) Installation of spring pin



5) Installation of spring pin

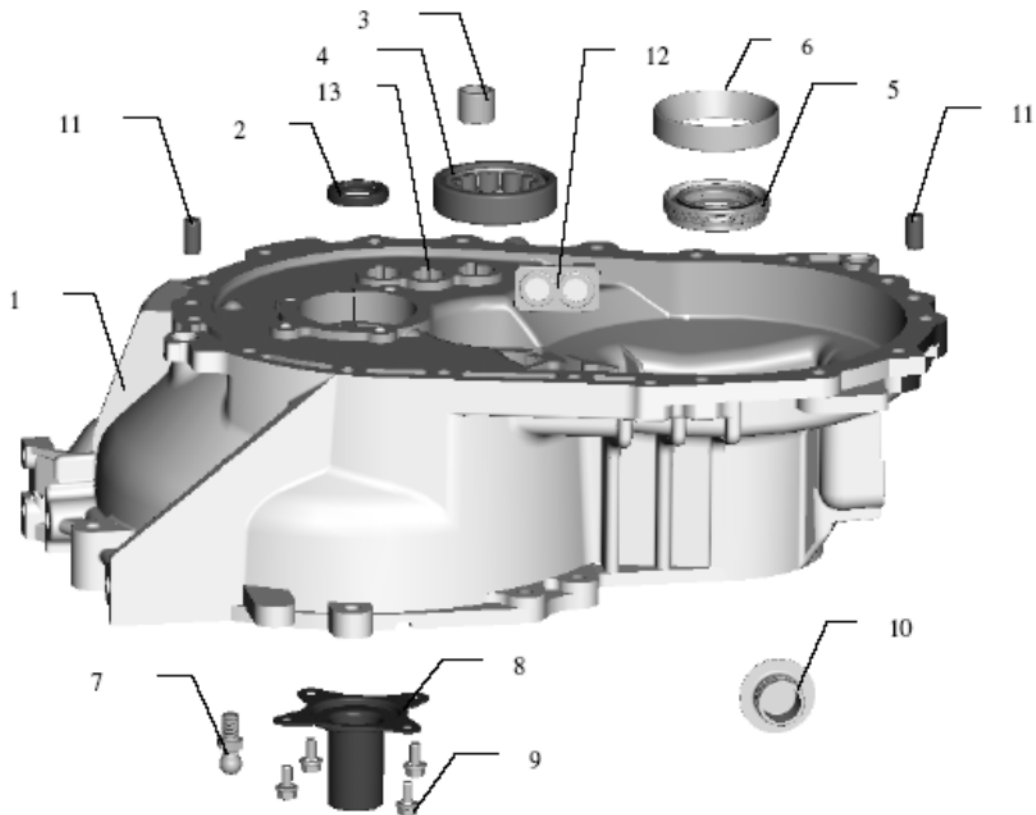
Punch out the lock pin in this direction shown in the left figure.



6) Installation of lock pin



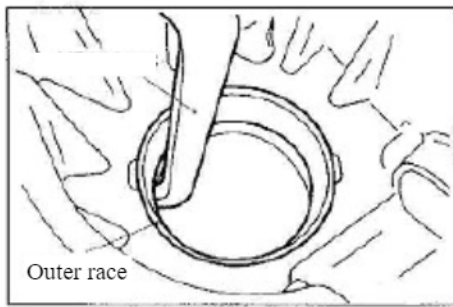
Section VIII Clutch Box



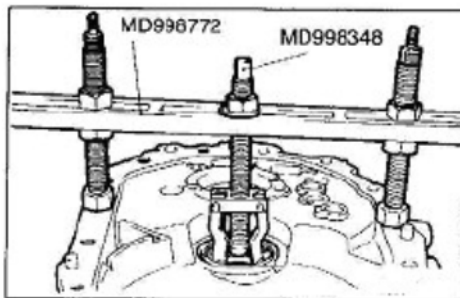
- | | |
|---------------------------------------|----------------------------------|
| 1. Clutch box | 8. Release bearing race |
| 2. Oil seal-input shaft | 9. Bolt GB5787 M6×12 |
| 3. Bearing-gear shifting mechanism | 10. Speedometer banking cover |
| 4. Output shaft front bearing | 11. Pin GB119 A10×20 |
| 5. Oil seal-differential | 12. Magnetic assembly |
| 6. Front/rear bearing of differential | 13. Bush-gear shifting mechanism |
| 7. Buttonhead-seat release fork | |



