DAIHATSU
G202
Chassis

MANUAL TRANSMISSION

G2MT00001-00000

SPECIFICATIONS

Vehicle model			G202		
			FMDS	GMDS	YMDS
Transmission	Type	Forward	Constant-mesh type		
		Reverse	Selective sliding type		
	Operation method		Floor shift type		
	Gear ratio	1st gear	3.090		
		2nd gear	1.842		
		3rd gear	1.250		
		4th gear	0.864		
		5th gear	0.707		
		Reverse	3.142		
Final reduction gear	Type		Conventional type		
	Gear type		Helical gear		
	Reduction ratio		4.933 [4.642]		
Differential gear	Housing type		Integral with transmission case		
	Gear type and number		Straight bevel gear, 2-large 2-small		

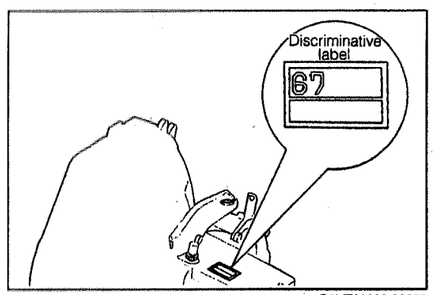
[ ]: Australian and European Specifications

G2MT00002-00000

DISCRIMINATION [Reference]

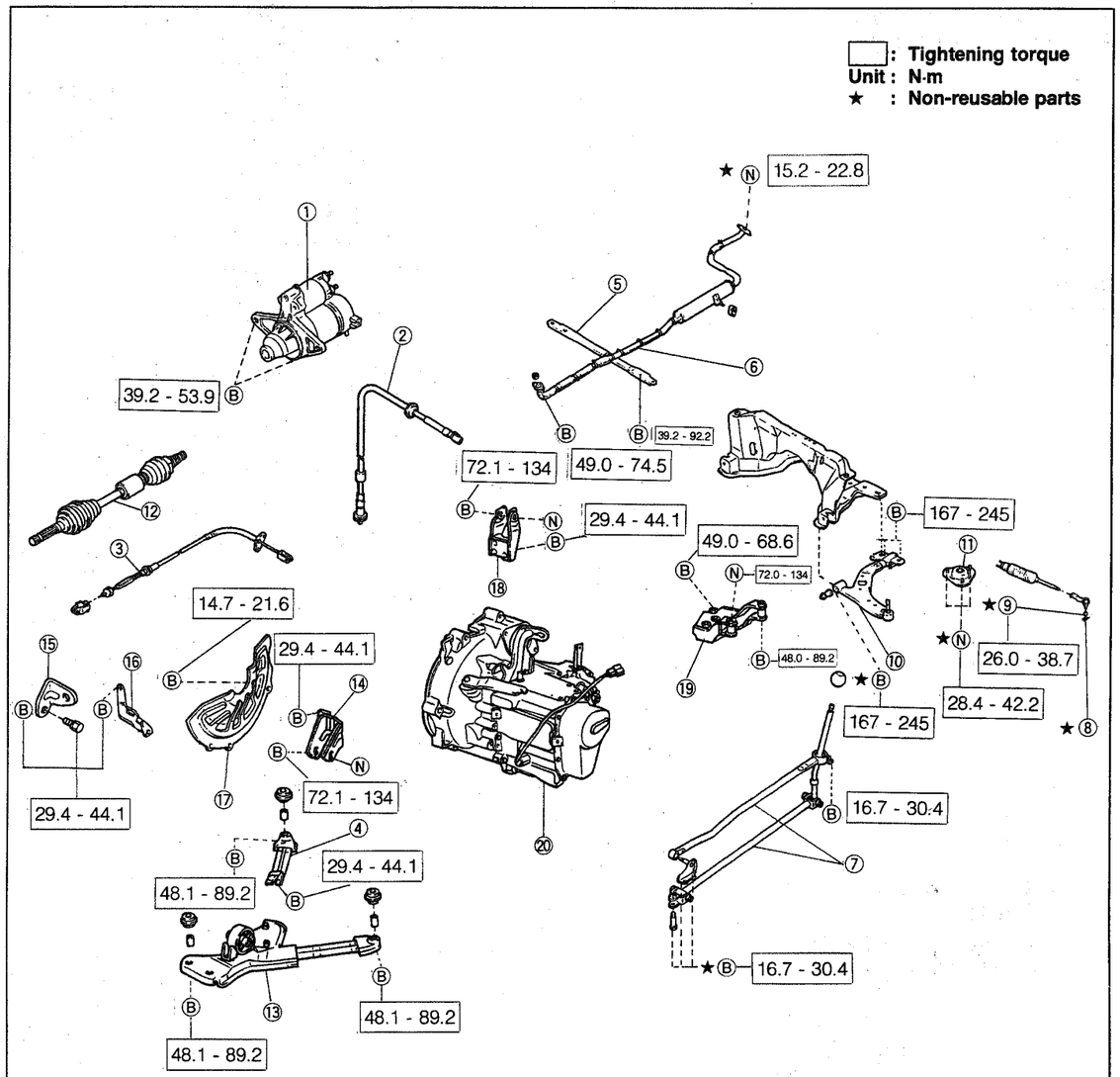
The label for the discrimination of a manual transaxle assembly is affixed on the upper surface of it.

Specifications	General	European Australian
Reduction ratio	4.933	4.642
Discriminative No.	67	66



G2MT00003-99999

TRANSAXLE ASSEMBLY

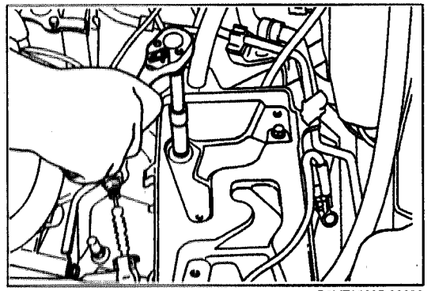


① Starter assembly
② Speedometer cable
③ Clutch cable
④ Engine lower mounting No. 2 member
⑤ Lower arm bracket connecting rod
⑥ Front exhaust pipe
⑦ Shift control shaft
⑧ Clip
⑨ Castle nut
⑩ Lower arm
⑪ Shock absorber upper support
⑫ Drive shaft
⑬ Engine lower mounting member
⑭ Engine front stopper bracket
⑮ Manifold stay
⑯ Stiffener front plate
⑰ Clutch housing under cover
⑱ Engine mounting rear bracket
⑲ Engine mounting upper left bracket
⑳ Transaxle assembly

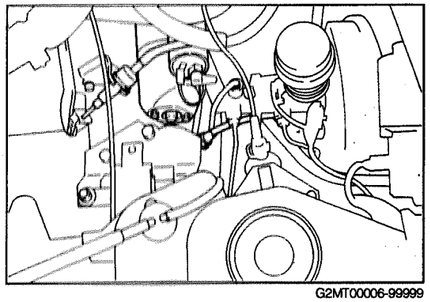
G2MT00004-99999

REMOVAL

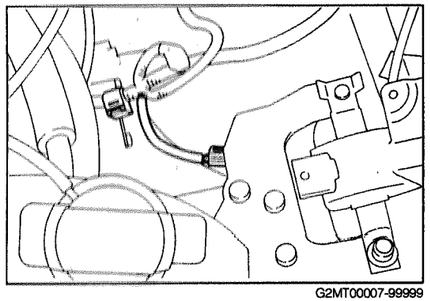
1. Remove the battery.
2. Remove the battery under tray.


G2MT00005-99999

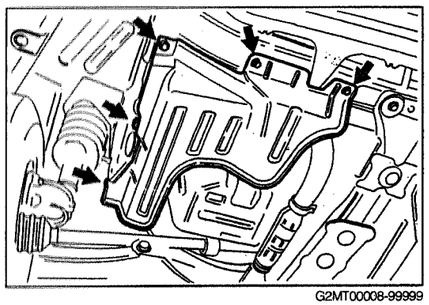
3. Remove the starter.
4. Disconnect the speedometer cable.
5. Disconnect the clutch cable.


G2MT00006-99999

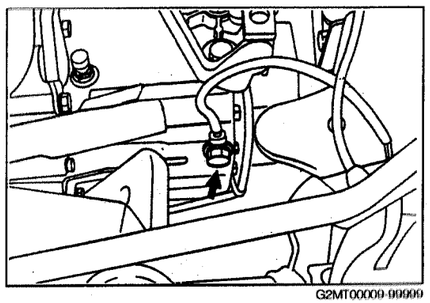
6. Disconnect the engine harness from the clamp.
7. Disconnect the backup lamp connector.


G2MT00007-99999

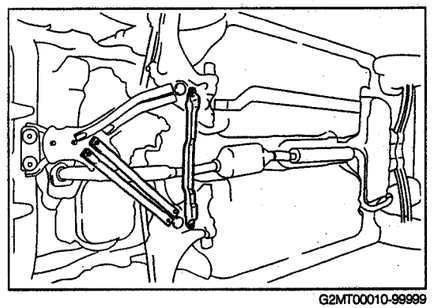
8. Jack up the vehicle.
   CAUTION:
   - Be sure to support the vehicle securely by means of safety stands and to place chocks.


G2MT00008-99999

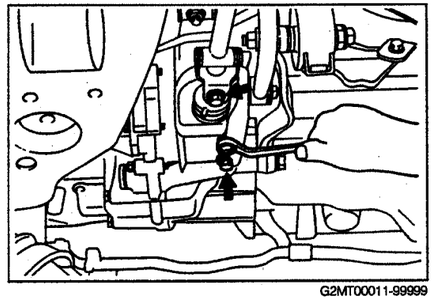
9. Remove the front wheels.
10. Drain the transmission oil.
11. Remove the engine undercovers.
12. Disconnect the earth cord.


G2MT00009-99999

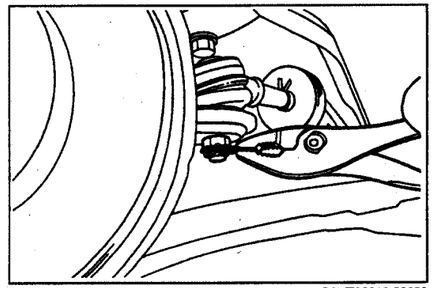
13. Remove the engine lower mounting No. 2 member.
14. Remove the lower arm bracket connecting rod.
15. Remove the front exhaust pipe assembly.
    NOTE:
    - Never reuse the removed exhaust pipe gasket.
    - Never reuse the removed nut for rear side.


G2MT00010-99999

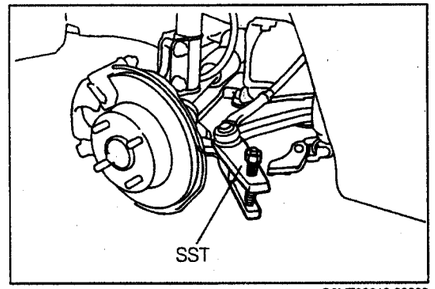
16. Disconnect the extension rod side and the shift shaft side of the shift control shaft from the manual transaxle.
    NOTE:
    - Never reuse the removed bolts.


G2MT00011-99999

17. Loosen the attaching nuts for the upper support (RH, LH) of the shock absorber fully.
    NOTE:
    - Never reuse the loosened nuts.
18. Pull out the clip (RH, LH) for the tie rod end.
    NOTE:
    - Never reuse the removed clip.

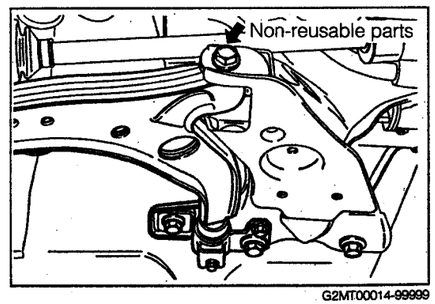

G2MT00012-99999

19. Remove the castle nut.
    NOTE:
    - Never reuse the removed castle nut.
20. Disconnect the tie rod end from the steering knuckle by using the following SST.
    SST: 09611-87701-000



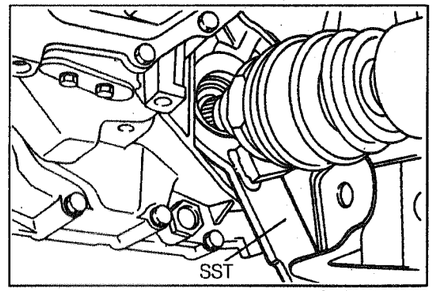
G2MT00013-99999

21. Disconnect the lower arm (RH, LH) from the front suspension cross member subassembly.
    NOTE:
    - Never reuse the removed bolt refer to the right figure.



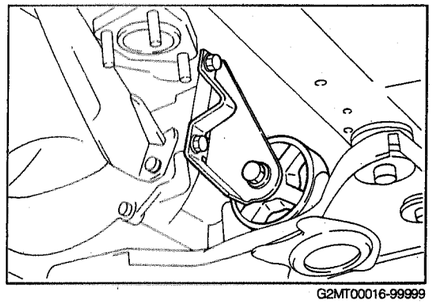
G2MT00014-99999

22. Pull out the drive shaft from the manual transaxle by using the following SST.
    SST: 09648-87201-000

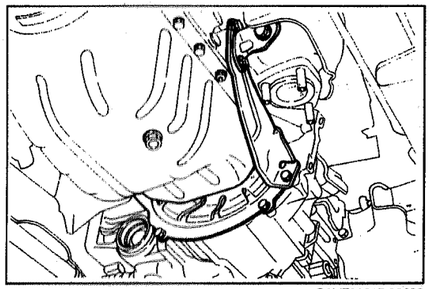


G2MT00015-99999

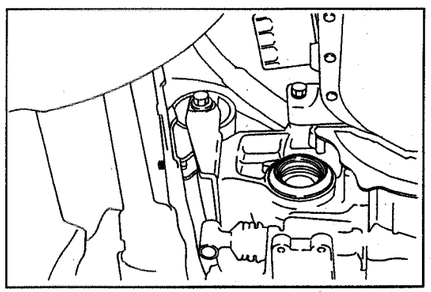
23. Disconnect the engine front stopper bracket from the engine mounting front insulator by removing the attaching bolt.
24. Remove the engine lower mounting member together with the engine mounting front insulator.


G2MT00016-99999

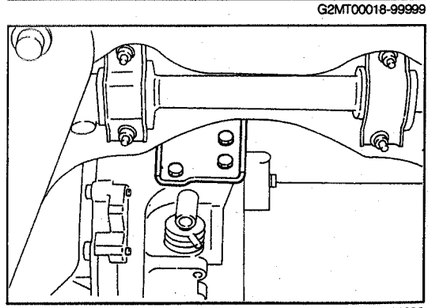
25. Remove the engine front stopper bracket.
26. Remove the manifold stay.
27. Remove the stiffener front plate.
28. Remove the clutch housing under cover.


G2MT00017-99999

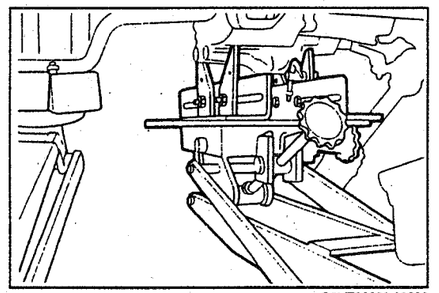
29. Loosen the attaching bolts for the transaxle to the cylinder block.
30. Disconnect the engine mounting rear bracket from the engine mounting rear insulator by removing the attaching bolt.


G2MT00018-99999

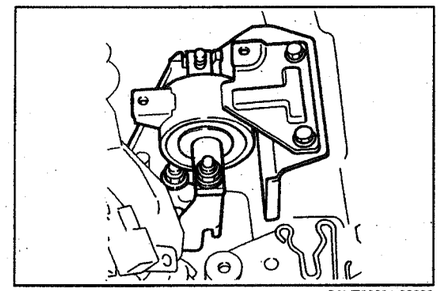
31. Remove the engine mounting rear bracket from the transaxle.


G2MT00019-99999

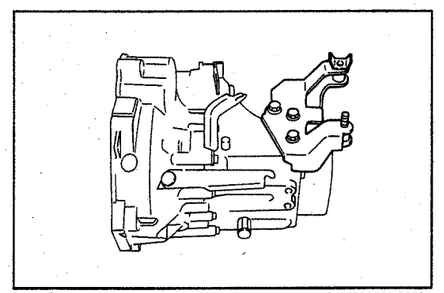
32. Support the engine and transmission, using respective jacks.


G2MT00020-99999

33. Disconnect the engine mounting upper left bracket from the engine mounting left insulator.
34. Remove the bolt that was left in a loosened state in the step 29. Remove the transmission assembly from the engine.
    NOTE:
    - **To remove the transmission, it may be necessary to slightly lower the engine. However, do not lower the engine beyond an extent required for the removal.**

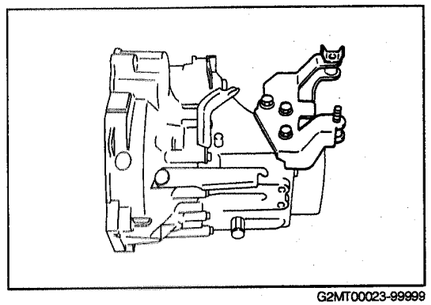

G2MT00021-99999

35. Remove the engine mounting upper left bracket.

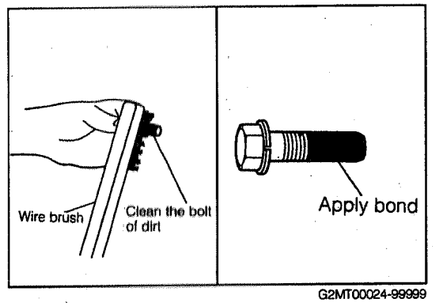

G2MT00022-99999

INSTALLATION

1. Install the engine mounting left bracket to the transaxle.
   Tightening Torque: 49.0 - 68.6 N·m
   (5.0 - 7.0 kgf-m, 36.2 - 50.6 ft-lb)


G2MT00023-99999

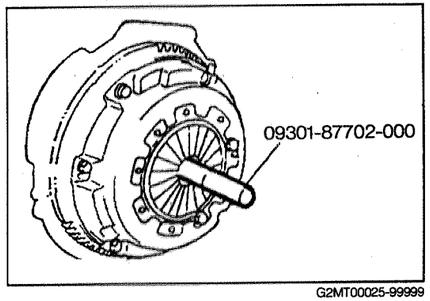
NOTE:
- The attaching bolt of the engine mounting left bracket is coated with the lock agent. Be sure to clean up the attaching bolt by using a wire brush or the like.
- Be sure to apply bond to the bolt before attaching it.



G2MT00024-99999

2. Check the clutch disc is centered in position, using the following SST.
   SST: 09301-87702-000

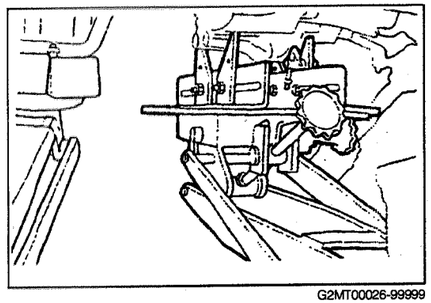
3. Check that the knock pins are set securely in the engine side.



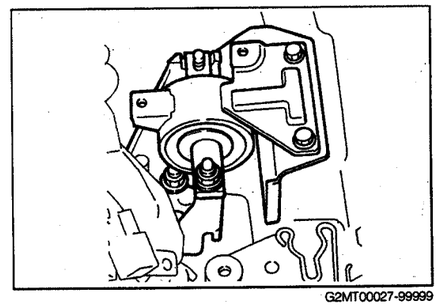
G2MT00025-99999

4. Set the transmission jack under the transaxle.
   Tighten the attaching bolts of the engine assembly and the transaxle while raising the transmission jack slowly.
   Tightening Torque: 49.0 - 68.6 N·m
   (5.0 - 7.0 kgf-m, 36.2 - 50.6 ft-lb)

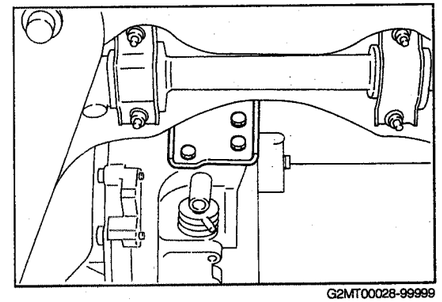
NOTE:
- Be sure to care about the tightening position together with a harness clamp. Refer to the tightening position indicated in the right figure.


G2MT00026-99999

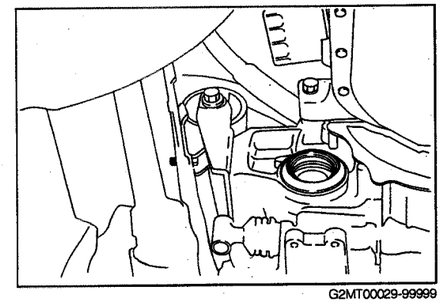
5. Connect the engine mounting left insulator and the mounting bracket (transaxle side).
   Tightening Torque: 72.1 - 134 N·m (Nut)
   (7.4 - 13.7 kgf-m, 53.1 - 98.7 ft-lb)
   Tightening Torque: 48.0 - 89.2 N·m (Bolt)
   (4.9 - 9.1 kgf-m, 35.4 - 65.8 ft-lb)


G2MT00027-99999

6. Install the engine mounting rear bracket to the transaxle.
   Tightening Torque: 29.4 - 44.1 N·m
   (3.0 - 4.5 kgf-m, 21.7 - 32.5 ft-lb)

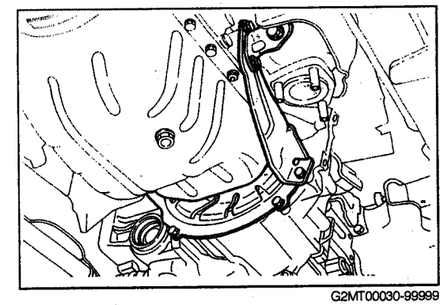

G2MT00028-99999

7. Connect the engine mounting rear bracket to the engine mounting rear insulator.
   Tightening Torque: 72.1 - 134.0 N·m
   (7.4 - 13.7 kgf-m, 53.2 - 99.1 ft-lb)

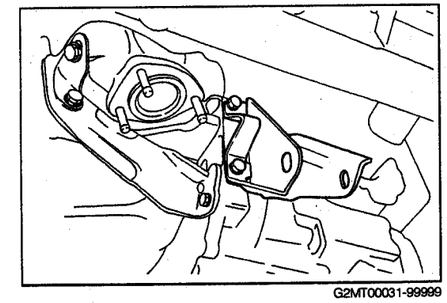

G2MT00029-99999

8. Install the clutch housing under cover.
   Tightening Torque: 14.7 - 21.6 N·m
   (1.5 - 2.2 kgf-m, 10.8 - 15.9 ft-lb)

9. Install the stiffener front plate and exhaust manifold stay.
   Tightening Torque: 29.4 - 44.1 N·m
   (3.0 - 4.5 kgf-m, 21.7 - 32.5 ft-lb)

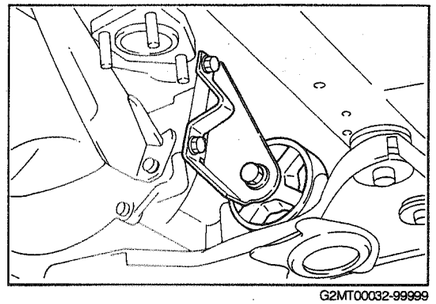

G2MT00030-99999

10. Install the engine front stopper bracket to the transaxle.
    Tightening Torque: 29.4 - 44.1 N·m
    (3.0 - 4.5 kgf-m, 21.7 - 32.5 ft-lb)


G2MT00031-99999

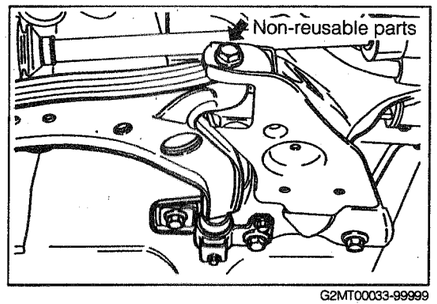
11. Install the engine lower mounting member together with the engine mounting front insulator.
    Tightening Torque: 48.1 - 89.2 N·m
    (4.9 - 9.1 kgf-m, 35.4 - 65.8 ft-lb)

12. Connect the engine front stopper bracket to the engine mounting front insulator.
    Tightening Torque: 72.1 - 134.0 N·m
    (7.4 - 13.7 kgf-m, 53.2 - 99.1 ft-lb)


G2MT00032-99999

13. Insert the drive shaft into the transaxle.
14. Connect the lower arm to the front suspension cross member.
    Tightening Torque:
    M10 bolt 14.2 - 32.9 N·m
    (1.44 - 3.93 kgf-m, 10.47 - 24.26 ft-lb)
    M14 bolt 167.0 - 245.0 N·m
    (17.0 - 25.0 kgf-m, 123 - 180 ft-lb)

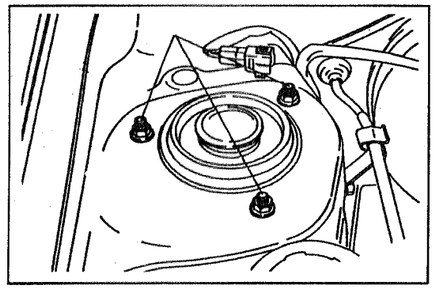
NOTE:
- Never reuse the removed bolt.
- Refer to the right figure.



