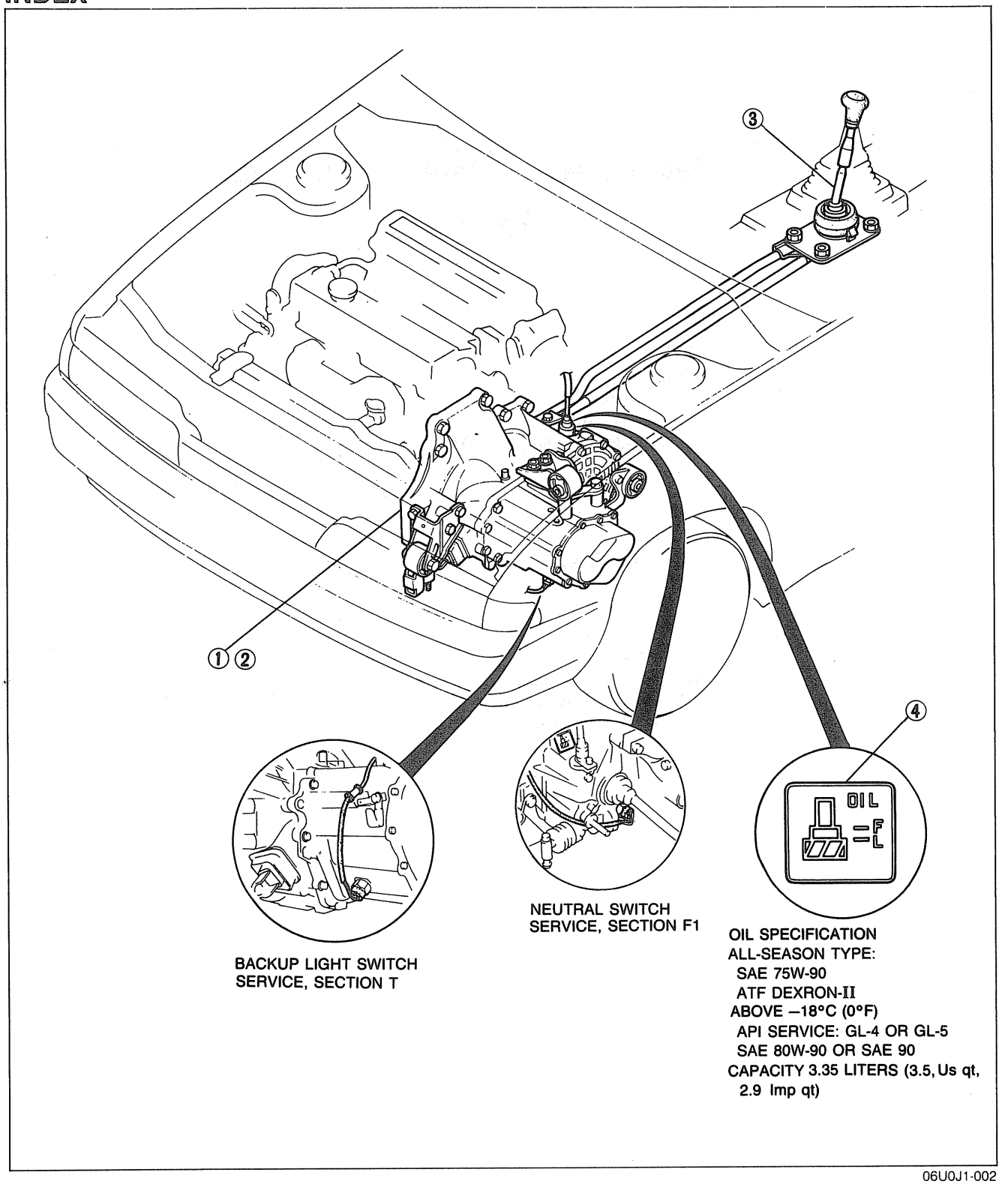
MANUAL TRANSAXLE (G5M-R)

16U0J1-027

INDEX



06U0J1-002

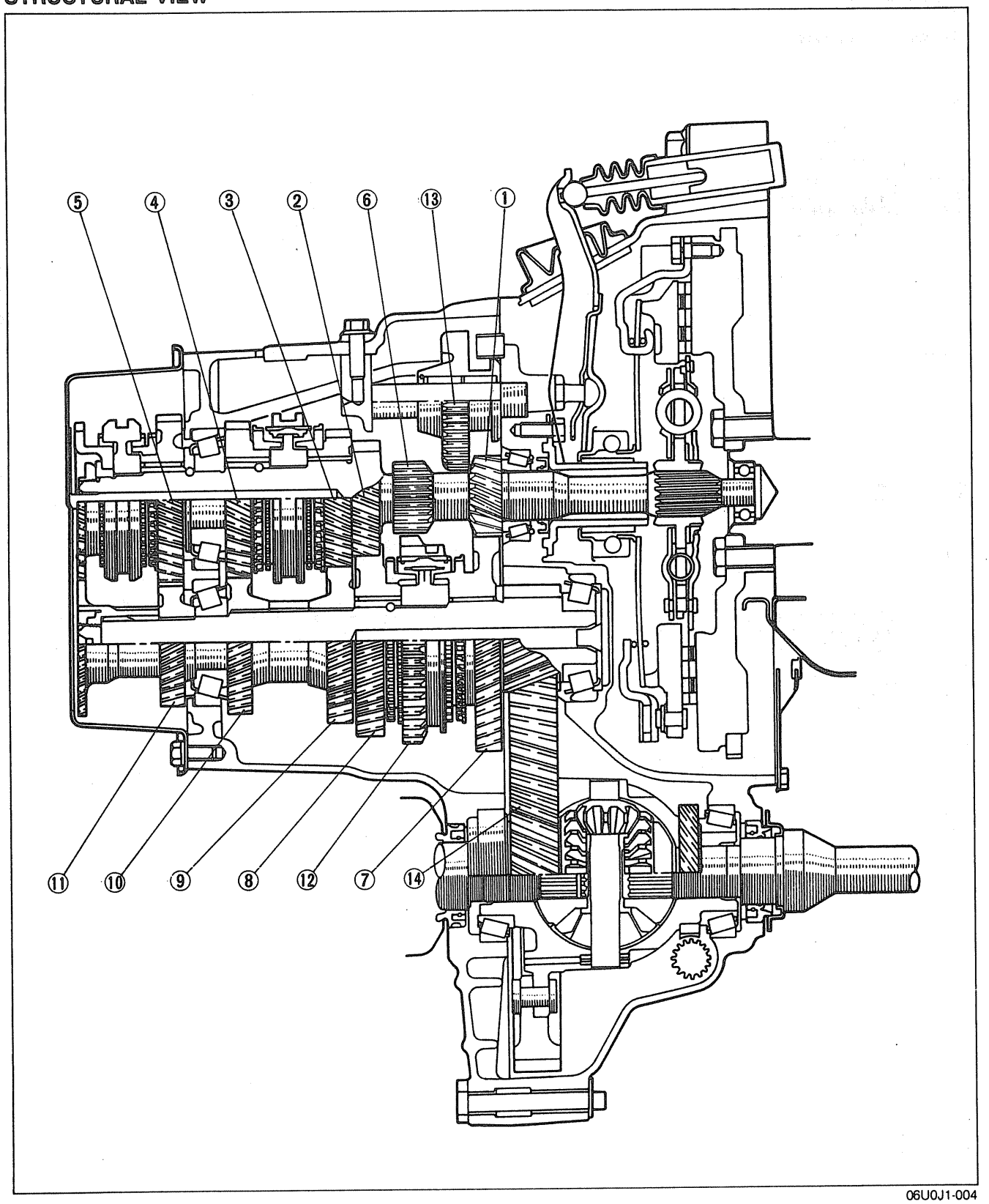
OUTLINE

SPECIFICATIONS

Item \ Engine		F2 Non-turbo
Transaxle model		G5M-R
Transaxle control		Floor shift
Synchromesh system		Forward.....synchromesh, Reverse.....selective sliding and synchromesh
Gear ratio	1st	3.307
	2nd	1.833
	3rd	1.233
	4th	0.914
	5th	0.717
	Reverse	3.166
Final gear ratio		4.105
Oil	Type	All season SAE 75W-90 ATF: DEXRON-II Above −18°C (0°F) API: GL-4 or GL-5 SAE 80W-90 or SAE 90
	Capacity	3.35 liters (3.5 US qt, 2.9 Imp qt)

16U0J1-001

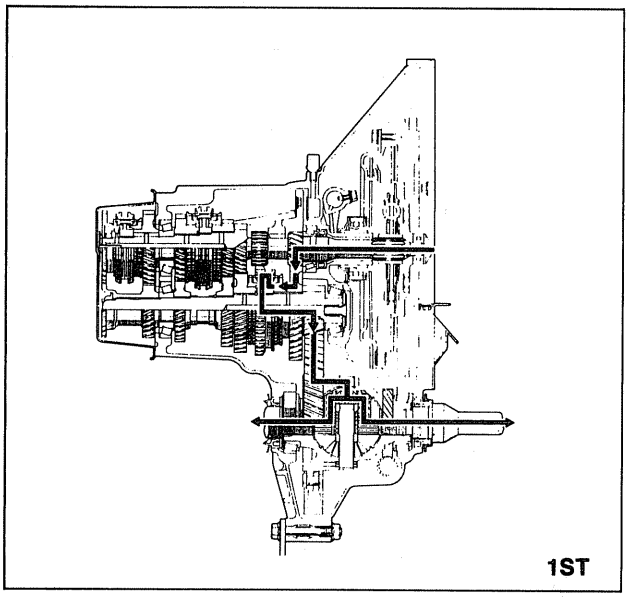
STRUCTURAL VIEW

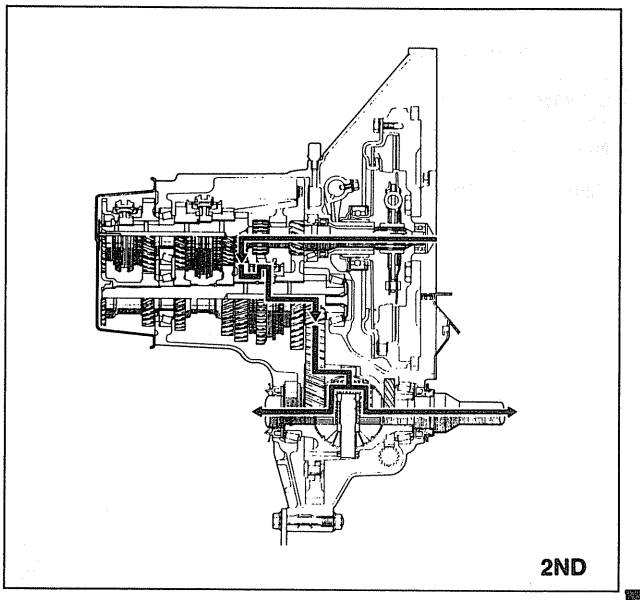


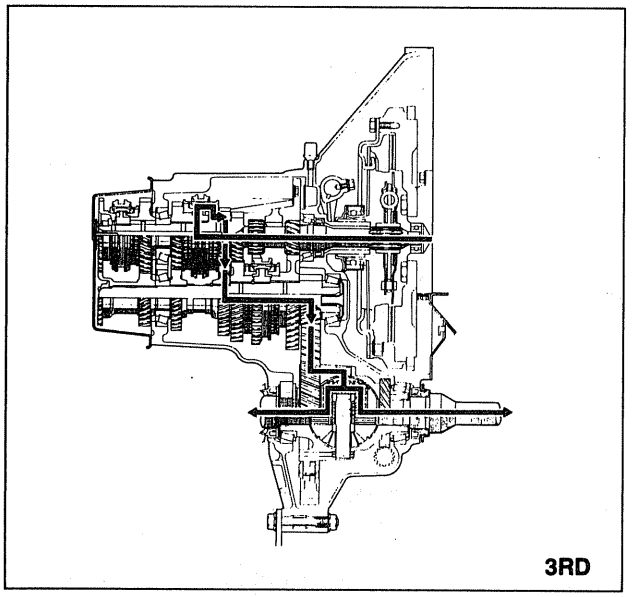
06U0J1-004

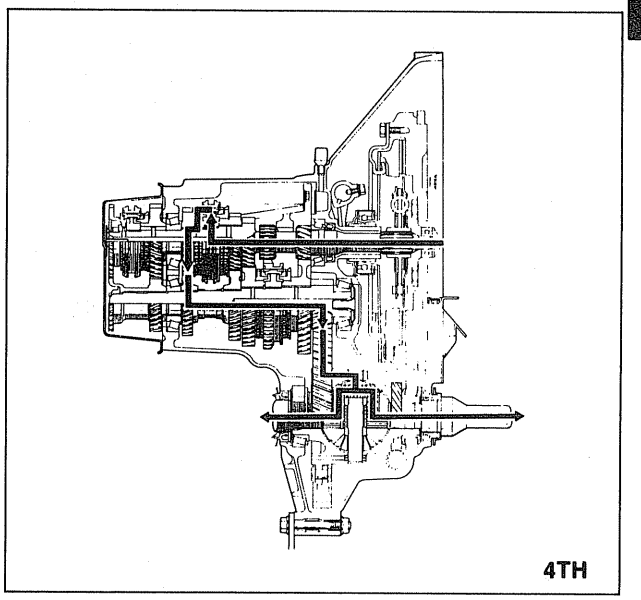
1. Primary 1st gear
2. Primary 2nd gear
3. Primary 3rd gear
4. Primary 4th gear
5. Primary 5th gear
6. Primary reverse gear
7. Secondary 1st gear
8. Secondary 2nd gear
9. Secondary 3rd gear
10. Secondary 4th gear
11. Secondary 5th gear
12. Secondary reverse gear
13. Reverse idler gear
14. Differential