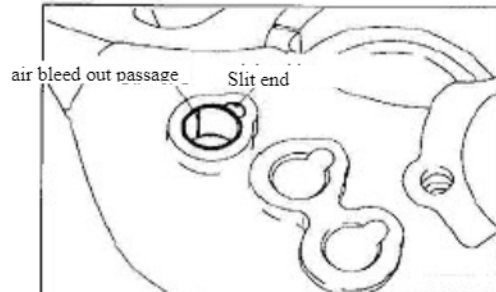
1. Assembly



- 1) Disassembly of the outer race of front/rear bearing of differential

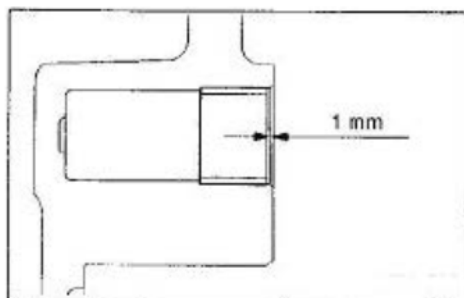


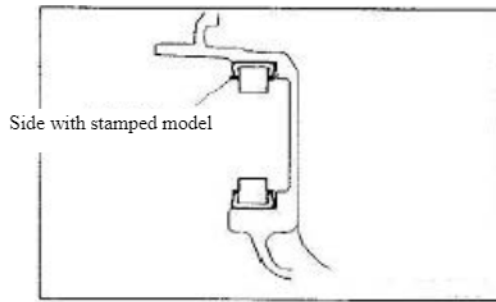
2. Assembly



- 1) Installation of bush

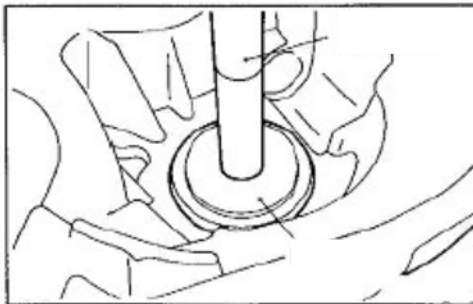
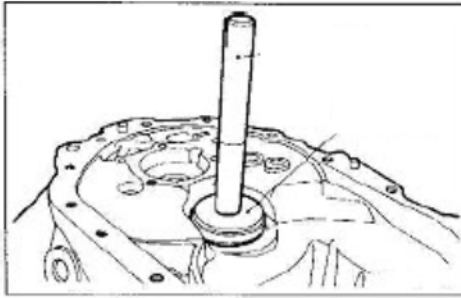
Press the bush into its own position, shown in the left figure, to ensure the air bleed out passage doesn't conform to the slit end.



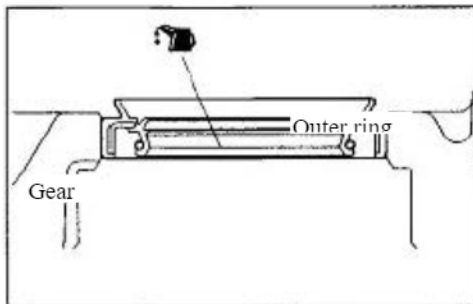


- 2) Installation of the outer race-output shaft bearing

Install the outer race to place the side surface with stamped model on the position shown in the left figure.

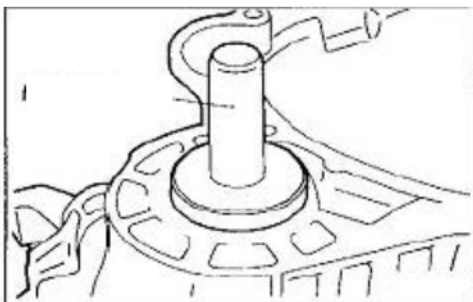


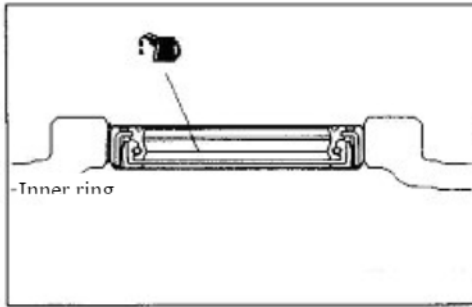
- 1) Installation of the race-differential bearing



- 2) Installation of the oil seal-differential
- Apply the transmission oil on the oil seal lip.