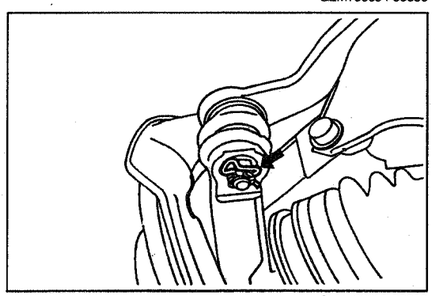
G2MT00033-99999

15. Tighten the front suspension support nuts to the specified torque, using new nuts.
    Tightening Torque: 28.4 - 42.2 N·m
    (2.9 - 4.3 kgf-m, 21.0 - 31.1 ft-lb)

NOTE:
- Never reuse the loosened nuts.


G2MT00034-99999

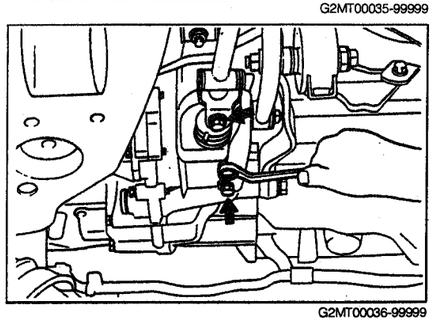
16. Connect the tie rod end to the steering knuckle, using the new nuts.
    Tightening Torque: 26.0 - 38.7 N·m
    (2.65 - 3.95 kgf-m,
    19.2 - 28.5 ft-lb)


G2MT00035-99999

17. Install a new clip (RH, LH) to the tie rod end.
    NOTE:
    - Never reuse the removed nuts and clips.
    - Be sure to align the nut with the clip by the smallest additional rotation angle (less than 60°) of the nut.

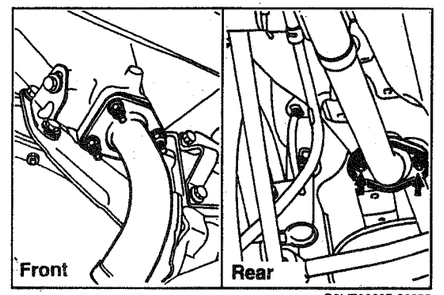
18. Connect the extension rod and shift control shaft to the transaxle.
    Tightening Torque: 16.7 - 30.4 N·m
    (1.7 - 3.1 kgf-m, 12.3 - 22.4 ft-lb)

NOTE:
- Never reuse the removed bolts.


G2MT00036-99999

19. Install the front exhaust pipe assembly.
    Tightening Torque: 49.0 - 74.5 N·m (Front)
    (5.0 - 7.6 kgf-m, 36.2 - 55.0 ft-lb)
    Tightening Torque: 15.2 - 22.8 N·m (Rear)
    (1.6 - 2.3 kgf-m, 11.2 - 16.8 ft-lb)

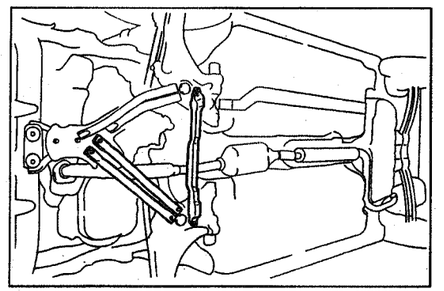
NOTE:
- Be sure to use a new exhaust pipe gasket.
- Be sure to use a new nut for rear side.



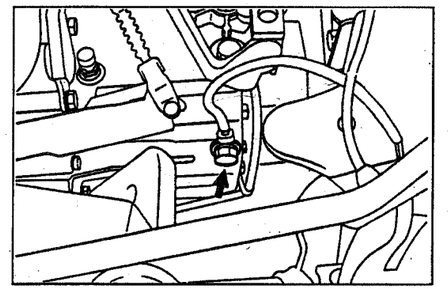
G2MT00037-99999

20. Install the engine lower arm bracket connecting rod.
    Tightening Torque: 39.2 - 92.2 N·m
    (4.0 - 9.4 kgf-m, 28.9 - 68.0 ft-lb)

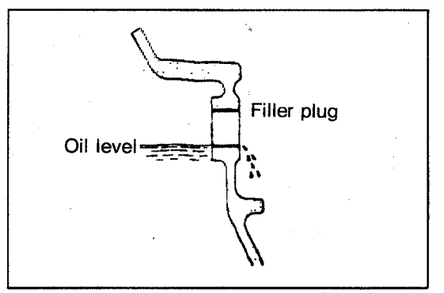
21. Install the engine lower mounting member No. 2.
    Tightening Torque:
    M10 48.1 - 89.2 N·m
    (4.9 - 9.1 kgf-m, 21.7 - 32.5 ft-lb)
    M12 29.4 - 44.1 N·m
    (3.0 - 4.5 kgf-m, 21.7 - 32.5 ft-lb)


G2MT00038-99999

22. Connect the earth cord.

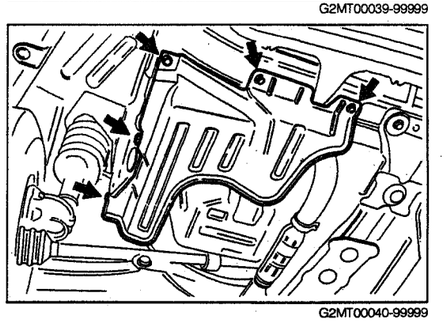

G2MT00000-99999

23. Fill the transmission oil in the transaxle.
    Oil Capacity: 2.25 liters
    Oil Grade: API GL-3 or GL-4
    Oil Viscosity: SAE 75W-85 or 75W-90 or 80W-90
    Drain and Filler Plug Tightening Torque:
    29.4 - 49.0 N·m (3.0 - 5.0 kgf-m, 21.7 - 36.2 ft-lb)

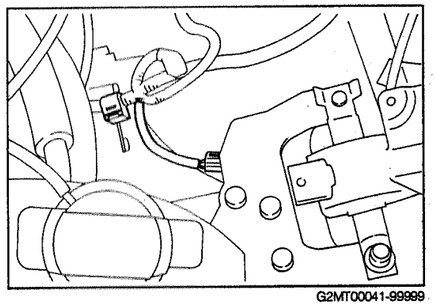


G2MT00039-99999

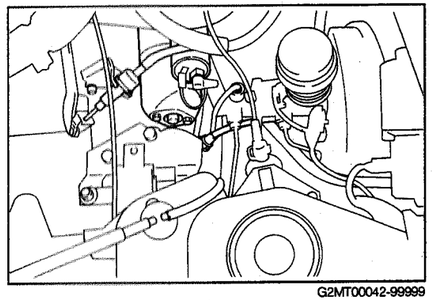
24. Install the engine undercovers.
25. Install the front wheels.
26. Jack down the vehicle.


G2MT00040-99999

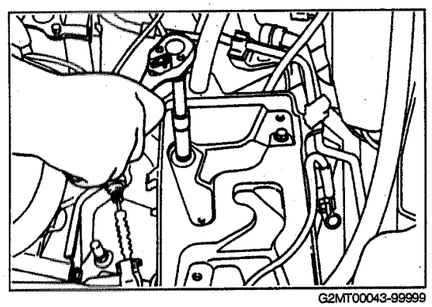
27. Connect the backup lamp connector.
28. Connect the engine harness to the clamp.


G2MT00041-99999

29. Install the starter.
    Tightening Torque: 39.2 - 53.9 N·m (4.0 - 5.5 kgf-m, 28.9 - 39.8 ft-lb)

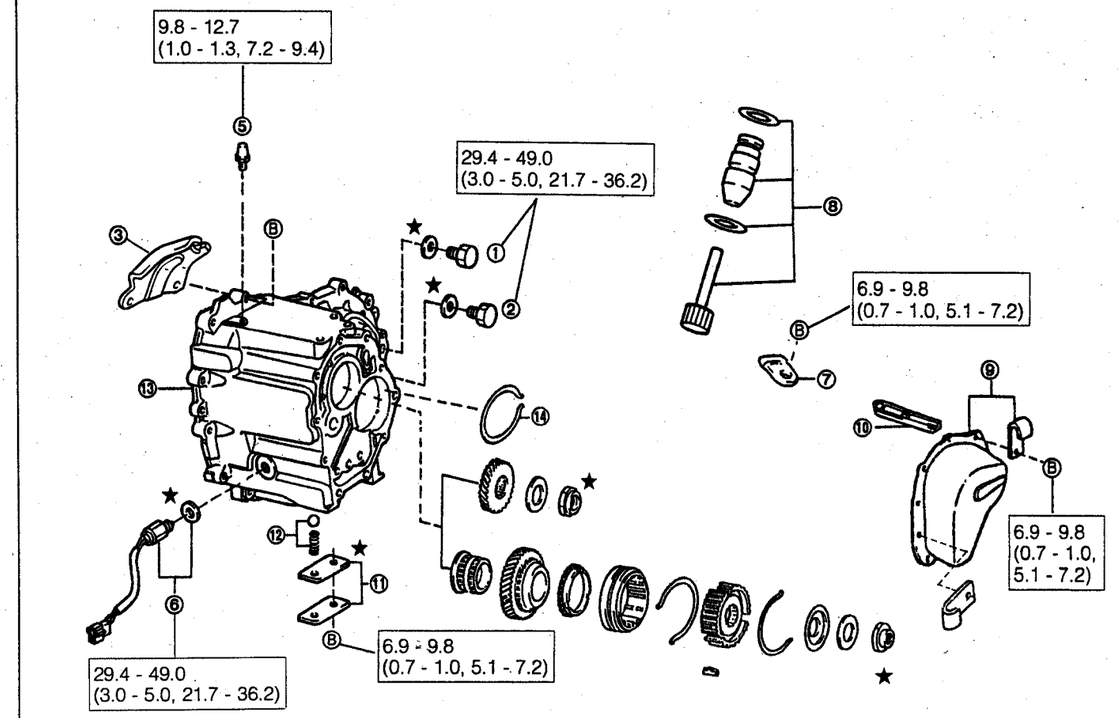

G2MT00042-99999

30. Connect the clutch cable.
    (Adjust the clutch cable and pedal. See page CL–2.)
31. Connect the speedometer cable.
32. Install the battery under tray.
33. Install the battery.


G2MT00043-99999

TRANSMISSION ASSEMBLY

COMPONENTS (PART 1)

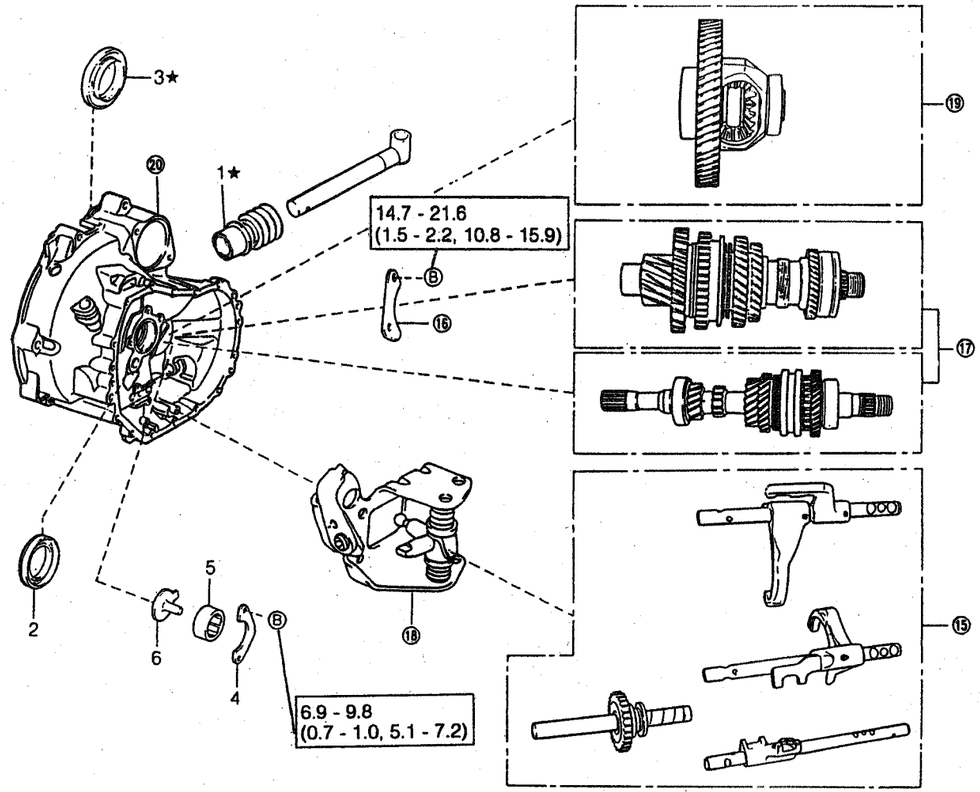


□: **Tightening torque**
Unit : N·m (kgf-m, ft-lb)
★ : **Non-reusable parts**

① W/head straight screw plug (filler side)
② W/head straight screw plug (drain side)
③ Clutch cable bracket
⑤ Breather plug
⑥ Backup lamp switch assembly & gasket
⑦ Lock plate
⑧ Speedometer shaft sleeve subassembly
⑨ Transmission case cover subassembly
⑩ Case cover oil pipe
⑪ Gasket & lock ball plate
⑫ Ball & compression spring
⑬ Transmission case
⑭ Hole snap ring

G2MT00044-99999

COMPONENTS (PART 2)

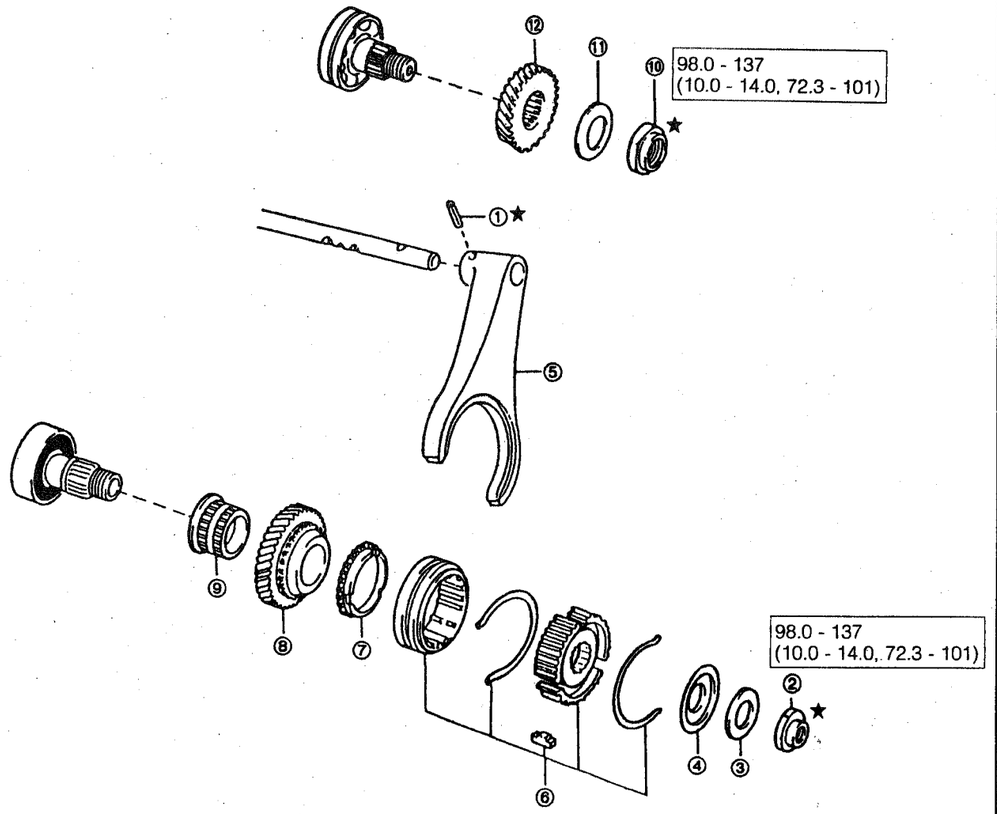


□: Tightening torque
Unit : N·m (kgf-m, ft-lb)
★ : Non-reusable parts

⑮ Control related parts
⑯ Input shaft bearing lock plate
⑰ Input shaft assembly & output shaft assembly
⑱ Selector support assembly & shifting bell crank
⑲ Differential case assembly
⑳ Transaxle case
1, 2, 3. Oil seal
4. Output shaft bearing lock plate
5. Needle roller bearing
6. Output shaft cover

G2MT00045-99999

COMPONENTS (PART 3)

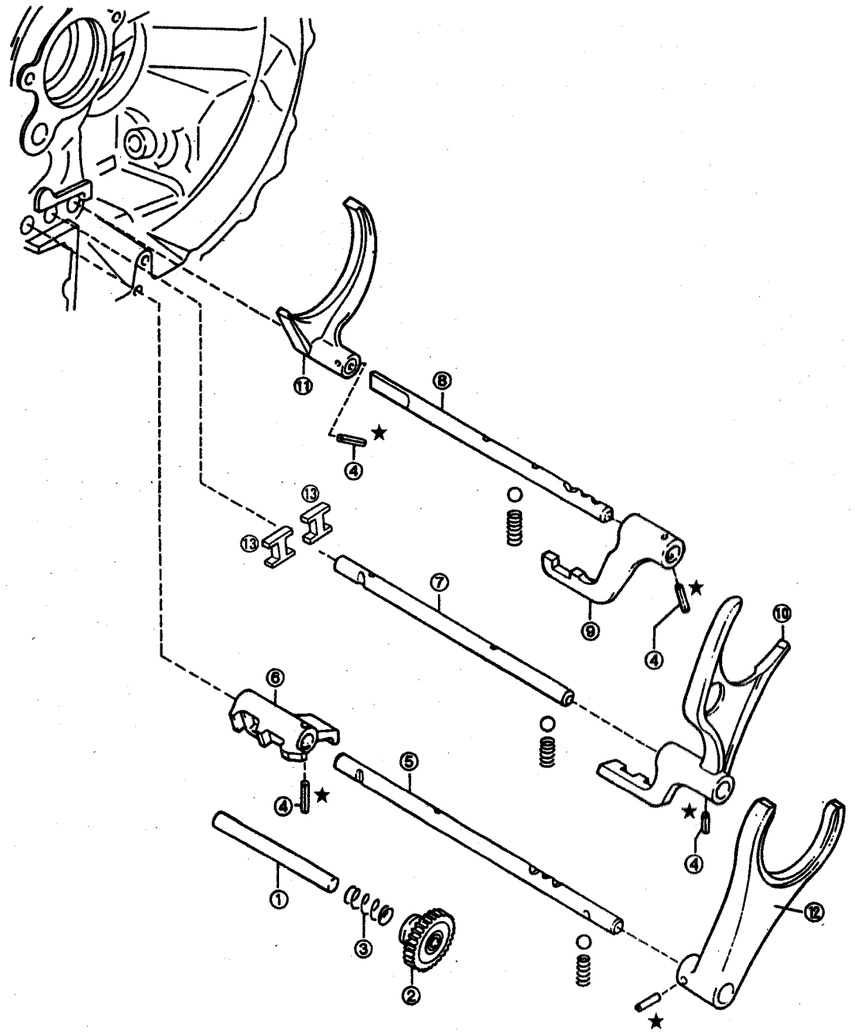


□: Tightening torque
Unit : N·m (kgf-m, ft-lb)
★ : Non-reusable parts

① Slotted spring pin
② Lock nut
③ Conical spring washer
④ Transmission hub sleeve stopper
⑤ 5th shift fork
⑥ Transmission clutch No. 3 hub assembly
⑦ Synchronizer ring
⑧ 5th gear
⑨ 5th gear bushing
⑩ Lock nut
⑪ Conical spring washer
⑫ Output 5th gear

G2MT00046-99999

COMPONENTS (PART 4)



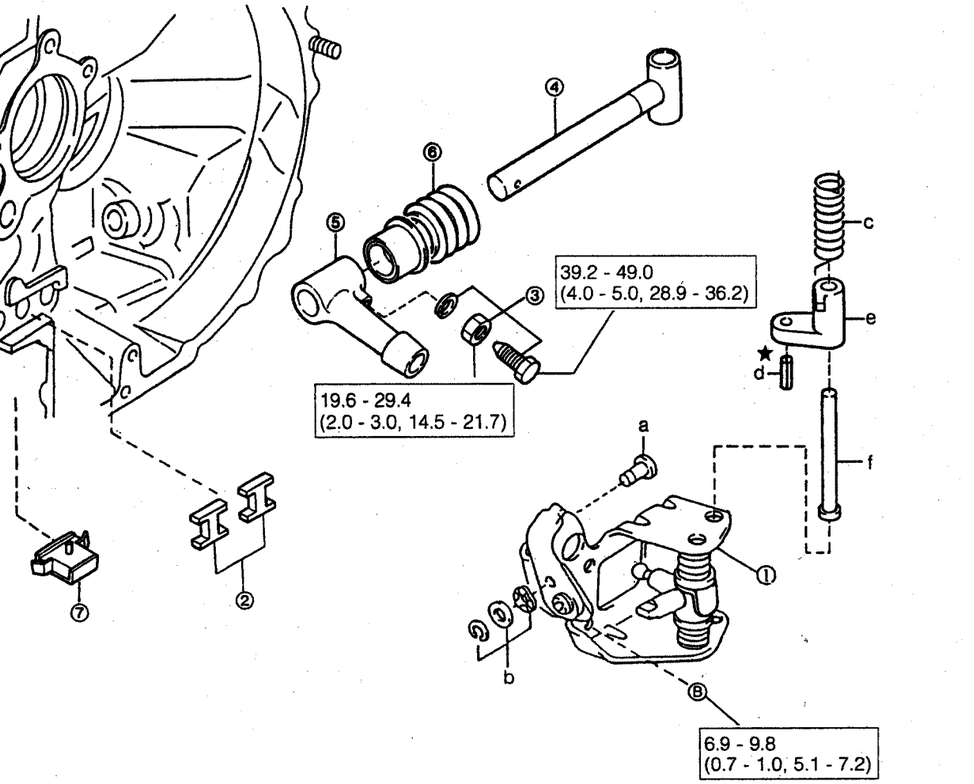
★ : Non-reusable parts

① Reverse idler shaft
② Reverse idler gear
③ Compression spring
④ Slotted spring pin × 4
⑤ 5th & reverse shift fork shaft
⑥ Reverse shift arm head
⑦ 3rd & 4th shift fork shaft
⑧ 1st & 2nd shift fork shaft
⑨ 1st & 2nd shift head
⑩ 3rd & 4th shift fork
⑪ 1st & 2nd shift fork
⑫ 5th shift fork
⑬ Shift inter lock plate

G2MT00047-99999

CONTROL LINKAGE-RELATED PARTS

COMPONENTS



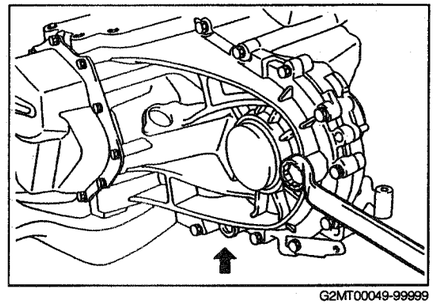
□ : Tightening torque
Unit : N·m (kgf-m, ft-lb)
★ : Non-reusable parts

① Select support assembly & shifting bell crank
  a. Shift arm pin & washer
  b. E ring & washer
  c. Compression spring
  d. Slotted spring pin
  e. Reverse restrict cam
  f. Reverse restrict shaft
② Shift inter lock plate
③ Wave washer, bolt and nut set
④ Shift & selector shaft
⑤ Shift inner lever
⑥ Control shaft boot
⑦ Magnet

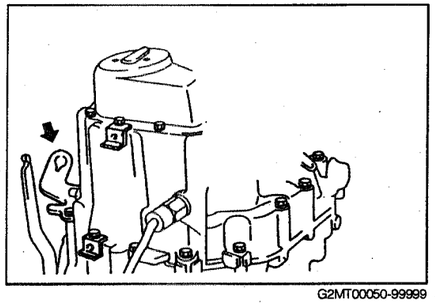
G2MT00048-99999

DISASSEMBLY

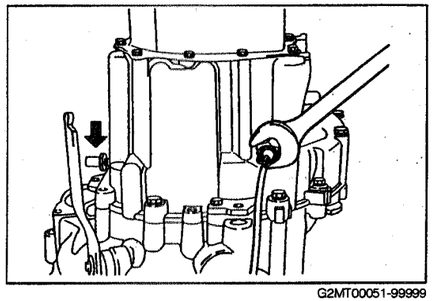
1. Remove the screw plugs (at the drain and filler sides).