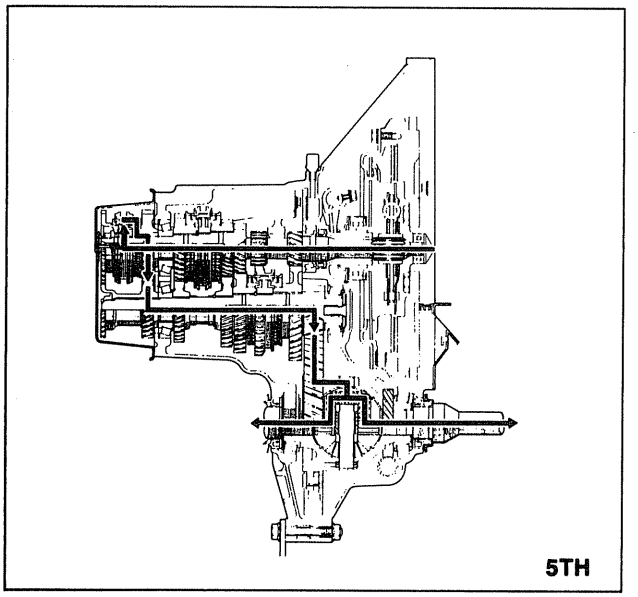
POWER FLOW

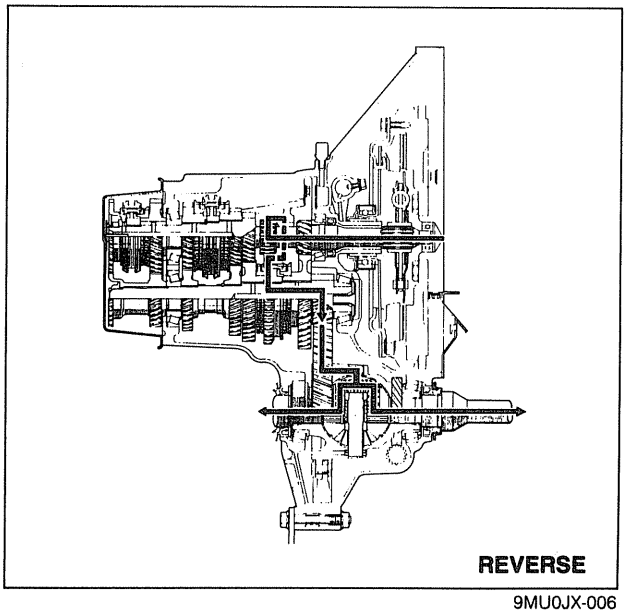










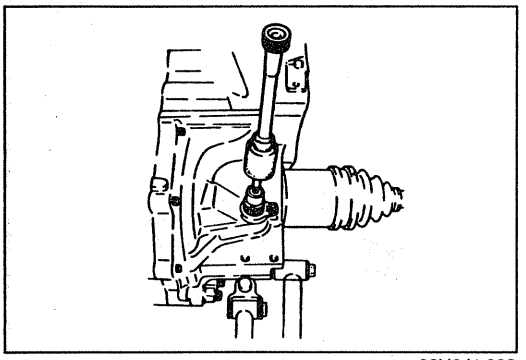


9MU0JX-006

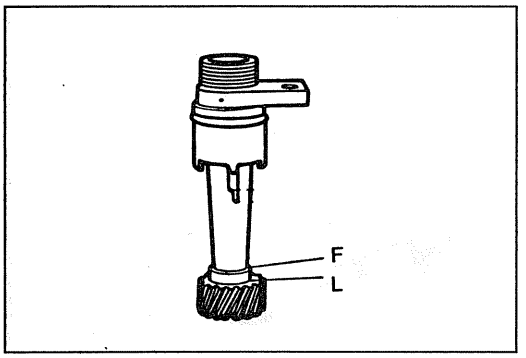
TROUBLESHOOTING GUIDE

Problem	Possible cause	Remedy	Page
Change lever won't shift smoothly, or is hard to shift	Seized change lever ball	Replace	J1–48
	Seized change control rod joint	Replace	J1–48
	Bent change control rod	Replace	J1–48
Too much play in change lever	Worn change control rod bushing	Replace	J1–48
	Weak ball spring or change lever	Replace	J1–48
	Worn ball bushing or change lever	Replace	J1–48
Difficult to shift	Bent change rod	Replace	J1–48
	No grease in transmission control	Lubricate with grease	J1–48
	Insufficient oil	Add oil	J1– 7
	Deterioration of oil quality	Replace with oil of specified quality	J1– 7
	Wear or play of shift fork or shift rod	Replace	J1–12
	Worn synchronizer ring	Replace	J1–23
	Worn synchronizer gear cone	Replace	J1–23
	Bad contact of synchronizer ring and gear cone	Replace	J1–23
	Excessive longitudinal play of gears	Replace	J1–19
	Worn bearing	Adjust or replace	J1–19
	Worn synchronizer key spring	Replace	J1–19
	Excessive primary shaft gear bearing preload	Adjust	J1–34
	Improperly adjusted change guide plate	Adjust	J1–15
Won't stay in gear	Bent change control rod	Replace	J1–48
	Worn change control rod bushing	Replace	J1–48
	Weak change lever ball spring	Replace	J1–48
	Improperly installed extension bar	Tighten	J1–48
	Worn shift fork	Replace	J1–19
	Worn clutch hub	Replace	J1–23
	Worn clutch hub sleeve	Replace	J1–23
	Worn gear sliding part of both shaft gears	Replace	J1–24
	Worn gear sliding part of each gear	Replace	J1–24
	Worn steel sliding groove of control end	Replace	J1–12
	Weak spring pressing against steel ball	Replace	J1–12
	Excessive thrust clearance	Replace	J1–30,32
	Worn bearing	Replace	J1–19
	Improperly installed engine mount	Tighten	J1–43
Abnormal noise	Insufficient oil	Add oil	J1– 7
	Deterioration of oil quality	Replace	J1– 7
	Worn bearing	Adjust or replace	J1–19
	Worn gear sliding surface of both shaft gears	Replace	J1–19
	Worn sliding surfaces of gears	Replace	J1–19
	Excessive gear backlash	Replace	J1–19
	Damaged gear teeth	Replace with oil of specified quality	J1–23,24
	Foreign material in gears	Replace	J1–19
	Damaged differential gear, or excessive backlash	Adjust or replace	J1–27

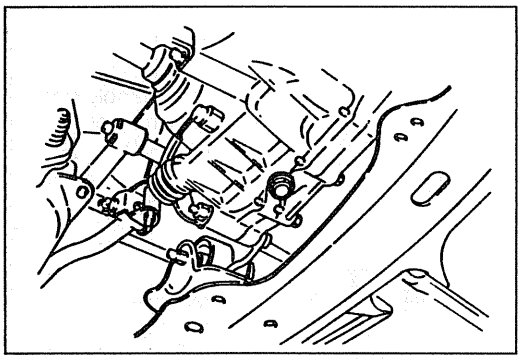
16U0J1-028



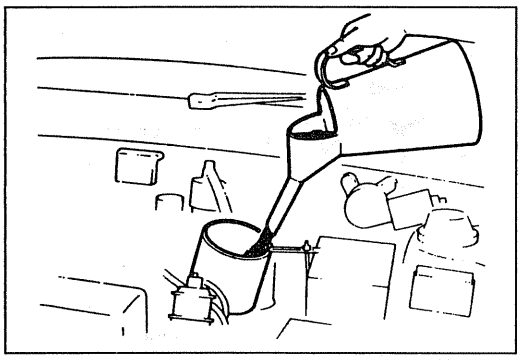
06U0J1-006



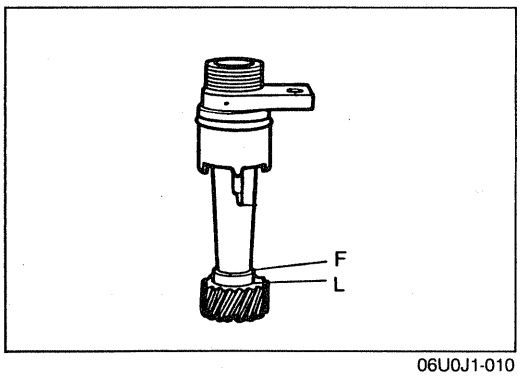
06U0J1-007



06U0J1-008



16U0J1-002



06U0J1-010

TRANSAXLE OIL

INSPECTION

1. Park the vehicle on level ground.
2. Slide up the speedometer cable dust cover, and disconnect the cable from the speedometer driven gear.
3. After removing the bolt, pull the gear case to remove it from the housing. (Insert a flat-tipped screwdriver between the speedometer gear case and the clutch housing, and use it to pry the gear case loose if necessary.)
4. Check that the oil level is between the "F" and "L".
5. If not, add the necessary amount of the specified oil through the gear case hole.
6. Install the speedometer driven gear.

J1

REPLACEMENT

1. Park the vehicle on level ground.
2. Remove the speedometer driven gear. (See "**INSPECTION**" section above.)
3. Remove the drain plug, and drain the oil.
4. Replace the drain plug, and add the necessary amount of the specified oil through the speedometer gear case hole.

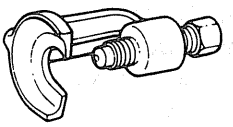
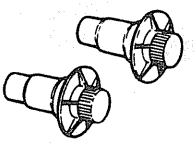
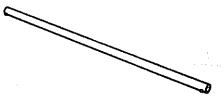
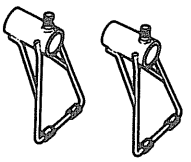
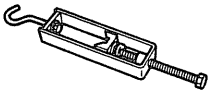
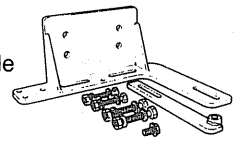
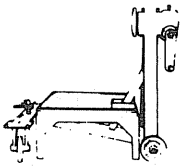
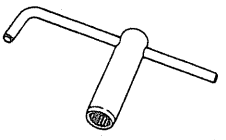
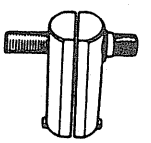
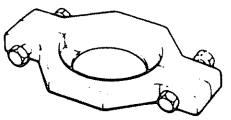
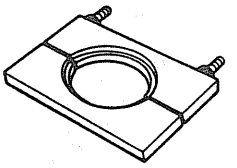
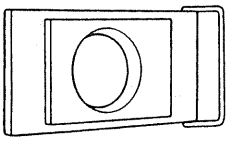
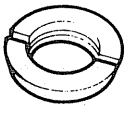
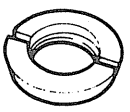
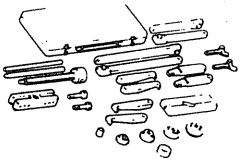
Specified oil
Type
All-season
SAE 75W-90
ATF: DEXRON-II
Above −18°C (0°F):
API: GL-4 or GL-5
SAE 80W-90 or SAE 90

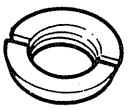
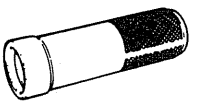
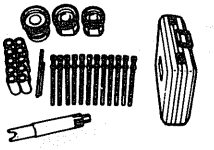
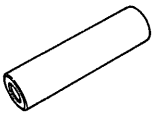
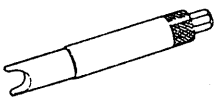
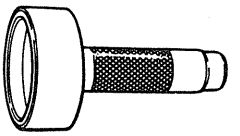
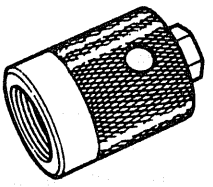
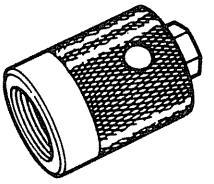
Capacity: 3.35 liters (3.5 US qt, 2.9 Imp qt)

5. Check that the oil level is between the "F" and "L".
6. If not, add the necessary amount of the specified oil through the gear case hole.
7. Install the speedometer driven gear.