The specified oil: 75W-90



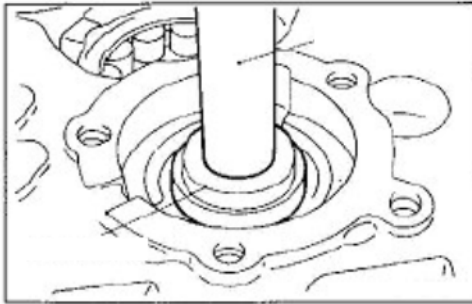


3) Installation of the oil seal-input shaft

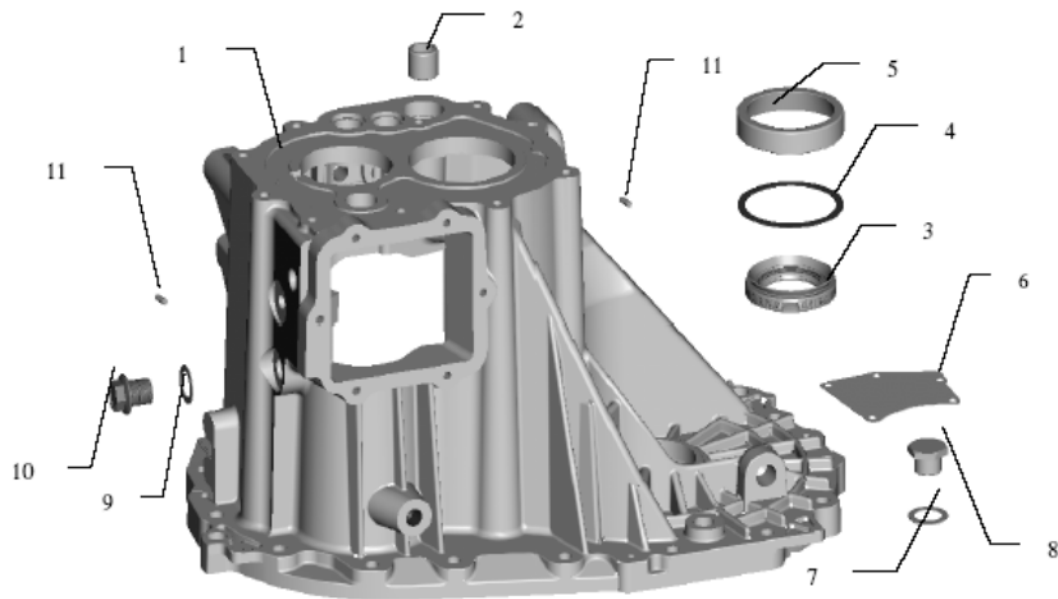
Apply the lubricating grease on the oil seal lip.

The specified lubricating grease

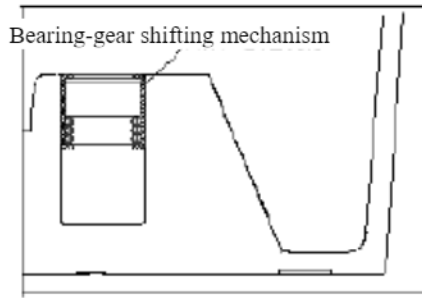
Mobilux Ep2 or equivalents



Section IX Transmission Housing Assembly

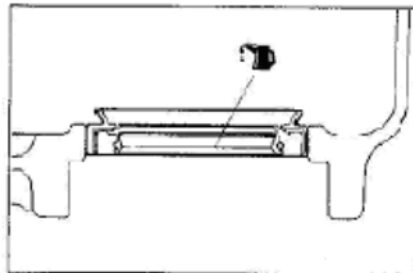


1. Transmission housing
2. Bearing-gear shifting mechanism
3. Oil seal-differential
4. Adjustment gasket-differential rear bearing
5. Outer race of front/rear bearing of differential
6. Oil baffle
7. Plain washer-oil draining screw plug
8. Oil draining screw plug
9. Plain washer-oil limiting screw plug
10. Oil limiting screw plug
11. Pin **GB119**



- 1) Installation of bearing-gear shifting mechanism

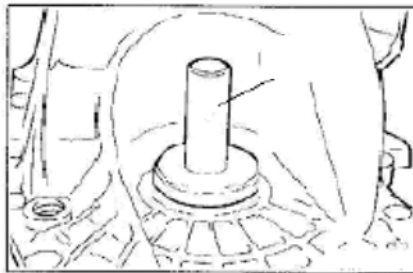
Press in the bearing till to flush with the surface of housing.