G2MT00049-99999

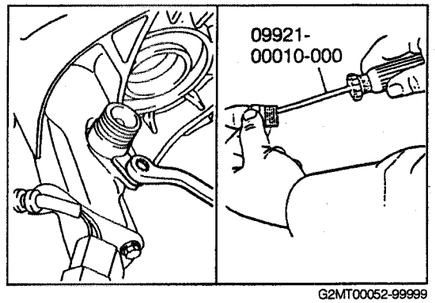
2. Remove the clutch cable bracket.


G2MT00050-99999

3. Remove backup lamp switch assembly and breather plug.


G2MT00051-99999

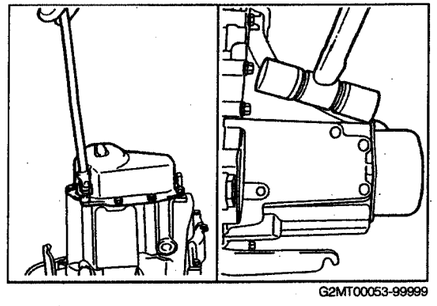
4. Remove the lock plate and speedometer shaft sleeve subassembly.
5. Remove the oil seal, using the SST given below.
   SST: 09921-00010-000



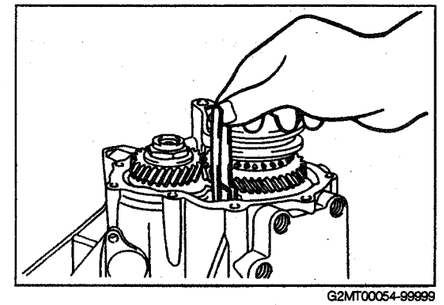
G2MT00052-99999

6. Remove the transmission case cover subassembly as follows:
   (1) To drive out the case cover subassembly, tap the flange section lightly in the axial direction, using a plastic hammer.

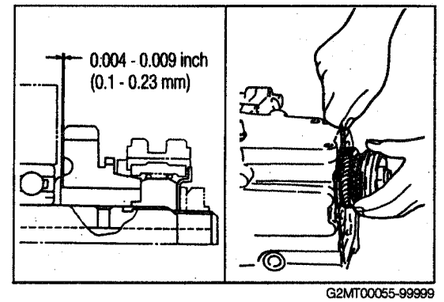
   NOTE:
   - Never tap the case cover at its side.


G2MT00053-99999

7. Remove the case cover oil pipe.

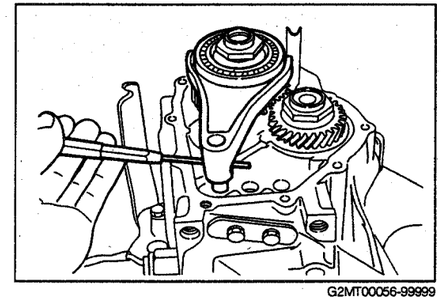

G2MT00054-99999

8. Measure the end play of the 5th gear.
   Specified Value: 0.1 - 0.23 mm
   Limit: 0.4 mm



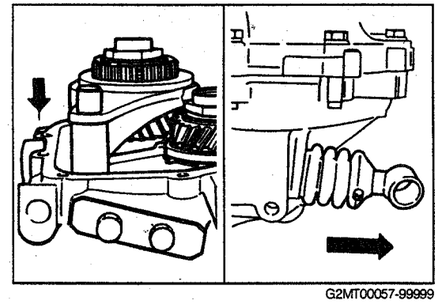
G2MT00055-99999

9. Lock nut removal
   (1) Remove the slotted spring pin, using a punch pin.

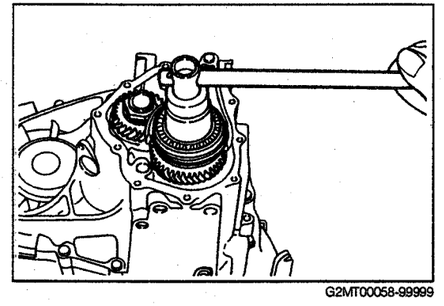

G2MT00056-99999

   (2) Move the 5th shift fork so as to engage the 5th gear. Also, shift the shift & select shaft so that the gears may be put in an interlocked state.
   (3) Release the staked lock nut, using a chisel.

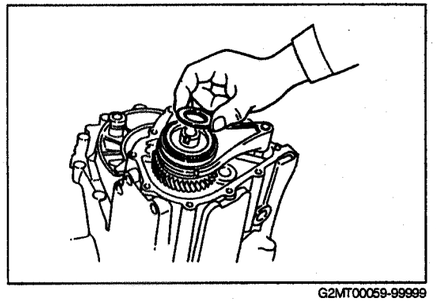
   CAUTION:
   - Be very careful not to damage the threaded portion of the input shaft.


G2MT00057-99999

   (4) Remove the lock nut at the input shaft, using a socket whose width across flats is 32 mm.
   (5) Set the sleeve for 5th gear to the 5th gear position.
   (6) Remove the lock nut at the output shaft side.

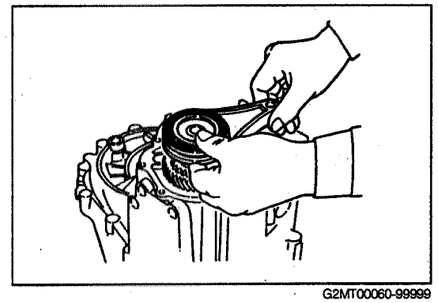

G2MT00058-99999

10. Remove the conical spring washer at the input shaft side and transmission hub sleeve stopper.



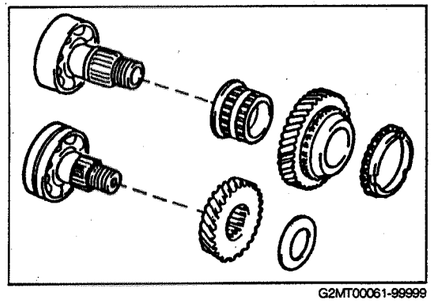
G2MT00059-99999

11. Remove the 5th shift fork and transmission clutch hub assembly No. 4 at the same time.



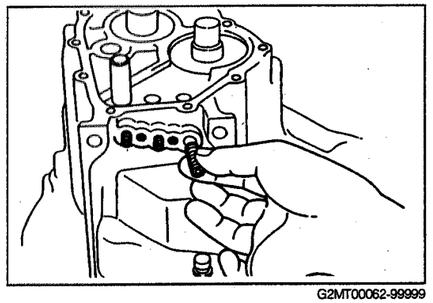
G2MT00060-99999

12. Remove the synchronizer ring, 5th gear and 5th gear bush. Remove the conical spring washer at the output shaft side. Remove the output 5th gear.



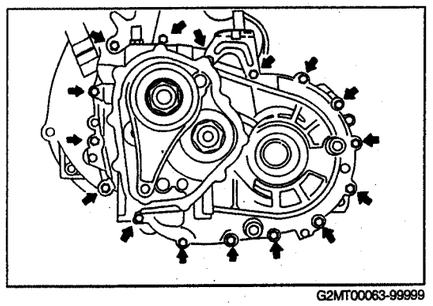
G2MT00061-99999

13. Remove the lock ball plate and gasket. Take out the compression spring and ball.



G2MT00062-99999

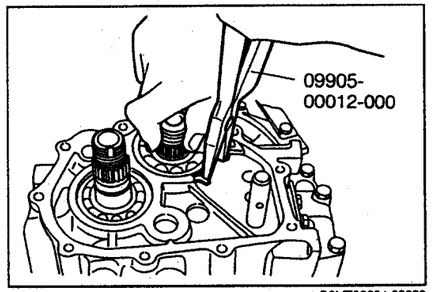
14. Remove the transmission case attaching bolts.



G2MT00063-99999

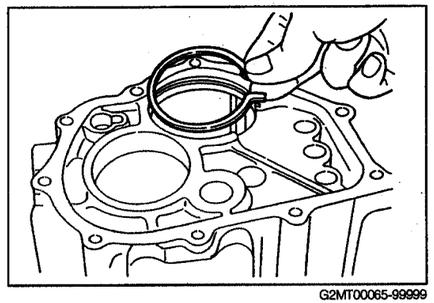
15. Transmission case removal
    (1) Expand the snap ring, using the following SST and drop the shaft.
    SST: 09905-00012-000

    (2) To drive out the transmission case, tap the case rib with a plastic hammer.



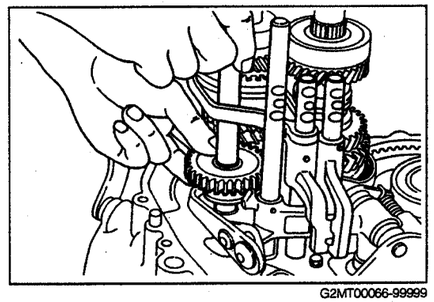
G2MT00064-99999

16. Detach the hole snap ring.



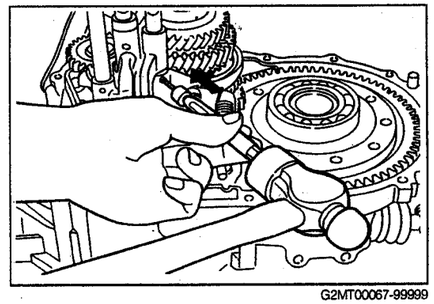
G2MT00065-99999

17. Pull out the reverse idler gear shaft. Remove the reverse idler gear together with the compression spring.



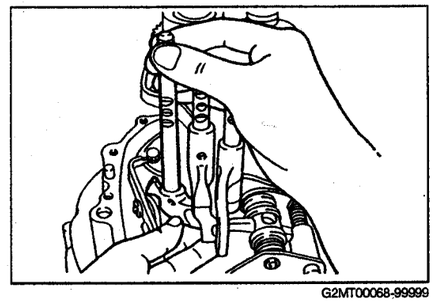
G2MT00066-99999

18. Slotted spring pin removal
    (1) Working from the arrow-headed direction in the figure, drive out the slotted spring pin by means of a punch pin.



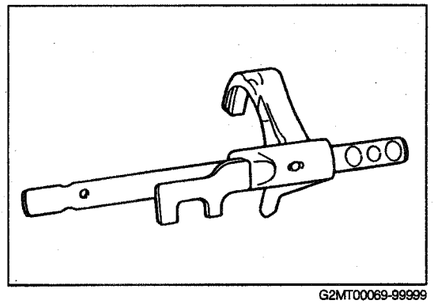
G2MT00067-99999

19. Pull out the 5th & reverse shift fork shaft. Remove the reverse shift arm head.

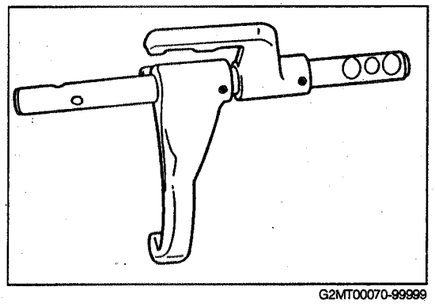


G2MT00068-99999

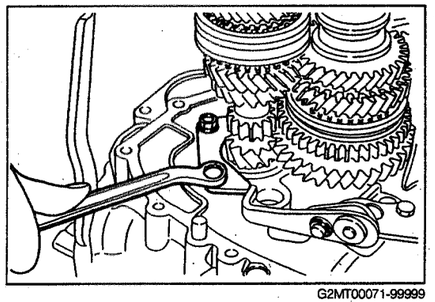
20. Remove the 3rd & 4th shift fork shaft and the 3rd & 4th shift fork.


G2MT00069-99999

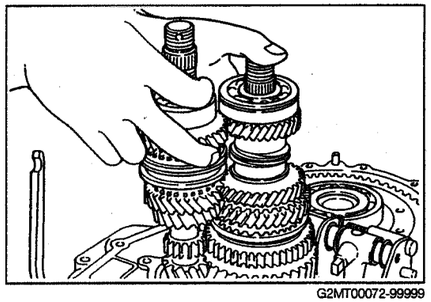
21. Pull out the 1st & 2nd shift fork shaft. Remove the 1st & 2nd shift fork and the 1st & 2nd shift head.


G2MT00070-99999

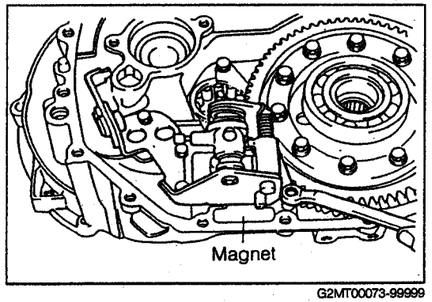
22. Remove the input shaft bearing lock plate.


G2MT00071-99999

23. Remove the input shaft assembly and output shaft assembly at the same time.

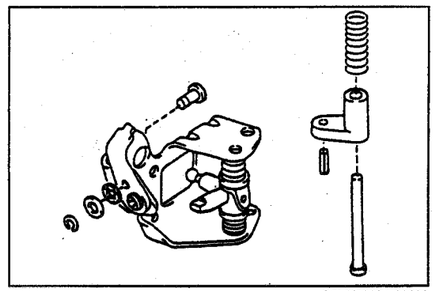

G2MT00072-99999

24. Remove the selecting & shifting bell crank support assembly and magnet.
NOTE:
1. Be sure not to release the staked section of the bell crank.
2. Replacement parts are supplied only as those with the bell crank support assembly. (The reverse restricting cam is excluded.)
Furthermore, it should be noted that the reverse restricting cam can not be disassembled.

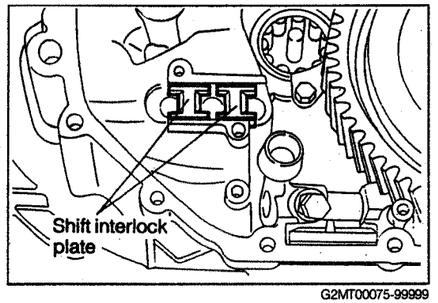


G2MT00073-99999

25. Disassemble the bell crank support assembly, as required.

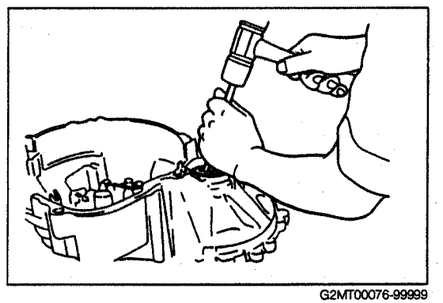

G2MT00074-99999

26. Remove the shift interlock plate.

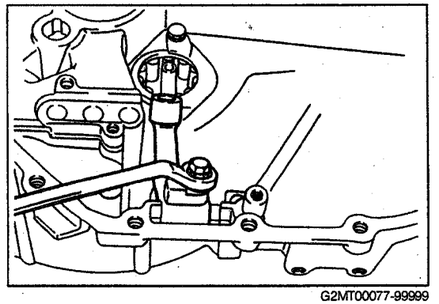


G2MT00075-99999

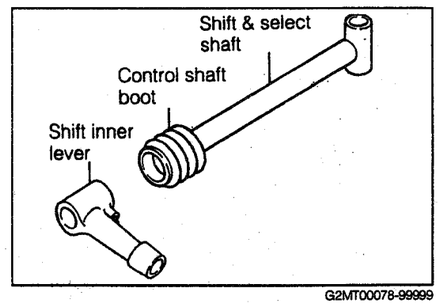
27. Differential case removal
(1) With a brass bar placed on the inner race of the side bearing, lightly tap the bar so that the differential case may be driven out from the transaxle case.


G2MT00076-99999

28. Removal of wave washer, nut and set bolt
(1) After the nut has been loosened, proceed to loosen the set bolt.


G2MT00077-99999

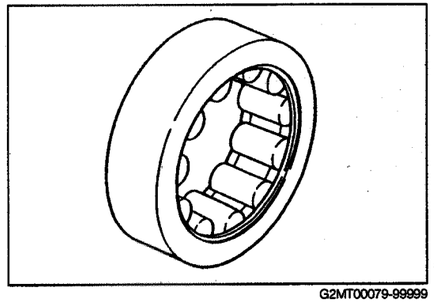
29. Remove the shift & select shaft, shift inner lever and control shaft boot.



G2MT00078-99999

INSPECTION

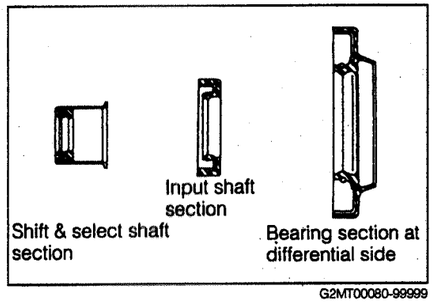
1. Check the needle roller bearing for wear or damage under the assembled state.



G2MT00079-99999

2. Check each oil seal for wear or damage.

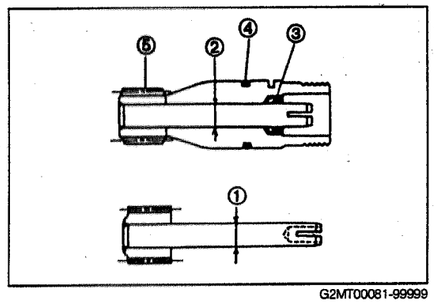
Part	Inspection criteria
Lip section of oil seal	Visually inspect to see if the lip section exhibits excessive damage or wear.



G2MT00080-99999

3. Check the speedometer shaft sleeve subassembly for wear or damage.

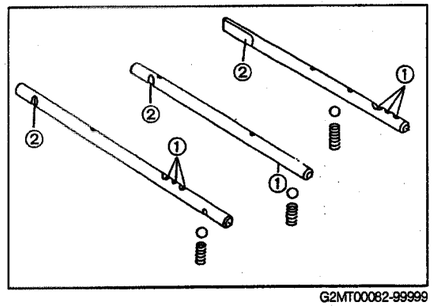
Part		Specified value mm	Limit mm
Driven gear shaft diameter	①	$8^{-0.013}_{-0.028}$	7.96
Shaft sleeve bore	②	$8^{+0.065}_{+0.029}$	8.10
Oil seal lip section	③	Visually inspect the section for excessive wear or damage.	
O-ring	④		
Driven gear tooth surface	⑤		



G2MT00081-99999

4. Check the shift fork shafts, balls and springs for damage or wear.

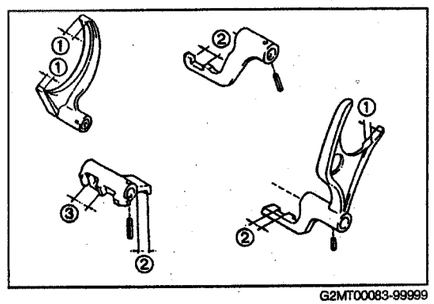
Part	Inspection criteria
Ball lock section ① and interlock section of fork shaft ②	Visually inspect the section for excessive damage or wear.



G2MT00082-99999

5. Check the 1st shift fork, the 2nd shift fork and the reverse shift head for damage or wear.

Part		Specified value mm	Limit mm
Thickness at tip-section of fork	①	7.0	6.3
Groove width of shift inner lever-contact-section	②	$12.1^{+0.1}_{+0}$	12.7
Groove width of reverse shift arm pin-contact-section	③	$15.0^{+0.043}_{+0}$	15.1

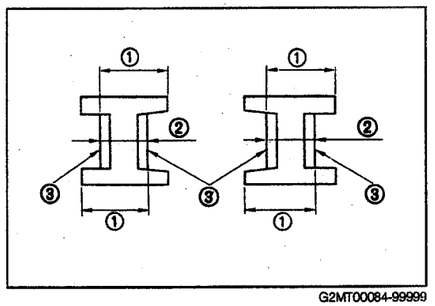


G2MT00083-99999

6. Check the interlock plate for damage or wear.

Part		Specified value mm	Limit mm
Length of lock plate	①	16.3 ± 0.15	16.0
	②	$11.3^{-0}_{-0.2}$	11.1
Roller section	③	Check the section for excessive damage or wear.	

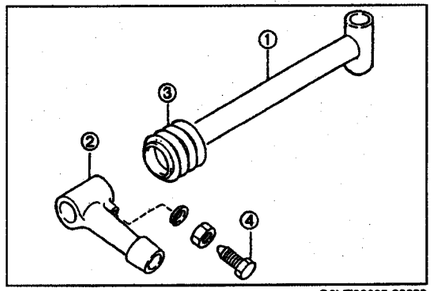
* Two lock plates must be replaced at the same time.