TRANSAXLE

PREPARATION
SST

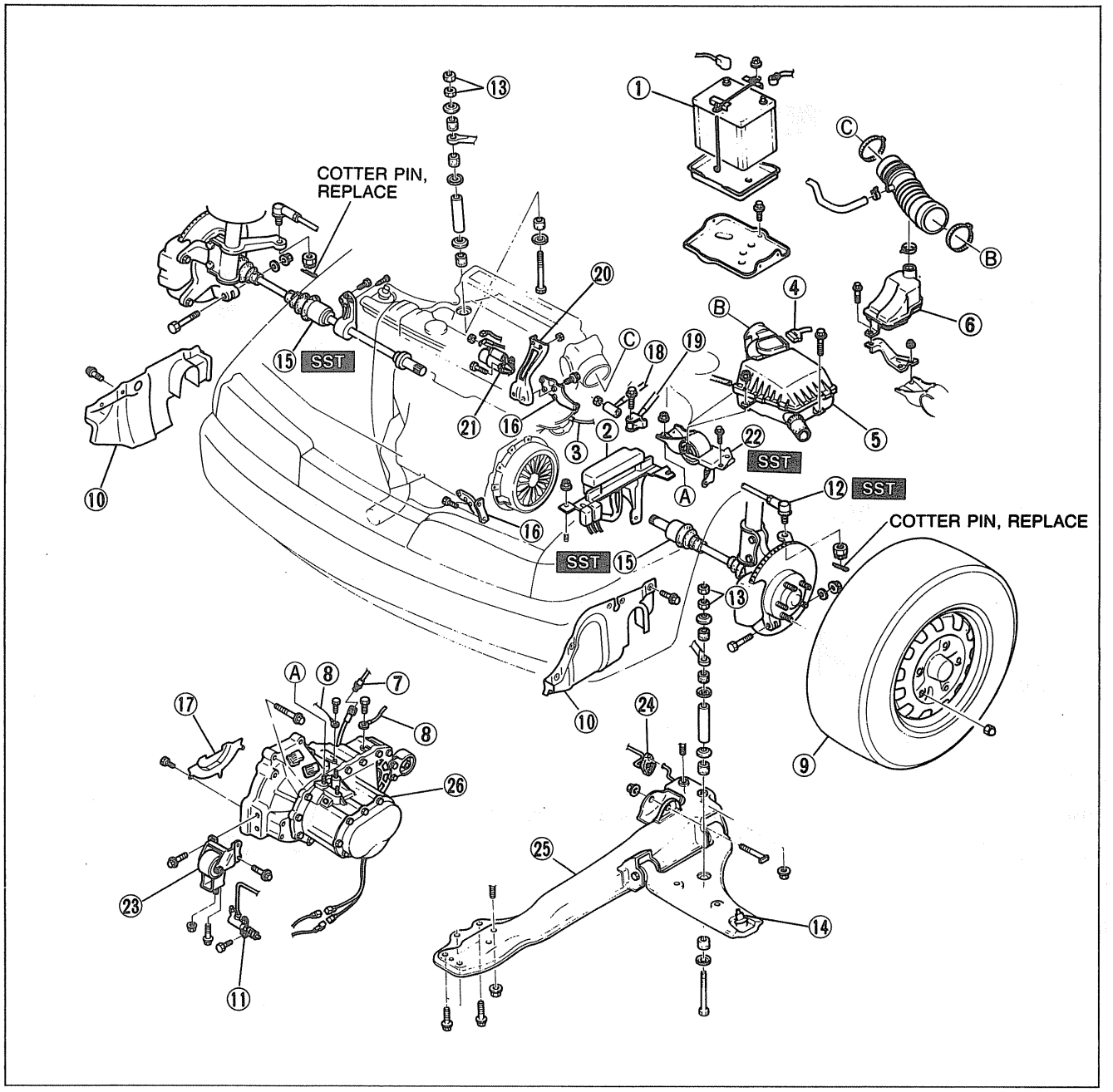
49 0118 850C Puller, ball joint 	For removal of ball joint	49 G030 455 Holder, diff. side gear 	For support of differential side gears
49 G017 5A0 Support, engine 	For support of engine	49 G017 501 Bar (Part of 49 G017 5A0) 	For support of engine
49 G017 502 Support (Part of 49 G017 5A0) 	For support of engine	49 G017 503 Hock (Part of 49 G017 5A0) 	For support of engine
49 G019 0A0 Hanger, transaxle 	For disassembly and assembly of transaxle	49 0107 680A Engine stand 	For disassembly and assembly of transaxle
49 G030 440 Holder, primary shaft 	For hold of primary shaft	49 FT01 361 Remover, bearing 	For removal of bearing outer race
49 0636 145 Puller, fan pulley boss 	For removal and Installation of bearing inner race	49 G030 370 Removing plate 	For removal of secondary 3rd gear and 2nd gear
49 F401 366A Plate 	For removal of bearing inner race	49 B092 374 Attachment H 	For removal of bearing inner race
49 B092 373 Attachment G 	For removal of bearing inner race	49 0839 425C Puller set, bearing 	For removal of bearing inner race

49 B092 375 Attachment J 	For removal of bearing inner race	49 G030 338 Attachment E 	For installation of bearing inner race
49 F401 331 Body 	For installation of bearing inner race	49 F401 335A Attachment A 	For installation of bearing inner race
49 F401 336B Attachment B 	For installation of bearing inner race	49 G030 380C Shim selector set 	For adjustment of bearing preload
49 G030 381 Selector for ϕ68 (Part of 49 G030 380C) 	For adjustment of bearing preload	49 G030 382A Selector ϕ58 (Part of 49 G030 380C) 	For adjustment of bearing preload
49 F401 382A Selector ϕ52 (Part of 49 G030 380C) 	For adjustment of bearing preload	49 F401 384 Collar (Part of 49 G030 380C) 	For adjustment of bearing preload
49 F401 385 Bar (Part of 49 G030 380C) 	For adjustment of bearing preload	49 G019 021 Bolt set (Part of 49 G030 380C) 	For adjustment of bearing preload
49 FT01 515A Adaptor, preload (Part of 49 G030 380C) 	For adjustment of bearing preload	49 B001 795 Installer, oil seal 	For installation of oil seal
49 G017 202 Adaptor, preload 	For adjustment of preload	49 B017 102 Adaptor, preload 	For adjustment of bearing preload

16U0J1-031

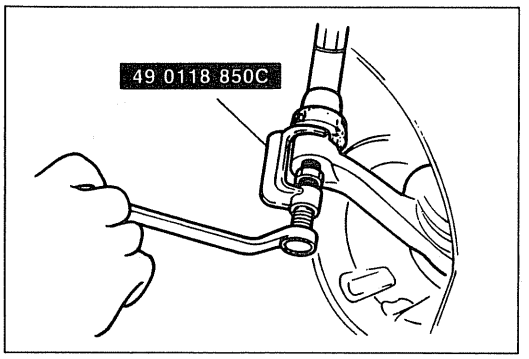
REMOVAL

1. Disconnect the negative battery cable.
2. Raise the vehicle and support it with safety stands.
3. Drain the transaxle oil into a suitable container.
4. Remove in the order shown in the figure, referring to **Removal Note**.



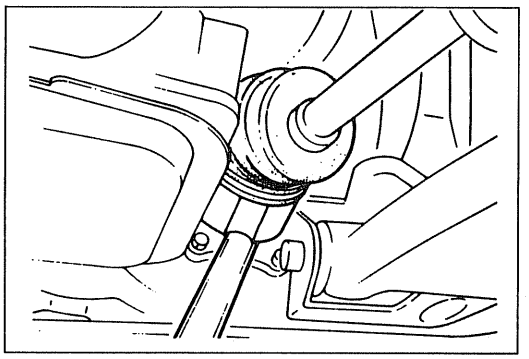
06U0J1-012

1. Battery
2. Main fuse block
3. Distributor lead
4. Airflow meter connector
5. Air cleaner assembly
6. Resonance chamber
7. Speedometer cable
8. Ground(s)
9. Wheel(s)
10. Splash shield(s)
11. Clutch release cylinder
12. Tie-rod end
    Removal ..... page J1–11
13. Nuts (stabilizer)
14. Lower arm ball-joint
15. Driveshaft
    Removal ..... page J1–11
16. Gusset plate(s)
17. Under cover
18. Extension bar
19. Control rod
20. Surge tank bracket
21. Starter
22. Engine mount No.4
    Removal ..... page J1–11
23. Engine mount No.2
24. Hanger rubber
25. Crossmember
26. Transaxle
    Removal ..... page J1–11
    Disassembly ... page J1–12
    Inspection ..... page J1–23
    Assembly ..... page J1–28



06U0J1-013

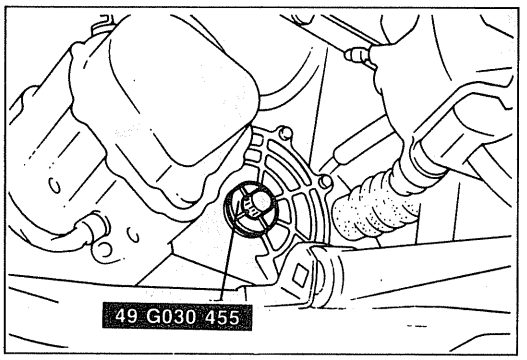
Removal note
Tie-rod end
Separate the tie-rod end from the knuckle with the **SST**.



06U0J1-014

Driveshaft
1. Separate the left driveshaft from the transaxle by prying with a bar inserted between the shaft and the case.

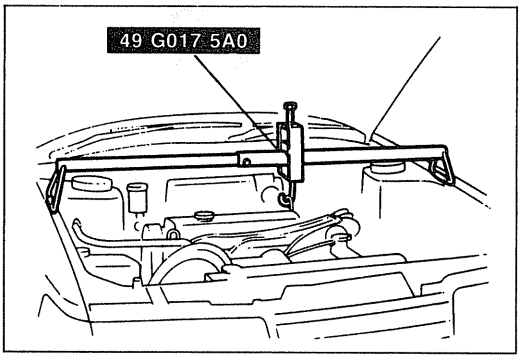
Caution
- **Do not damage the oil seal.**
- **Do not separate the driveshaft by pulling the disc plate.**



06U0J1-015

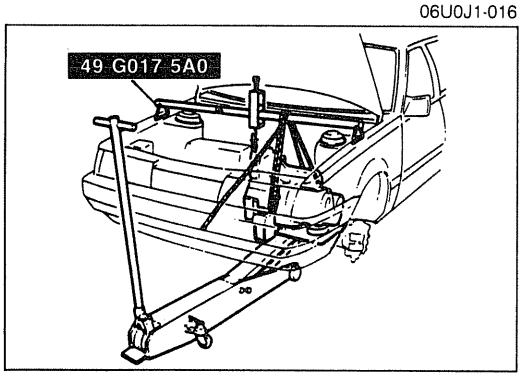
2. Install the **SST** to the differential side gear.

Note
- **Failure to install the SST may cause the differential side gears to become mispositioned.**



06U0J1-016

Engine mount No.4
Suspend the engine with the **SST**.



06U0J1-017

Transaxle
1. Lean the engine toward the transaxle.
2. Support the transaxle with a jack.
3. Remove the remaining transaxle mounting bolts.
4. Remove the transaxle.

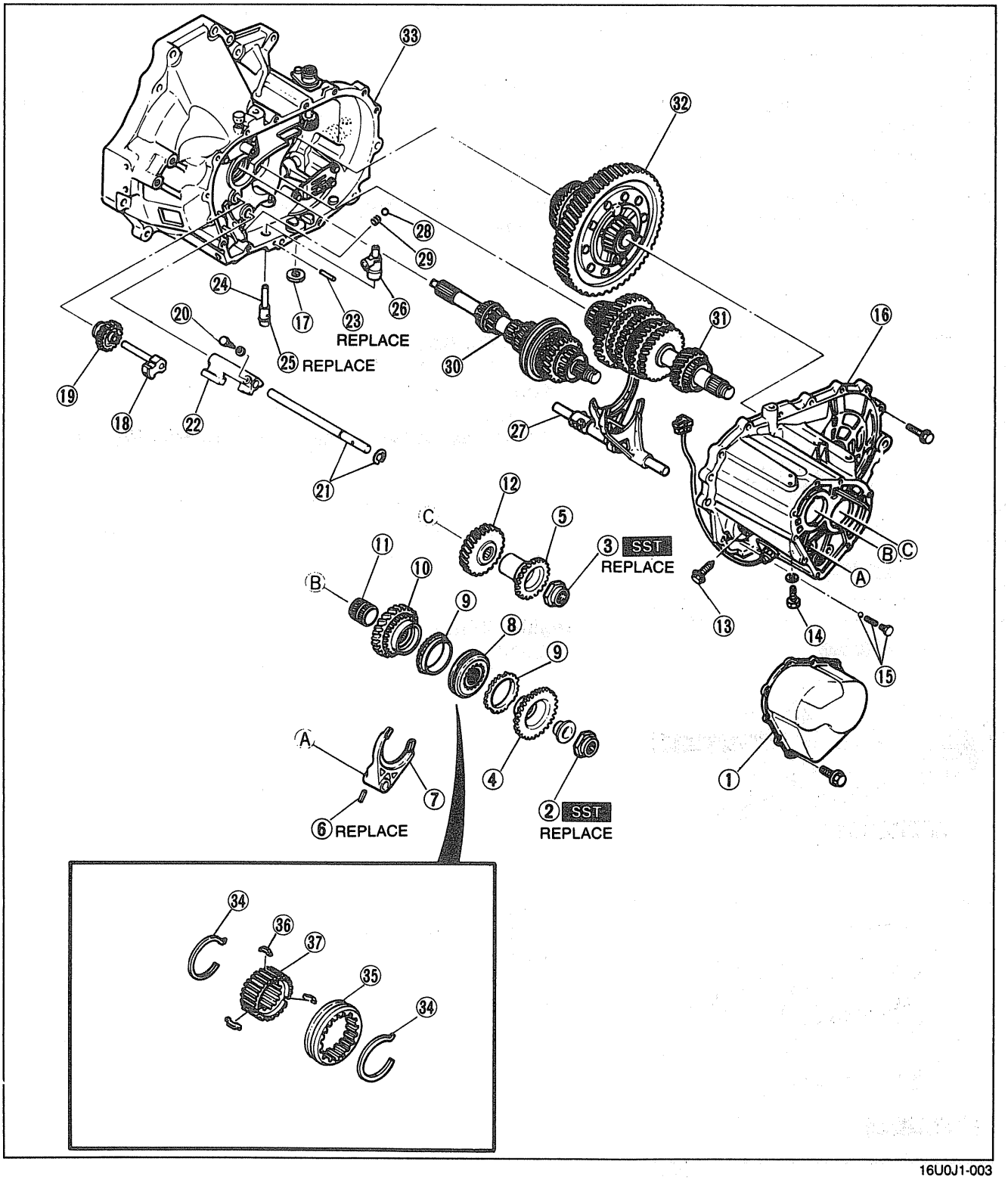
DISASSEMBLY

Precaution

1. Clean the transaxle exterior thoroughly with steam or cleaning solvents before disassembly.
2. Clean the removed parts with cleaning solvent, and dry with compressed air. (Except sealed bearings.) Clean out all holes and passages with a compressed air, and check that there are no obstructions.
3. Wear eye protection when using compressed air to clean components.

Step 1

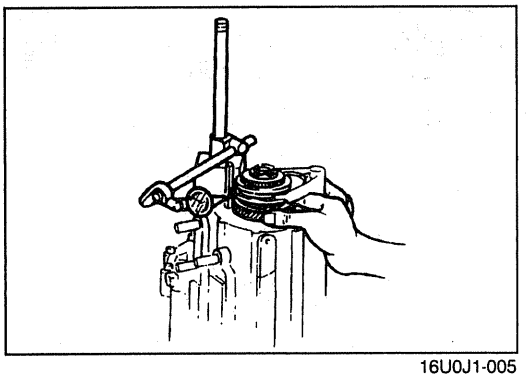
1. Measure the thrust clearance between 5th gear and transaxle case referring to **Preinspection**.
2. Disassemble in the order shown in the figure, referring to **Disassembly Note**.