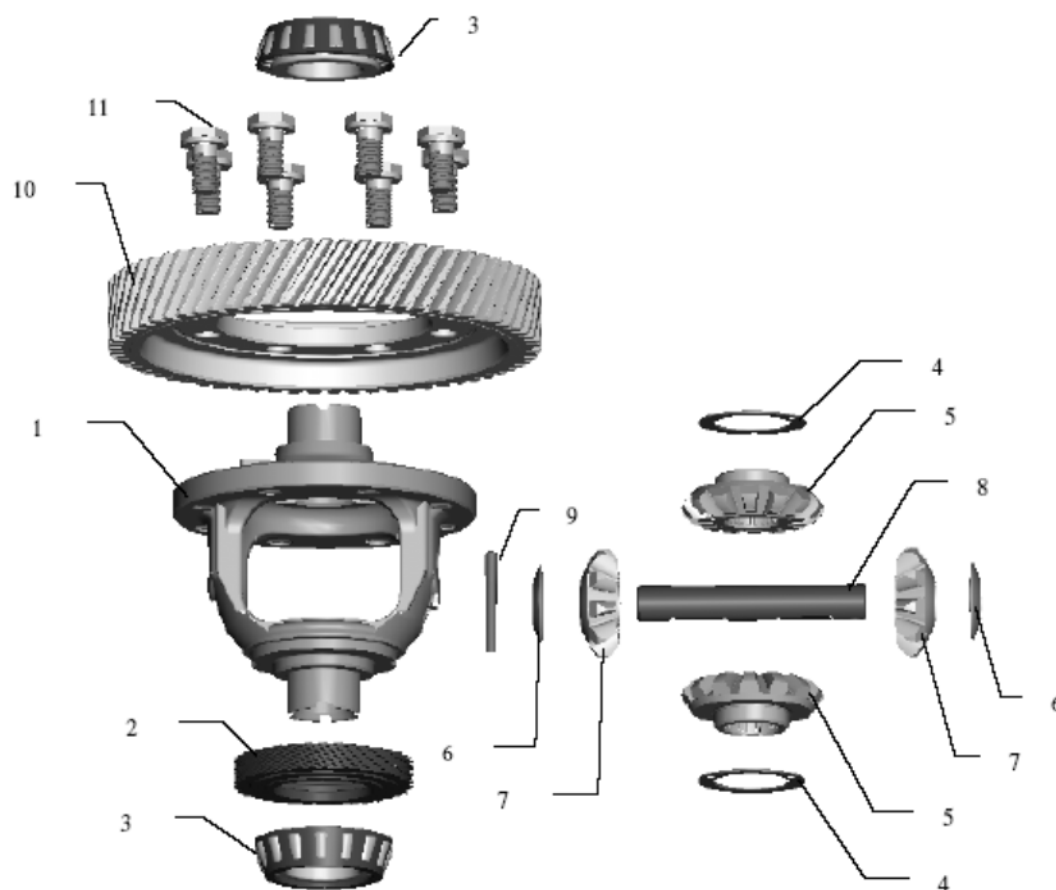
- 2) Installation of the oil seal-differential

Examine that the oil seal has no damage, apply the lubricating grease on the external diameter and inner lip mouth of the oil seal, and then use the special tool to install the seal into the specified position.

The lubricating grease: Mobilux Ep2



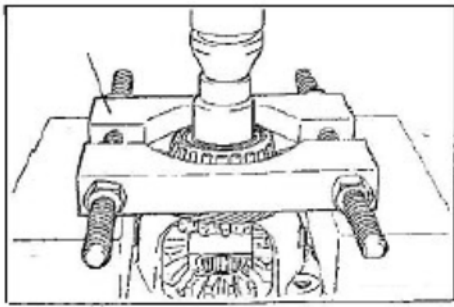
Section X Differential Assembly



1. Differential housing
2. The driving gear-speedometer
3. Front/rear bearing of differential
4. Adjustment gasket-axle shaft gear
5. Axle shaft gear
6. Spherical washer-planetary gear
7. Planetary gear
8. Planetary gear shaft
9. Anchor pin-planetary gear shaft
10. The driven gear of main reducing gear
11. Bolt-the driven gear of main reducing gear and the differential housing