G2MT00084-99999

7. Check the control shaft and inner lever for damage or wear.

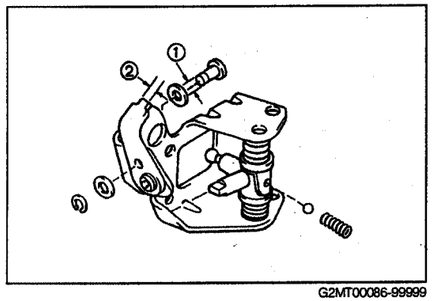
Part		Inspection criteria
Control shaft	①	Visually inspect the following items given below. • Shaft for bend • Recessed section of inner lever and shaft inserting section for wear or damage. • Dust boot for cracks or wear • Tip-end of lock bolt for wear
Inner lever recessed section and shaft inserting section	②	
Sliding section of dust boot and breakage	③	
Tip-end of lock bolt	④	



G2MT00085-99999

8. Check the selecting & shifting bell crank and the reverse shift arm for damage or wear.

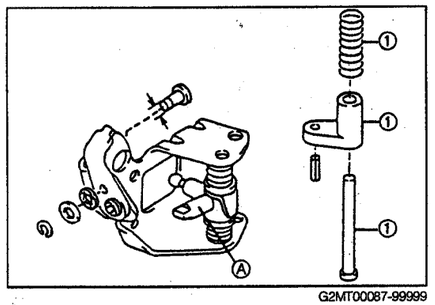
Part		Specified value mm	Limit mm
Reserve shift arm pin diameter	①	$15.0^{-0.050}_{-0.093}$	14.85
Tip-end width of reverse shift arm	②	$8.0^{-0.080}_{-0.0116}$	7.8
Operation of selecting & shifting bell crank		Check to see if the bell crank can move in up-and-down direction with detent felling.	



G2MT00086-99999

9. Check the reverse restricting cam and shaft for damage or wear.

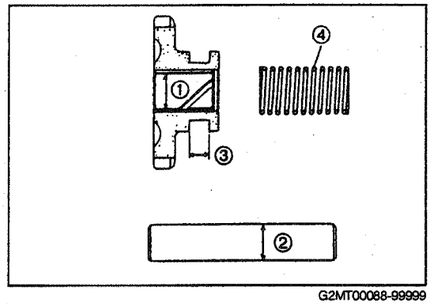
Part		Inspection criteria
Operation of restricting cam		• Ensure that the mis-operation preventing mechanism functions at the support assembly. ① The cam should be raised at the same time when the section Ⓐ is lifted. ② When turned to the left, ensure that the cam drops and the section Ⓐ is locked.
Each part of reverse restricting cam and shaft	①	Visually inspect each part for damage or wear.



G2MT00087-99999

10. Check the reverse idler gear and shaft for wear or damage.

Part		Specified value mm	Limit mm
Bush inner diameter	①	$17^{+0.027}_{+0}$	17.05
Shaft outer diameter	②	$17^{-0.032}_{-0.059}$	16.9
Groove width	③	$8^{+0.058}_{+0}$	8.2
Wear or damage of spring	④	Visually inspect the spring for flattened condition and the washer for wear or damage.	



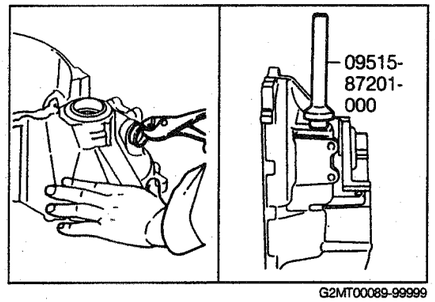
G2MT00088-99999

REPLACEMENT

Replace any parts that exhibit abnormality, following the procedure given below.

1. Oil seal for control shaft use
   Disassembly:
   Remove the oil seal by pinching its flange section with pliers.

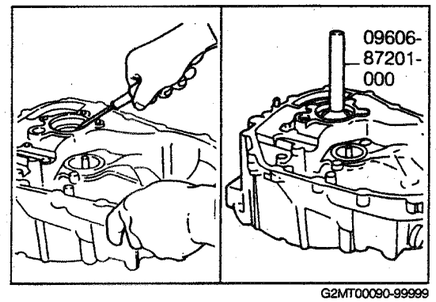
   Assembly:
   Drive the oil seal into position, until it comes into contact with the axle case.
   SST: 09515-87201-000



G2MT00089-99999

2. Oil seal for input shaft use
   Disassembly:
   Remove the oil seal with a common screwdriver.

   Assembly:
   Drive the oil seal into position, until it be-comes flush with the edge surface of the transaxle case.
   SST: 09606-87201-000



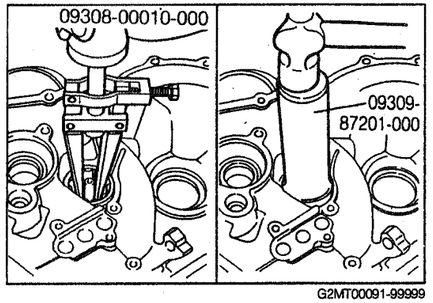
G2MT00090-99999

3. Needle Roller Bearing.
   Disassembly:
   After the output shaft bearing lock plate has been removed, remove the roller bearing, using the following SST.
   SST: 09308-00010-000

   Assembly:
   (1) Assemble the roller bearing, using the following SST.
   SST: 09309-87201-000

   NOTE:
   - Visually check to see if the output shaft cover exhibits severe distortion or clogging.

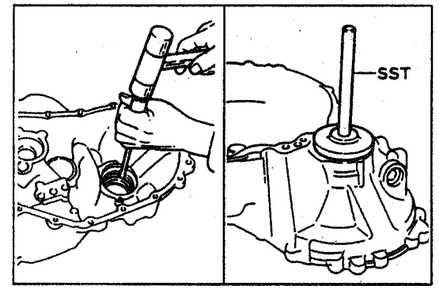
   (2) Install the bearing lock plate.
   Tightening Torque: 6.9 - 9.8 N·m
   (0.7 - 1.0 kgf-m, 5.1 - 7.2 ft-lb)



G2MT00091-99999

4. Oil seal for differential use
   Disassembly:
   Remove the oil seal with a common screwdriver.

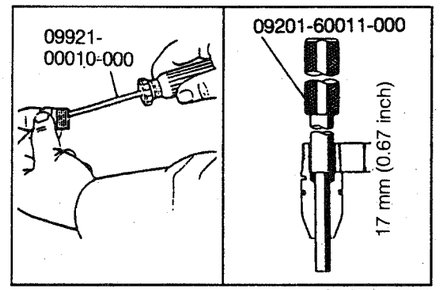
   Assembly:
   Drive the oil seal into position, until it comes into contact with the rib of the axle case.
   SST: 09517-87701-000 (Case side)
   09517-87702-000 (Housing side)



G2MT00092-99999

5. Oil seal for speedometer shaft sleeve
   Disassembly:
   Remove the oil seal, using the SST given below.
   SST: 09921-00010-000

   Assembly:
   Assembly the oil seal, using the SST given below.
   SST: 09201-60011-000



G2MT00093-99999

ASSEMBLY

NOTE:
- Apply gear oil to the entire surface of the rotary or sliding section.

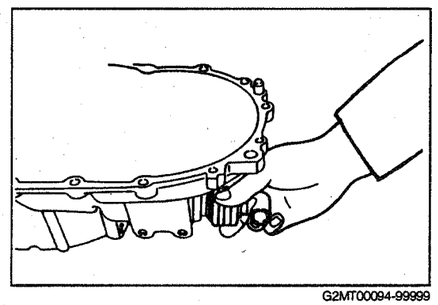
1. Assemble the boot and shift inner lever on the control shaft.
   NOTE:
   - Be very careful not to scratch the boot.

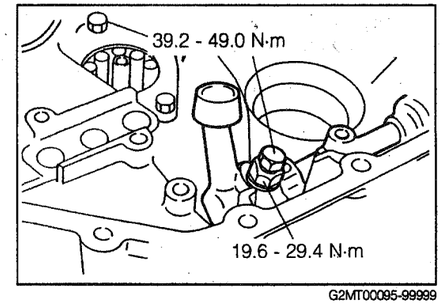
2. Assemble the shift & selector shaft in the case.

3. Assemble of wave washer, nut and setting bolt.
   (1) Align the hole of the shift inner lever with the cut-out section of the shift & selector shaft. Proceed to tighten the set bolt to the specified torque.
   Tightening Torque: 39.2 - 49.0 N·m
   (4.0 - 5.0 kgf-m, 28.9 - 36.2 ft-lb)

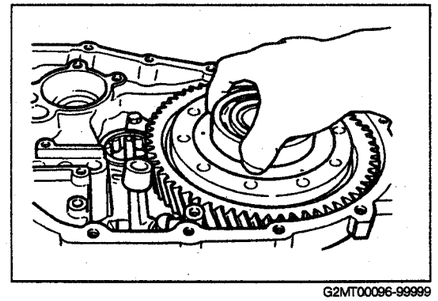
   (2) Tighten the nut to the specified torque.
   Tightening Torque: 19.6 - 29.4 N·m
   (2.0 - 3.0 kgf-m, 14.5 - 21.7 ft-lb)

4. Assemble the differential case.

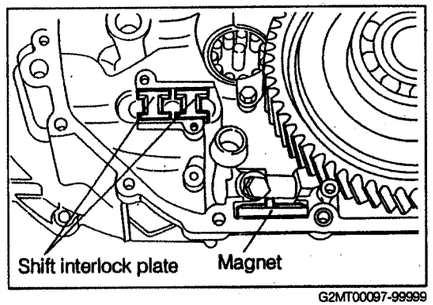

G2MT00094-99999



G2MT00095-99999

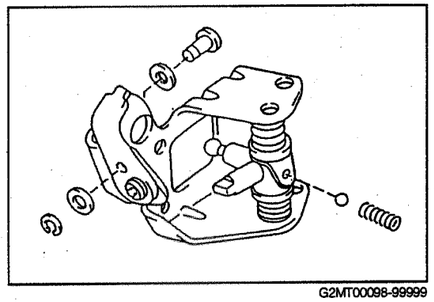

G2MT00096-99999

5. Assemble the shift interlock plate in the neutral position.
6. Install the magnet into position.



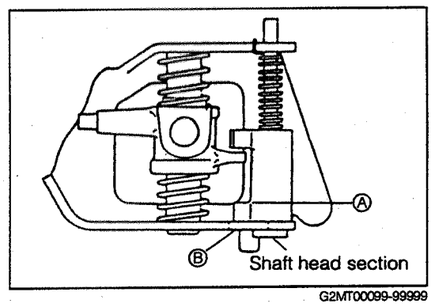
G2MT00097-99999

7. Assembly of selecting & shifting bell crank support assembly
   (1) Working from the inside of the case, install the shift arm pin. Assembly the washer.


G2MT00098-99999

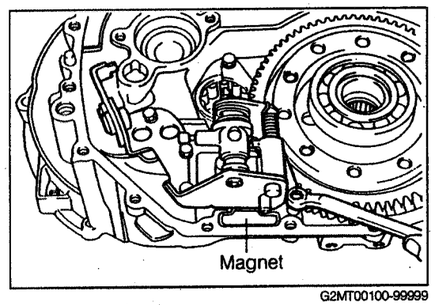
   (2) Drive the slotted spring pin into position, until it becomes flush with the edge surface Ⓐ of the restricting cam.
   (3) Assemble the restricting cam.
      A Assemble the restricting cam in such a way that the slotted spring pin may be inserted into the hole Ⓑ

NOTE:
- Be sure not to forget to attach the spring in place.



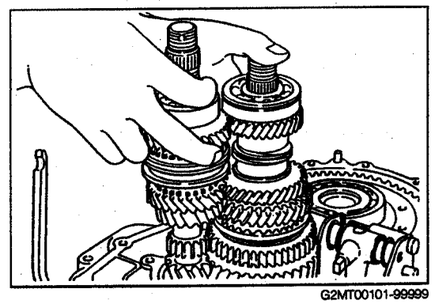
G2MT00099-99999

   (4) Assemble the magnet and selecting & shifting bell crank support assembly.
      Tightening Torque: 6.9 - 9.8 N·m
      (0.7 - 1.0 kgf-m, 5.1 - 7.2 ft-lb)

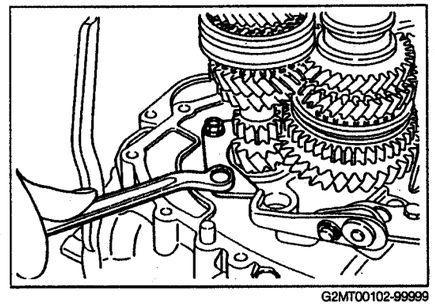


G2MT00100-99999

8. Assemble the input shaft assembly and output shaft assembly at the same time.

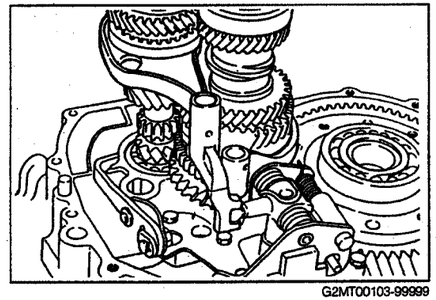

G2MT00101-99999

9. Assemble the input shaft bearing lock plate.
   Tightening Torque: 14.7 - 21.6 N·m
   (1.5 - 2.2 kgf-m, 10.8 - 15.9 ft-lb)

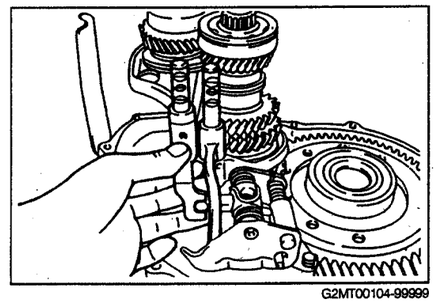

G2MT00102-99999

10. Assembly of 1st & 2nd shift fork and the 3rd & 4th shift fork.
NOTE:
- **Prior to the assembling, apply gear oil to the sliding section of each shift fork.**

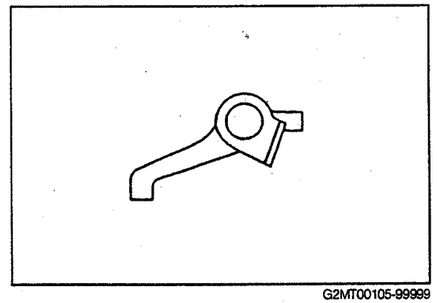
   (1) Assemble the 1st & 2nd shift fork onto the synchronizer hub for the 1st & 2nd gear use provided at the output shaft side.
   (2) Assemble the 3rd & 4th shift fork onto the synchronizer hub for the 3rd & 4th gear use provided at the input shaft side.


G2MT00103-99999

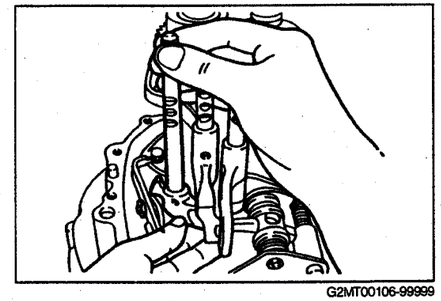
11. Assemble the 1st & 2nd shift head, the 1st & 2nd shift fork shaft and the 3rd & 4th shift fork shaft.


G2MT00104-99999

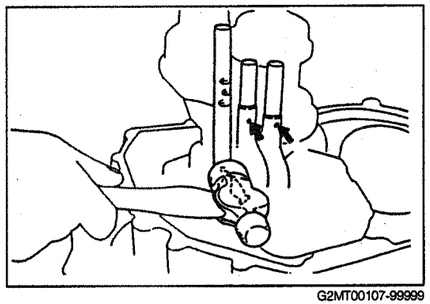
12. Assembly of reverse shift arm head
   (1) Assemble the arm head in the direction as indicated in the right figure.


G2MT00105-99999

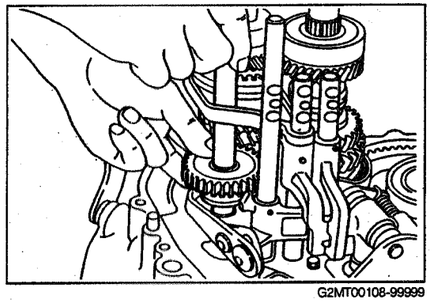
13. Assemble the 5th & reverse shift fork shaft.


G2MT00106-99999

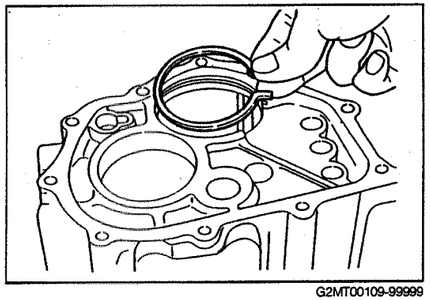
14. Working from the direction as indicated in the figure, drive the slotted spring pin into position, until it becomes flush with the edge surface of the shift fork.


G2MT00107-99999

15. Assemble the compression spring, reverse idler gear and reverse idler gear shaft.


G2MT00108-99999

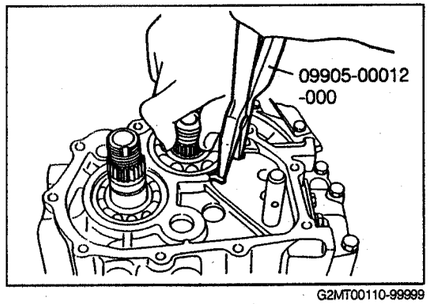
16. Install the hole snap ring in the transmission case.


G2MT00109-99999

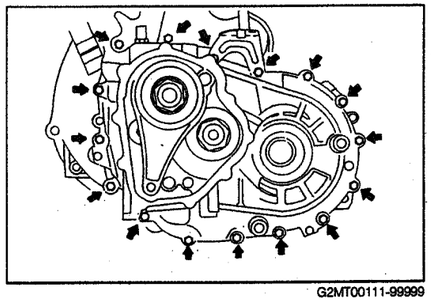
17. Transmission case assembly
    (1) Apply the Three Bond sealer 1216 to the mating surface of the housing. While the hole snap ring of the bearing is held in an expanded state, assemble the transmission case in the axle case.
    SST: 09905-00012-000

    NOTE:
    - **Make sure that the snap ring is fitted positively in the bearing, by raising the output shaft by your hand.**

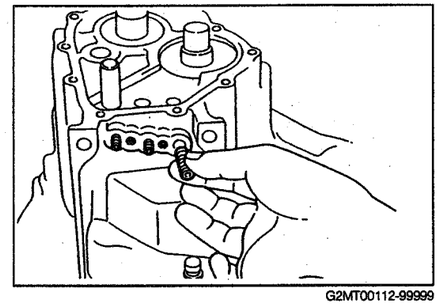
    (2) Tighten the housing attaching bolts.
    Tightening Torque: 14.7 - 21.6 N·m
    (1.5 - 2.2 kgf-m, 10.8 - 15.9 ft-lb)



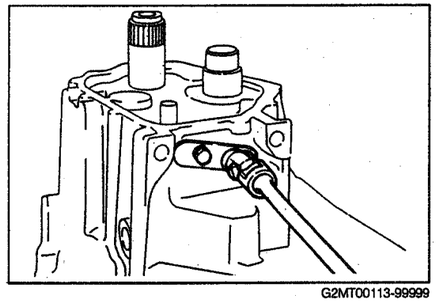
G2MT00110-99999


G2MT00111-99999

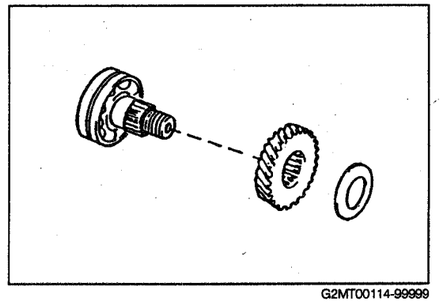
18. Assemble the ball and compression spring.


G2MT00112-99999

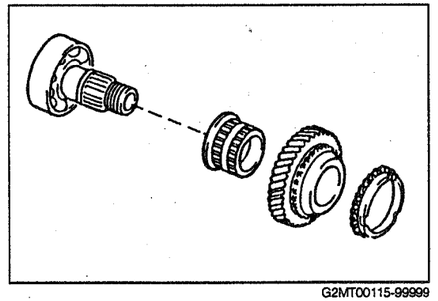
19. Assemble the lock ball plate and gasket.
    Tightening Torque: 6.9 - 9.8 N·m
    (0.7 - 1.0 kgf-m, 5.1 - 7.2 ft-lb)


G2MT00113-99999

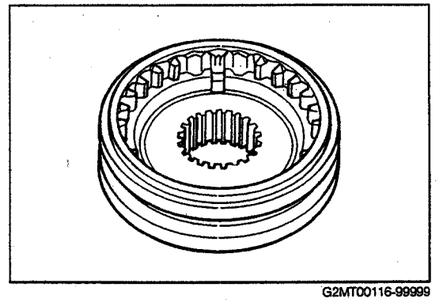
20. Assemble the output 5th gear and the conical spring washer for the output shaft.
    NOTE:
    - **Tighten a new lock nut temporarily.**


G2MT00114-99999

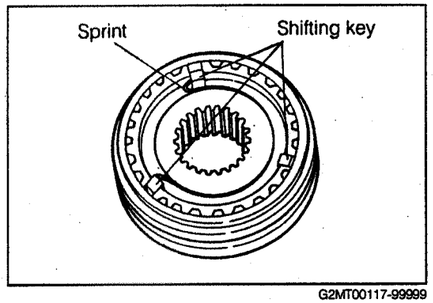
21. Assemble the 5th gear bush.
22. Assemble the 5th gear and synchronizer ring.


G2MT00115-99999

23. Assembly of transmission clutch hub
    (1) Assemble the clutch hub, aligning the spline-missing section of the clutch with the key installing section (in which teeth are missing at both sides) of the hub.


G2MT00116-99999

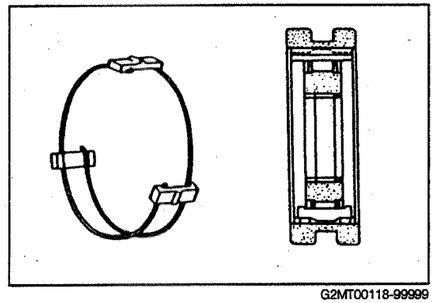
(2) Assemble the synchronizer ring at one side of the clutch hub. Place the clutch hub on a level bench in such a way that the side where synchronizer ring has been assembled may come at the lower side.
(3) Assemble the three shifting keys and spring in place.
(4) Install the synchronizer ring. Turn over the hub assembly.



G2MT00117-99999

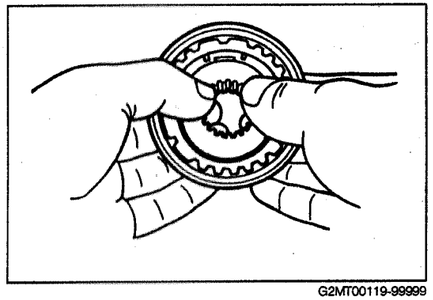
(5) Detach the synchronizer ring that has been installed in the step (2). Install the other spring.