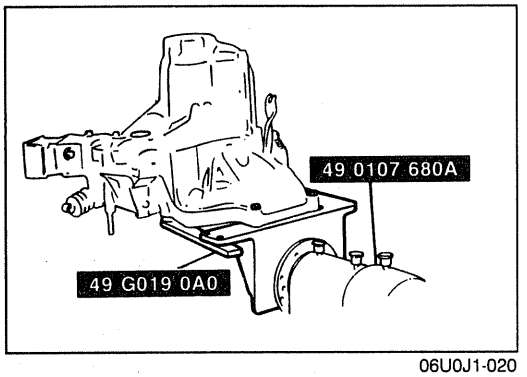
16U0J1-003

1. Rear cover
2. Locknut
   Removal ..... page J1–13
3. Locknut
4. Primary reverse synchronizer gear
   Inspection ..... page J1–23
5. Secondary reverse synchronizer gear
   Inspection ..... page J1–23
6. Roll pin
7. Shift fork
8. Clutch hub assembly
9. Synchronizer ring
   Inspection ..... page J1–23
10. Primary 5th gear
    Inspection ..... page J1–23
11. Gear sleeve
12. Secondary 5th gear
    Inspection ..... page J1–23
13. Lock bolt
14. Guide bolt
15. Lock bolt, and ball and spring
16. Transaxle case assembly
    Removal ..... page J1–14
    Disassembly ... page J1–15
17. Magnet
18. Reverse idler shaft
19. Reverse idler gear
    Inspection ..... page J1–24
20. Lock bolt
21. Shift rod (5th/Rev.) and clip
22. Shift rod end (5th/Rev.)
23. Pin
24. Crank lever shaft
25. O-ring
26. Crank lever assembly
27. Shift fork and shift rod assembly
    Removal ..... page J1–14
    Disassembly ... page J1–19
28. Steel ball
29. Spring
30. Primary shaft gear assembly
    Disassembly ... page J1–19
31. Secondary shaft gear assembly
    Disassembly ... page J1–19
32. Differential assembly
    Disassembly ... page J1–22
33. Clutch housing
    Disassembly ... page J1–15
34. Synchronizer key spring
    Inspection ..... page J1–24
35. Clutch hub sleeve
    Inspection ..... page J1–24
36. Synchronizer key
    Inspection ..... page J1–24
37. Clutch hub
    Inspection ..... page J1–23

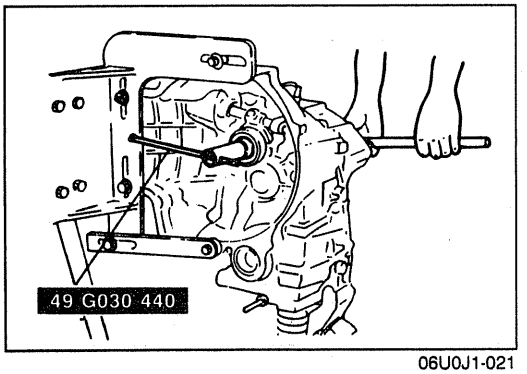
16U0J1-004



16U0J1-005



06U0J1-020



06U0J1-021

Preinspection
5th gear thrust clearance

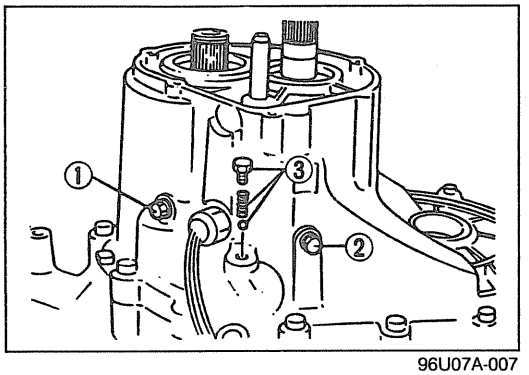
1. Measure the 5th gear thrust clearance with a dial indicator.

   Clearance: 0.10—0.22mm (0.0039—0.0087 in)
   Maximum : 0.27mm (0.0106 in)

2. If the clearance exceeds the the maximum, check the contact surfaces of 5th gear and the clutch hub. Replace worn or damaged parts.

Disassembly Note
Locknut

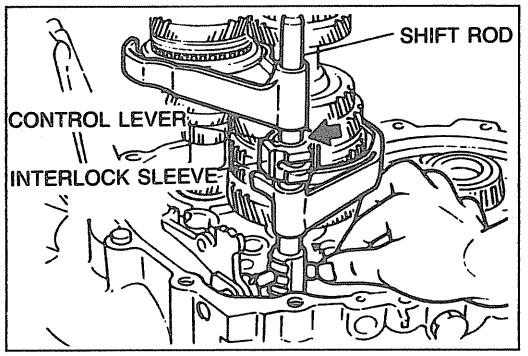
1. Mount the transaxle on the **SST**.
2. Lock the primary shaft with the **SST**.
3. Shift to 1st or 2nd gear.
4. Remove the locknut.



96U07A-007

Transaxle case assembly

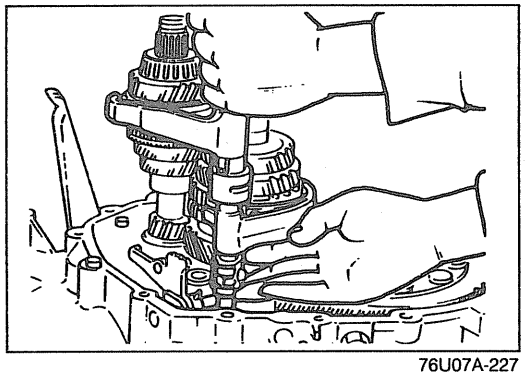
1. Remove the lock bolt ①, the guide bolt ②.
2. Remove the lock bolt, spring and ball ③.
3. Remove the transaxle case installation bolts, and remove the transaxle case.



86U07A-039

Shift fork and shift rod assembly

1. Align the ends of the interlock sleeve and of the control lever, then turn the shift rod counter clockwise.
2. While holding the 1st-2nd shift fork with one hand and the 3rd-4th shift fork with the other, raise them both at the same time and shift each of the clutch hub sleeves.

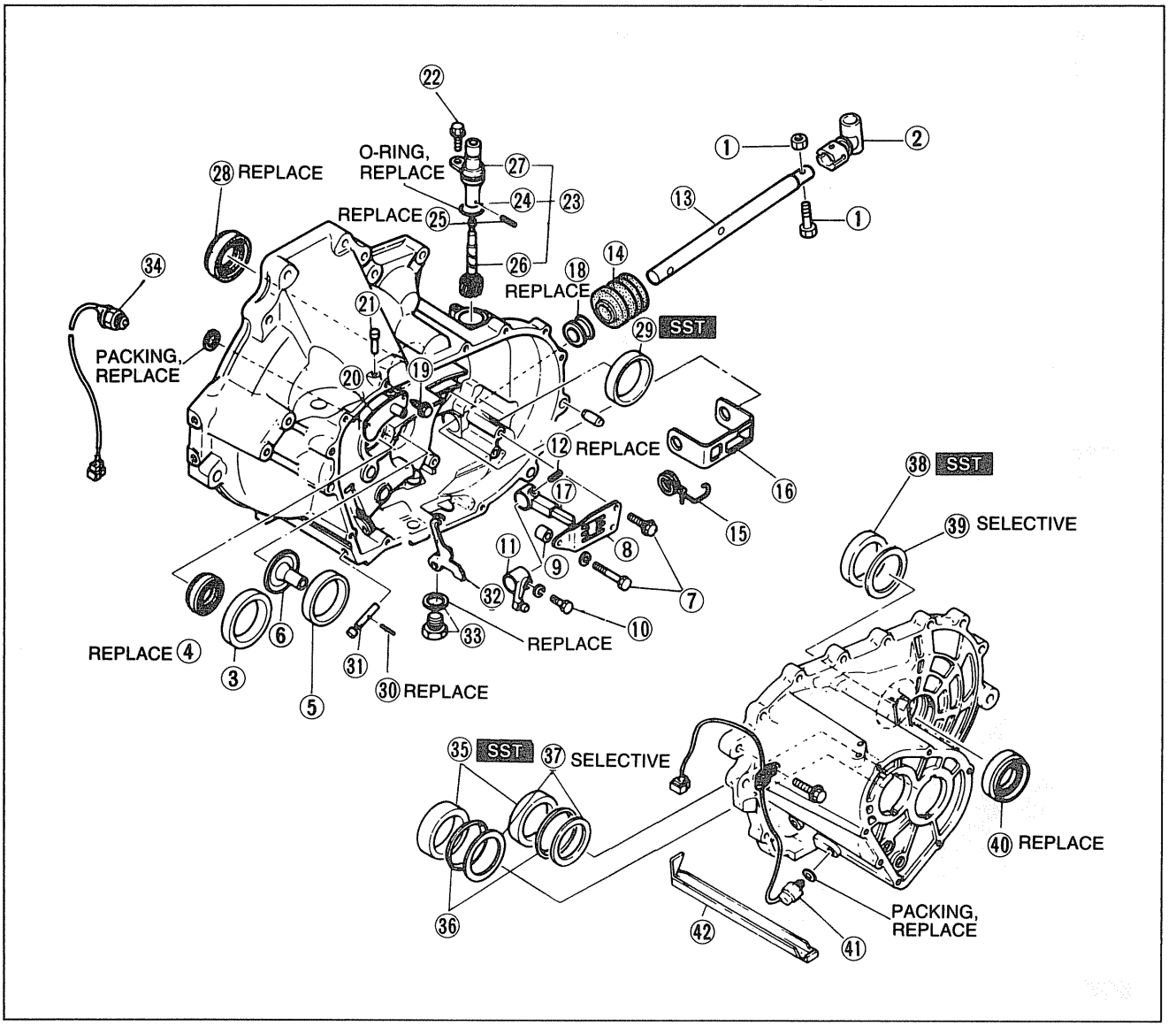


76U07A-227

3. Lift the control end and remove the steel ball, and, at the same time, remove the shift rod from the clutch housing.
4. Separate the shift rod and shift fork assembly from each of the clutch hub sleeves.

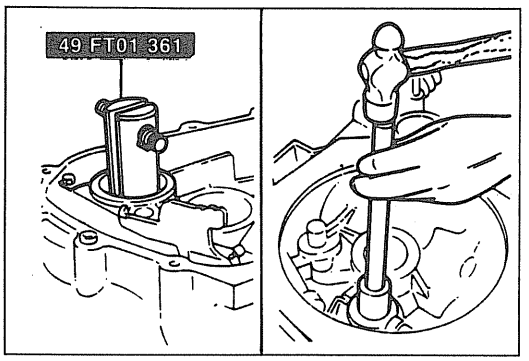
Step 2

1. Disassemble in the order shown in the figure, referring to **Disassembly Note**.



16U0J1-006

1. Bolt, nut
2. Joint
3. Bearing outer race
   Removal ..... page J1–16
4. Oil seal
5. Bearing outer race
6. Funnel
7. Bolts
8. Guide plate
9. Pipe
10. Bolt
11. Change arm
12. Roll pin
13. Change rod
14. Boot
15. Spring
16. Reverse gate
17. Selector
18. Oil seal
19. Bolt
20. Bleeder cover
21. Bleeder
22. Bolt
23. Speedometer driven gear assembly
24. O-ring
25. Roll pin
26. Driven gear
27. Gear case
28. Oil seal
    Do not remove if not necessary
    Replace
    (On-vehicle) .. page J1–16
29. Bearing outer race
    Removal ..... page J1–16
30. Roll pin
    Removal ..... page J1–16
31. Reverse lever shaft
32. Reverse lever
33. Drain plug and washer
34. Neutral switch
35. Bearing outer race
    Removal ..... page J1–16
36. Diaphragm spring
37. Adjust shim
38. Bearing outer race(s)
    Removal ..... page J1–16
39. Adjust shim(s)
40. Oil seal
    Do not remove if not necessary
    Replace
    (On-vehicle) .. page J1–16
41. Back-up light switch
42. Oil passage

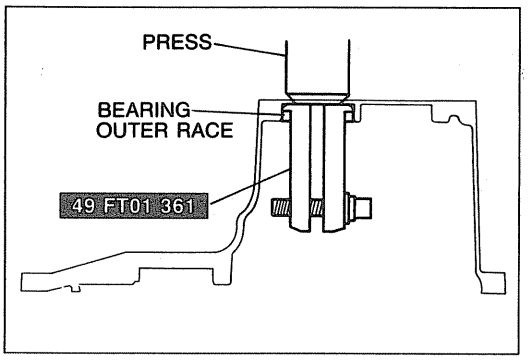


06U0J1-085

Disassembly Note
Bearing outer race (clutch housing)

Note
- **If it is difficult to remove the bearing outer race, remove it with the SST.**

Remove the bearing outer race with the **SST**.

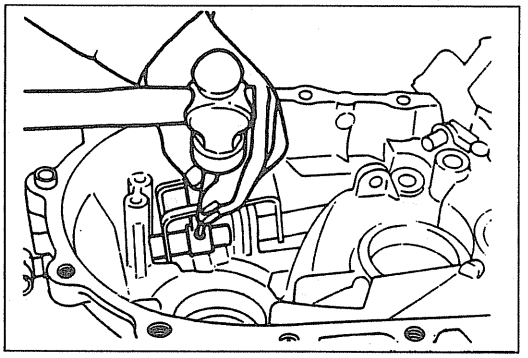


06U0J1-086

Bearing outer races (transaxle case)

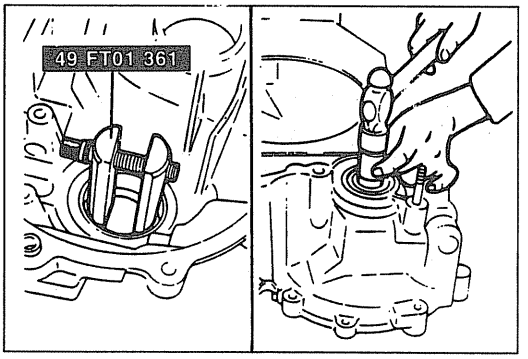
Note
- **If it is difficult to remove the bearing outer races, remove it with the SST.**

Remove the bearing outer races with the **SST**.