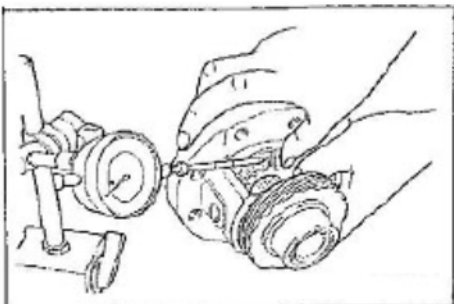
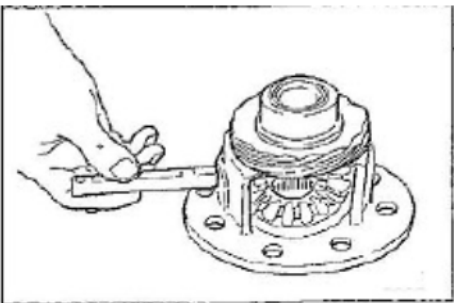
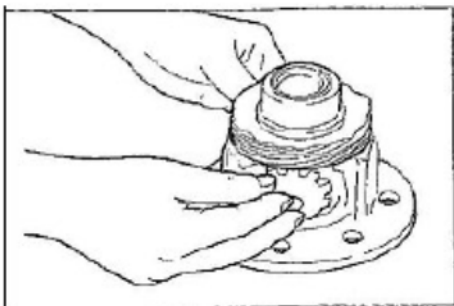


1. Disassembly



Disassembly of the differential-front/rear shaft bearing

2. Assembly



- 1) Installation of adjustment gasket-axle shaft gear/axle shaft gear/spherical washer-planetary gear/planetary gear shaft

- (1) Assemble the spherical washer on the back of axle shaft gear, and then install the axle shaft gear on the differential.

Remarks: The adjustment gasket with intermediate thickness (0.93 to 1.00 mm) shall be assembled when a new axle shaft gear is installed.

- (2) Place the spherical washer on the back of any planetary gear to make two planetary gears engage simultaneously with the axle shaft gear. Turn these gears, and, at the same time, install them on their proper positions.

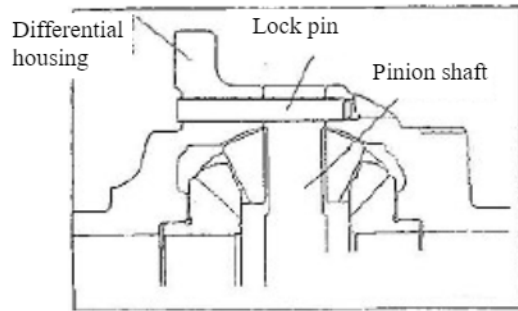
- (3) Insert and install the planetary gear shaft.

- (4) Measure the gear clearance between the axle shaft gear and the planetary gear.

The standard value: 0.08 to 0.15 mm

- (5) If the measured gear clearance doesn't conform to the standard value, select and install the adjustment gasket, and then measure the gear clearance again.

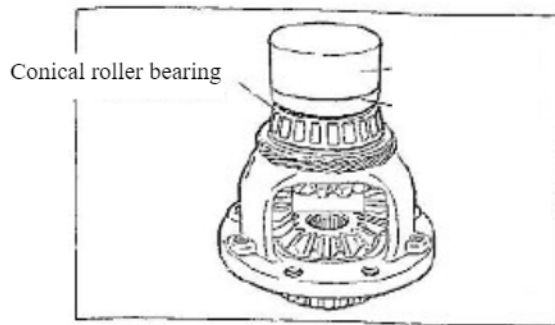
Remarks: Adjust the gear clearance till that the gear clearances of both sides is the same as each other.



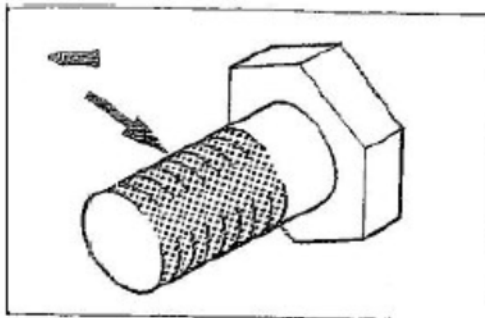
1) Installation of the lock pin

Install the lock pin on the position shown in the left figure.

CAUTION: After the lock pin is taped in, the axle shaft gear and the planetary gear shall operate normally.

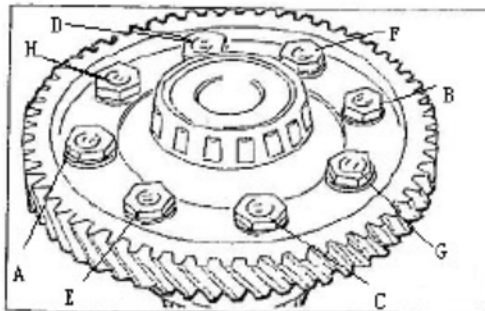


2) Installation of the front/rear bearing of differential



3) Installation of the driven gear of main reducing gear

(1) Apply the sealant on the full screw threads of a bolt.



(2) Screw up the bolt in the sequence, shown in the left figure, to the specified torque (132N.M).