NOTE:
- **Make sure that this spring does not come at the same position as the spring at the opposite side.**

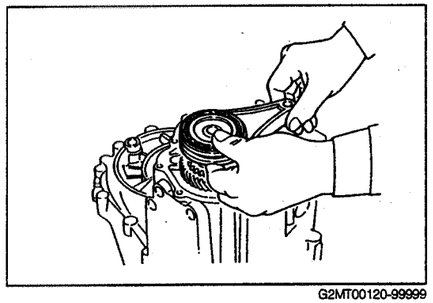

G2MT00118-99999

(6) Install the synchronizer ring in place. Push the synchronizer ring in both directions by your both hands. Check to see if the synchronizing action takes place smoothly.

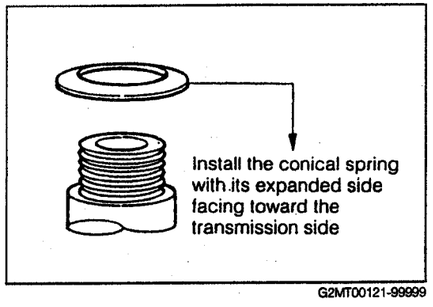
NOTE:
1. **The hub assembly for the 3rd and 4th gear use differs from the hub assembly for the 5th gear use only in the inner diameter of the clutch hub. Other parts are shared in common.**
2. **The sleeve and clutch do not have any installing direction to be observed during their assembly.**


G2MT00119-99999

24. Assemble the transmission clutch hub assembly and the 5th gear shift fork at the same time.

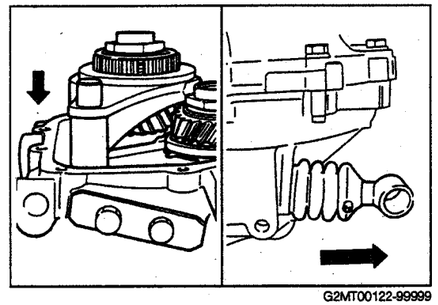

G2MT00120-99999

25. Assemble the transmission hub sleeve stopper.
26. Assemble the conical spring washer in such a way that its expanded side may face toward the transmission side.

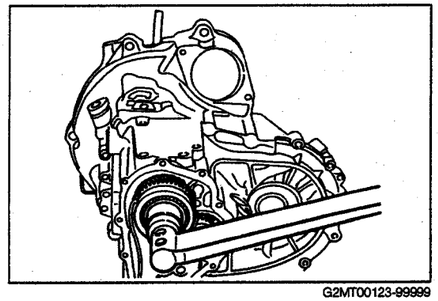


G2MT00121-99999

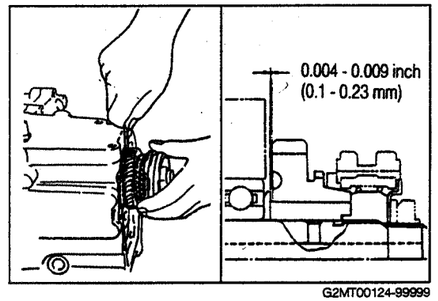
27. New lock nut installation.
(1) Make the gears in an interlocked state. (See page MT-18.)
(2) Tighten the lock nut at the input shaft to the specified torque, using a socket whose width across flats is 32 mm.
Tightening Torque: 98.1 - 137.3 N·m (10.0 - 14.0 kgf-m, 72.3 - 101 ft-lb)


G2MT00122-99999

(3) Tighten the lock nut at the output shaft to the specified torque.
Tightening Torque: 98.1 - 137.3 N·m (10.0 - 14.0 kgf-m, 72.3 - 101 ft-lb)


G2MT00123-99999

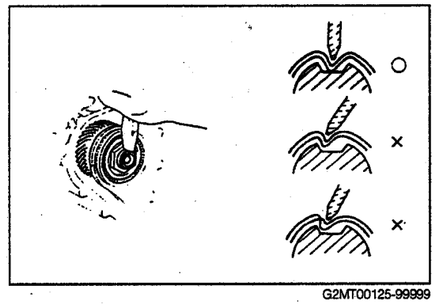
(4) Before the lock nut is staked, measure the end play of the 5th gear.
Specified Value: 0.1 - 0.23 mm
Limit: 0.4 mm



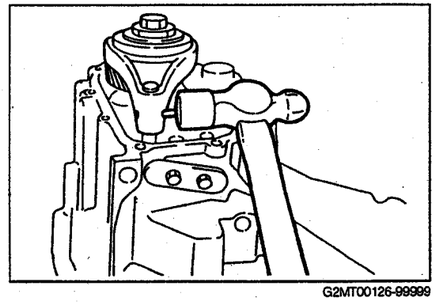
G2MT00124-99999

(5) Stake the lock nut, using a chisel.

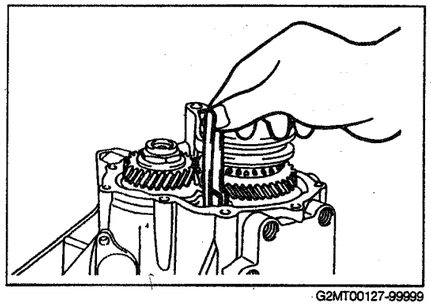
NOTE:
- **Be sure to stake the central part of the lock nut so as to avoid dislocation or cracks.**


G2MT00125-99999

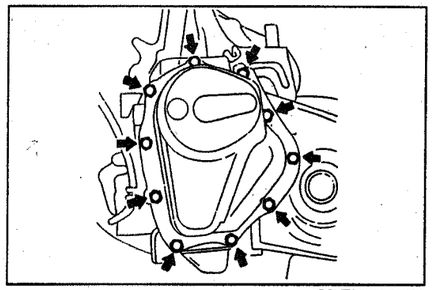
28. Drive the slotted spring pin into position, until it becomes flush with the edge surface of the shift fork.


G2MT00126-99999

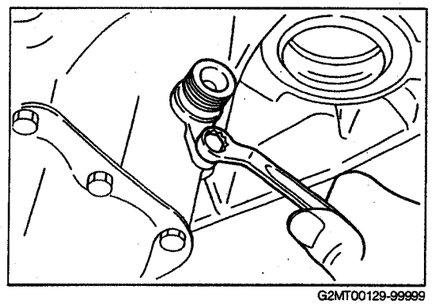
29. Install the case cover oil pipe until its rib section comes into contact with the case.


G2MT00127-99999

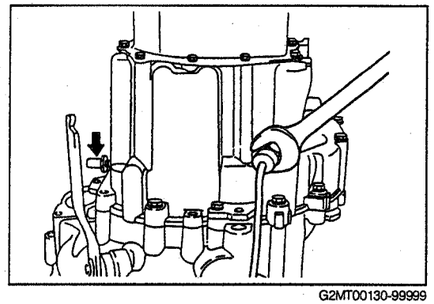
30. Assembly of transmission case cover
    (1) Apply the liquid gasket sealer (Three Bond 1216) to the mating surfaces of the case, except for those hole areas.
    (2) Tighten the transmission case installing bolts.
    Tightening Torque: 6.9 - 9.8 N·m (0.7 - 1.0 kgf-m, 5.1 - 7.2 ft-lb)


G2MT00128-99999

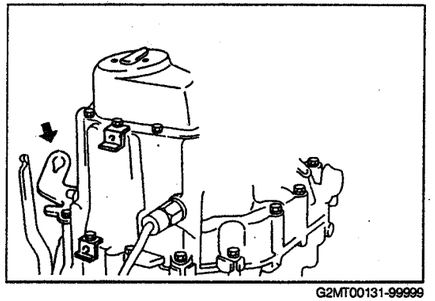
31. Assemble the speedometer shaft sleeve subassembly and lock plate.
    Tightening Torque: 6.9 - 9.8 N·m (0.7 - 1.0 kgf-m, 5.1 - 7.2 ft-lb)


G2MT00129-99999

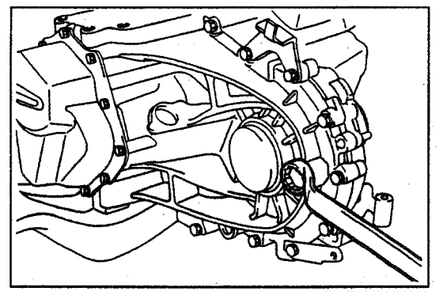
32. Install the backup lamp switch and breather plug.
    Tightening Torques:
    29.4 - 49.0 N·m (Back up Lamp Switch)
    (3.0 - 5.0 kgf-m, 21.7 - 36.2 ft-lb)
    9.8 - 12.7 N·m (Breather Plug)
    (1.0 - 1.3 kgf-m, 7.2 - 9.4 ft-lb)


G2MT00130-99999

33. Install the clutch cable bracket.
    Tightening Torque: 14.7 - 21.6 N·m (1.5 - 2.2 kgf-m, 10.8 - 15.9 ft-lb)

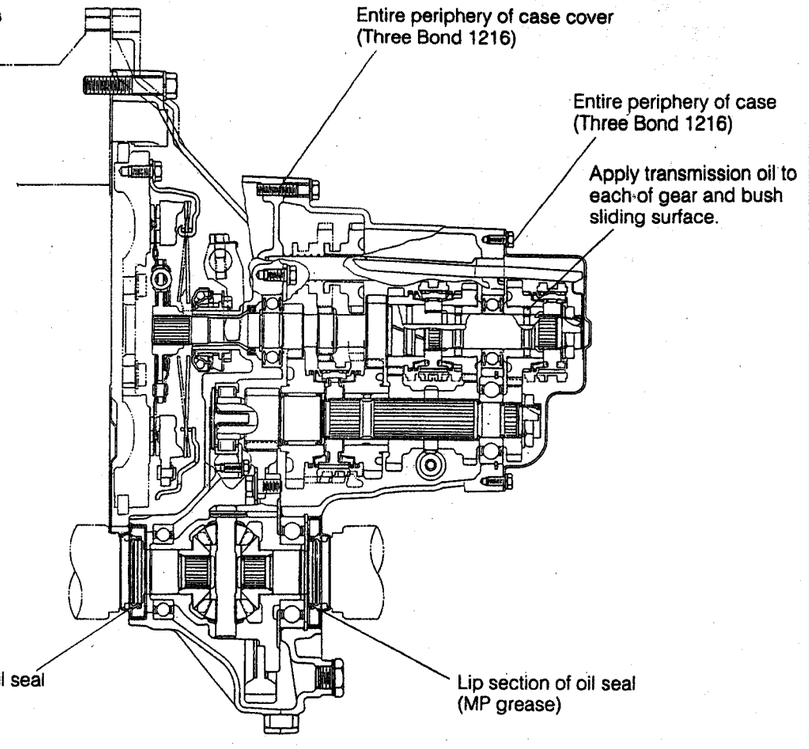

G2MT00131-99999

34. Install the screw plugs (at the drain and filler sides).
    Tightening Torque: 29.4 - 49.0 N·m (3.0 - 5.0 kgf-m, 21.7 - 36.2 ft-lb)


G2MT00132-99999

APPLICATION POINTS OF GREASE & BOND AND APPLICATION PROCEDURE

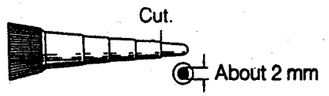
① **NOTE:**
As for each gear clustered on the input and output shafts and the rotary and sliding sections of the oil seals, apply gear oil to the entire surface of each part.



G2MT00133-99999

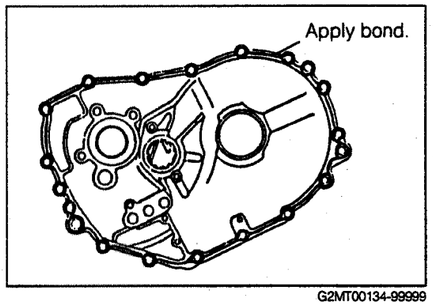
Application Procedure for Liquid Gasket Sealer (Three Bond 1216 ... Part No. 999-0480-8U90-01)

1. Cut the first stage of the nozzle of the sealer (Three Bond 1216) that is furnished in accessories.

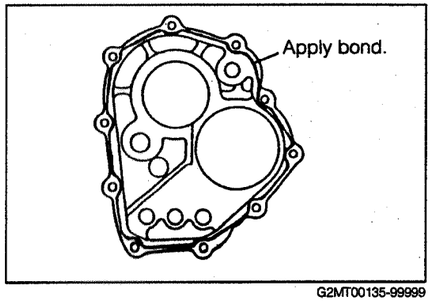


2. Remove any remaining trace of the liquid gasket that may be found on the housing or the case with thinner or a scraper. Care must be exercised not to scratch the surfaces during the cleaning.

3. Apply the liquid sealer to the entire periphery of the housing and case without any unapplied spot, as indicated in the illustration at the right.
   NOTE:
   1. Apply the liquid sealer to the inside of each hole, excluding those bolts holes.
   2. Be sure to perform the assembling within five minutes after the application of the liquid sealer.
   3. Make sure to dry the thinner completely.



G2MT00134-99999

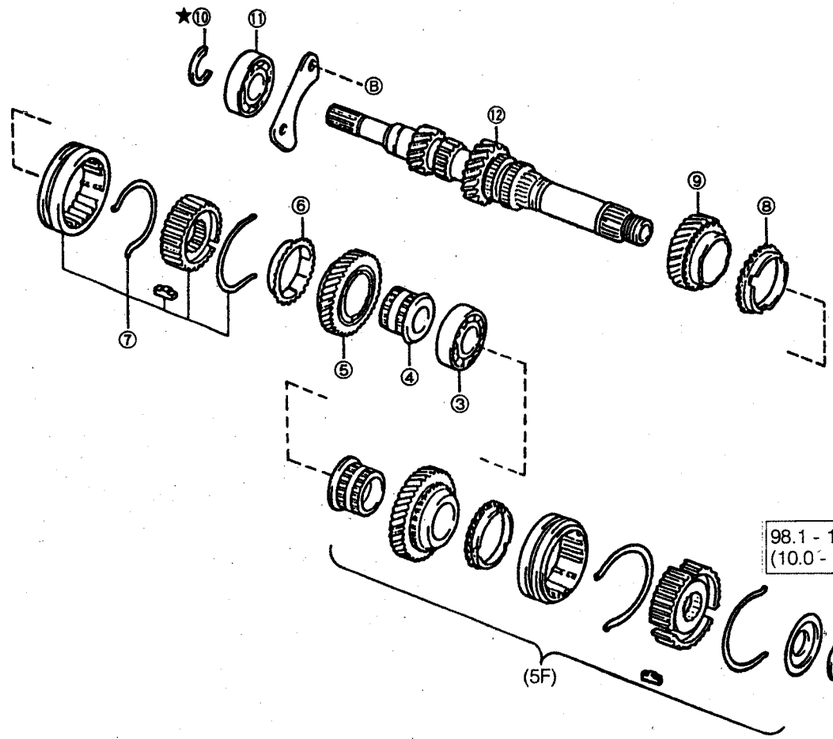


G2MT00135-99999

NOTE:
〈Handling Instructions on Liquid gasket〉
1. The liquid gasket starts to cure when it reacts with the moisture in the atmosphere. Hence, upon completion of the work, be sure to expel any air trapped in the tube and tighten the tube cap securely.
2. As regards the storage place for this liquid gasket, avoid such places where high temperature or high humidity prevails or those exposed to direct sunrays. Make sure to store it in a dry, cold and dark place.
   (The allowable limit for use is approximately six months.)

INPUT SHAFT

COMPONENTS



□ : Tightening torque
Unit : N·m (kgf-m, ft-lb)
★ : Non-reusable parts

① Lock nut
② Conical washer
③ Bearing
④ 4th gear bushing
⑤ 4th gear
⑥ Synchronizer ring
⑦ Synchronizer hub assembly No. 2
⑧ Synchronizer ring
⑨ 3rd gear
⑩ Shaft snap ring
⑪ Bearing
⑫ Input shaft

G2MT00136-99999

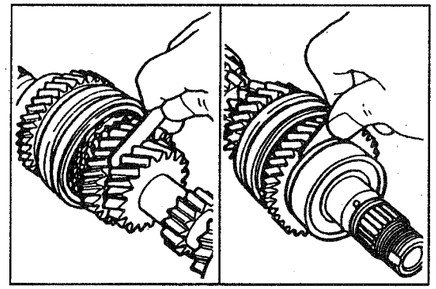
Operation Prior to Disassembly

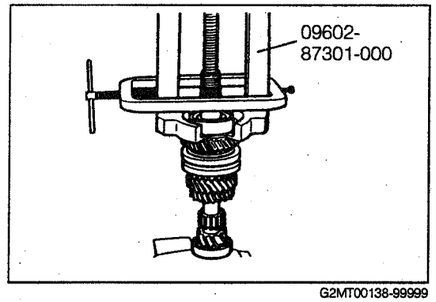
1. Pull out the input shaft and the output shaft at the same time from the transmission case.
2. Measure the end play of the 3rd gear and 4th gear.

Part	Specified value mm	Limit mm
3rd gear	0.1 - 0.37	0.5
4th gear	0.1 - 0.23	0.4

DISASSEMBLY

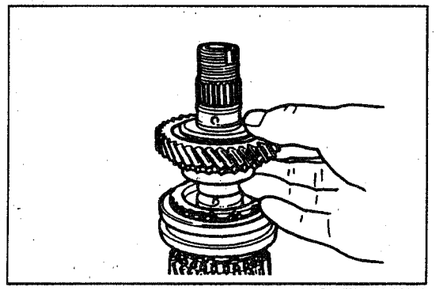
1. Remove the bearing, using the following SST.
   SST: 09602-87301-000


G2MT00137-99999

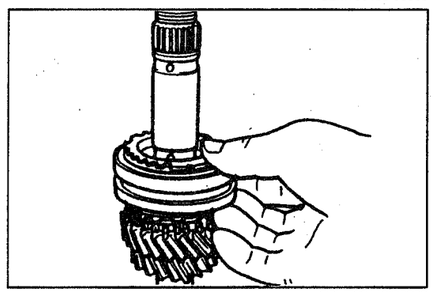


G2MT00138-99999

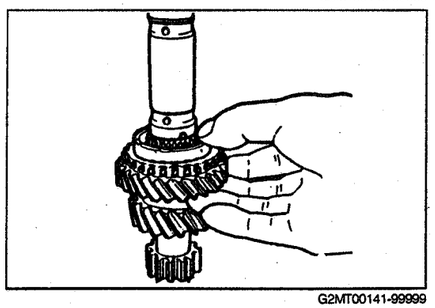
2. Remove the 4th gear and 4th gear bush.


G2MT00139-99999

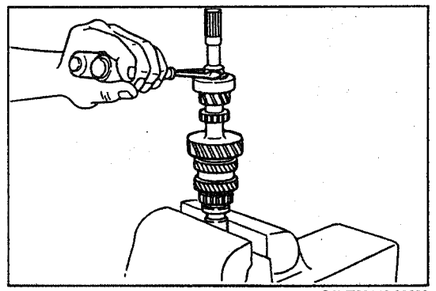
3. Remove the synchronizer ring. Then, remove the synchronizer hub assembly No. 2.
   Detach the two synchromesh shifting springs and three synchromesh shifting keys.


G2MT00140-99999

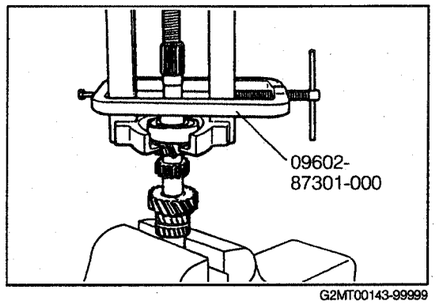
4. Remove the synchronizer ring and 3rd gear.


G2MT00141-99999

5. Detach the shaft snap ring, using two screwdrivers.
   NOTE:
   - Special care must be exercised as to the snap ring which may be lost during the disassembly.


G2MT00142-99999

6. Remove the bearing, using the following SST.
   SST: 09602-87301-000

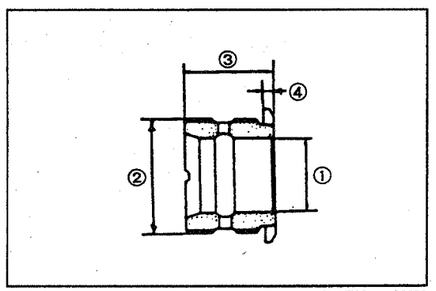


G2MT00143-99999

INSPECTION

1. Check the 4th and 5th gear bush for wear or damage.

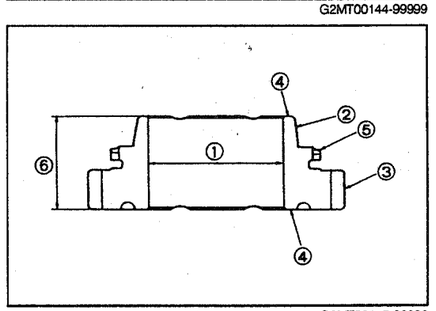
Part		Specified value mm	Limit mm
Bore	①	$25^{+0.042}_{+0.027}$	25.05
Outer diameter	②	$37^{-0.040}_{-0.060}$	36.89
Overall length	③	29 ± 0.03	28.97
Thickness of flange section	④	3 ± 0.06	2.94



G2MT00144-99999

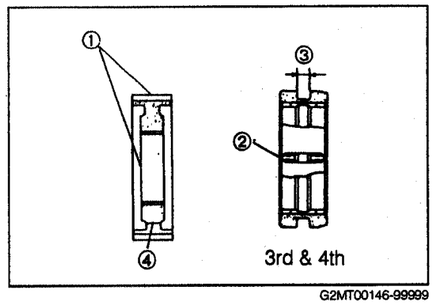
2. Check each gear for wear or damage.

Part	Specified value mm		Limit mm	
	Bore ①	Width ⑥	Bore ①	Width ⑥
3rd gear (input)	$37^{+0.025}_{+0}$	$27.5^{-0.20}_{-0.27}$	37.05	27.2
4th gear (input)	$37^{+0.025}_{+0}$	$26^{-0.13}_{-0.20}$	37.05	25.7
5th gear (input)	$37^{+0.025}_{+0}$	$26^{-0.13}_{-0.20}$	37.05	25.7
Splined section				
Gear section ③	Visually inspect the section for excessive damage or wear.			
Tapered section ②				
Both edge surfaces of gear ④				
Fitting section with hub sleeve ⑤	Inspect the section for excessive play, nick or rounded edge.			



G2MT00145-99999

3. Check the clutch hub and sleeve for the 3rd & 4th gear use for wear or damage.



G2MT00146-99999

Clutch Hub

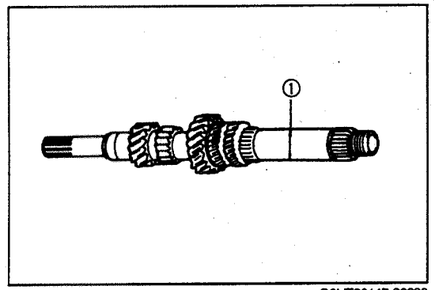
Part		Limit
Splined section	①	Visually inspect the section for excessive damage or wear.
Synchromesh shifting key fitting groove	②	
With the hub fitted into the sleeve, check for excessive looseness in up-&-down direction and slant of the hub and sleeve.		

Sleeve

Part		Specified value mm	Limit mm
Shift fork groove width	③	7.0 $^{+0.12}_{+0.05}$	7.3
Fitting section with gear	④	Visually inspect the section for excessive damage, wear, nick or rounded edge.	