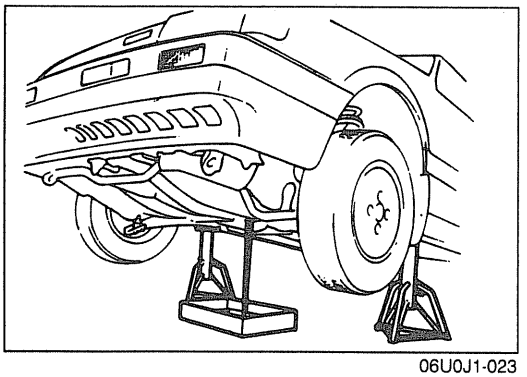
76G07A-020

Roll pin
Align the groove for removal of the clutch housing pin with the position of the roll pin, then tap the pin out using a pin punch.



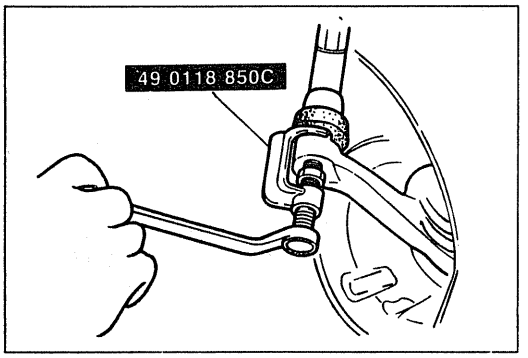
86U07A-044

Bearing outer race (differential)
Remove the bearing outer race with the **SST**.



06U0J1-023

On-vehicle replacement
Oil seals
Jack up the vehicle, support it on safety stands, and then drain the transaxle oil. Next, use the following procedure to replace the driveshaft oil seals:
1. Remove the front wheel(s).
2. Remove the splash shield(s).
3. Separate the front stabilizer from the lower arm.

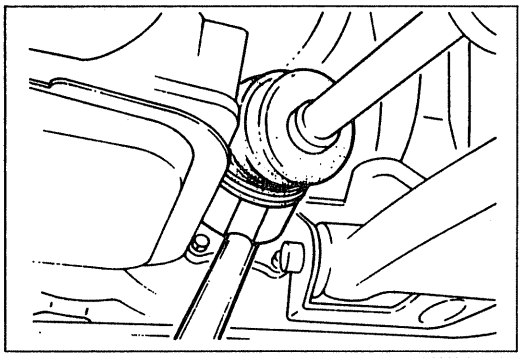


86U07A-009

4. Remove the clinch bolt and pull the lower arm downward. Separate the knuckle from the lower arm ball-joint.

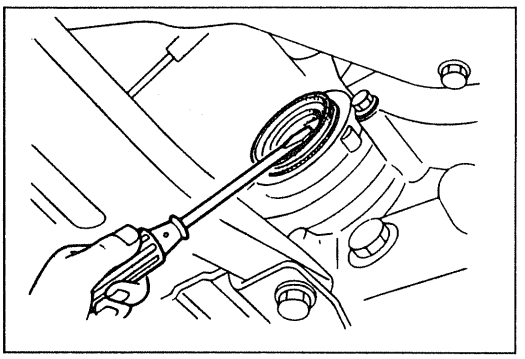
Note
- **Be careful not to damage the ball-joint dust boot.**

5. Remove the cotter pin then disconnect the tie-rod end with the **SST**.

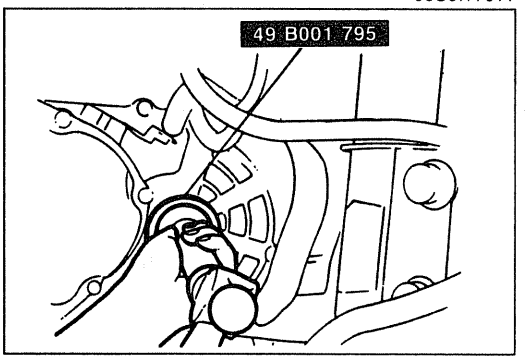

06U0J1-024

Caution
- **Do not damage the oil seal.**
- **Do not separate the driveshaft by pulling the disc plate.**

6. Separate the left driveshaft from the transaxle by prying with a bar inserted between the shaft and the case.


86U07A-011

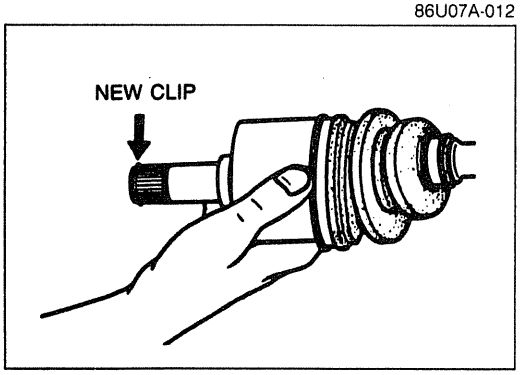
7. Remove the oil seal with a flat-tipped screwdriver.



86U07A-012

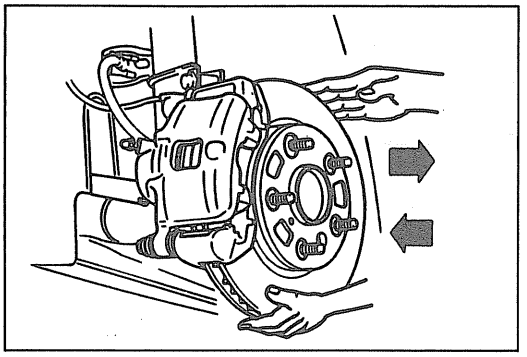
8. Tap the new oil seal into the transaxle case with the **SST**.

Note
- **Tap in until the oil seal installer contacts the case.**
- **Coat the oil seal lip with transaxle oil.**

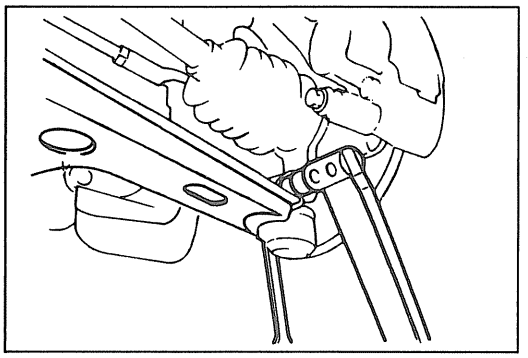


86U07A-013

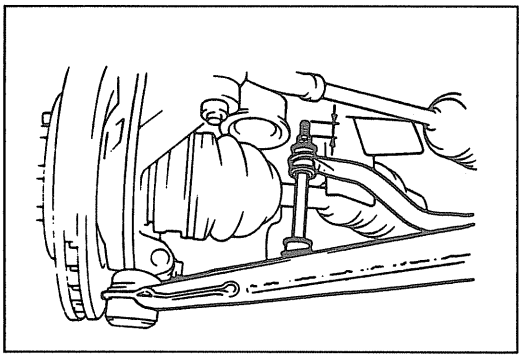
9. Replace the driveshaft end clip with a new one. Insert the clip with the gap at the top of the groove.



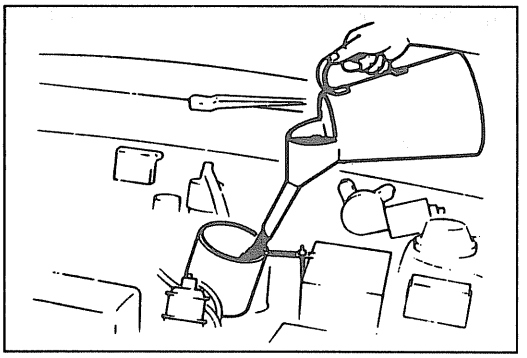
86U07A-014



86U07A-015



06U0J1-090



16U0J1-029

10. Install the driveshaft as follows:
    (1) Pull the front hub outward, then fit the driveshaft into the transaxle.
    (2) Insert the driveshaft into the transaxle by pushing on the wheel hub assembly.

Note
- **Be careful not to damage the oil seal.**
- **After installation is finished, pull the front hub slowly outward to check that the driveshaft is held securely by the clip.**

11. Install the lower arm ball-joint to the knuckle, and tighten the clinch bolt.

Tightening torque:
43—54 N·m (4.4—5.5 m-kg, 32—40 ft-lb)

12. Install the tie-rod end and new cotter pin.

Tightening torque:
29—44 N·m (3.0—4.5 m-kg, 22—33 ft-lb)

13. Adjust and tighten the stabilizer.

Tightening torque:
16—23 N·m (1.6—2.3 m-kg, 12—17 ft-lb)
Dimension: 20.1 ± 2mm (0.79 ± 0.08 in)

14. Install the drain plug.

Tightening torque:
39—59 N·m (4.0—6.0 m-kg, 29—43 ft-lb)

15. Install the wheel.

Tightening torque:
88—118 N·m (9.0—12.0 m-kg, 65—87 ft-lb)

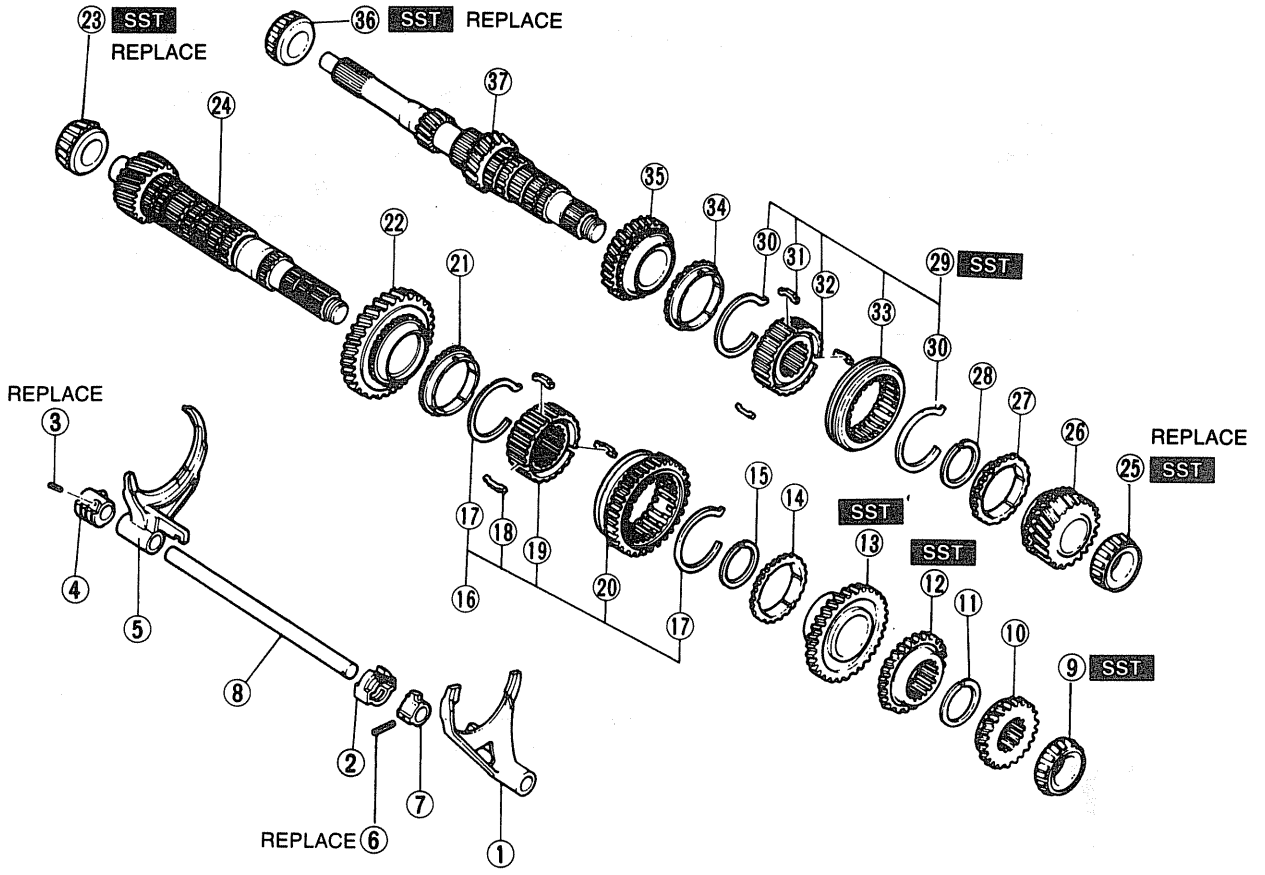
16. Add the correct quantity of the specified oil.

Type:
All-season ATF: DEXRON-II
Above −18°C (0°F):
API: GL-4 or GL-5
SAE 80W-90 or SAE 90

Capacity: 3.35 liters (3.5 US qt, 2.9 Imp qt)

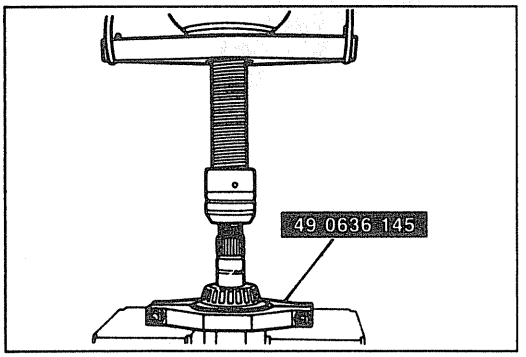
Step 3

1. Disassemble in the order shown in the figure, referring to **Disassembly Note**.

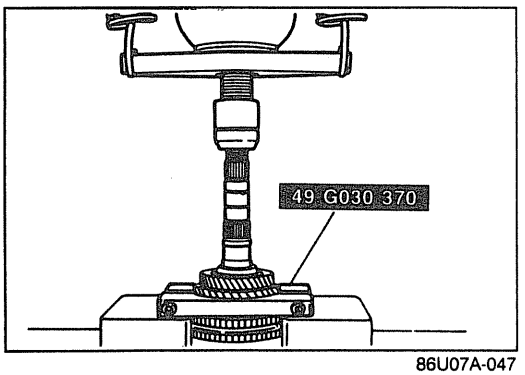


1. Shift fork (3rd/4th)
2. Interlock sleeve
3. Roll pin
4. Control end
5. Shift fork (1st/2nd)
6. Roll pin
7. Control lever
8. Control rod
9. Bearing inner race
   Removal ..... page J1–20
   Inspection ..... page J1–25
10. Secondary 4th gear
    Inspection ..... page J1–23
11. Retaining ring
12. Secondary 3rd gear
    Removal ..... page J1–20
    Inspection ..... page J1–23
13. Secondary 2nd gear
    Removal ..... page J1–20
    Inspection ..... page J1–23
14. Synchronizer ring
    Inspection ..... page J1–23
15. Retaining ring
16. Clutch hub assembly
    Removal ..... page J1–21
17. Synchronizer key spring
    Inspection ..... page J1–24
18. Synchronizer key
    Inspection ..... page J1–24
19. Clutch hub
    Inspection ..... page J1–23
20. Clutch hub sleeve (reverse gear)
    Inspection ..... page J1–24
21. Synchronizer ring
    Inspection ..... page J1–23
22. Secondary 1st gear
    Removal ..... page J1–21
    Inspection ..... page J1–23
23. Bearing inner race
    Removal ..... page J1–21
    Inspection ..... page J1–25
24. Secondary shaft
    Inspection ..... page J1–23
25. Bearing inner race
    Removal ..... page J1–21
    Inspection ..... page J1–25
26. Primary 4th gear
    Inspection ..... page J1–23
27. Synchronizer ring
    Inspection ..... page J1–23
28. Retaining ring
29. Clutch hub assembly (3rd/4th)
    Removal ..... page J1–21
30. Synchronizer key spring
    Inspection ..... page J1–24
31. Synchronizer key
    Inspection ..... page J1–24
32. Clutch hub
    Inspection ..... page J1–23
33. Clutch hub sleeve
    Inspection ..... page J1–24
34. Synchronizer ring
    Inspection ..... page J1–23
35. Primary 3rd gear
    Inspection ..... page J1–23
36. Bearing inner race
    Removal ..... page J1–21
    Inspection ..... page J1–25
37. Primary shaft
    Inspection ..... page J1–23

16U0J1-007



06U0J1-028



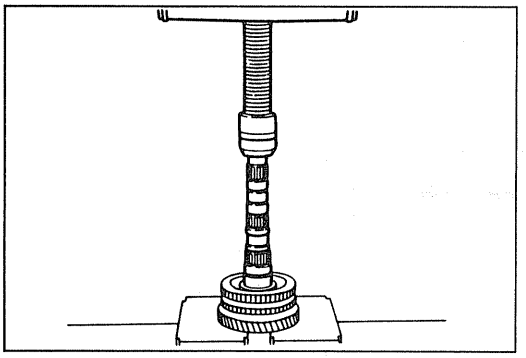
86U07A-047

Disassembly note
Bearing inner race (secondary 4th gear end)
Remove the bearing inner race and secondary 4th gear with the **SST**.

Caution
- **Hold the shaft with one hand so that it does not fall.**

Secondary 3rd gear and 2nd gear
1. Remove the retaining ring.
2. Shift the gears to 1st gear.
3. Remove the secondary 3rd gear and 2nd gear with the **SST**.

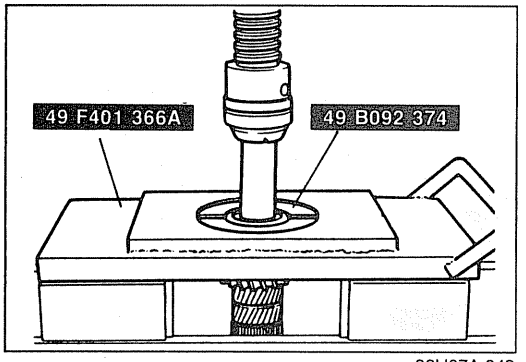
Caution
- **Hold the shaft with one hand so that it does not fall.**



16U0J1-008

Clutch hub assembly and Secondary 1st gear
1. Remove the retaining ring.
2. Remove the clutch hub assembly (reverse gear) and 1st gear as shown in the figure.

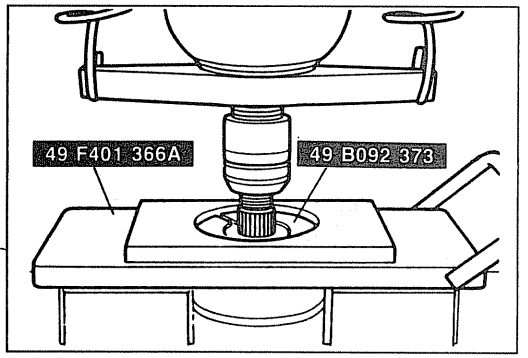
Caution
- **Hold the shaft with one hand so that it does not fall.**



86U07A-049

Bearing inner race (secondary shaft end)
Remove the bearing inner race with the **SST**.

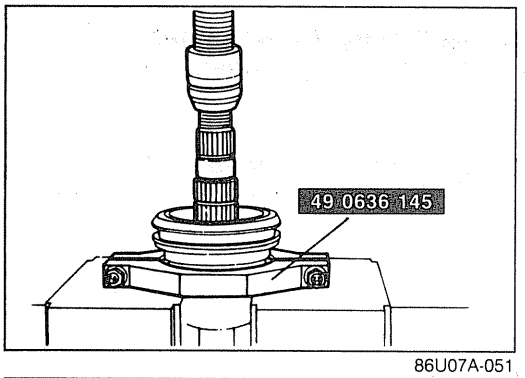
Caution
- **Hold the shaft with one hand so that it does not fall.**



06U0J1-030

Bearing inner race (primary 4th gear end)
Remove the bearing inner race with the **SST**.

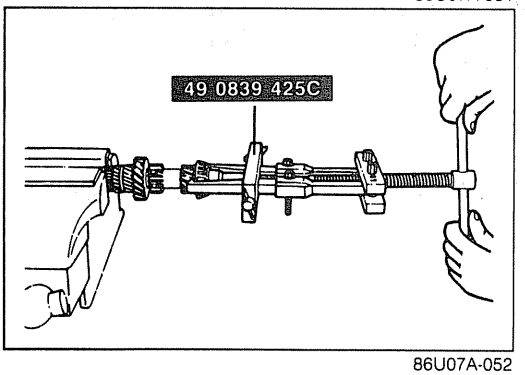
Caution
- **Hold the shaft with one hand so that it does not fall.**



86U07A-051

Clutch hub assembly (3rd/4th)
1. Remove the retaining ring.
2. Remove the clutch hub assembly with the **SST**.

Caution
- **Hold the shaft with one hand so that it does not fall.**



86U07A-052

Bearing inner race (primary shaft end)
Remove the bearing inner race with the **SST**.

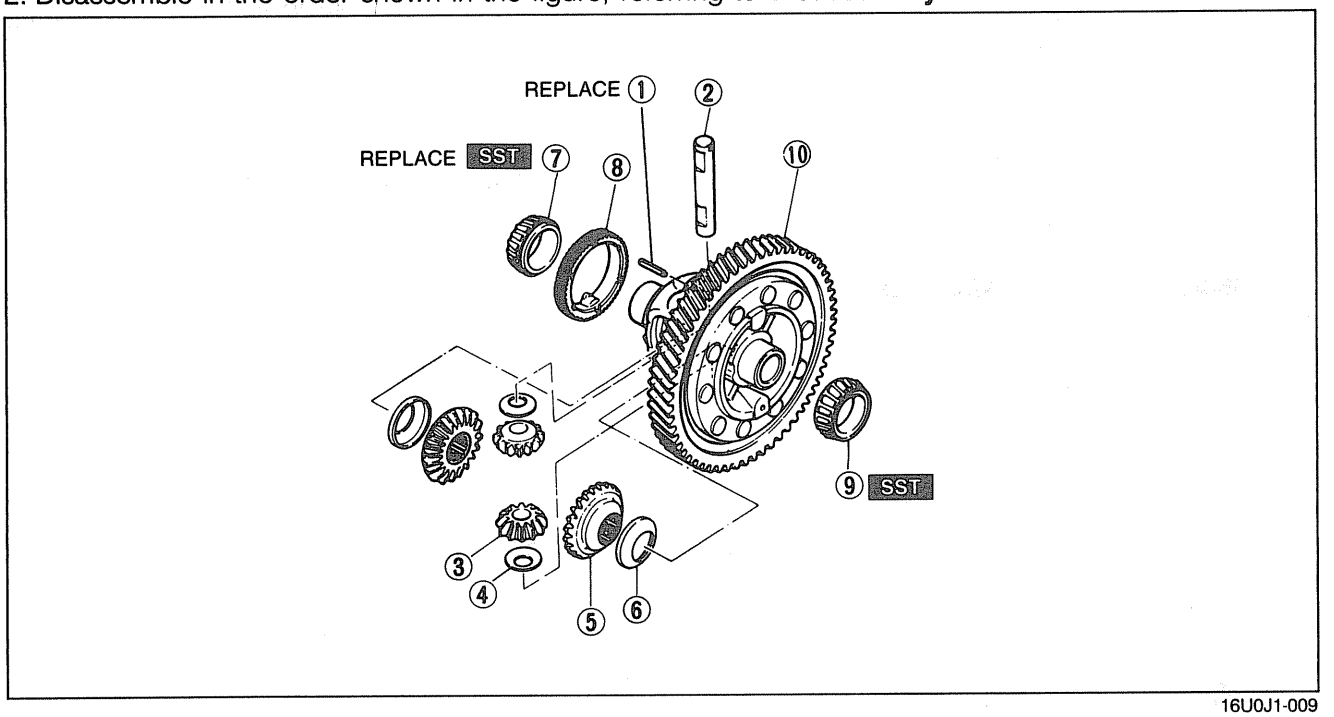
Caution
- **Hold the shaft with one hand so that it does not fall.**

Step 4 (Differential)

1. Inspect side gears and pinion gears for backlash. (Refer to page J1–27.)

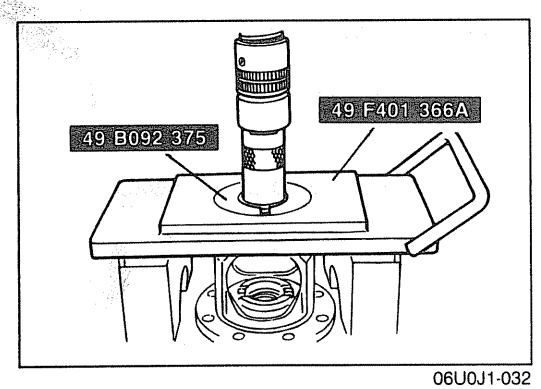
Caution
- **Do not remove inner races if not necessary.**

2. Disassemble in the order shown in the figure, referring to **Disassembly Note**.

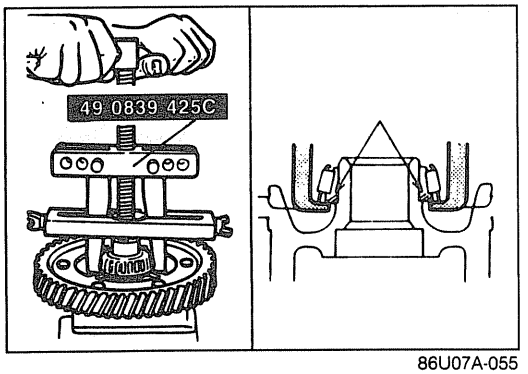


16U0J1-009

1. Roll pin
2. Pinion shaft
3. Pinion gear
4. Thrust washer
5. Side gear
6. Thrust washer
7. Side bearing inner race
   Removal ..... page J1–22
8. Speedometer drive gear
   Inspection ..... page J1–25
9. Side bearing inner race
   Removal ..... page J1–22
10. Gear case



06U0J1-032



86U07A-055

Disassembly note

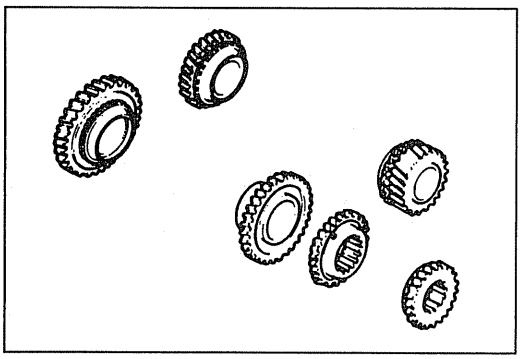
Side bearing inner race (side opposite ring gear)

Remove the race from the gear case with the **SST**.

Caution
- **Hold the gear case with one hand so that it does not fall.**

Side bearing inner race (ring gear side)

Remove the race with a combination of parts from the **SST**.



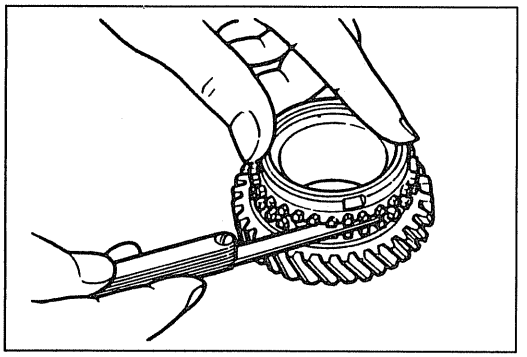
06U0J1-033

INSPECTION

Check the following parts, and replace if necessary.

1st, 2nd, 3rd, 4th, and 5th gears

1. Worn or damaged synchronizer cone.
2. Worn or damaged hub sleeve coupling.
3. Worn or damaged teeth.
4. Worn or damaged inner surface or end surface of gears.