4. Check the input shaft for wear or damage.

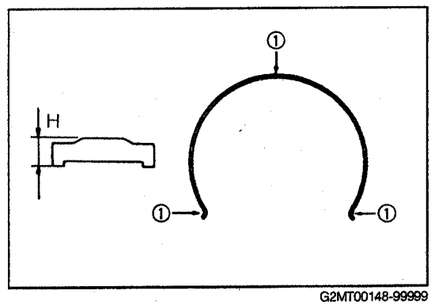
Part		Specified value mm	Limit mm
Outer diameter of bush bore-contact-section	①	25 $^{+0.017}_{+0.002}$	24.99
Tooth surfaces of gear and spline		Visually inspect the surface for excessive damage, wear, nick or rounded edge.	



G2MT00147-99999

5. Check the synchromesh shifting key and key spring for wear or damage.

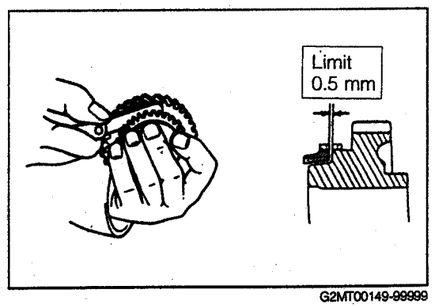
Part		Specified value mm	Limit mm
Key for 3rd & 4th gear (dimension H)		5.0 $^{-0.2}_{-0.4}$	4.3
Spring	①	Visually inspect the spring for damage or distortion.	



G2MT00148-99999

6. Check the synchronizer ring for wear or damage.

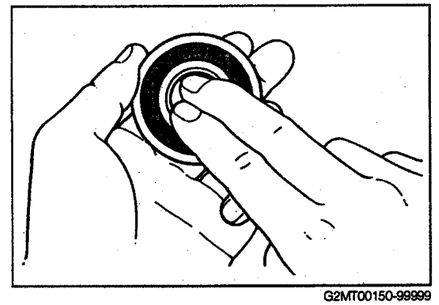
Part		Specified value mm	Limit mm
Gap when synchronizer ring is pressed to gear	3rd and 4th gears	0.85 - 1.45	0.5
Damage at inner tapered section		Visually inspect the section for excessive damage.	
Damage at spline			



G2MT00149-99999

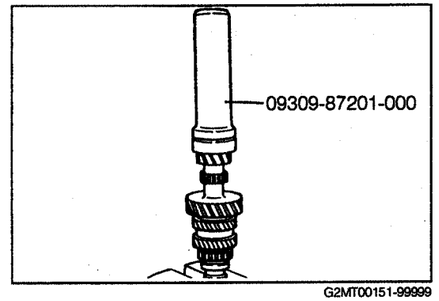
7. Check the bearing for wear or damage.

Part	Inspection criteria
Bearing	When the inner race is turned by your fingers, it should turn smoothly without any binding.


G2MT00150-99999

ASSEMBLY

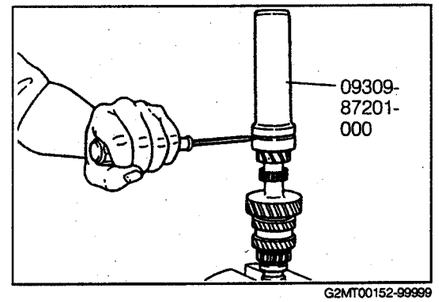
1. Apply gear oil to the entire surface of the rotary or sliding section of each gear of the input shaft.
2. Assemble the bearing, using the following SST.
   SST: 09309-87201-000



G2MT00151-99999

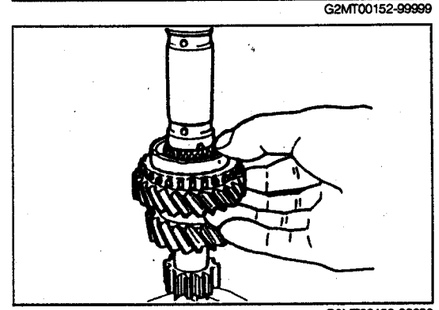
3. Drive a new snap ring into position, using a screwdriver. For easier installation, hold the snap ring with the following SST.
   SST: 09309-87201-000

CAUTION:
- Be very careful not to scratch the shaft.

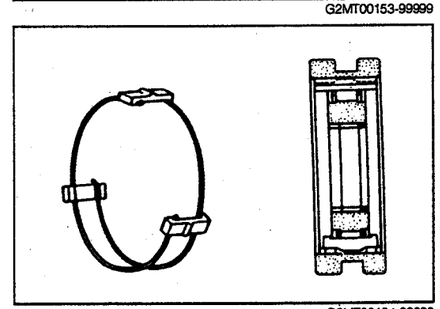


G2MT00152-99999

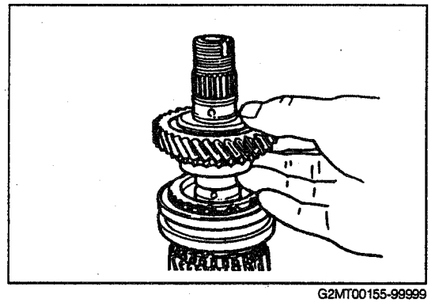
4. Assemble the 3rd gear.


G2MT00153-99999

5. Assemble the synchronizer ring and synchronizer hub assembly No. 2.
   (1) Assemble the clutch and sleeve. Ensure that both parts can slide smoothly.
   (2) Assemble the shifting keys and springs.

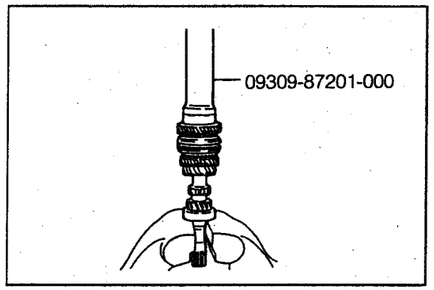

G2MT00154-99999

6. Assemble the synchronizer ring and 4th gear.
7. Assemble the 4th gear bushing.



G2MT00155-99999

8. Assemble the bearing, using the following SST.
   SST: 09309-87201-000

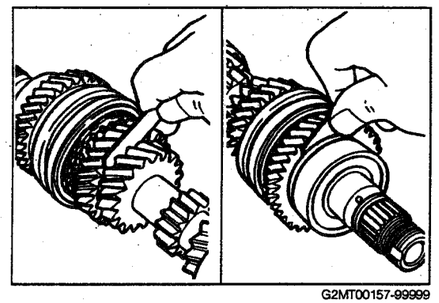


G2MT00156-99999

9. Upon completion of the assembly, measure the end play of each part of the input shaft.

Part	Specified value mm	Limit mm
3rd gear	0.1 - 0.37	0.5
4th gear	0.1 - 0.23	0.4

NOTE:
- If the end play does not comply with the specification, check the gear, bushing and clutch hub sliding section. Replace any parts which exhibit abnormality.

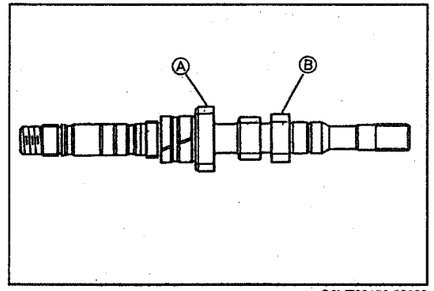


G2MT00157-99999

DISCRIMINATION

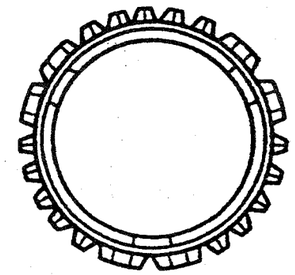
1. Discrimination of input shaft

Specifications		General	European Australian
Discrimination No.		67	66
Tooth number	A	19	
	B	11	



G2MT00158-99999

2. Discrimination of synchronizer ring



Synchronizer ring No. 1
(For 3rd, 4th and 5th gear)

G2MT00159-99999

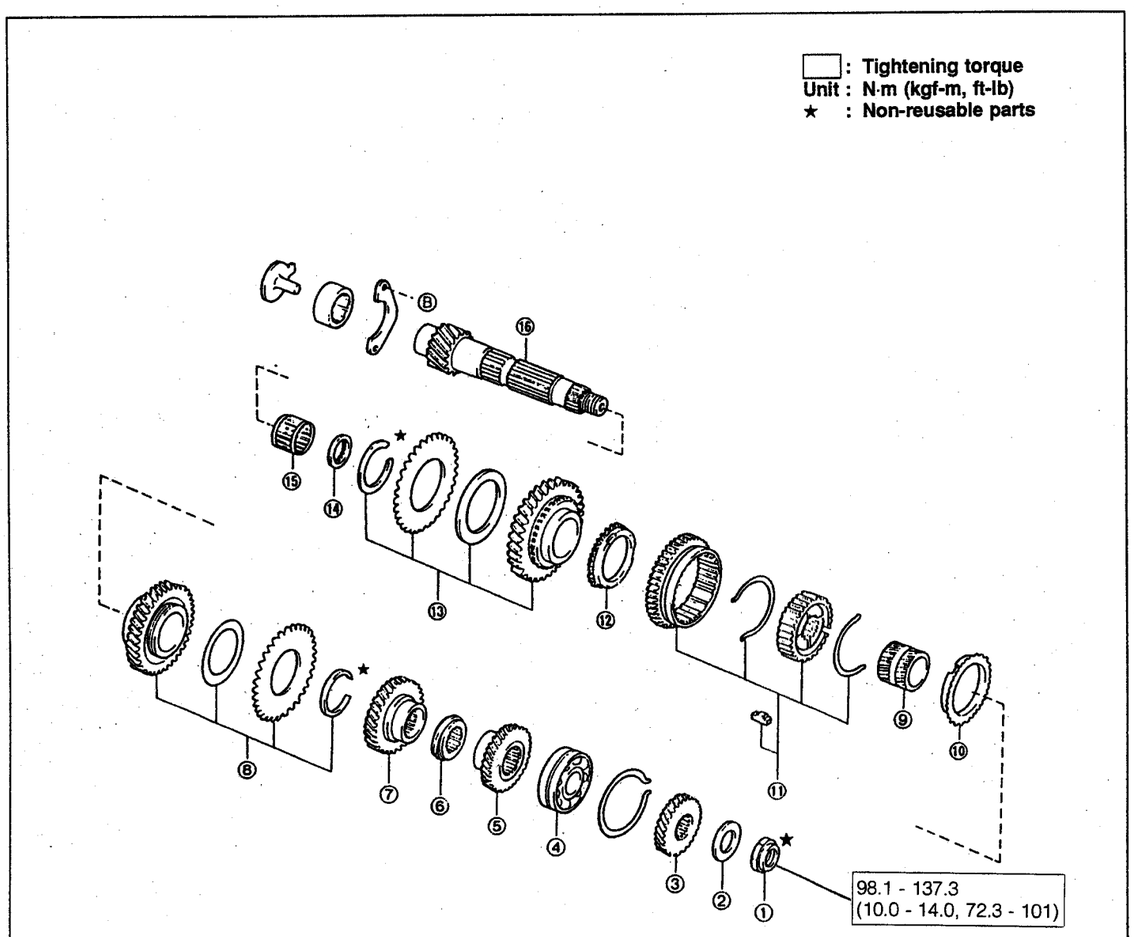
3. Discrimination of 3rd, 4th and 5th gears.

Specifications		General	European Australian
Discrimination No.		67	66
Tooth number	3rd	28	
	4th	37	
	5th	41	

G2MT00160-00000

OUTPUT SHAFT

COMPONENTS



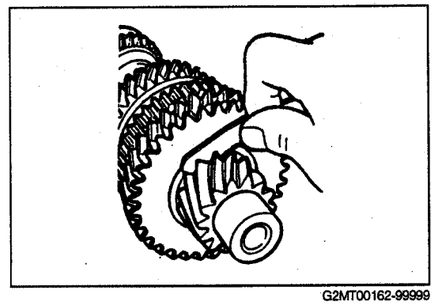
① Lock nut
② Conical spring washer
③ Output 5th gear
④ Bearing
⑤ Output 4th gear
⑥ Speedometer drive gear
⑦ Output 3rd gear
⑧ 2nd gear assembly
⑨ Bushing
⑩ Synchronizer ring No. 3
⑪ Synchronizer hub assembly
⑫ Synchronizer ring No. 2
⑬ 1st gear assembly
⑭ Washer
⑮ Needle roller bearing
⑯ Output shaft

G2MT00161-99999

Operation Prior to Disassembly

1. Pull out the output shaft and the input shaft at the same time from the transmission case.
2. Measure the end play of the 1st and 2nd gear of the output shaft.

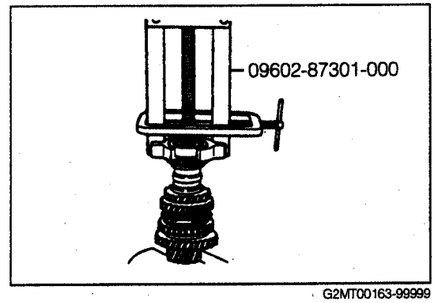
Part	Specified value mm	Limit mm
1st gear	0.1 - 0.37	0.5
2nd gear	0.1 - 0.23	0.4



G2MT00162-99999

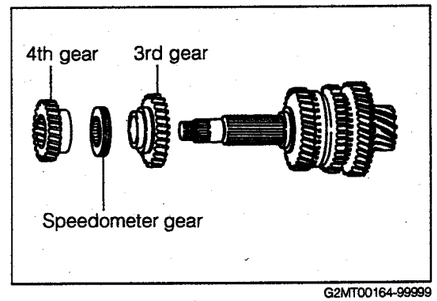
DISASSEMBLY

1. Remove the conical spring washer. Then, remove the bearing, using the following SST.
   SST: 09602-87301-000



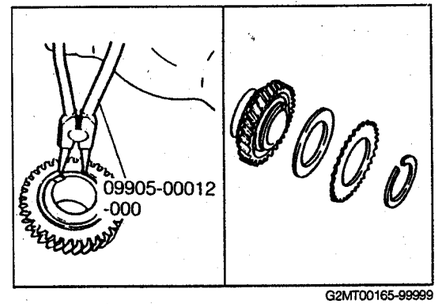
G2MT00163-99999

2. Remove the output 4th gear, speedometer drive gear and output 3rd gear.



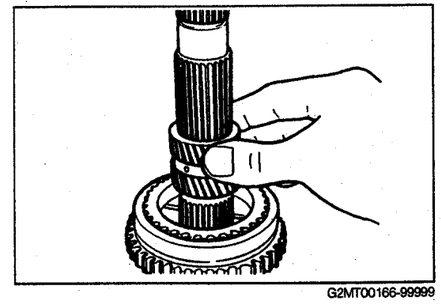
G2MT00164-99999

3. Remove the 2nd gear assembly.
   (1) Detach the shaft snap ring, using the following SST.
   SST: 09905-00012-000
   (2) Remove the 2nd subgear.
   (3) Remove the conical spring washer.



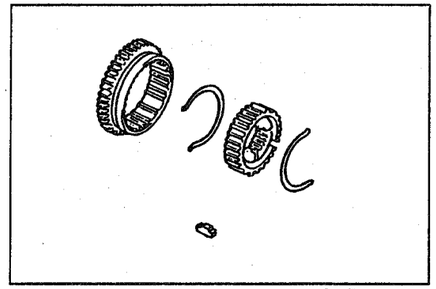
G2MT00165-99999

4. Remove the 2nd gear bush and synchronizer ring No. 3.



G2MT00166-99999

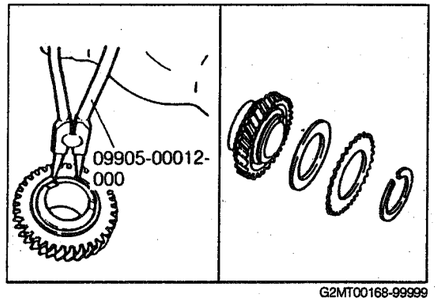
5. Removal of synchronizer hub assembly.
   (1) Remove the two synchromesh shifting key springs and three synchromesh shifting keys.
6. Remove the synchronizer ring No. 2.



G2MT00167-99999

7. Removal of 1st gear assembly
   (1) Detach the shaft snap ring, using the following SST.
   SST: 09905-00012-000

   (2) Remove the 1st subgear.
   (3) Remove the conical spring washer.
8. Remove the spacer and needle roller bearing.

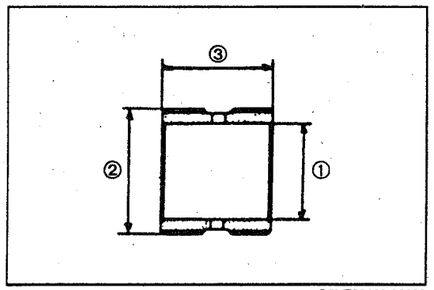


G2MT00168-99999

INSPECTION

1. Check the 2nd gear bushing for wear or damage.

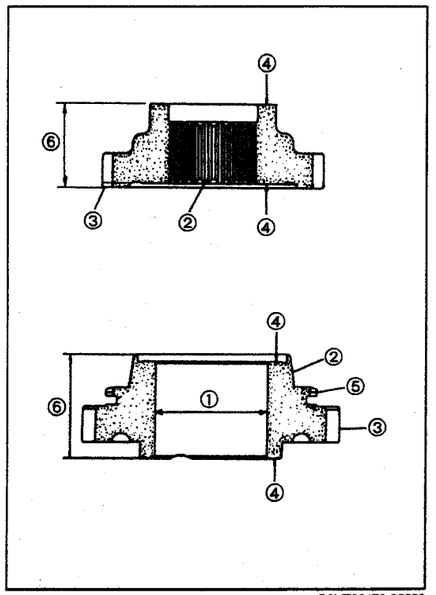
Part		Specified value mm	Limit mm
Bore	①	$29^{-0.115}_{-0.130}$	28.91
Outer diameter	②	$37^{-0.040}_{-0.060}$	36.89
Overall length	③	32.5 ± 0.03	32.47



G2MT00169-99999

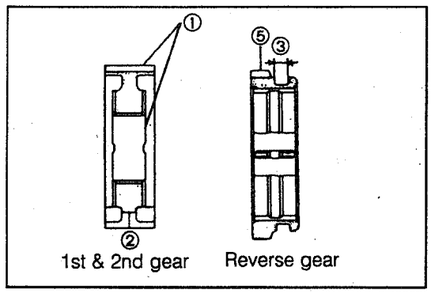
2. Check each gear for wear or damage.

Part		Specified value mm		Limit mm	
		Bore ①	Width ⑥	Bore ①	Width ⑥
1st gear (output)		$37^{+0.025}_{+0}$	$32.5^{-0.20}_{-0.27}$	37.05	32.2
2nd gear (output)		$37^{+0.025}_{+0}$	$32.5^{-0.13}_{-0.20}$	37.05	32.2
3rd gear (output)		—	26 ± 0.03	—	
4th gear (output)		—	29.5 ± 0.03	—	
5th gear (output)		—	13.5 ± 0.15	—	
Splined section Tapered section	②	Visually inspect the section for excessive damage or wear.			
Gear section	③				
Both edge surfaces of gear	④				
Fitting section with hub sleeve	⑤	Inspect the section for excessive play, nick or rounded edge.			



G2MT00170-99999

3. Check the clutch hub for the 1st & 2nd gears and reverse gear for wear or damage.



G2MT00171-99999

Clutch Hub

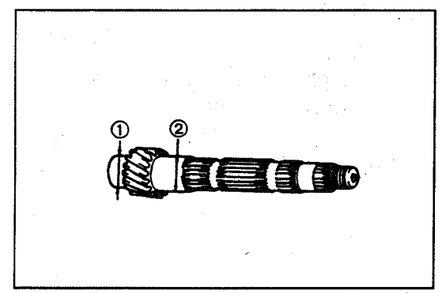
Part		Limit
Splined section	①	Visually inspect the section for excessive damage or wear.
Synchromesh shifting key fitting groove	②	
With the hub fitted into the sleeve, check for excessive looseness in up-&-down direction and the slant of the hub and sleeve.		

Reverse Gear

Part		Specified value mm	Limit mm
Shift fork groove width	③	$7.0^{+0.18}_{+0.05}$	7.3
Fitting section with gear	④	Visually inspect the section for excessive damage, wear, nick or rounded edge.	
Reverse gear tooth surface	⑤		

4. Check the output shaft for wear or damage.

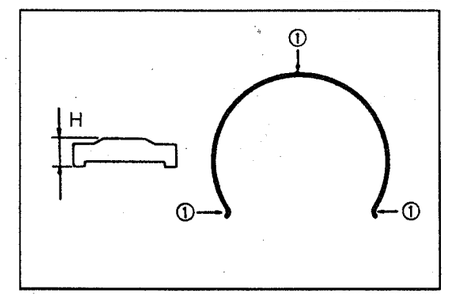
Part		Specified value mm	Limit mm
Outer diameter of needle roller bearing-contact-section	①	$30^{+0}_{-0.021}$	29.96
	②	$32^{-0.009}_{-0.029}$	31.96
Tooth surfaces of gear and spline		Visually inspect the surface for excessive damage, wear, nick or rounded edge.	



G2MT00172-99999

5. Check the synchromesh shifting key and key spring for wear or damage.

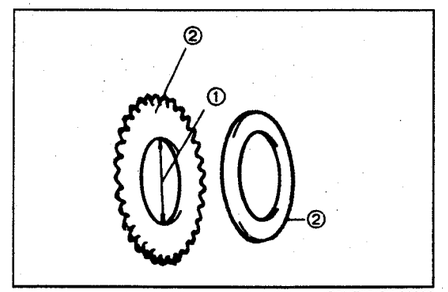
Part		Specified value mm	Limit mm
Shifting key for 1st & 2nd gears (dimension H)		5.1 ± 0.1	4.7
Spring	①	Visually inspect the spring for damage or distortion.	



G2MT00173-99999

6. Check the 1st and 2nd subgears and conical spring washer for damage or wear.

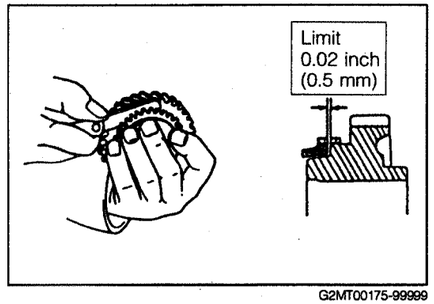
Part		Specified value mm	Limit mm
Bore of subgear	①	$47^{+0.2}_{+0}$	4.75
Subgear-to-conical spring washer sliding surface	②	Visually inspect the surface for damage or distortion.	



G2MT00174-99999

7. Check the synchronizer ring for wear or damage.

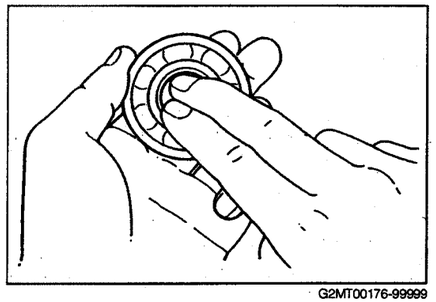
Part		Specified value mm	Limit mm
Gap when synchronizer ring is pressed to gear	1st and 2nd gears	0.85 - 1.45	0.5
Damage at inner tapered section		Visually inspect the section for excessive damage.	
Damage at spline			



G2MT00175-99999

8. Check the bearing for wear or damage.

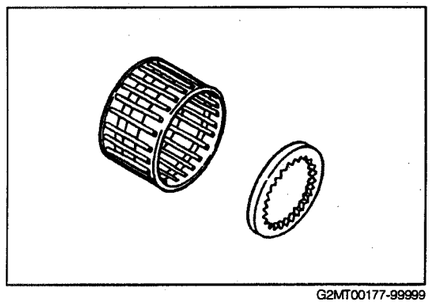
Part	Inspection criteria
Bearing	When the inner race is turned by your fingers, it should turn smoothly without any binding.


G2MT00176-99999

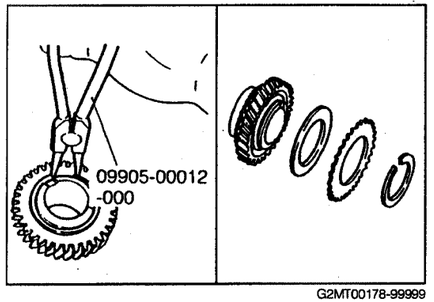
ASSEMBLY

NOTE:
- Apply gear oil to the entire surface of the rotary or sliding section of each gear of the output washer.

1. Assemble the needle roller bearing and washer.

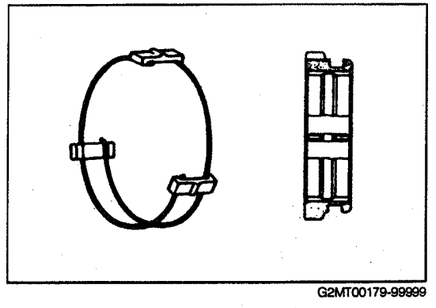

G2MT00177-99999

2. Installation of the 1st gear assembly
   (1) Install the conical spring in such a way that its expanded side may face toward the subgear side.
   (2) Assemble the 1st subgear.
   (3) Assemble a new snap ring, using the following SST.
   SST: 09905-00012-000

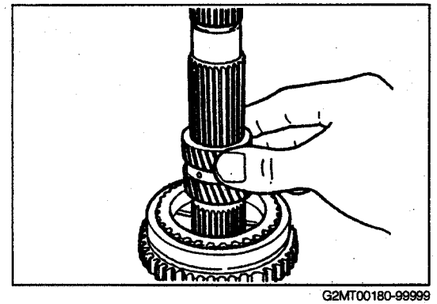


G2MT00178-99999

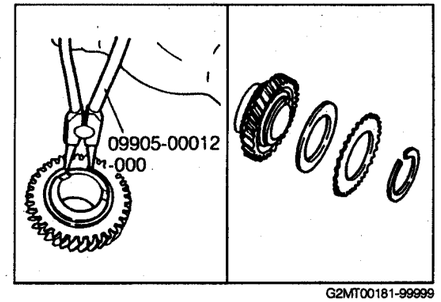
3. Assemble the synchronizer ring No. 2.
4. Assembly of the synchronizer hub assembly.
   (1) Assemble the hub clutch and reverse gear. Ensure that both parts can slide smoothly.
   (2) Assemble the shifting keys and springs.


G2MT00179-99999

5. Assemble the synchronizer ring No. 3, bushing and 2nd gear.

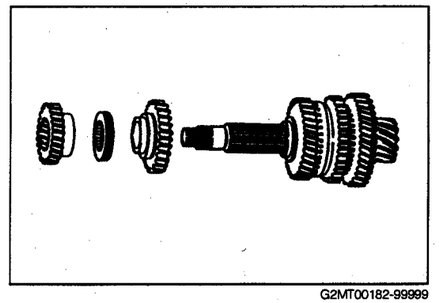

G2MT00180-99999

6. Installation of the 2nd gear assembly
   (1) Install the conical spring in such a way that its expanded side may face toward the subgear side.
   (2) Assemble the 2nd subgear.
   (3) Assemble a new snap ring, using the following SST.
   SST: 09905-00012-000



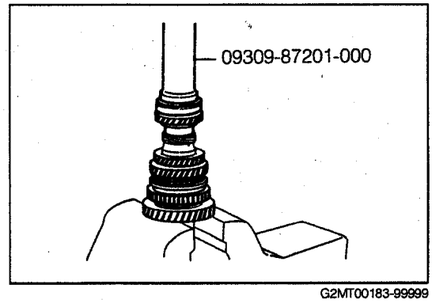
G2MT00181-99999

7. Assemble the output 3rd gear, speedometer drive gear and output 4th gear.
   NOTE:
   - Apply gear oil to the entire surface of the rotary or sliding section of each gear.


G2MT00182-99999

8. Assemble the bearing, using the following SST.
   SST: 09309-87201-000

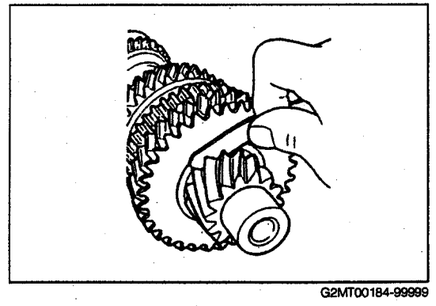
   NOTE:
   - The bearing should be assembled in such a way that the groove in the bearing outer race may come at the upper side.



G2MT00183-99999

9. Upon completion of the assembly, measure the end play of each part of the output shaft.

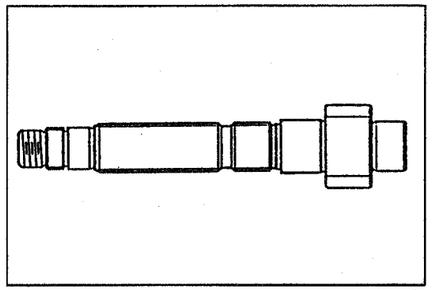
Part	Specified value mm	Limit mm
1st gear	0.1 - 0.37	0.5
2nd gear	0.1 - 0.23	0.4


G2MT00184-99999

DISCRIMINATION

1. Discrimination of output shaft

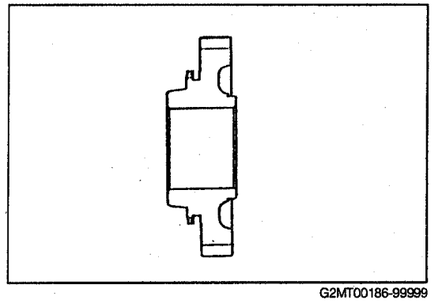
Specifications	General	European Australian
Discrimination No.	67	66
Tooth number	15	14



G2MT00185-99999

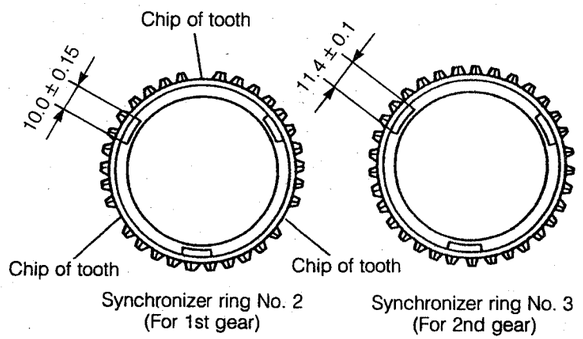
2. Discrimination of 1st and 2nd gears.

Specifications		General	European Australian
Discrimination No.		67	66
Tooth number	1st	34	
	2nd	35	



G2MT00186-99999

3. Discrimination of synchronizer ring



G2MT00187-99999

4. Discrimination of speedometer drive gear

Specifications	General	European Australian
Discrimination No.	67	66
Tooth number	4/18	5/21

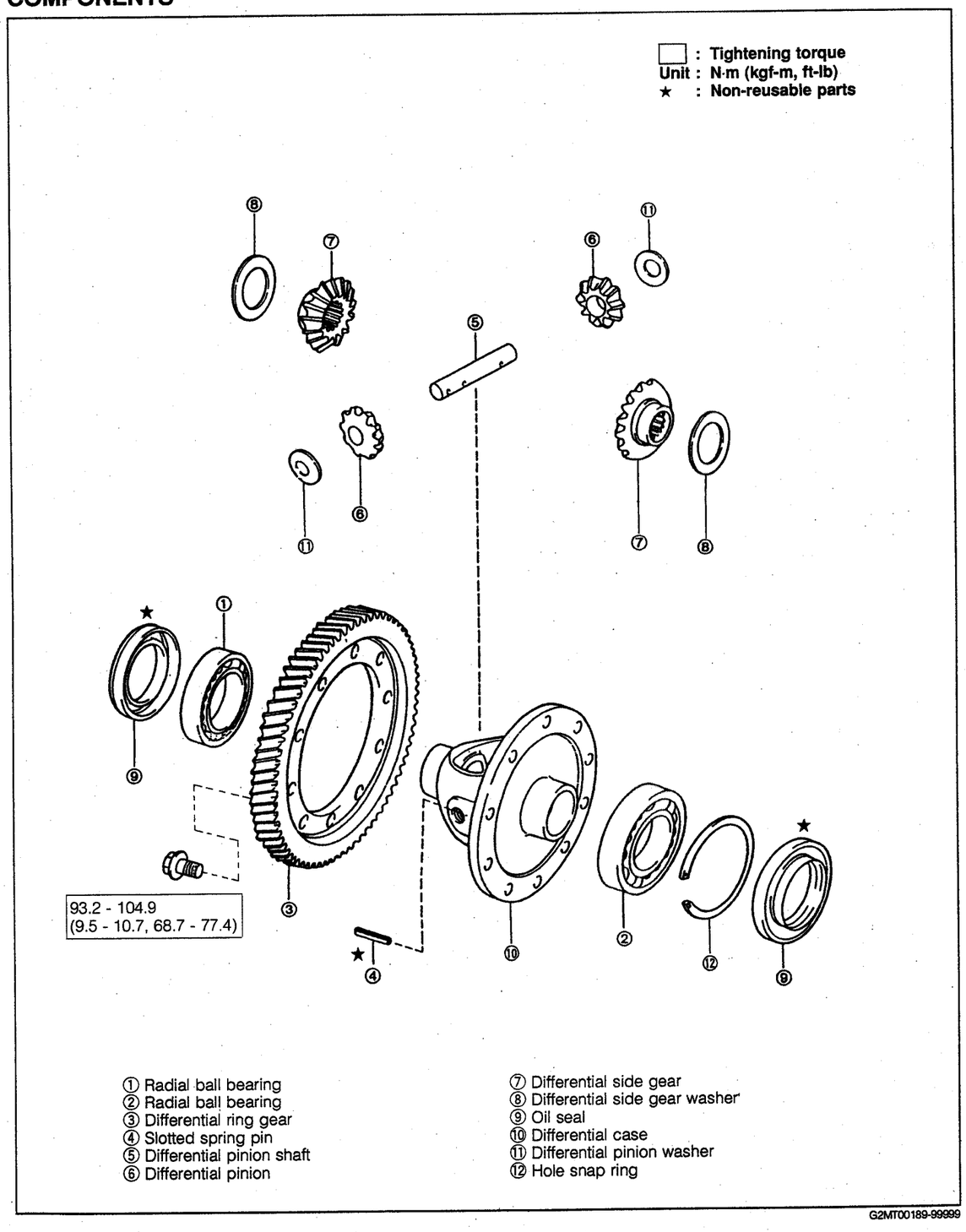
5. Discrimination of output 3rd, 4th and 5th gears

Specifications		General	European Australian
Discrimination No.		67	66
Tooth number	3rd	35	
	4th	32	
	5th	29	

G2MT00188-00000

DIFFERENTIAL GEAR

COMPONENTS



① Radial ball bearing
② Radial ball bearing
③ Differential ring gear
④ Slotted spring pin
⑤ Differential pinion shaft
⑥ Differential pinion
⑦ Differential side gear
⑧ Differential side gear washer
⑨ Oil seal
⑩ Differential case
⑪ Differential pinion washer
⑫ Hole snap ring

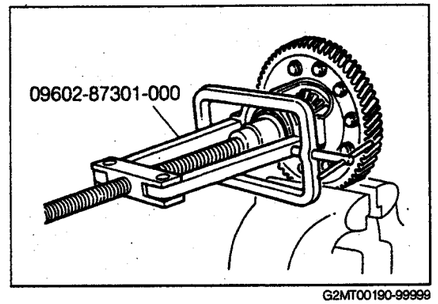
G2MT00189-99999

BEARING

NOTE:
- Check bearings for wear and rough rotation. If bearings are normal condition, removal is not necessary.

REMOVAL

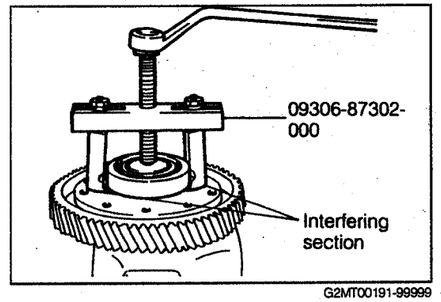
1. Remove the bearing at the engine side, using the following SST.
   SST: 09602-87301-000



G2MT00190-99999

2. Remove the bearing at the transmission side, using the following SST.
   SST: 09306-87302-000

NOTE:
- Grinding off the interfering section of the SST will make the operation easier.

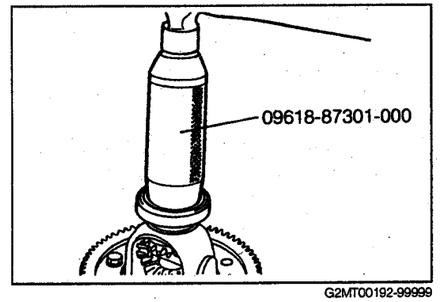


G2MT00191-99999

INSTALLATION

1. Assemble a new radial ball bearings, using the following SST.
   SST: 09618-87301-000

NOTE:
- Install the radial ball bearings with the bearing having a larger outer diameter assembled at the ring gear side.



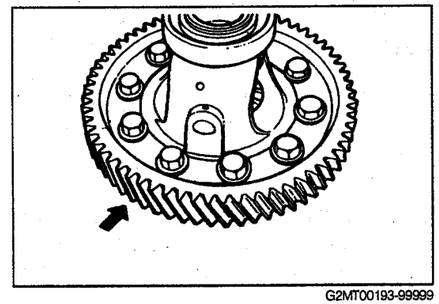
G2MT00192-99999

DIFFERENTIAL GEAR

INSPECTION

1. Check the differential ring gear for wear or damage.

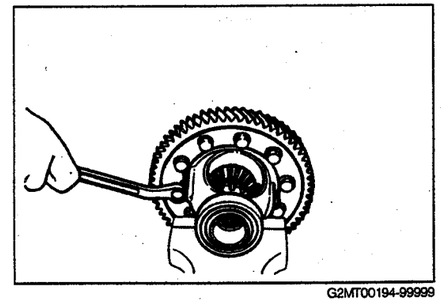
Part	Inspection criteria
Gear tooth surface	Visually inspect the surface for wear, damage, nick or rounded edge.



G2MT00193-99999

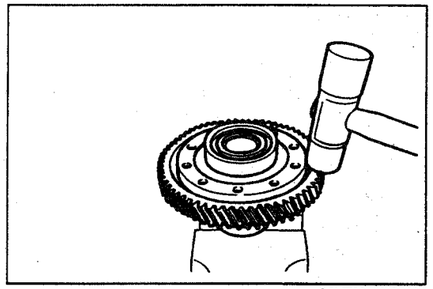
REMOVAL

1. Clamp the differential case in a vise. Remove the attaching bolts.



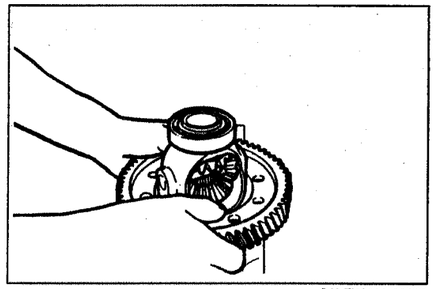
G2MT00194-99999

2. Remove the differential ring gear.
   If any difficulty in removing the ring gear is encountered, evenly tap the peripheral section of the ring gear, using a plastic hammer.


G2MT00195-99999

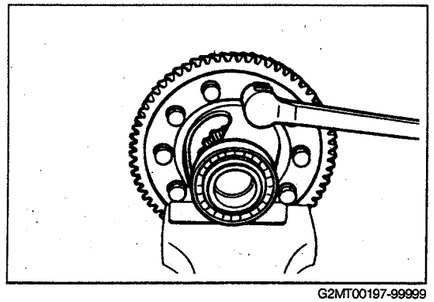
INSTALLATION

1. Install the ring gear in such a way that the side having large chamfer at its inner diameter comes at the case side.


G2MT00196-99999

2. Tighten the ring gear attaching bolts.
   Tightening Torque:
   93.2 - 104.9 N·m (9.5 - 10.7 kgf-m, 68.7 - 77.4 ft-lb)

NOTE:
- Be sure to attach the lock plate to the two bolts provided in the pinion shaft direction.

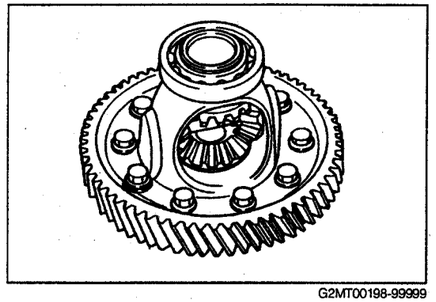

G2MT00197-99999

DIFFERENTIAL CASE

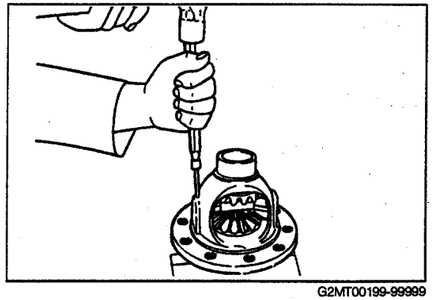
DISASSEMBLY

NOTE:
- As for the side gears, pinions and pinion shaft, their disassembling and assembling operations can be carried out without removing both bearings or ring gear.

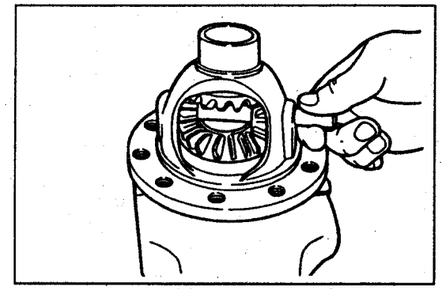
1. Disassemble the radial ball bearings.
2. Disassemble the ring gear.


G2MT00198-99999

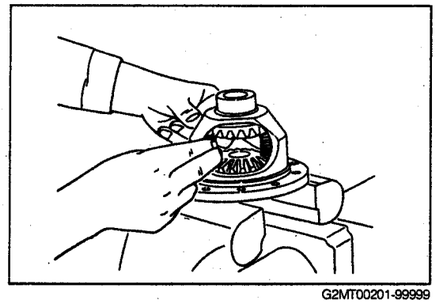
3. Drive out the slotted spring pin, using a punch pin.


G2MT00199-99999

4. Pull out the differential pinion shaft.


G2MT00200-99999

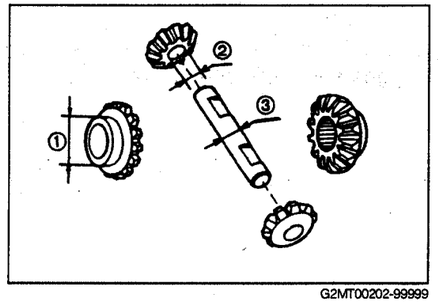
5. Remove the pinions, pinion washers, side gears and side gear washers.


G2MT00201-99999

INSPECTION

1. Check the side gears, pinions and pinion shaft for wear or damage.

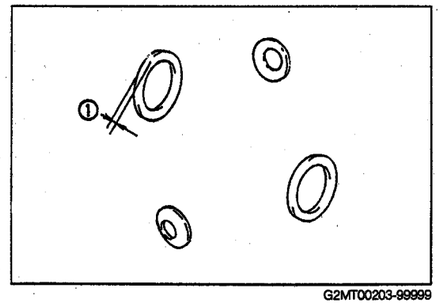
Part	Specified value mm	Limit mm
Outer diameter of the side gear boss section ①	$32.0^{-0.025}_{-0.050}$	31.95
Pinion shaft fitting hole of pinion ②	$15.0^{+0.06}_{+0.03}$	15.08
Outer diameter of pinion shaft ③	$15.0^{-0.038}_{-0.056}$	14.95
Check the gear tooth surface and the splined section of the side gear for wear or damage.		



G2MT00202-99999

2. Check the side gear thrust washers and pinion washers for wear or damage.

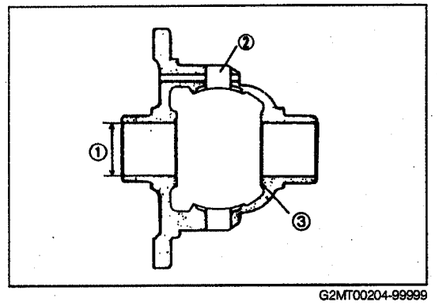
Part	Specified value mm	Limit mm
Thickness of thrust washer ①	0.8 ± 0.05	0.75
Washer surface	Visually inspect the section for excessive wear or damage.	



G2MT00203-99999

3. Check the differential case for wear or damage.

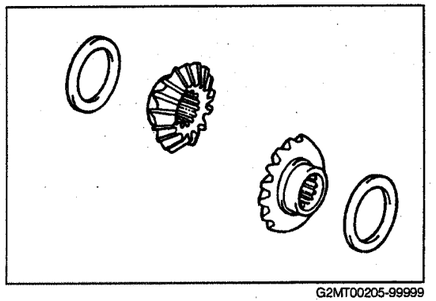
Part	Specified value mm	Limit mm
Side gear boss fitting hole ①	32 $^{+0.034}_{+0.009}$	32.08
Pinion gear contact section ②	Visually inspect the section for excessive wear or damage.	
Side gear thrust washer contact section ②		



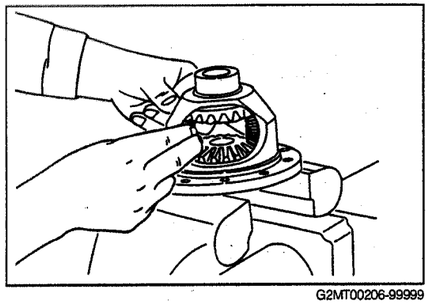
G2MT00204-99999

ASSEMBLY

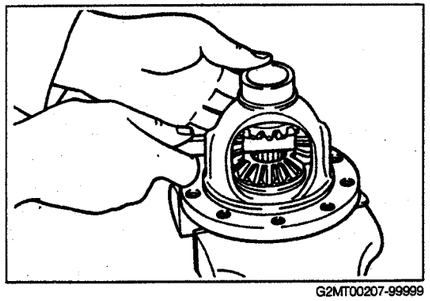
1. Assemble the differential washers and differential side gears into the differential case.


G2MT00205-99999

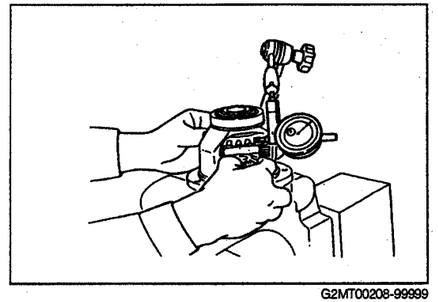
2. Assembly of differential pinions and washers
   (1) Make the two pinions mesh with the side gears, working from the case side. Rotate the side gear so that the pinion's hole may align with the pinion shaft hole provided in the case.