16U0J1-010

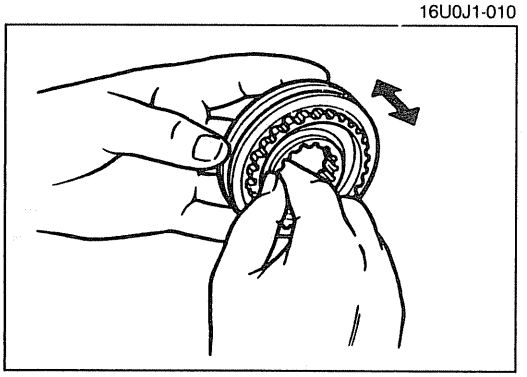
Synchronizer Ring

1. Engagement with gear.
2. Worn or damaged teeth.
3. Worn or damaged tapered surface.
4. Clearance from side of gear.

Clearance: 1.5mm (0.059 in)
Minimum : 0.8mm (0.032 in)

Note

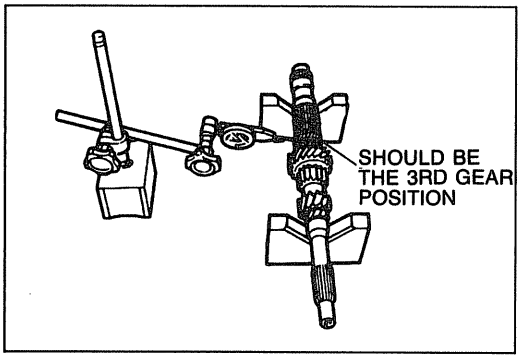
- **Press the synchronizer ring uniformly against the gear and measure around the circumference.**
- **If the clearance is less than specified, replace the synchronizer ring or gear.**



63U07A-070

Clutch Hub

1. Worn or damaged splines.
2. Worn or damaged synchronizer key groove.
3. Worn end surface.
4. Operation of the hub sleeve when it is installed.

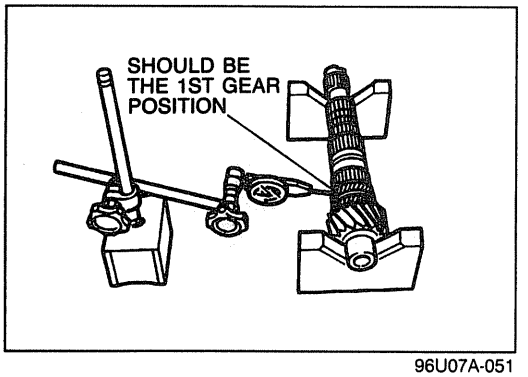


96U07A-050

Primary Shaft Gear and Secondary Shaft Gear

1. Worn or damaged gear contact surface.
2. Worn or damaged splines.
3. Worn teeth.
4. Clogged oil passage.
5. Shaft gears' run-out.

Primary shaft gear runout: 0.05mm (0.002 in) max.

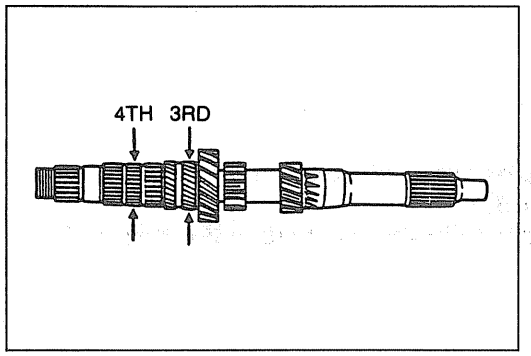


96U07A-051

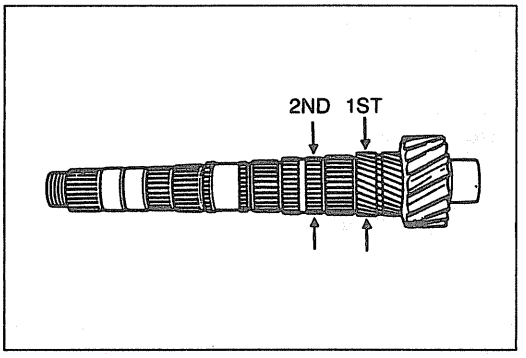
Secondary shaft gear runout:
0.015mm (0.0006 in) max.

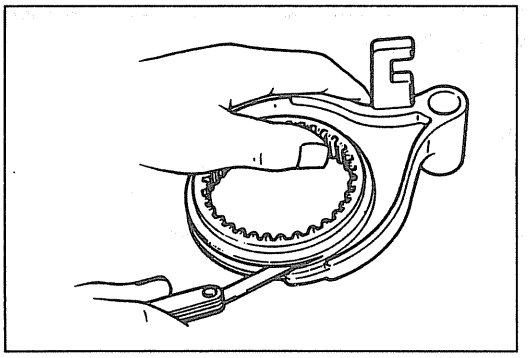
Note

- **If the shaft gear is replaced, adjust the bearing preload. (Refer to page J1–33.)**

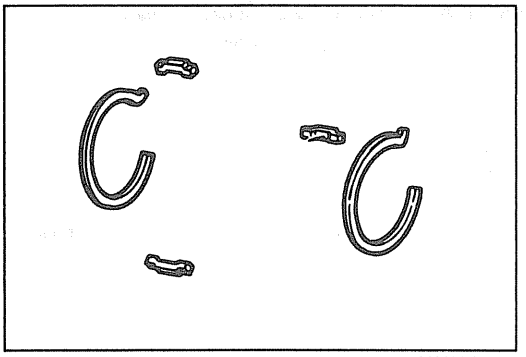


16U0J1-011

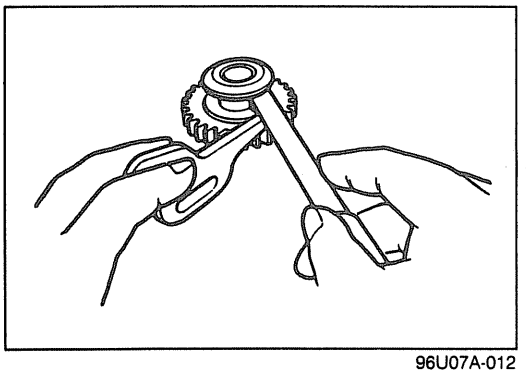




16U0J1-012



63U07A-072



96U07A-012

6. Oil clearance between shaft gears and gears.

Oil Clearance

mm (in)

	Shaft (A) (outer diameter)	Gear (B) (inner diameter)	Sleeve (C) (outer diameter)	Oil (D) Clearance
3rd Gear	35.970 (1.416)—35.945 (1.415)	36.025 (1.418)—36.000 (1.417)	—	(D) = (B)–(A) 0.03 (0.001)—0.08 (0.003)
4th Gear	30.970 (1.219)—30.945 (1.218)	31.025 (1.222)—31.000 (1.221)	—	(D) = (B)–(A) 0.03 (0.001)—0.08 (0.003)
5th Gear	—	34.025 (1.340)—34.000 (1.339)	33.970 (1.337)—33.945 (1.336)	(D) = (B)–(C) 0.03 (0.001)—0.08 (0.003)
1st Gear	39.470 (1.554)—39.445 (1.553)	39.525 (1.556)—39.500 (1.555)	—	(D) = (B)–(A) 0.03 (0.001)—0.08 (0.003)
2nd Gear	34.970 (1.377)—34.945 (1.376)	35.025 (1.379)—35.000 (1.378)	—	(D) = (B)–(A) 0.03 (0.001)—0.08 (0.003)

Clutch Hub Sleeve

1. Worn or damaged hub splines.
2. Worn or damaged sleeve fork groove.
3. Clearance between sleeve and shift fork.

Clearance

mm (in)

	Standard	Limit
1st—2nd	0.08 (0.003)—0.228 (0.009)	0.728 (0.029)
3rd—4th	0.1 (0.004)—0.5 (0.020)	1.000 (0.039)
5th	0.15 (0.059)—0.458 (0.018)	0.958 (0.038)

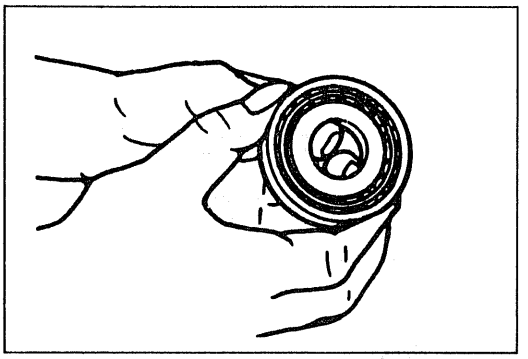
Synchronizer Key and Spring

1. Worn key.
2. Bent spring.

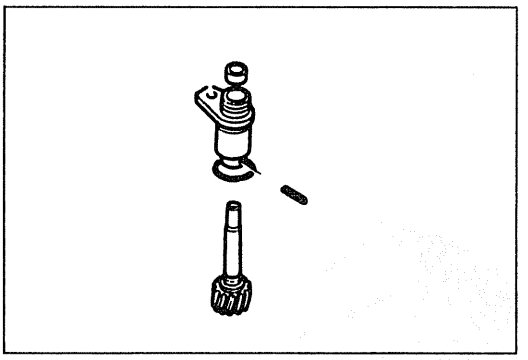
Reverse Idle Gear

1. Worn or damaged bushing.
2. Worn or damaged teeth.
3. Worn or damaged reverse shift lever coupling groove.
4. Clearance between sleeve and reverse shift lever.

Standard : 0.095—0.318mm (0.004—0.013 in)
Maximum: 0.5mm (0.020 in)



63U07A-075



06U0J1-034

Bearing
1. Roughness or noise while turning
2. Worn or damaged outer race or rollers

Caution
- **Replace the bearing, the outer race, and the inner race as a unit.**
- **If the bearing is replaced, adjust the preload.**

Speedometer Driven Gear Assembly
Worn or damaged teeth.

Speedometer Drive Gear
Worn or damaged teeth.

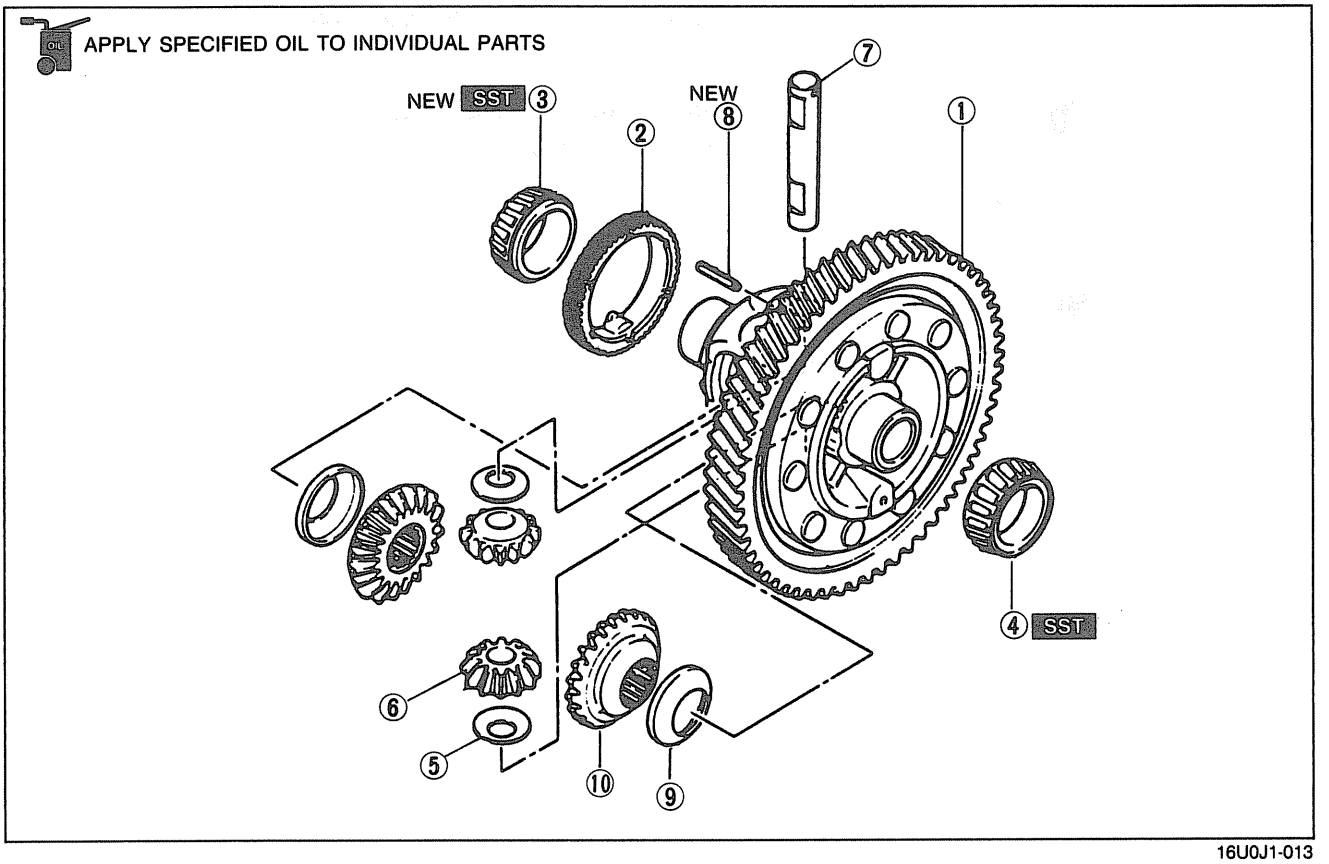
ASSEMBLY

Precaution

1. All O-rings and gasket must be replaced with the new ones included in the overhaul kit.
2. Before assembly, make sure all parts are completely clean.
3. Assemble the parts within 10 minutes after applying sealant. Allow all sealant to cure at least 30 minutes after assembly before filling the transaxle with transaxle oil.
4. If the clutch housing or transaxle case is replaced, adjust the bearing preload of the shaft gears and the preload of the differential side bearings.
5. If the bearing inner races are replaced, assemble new bearing outer races.