G2MT00206-99999

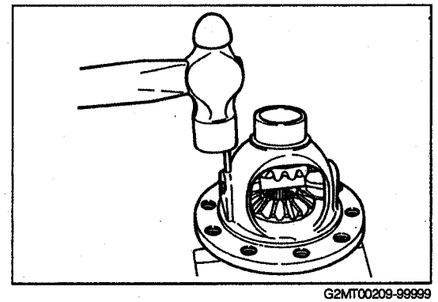
3. Assemble the differential pinion shaft.


G2MT00207-99999

4. Side gear backlash measurement
   (1) Fix the side gear at one side.
   (2) Measure the backlash of each side gear at the right and left sides at several points, using a dial gauge.
   Specified Backlash: 0.02 - 0.21 mm


G2MT00208-99999

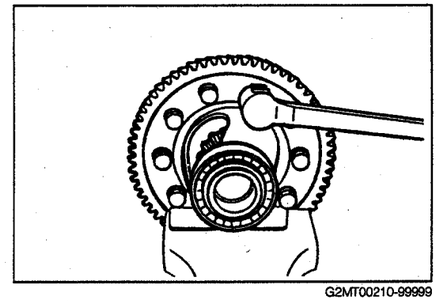
5. New slotted spring pin installation
   (1) Align the pin hole of the pinion shaft with the corresponding pin hole in the case.
   (2) Working from the backside of the case (ring gear side), drive a new slotted spring pin into position, until it becomes flush with the case edge surface.


G2MT00209-99999

6. Install the ring gear onto the differential case.
7. Tighten the ring gear attaching bolts.
   Tightening Torque:
   93.2 - 104.9 N·m (9.5 - 10.7 kgf-m, 68.7 - 77.4 ft-lb)

   NOTE:
   - **Be sure to attach the lock plate to the two bolts provided in the pinion shaft direction.**

8. Assemble the radial ball bearings.


G2MT00210-99999

DISCRIMINATION

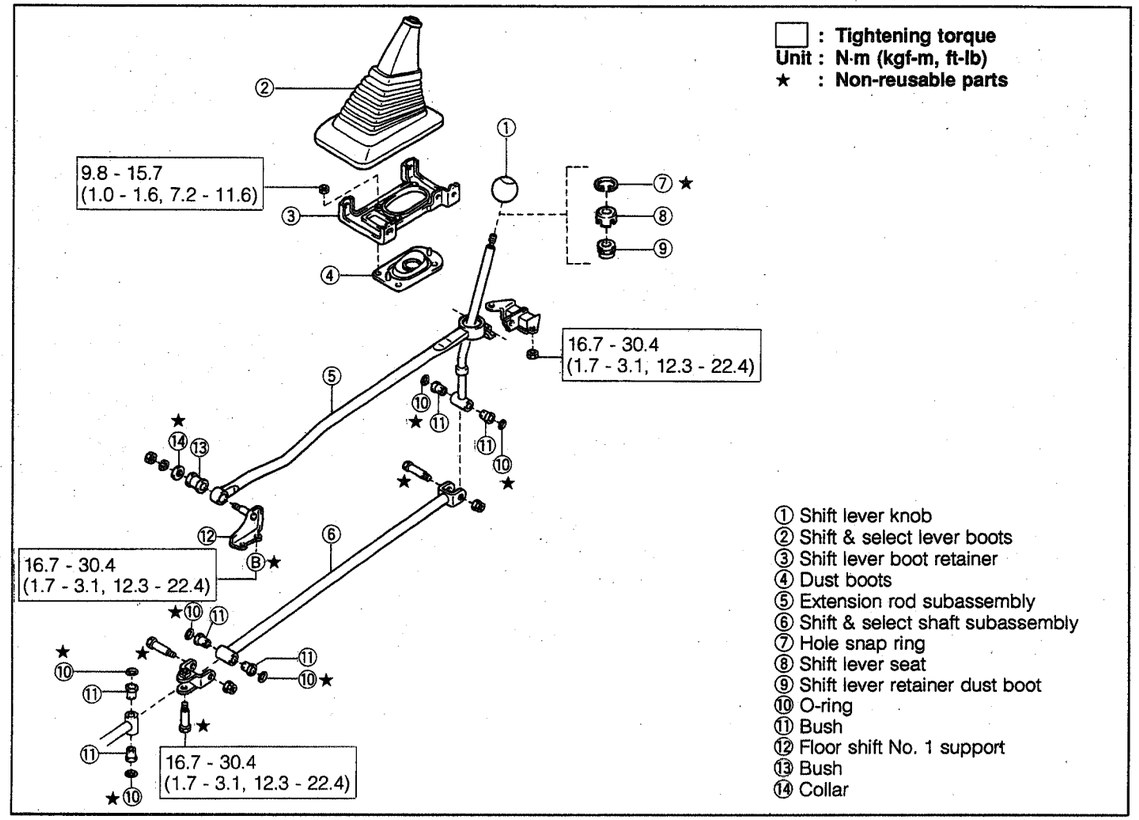
Discrimination of differential ring gear

Specifications	General	European Australian
Discrimination No.	67	66
Tooth number	74	65

G2MT00211-00000

SHIFT LEVER & SELECTING ROD

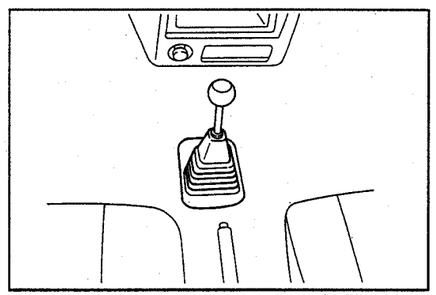
COMPONENTS



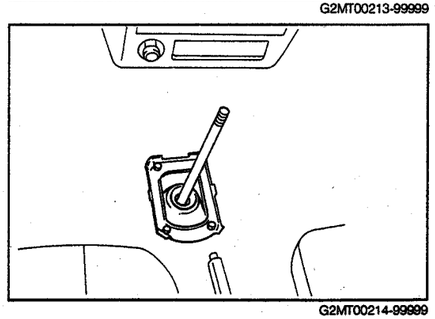
G2MT00212-99999

REMOVAL

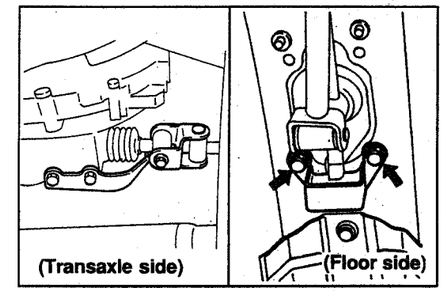
1. Remove the shift lever knob.
2. Remove the shift & select lever boot.


G2MT00213-99999

3. Remove the shift lever boot retainer and dust boot.


G2MT00214-99999

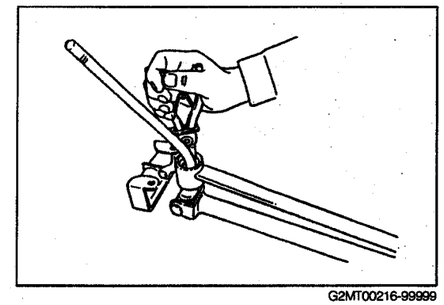
4. Disconnect the shift & select shaft and the extension rod from the transaxle.
5. Pull out the shift & select shaft together with the extension rod.



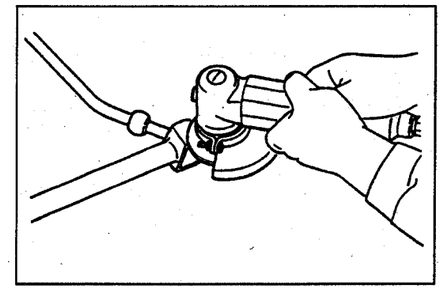
G2MT00215-99999

DISASSEMBLY

1. Remove the snap ring by using a snap ring pliers.
2. Remove the floor shift support No. 1.
3. Remove the nut, washer, collar and the bush for the floor shift support No. 1.

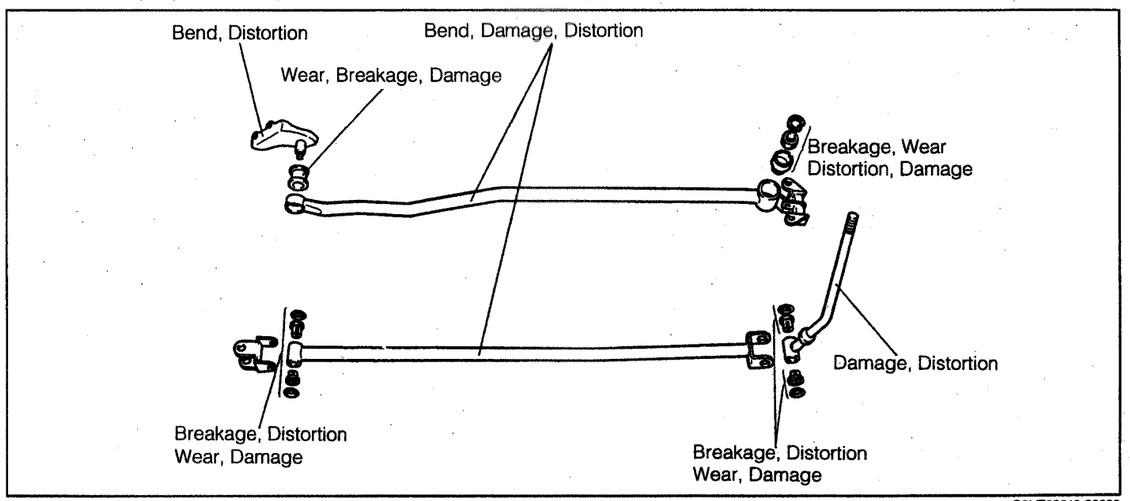

G2MT00216-99999

4. Remove the extension rod subassembly by using a grinder.
5. Remove the shift & select shaft subassembly by using a grinder.
6. Remove the control rod joint.
7. Remove the bush and O-ring.


G2MT00217-99999

INSPECTION

Inspect the following parts. Then, check to see if each joint section rotates smoothly and does not bind when assembled. (Replace the parts which exhibit abnormality.)



G2MT00218-99999

ASSEMBLY

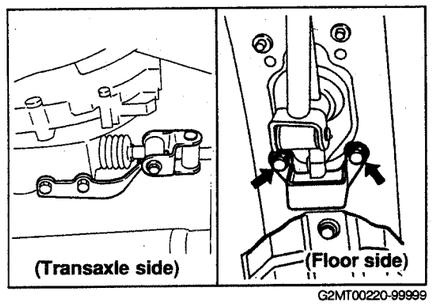
1. Install a new O-ring.
2. Apply MP grease to both the inner and outer surfaces of the bush and install it.
3. Install the control joint.
4. Assemble the shift & select shaft subassembly.
   NOTE:
   - In case of the spare part, as the connecting method of the shift & select shaft and shift lever is bolt connecting, be sure not to mistake the connecting method.
5. Install the extension rod subassembly.
6. Install the nut, washer, collar and the bush for the floor shift support No. 1.
7. Install the floor shift support No. 1.
   Tightening Torque: 15.7 - 20.6 N·m (Floor side)
   (1.6 - 2.1 kgf-m, 11.6 - 15.2 ft-lb)
8. Install a new snap ring by using a snap ring pliers.

G2MT00219-00000

INSTALLATION

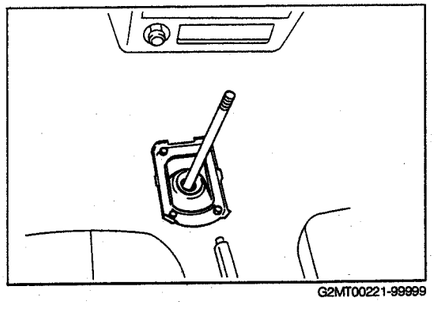
1. Install the shift & select shaft together with the extension rod.
2. Connect the floor shift support No. 2 of the extension rod subassembly to the body.
   Tightening Torque: 16.7 - 30.4 N·m (Floor side)
   (1.7 - 3.1 kgf-m, 12.3 - 22.4 ft-lb)
3. Connect the shift & select shaft subassembly and the extension rod subassembly to the transaxle.
   Tightening Torque: 16.7 - 30.4 N·m (Transaxle side)
   (1.7 - 3.1 kgf-m, 12.3 - 22.4 ft-lb)

   NOTE:
   - Be sure to use a new attaching bolts for both the shift & select shaft subassembly and extension rod subassembly.



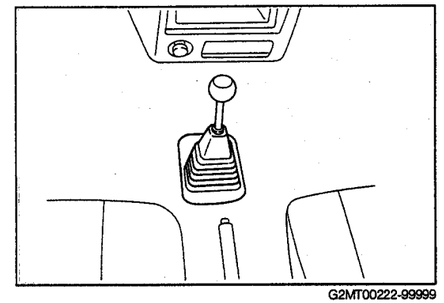
G2MT00220-99999

4. Install the shift lever boot retainer and dust boot.
   Tightening Torque: 9.8 - 15.7 N·m
   (1.0 - 1.6 kgf-m, 7.2 - 11.6 ft-lb)



G2MT00221-99999

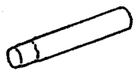
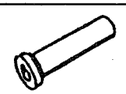
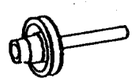
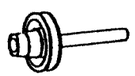
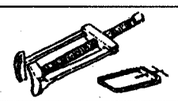
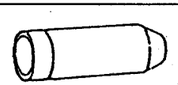
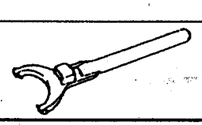
5. Install the shift & select lever boot.
6. Install the shift lever knob.



G2MT00222-99999

APPENDIX

SSTs (Special Service Tools)

Shape	Part No. and name	Purpose
	09201-60011-000 Valve guide bush remover & replacer	Assembling oil seal
	09301-87702-000 Clutch guide tool	Assembling clutch
	09306-87302-000 Counter gear front bearing puller	Removal of bearing
	09308-00010-000 Oil seal puller	Removal of roller bearing
	09309-87201-000 Transmission bearing replacer	Assembling bearing
	09515-87201-000 Rear axle shaft bearing replacer (Tip-end ϕ16.5)	Assembling oil seal
	09517-87701-100 Oil seal replacer (Transmission case side)	Assembling oil seal
	09517-87702-000 Oil seal replacer (Clutch housing side)	Assembling oil seal
	09602-87301-000 Counter gear bearing puller	Removal of bearing
	09606-87201-000 Front hub bearing remover & replacer (Tip-end ϕ24)	Assembling oil seal
	09618-87301-000 Transmission bearing replacer	Assembling bearing
	09905-00012-000 Snap ring expander	Removal of snap ring
	09921-00010-000 Spring tension tool	Removal of oil seal
	09648-87201-000 Drive shaft replacer	Removal of drive shaft

G2MT00223-99999

SERVICE SPECIFICATIONS

Unit: mm (inch)

Item		Specified value	Allowable limit	Remarks
2nd gear bush	Inner diameter	28.870 - 28.885 (1.1366 - 1.1372)	28.910 (1.1382)	
	Outer diameter	36.940 - 36.960 (1.4543 - 1.4551)	36.890 (1.4524)	
	Overall length	32.470 - 32.530 (1.2783 - 1.2807)	32.470 (1.2784)	
4th and 5th gear bush	Inner diameter	25.027 - 25.042 (0.9853 - 0.9859)	25.05 (0.986)	
	Outer diameter	36.940 - 36.960 (1.4543 - 1.4551)	36.89 (1.452)	
	Overall length	28.970 - 29.030 (1.1405 - 1.1429)	28.97 (1.141)	
	Thickness of flange section	2.94 - 3.06 (0.116 - 0.120)	2.94 (0.116)	
End play	1st gear	0.10 - 0.37 (0.0039 - 0.0146)	0.5 (0.0197)	
	2nd gear	0.10 - 0.23 (0.0039 - 0.0091)	0.4 (0.0157)	
	3rd gear	0.10 - 0.37 (0.0039 - 0.0146)	0.5 (0.0197)	
	4th gear	0.10 - 0.23 (0.0039 - 0.0091)	0.4 (0.0157)	
	5th gear	0.10 - 0.23 (0.0039 - 0.0091)	0.4 (0.0157)	
Gear width	1st gear	32.23 - 32.30 (1.2689 - 1.2717)	32.2 (1.268)	
	2nd gear	32.30 - 32.37 (1.2717 - 1.2744)	32.2 (1.268)	
	3rd gear	27.23 - 27.30 (1.0720 - 1.0748)	27.2 (1.071)	
	4th gear	25.80 - 25.87 (1.0157 - 1.0185)	25.7 (1.012)	
	5th gear	25.80 - 25.87 (1.0157 - 1.0185)	25.7 (1.012)	
Reverse idler gear and shaft	Bush inner diameter	17.000 - 17.027 (0.6693 - 0.6704)	17.050 (0.6713)	
	Shaft outer diameter	16.941 - 16.968 (0.6670 - 0.6680)	16.900 (0.6654)	
	Bush-to-shaft clearance Groove width	8.000 - 8.058 (0.3149 - 0.3172)	8.2 (0.322)	
Input shaft outer diameter		25.002 - 25.017 (0.9843 - 0.9849)	24.99 (0.984)	Bush installing position
Output shaft outer diameter	Front	29.979 - 30.000 (1.1803 - 1.1811)	29.96 (1.1795)	
	Rear	31.971 - 31.991 (1.2587 - 1.2595)	31.96 (1.2583)	
Synchronizer ring-to-gear clearance		0.85 - 1.45 (0.0335 - 0.0571)	0.5 (0.020)	
Differential pinion and side gear	Outer diameter of side gear boss section	31.950 - 31.975 (1.2578 - 1.2588)	31.95 (1.257)	

Unit: mm (inch)

Item		Specified value	Allowable limit	Remarks
Differential pinion and side gear	Inner diameter of pinion shaft fitting hole of pinion	15.03 - 15.08 (0.591 - 0.593)	15.08 (0.593)	
	Outer diameter of pinion shaft	14.944 - 14.962 (0.5883 - 0.5890)	14.95 (0.5885)	
Differential side gear-to-pinion backlash		0.02 - 0.20 (0.0008 - 0.0079)	—	
Speedometer shaft sleeve subassembly	Driven gear shaft diameter	7.972 - 7.987 (0.3139 - 0.3144)	7.96 (0.314)	
	Shaft sleeve bore	8.029 - 8.065 (0.3161 - 0.3175)	8.10 (0.318)	
Shift fork	Thickness of tip-section of fork	7.0 (0.276)	6.3 (0.248)	
	Groove width of shift inner lever-contact-section	12.1 - 12.2 (0.476 - 0.480)	12.7 (0.500)	
	Groove width of reverse shift arm pin-contact-section	15.000 - 15.043 (0.591 - 0.5922)	15.1 (0.5944)	
Length of interlock plate		16.15 - 16.45 (0.636 - 0.647)	16.0 (0.630)	
Reverse shift arm	Pin diameter	14.907 - 14.950 (0.5869 - 0.5886)	14.85 (0.5846)	
	Tip end width	7.884 - 7.920 (0.3104 - 0.3118)	7.8 (0.3071)	
Shift fork groove width of sleeve and reverse gear		7.05 - 7.18 (0.278 - 0.282)	7.3 (0.287)	
Thickness of syncromesh shifting key	for 1st & 2nd	5.0 - 5.2 (0.197 - 0.204)	4.7 (0.185)	
	for 3rd & 4th, 5th	4.6 - 4.8 (0.182 - 0.188)	4.3 (0.169)	

G2MT00224-00000

TIGHTENING TORQUE

Tightening component	Tightening torque		
	N·m	kgf-m	ft-lb
E/G mt. rear bracket × Transaxle	29.4 - 44.1	3.0 - 4.5	21.7 - 32.5
Transaxle × Engine	49.0 - 68.6	5.0 - 7.0	36.2 - 50.6
Engine mount bracket left × Transaxle	49.0 - 68.6	5.0 - 7.0	36.2 - 50.6
E/G mt. insulator left × Transaxle (Nut)	72.1 - 134	7.4 - 13.7	53.2 - 99.1
E/G mt. insulator left × Transaxle (Bolt)	48.0 - 89.2	4.9 - 9.1	35.4 - 65.8
Starter × Transaxle	39.2 - 53.9	4.0 - 5.5	28.9 - 39.8
Engine mount insulator rear × E/G mt. rear bracket	72.1 - 134	7.4 - 13.7	53.2 - 99.1
Shift control shaft × Transaxle	16.7 - 30.4	1.7 - 3.1	12.3 - 22.4
Lower arm × Fr. suspension cross member	167 - 245	17.0 - 25.0	123 - 180
Shock absorber (upper support) × Flame	28.4 - 42.2	2.9 - 4.3	21.0 - 31.1
Stiffener front plate × Cylinder block	29.4 - 44.1	3.0 - 4.5	21.7 - 32.5
Stiffener front plate × Transaxle	14.7 - 21.6	1.5 - 2.2	10.8 - 15.9
Engine mount front bracket × Transaxle	29.4 - 44.1	3.0 - 4.5	21.7 - 32.5
Engine lower mounting member × Flame	48.0 - 89.2	4.9 - 9.1	35.4 - 65.8
E/G mt. insulator fr. × E/G mount front bracket	72.1 - 134	7.4 - 13.7	53.2 - 99.1
Tie-rod end × Knuckle	26.5 - 39.2	2.7 - 4.0	19.5 - 28.9
Breather plug × Transaxle	9.8 - 12.7	1.0 - 1.3	7.2 - 9.4
W/head straight screw plug (filler side)	29.4 - 49.0	3.0 - 5.0	21.7 - 36.2
W/head straight screw plug (drain side)	29.4 - 49.0	3.0 - 5.0	21.7 - 36.2
Speedometer sleeve (Lock plate) × Transaxle	6.9 - 9.8	0.7 - 1.0	5.1 - 7.2
Backup lamp switch assembly × Transaxle	29.4 - 49.0	3.0 - 5.0	21.7 - 36.2
Bearing lock plate × Bell crank (output shaft)	6.9 - 9.8	0.7 - 1.0	5.1 - 7.2
Shift inner lever (Bolt)	39.2 - 49.0	4.0 - 5.0	28.9 - 36.2
Shift inner lever (Nut)	19.6 - 29.4	2.0 - 3.0	14.5 - 21.7
Lock nut × Input shaft	98.1 - 137	10.0 - 14.0	72.3 - 101
Lock nut × Output shaft	98.1 - 137	10.0 - 14.0	72.3 - 101
Differential case × Ring gear	93.2 - 105	9.5 - 10.7	68.7 - 77.4
Front exhaust pipe (front side, bolt)	49.0 - 74.5	5.0 - 7.6	36.2 - 55.0
Front exhaust pipe (rear side, nut)	15.2 - 22.8	1.6 - 2.3	11.2 - 16.8
Shift & select shaft subassembly × Transaxle	16.7 - 30.4	1.7 - 3.1	12.3 - 22.4
Extension rod subassembly × Transaxle	16.7 - 30.4	1.7 - 3.1	12.3 - 22.4
Floor shift support No. 2 × Floor	16.7 - 30.4	1.7 - 3.1	12.3 - 22.4
Lower arm bkt. con. rod × Lower arm	39.2 - 92.2	4.0 - 9.4	28.9 - 68.0
Floor shift support No. 1 × Extension rod	15.7 - 20.6	1.6 - 2.1	11.6 - 15.2

G2MT00225-00000