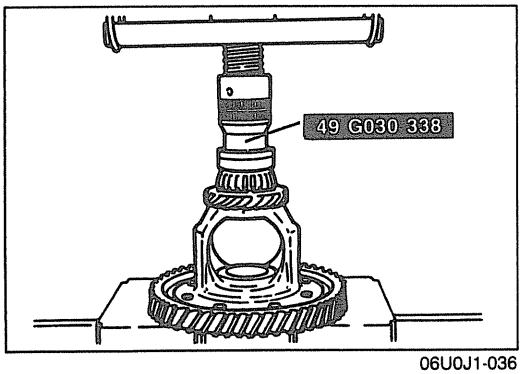
Step 1 (Differential)

1. Assemble in the order shown in the figure, referring to **Assembly Note**.



16U0J1-013

1. Gear case
2. Speedometer drive gear
   Installation..... page J1–26
3. Side bearing inner race
   Installation..... page J1–26
4. Side bearing inner race
   Installation..... page J1–27
5. Thrust washer
6. Pinion gear
   Installation..... page J1–27
7. Pinion shaft
   Installation..... page J1–27
8. Roll pin
   Installation..... page J1–27
9. Thrust washer
10. Side gear
    Installation..... page J1–27



06U0J1-036

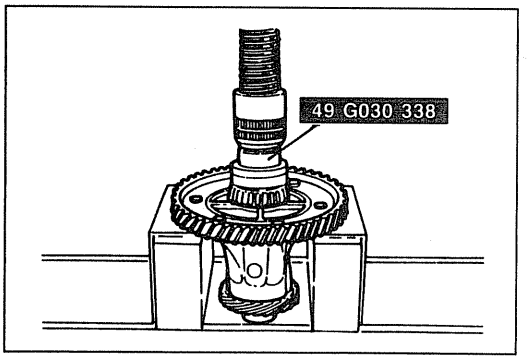
Assembly note

Speedometer drive gear and Side bearing inner race

Install the speedometer drive gear and the new bearing inner race with the **SST**.

Note

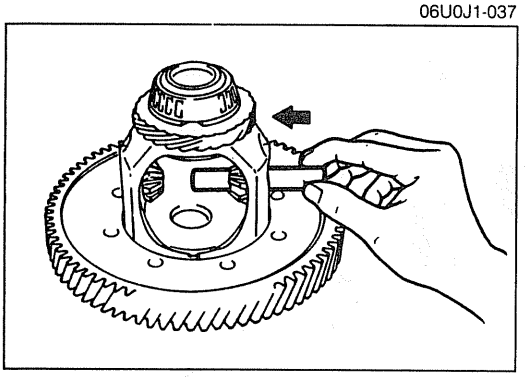
- **Press to 19,620 N (2,000 kg, 4,400 lb).**



06U0J1-037

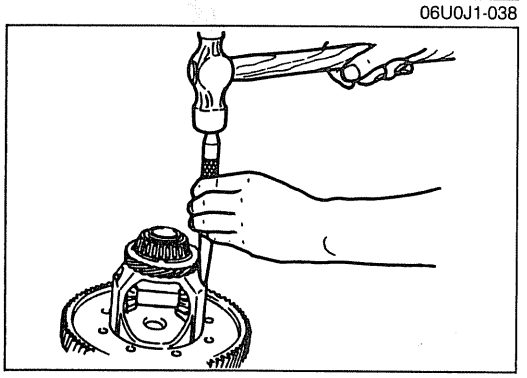
Side bearing inner race
Install the new bearing inner race with the **SST**.

Note
- **Press to 19,620 N (2,000 kg, 4,400 lb).**



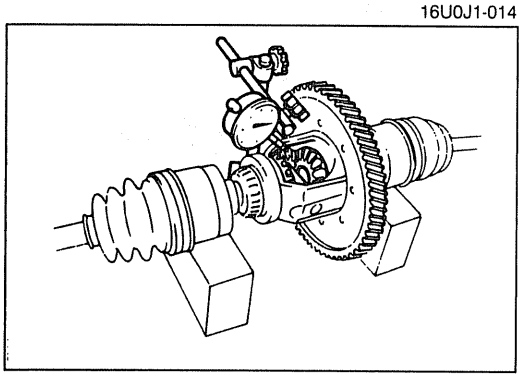
06U0J1-038

Pinion gears and pinion shaft
1. Install the thrust washers and pinion gears.
2. Install the pinion shaft.



16U0J1-014

Roll pin and side gears
1. Install the roll pin, then crimp it so that it cannot come out of the gear case.
2. Install the thrust washers and the side gears.



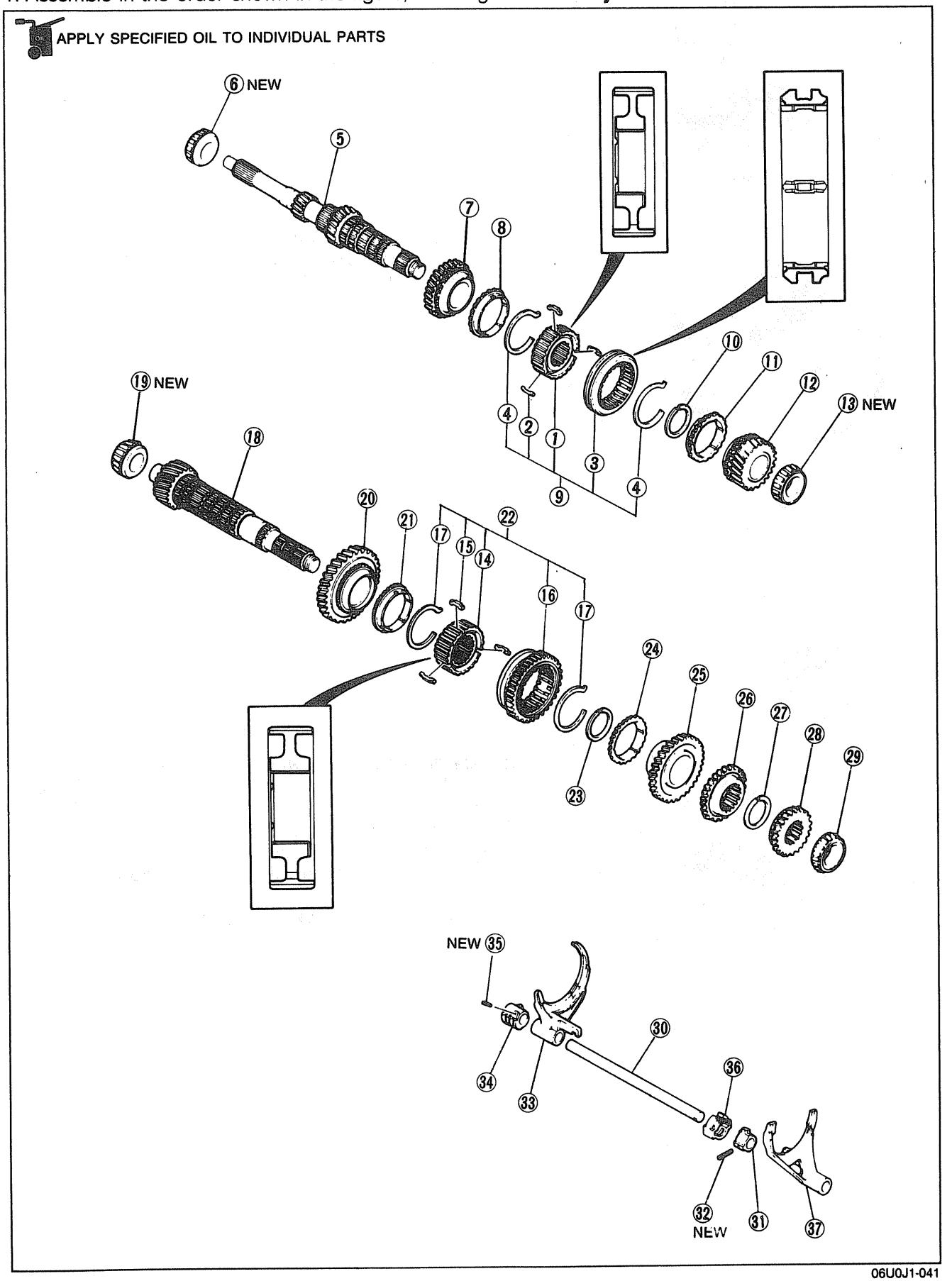
06U0J1-040

Backlash of side gear and pinion gear
1. Install the left and right driveshafts in the differential assembly.
2. Support the driveshafts on V-blocks as shown in the figure.
3. Measure the backlash of both pinion gears.
4. If not, reassemble the differential assembly.

Backlash: 0—0.1mm (0—0.004 in)

Step 2

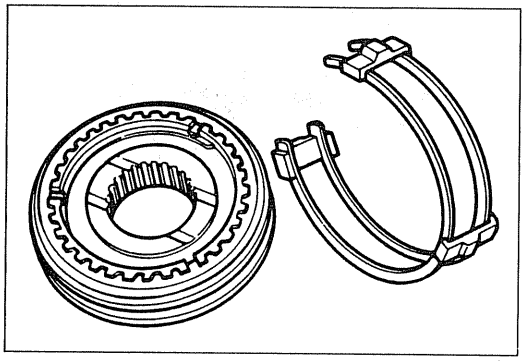
1. Assemble in the order shown in the figure, referring to **Assembly Note**.



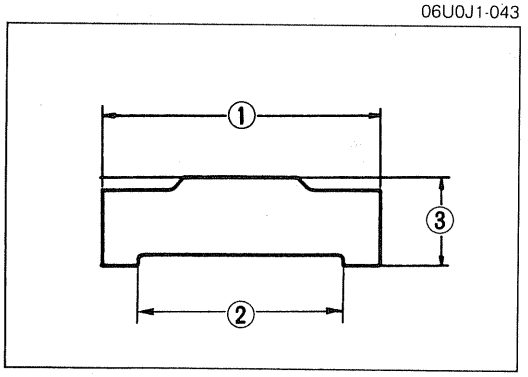
06U0J1-041

1. Clutch hub
   Installation..... page J1–29
2. Synchronizer key
3. Clutch hub sleeve
4. Synchronizer spring
5. Primary shaft
6. Bearing inner race
   Installation..... page J1–30
7. Primary 3rd gear
   Installation..... page J1–30
8. Synchronizer ring
   Installation..... page J1–30
9. Clutch hub assembly (3rd and 4th gear)
10. Retaining ring
11. Synchronizer ring
    Installation..... page J1–30
12. Primary 4th gear
    Installation..... page J1–30
13. Bearing inner race
    Installation..... page J1–30
14. Clutch hub
    Installation..... page J1–29
15. Synchronizer key
16. Clutch hub sleeve
17. Synchronizer spring
18. Secondary shaft
19. Bearing inner race
    Installation..... page J1–31
20. Secondary 1st gear
    Installation..... page J1–31
21. Synchronizer ring
    Installation..... page J1–31
22. Clutch hub assembly
    Installation..... page J1–31
23. Retaining ring
24. Synchronizer ring
    Installation..... page J1–31
25. Secondary 2nd gear
    Installation..... page J1–31
26. Secondary 3rd gear
    Installation..... page J1–31
27. Retaining ring
28. Secondary 4th gear
    Installation..... page J1–32
29. Bearing inner race
    Installation..... page J1–32
30. Control rod
31. Control lever
32. Roll pin
33. Shift fork (1st and 2nd gears)
34. Control end
35. Roll pin
36. Interlock sleeve
    Installation..... page J1–32
37. Shift fork (3rd and 4th gears)

06U0J1-042



06U0J1-043



06U0J1-044

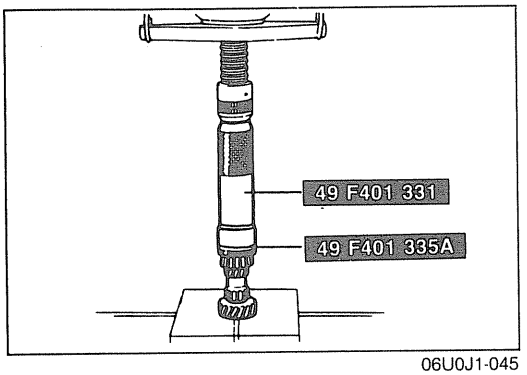
Assembly note
Clutch hub
Install the synchronizer key spring in the clutch hub with the hook in the groove. This holds the three synchronizer keys in place.

Note
- **The sizes of the synchronizer keys are different.**

Specification:

mm (in)

	①	②	③
1st/2nd	19 (0.75)	14.2 (0.56)	4.25 (0.17)
3rd/4th 5th/Rev.	17 (0.67)	12.2 (0.48)	4.25 (0.17)

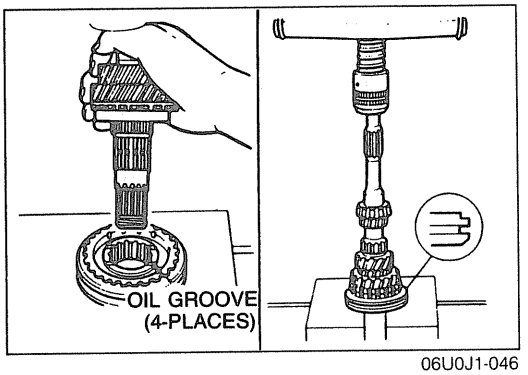


06U0J1-045

Primary Shaft Gear Bearing inner race

Install the new bearing inner race with the **SST**.

Note
- **Press to 19,620 N (2,000 kg, 4,400 lb).**

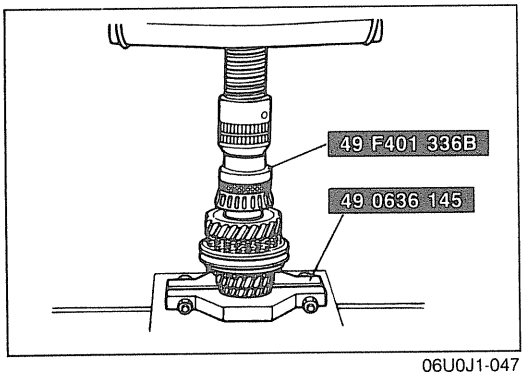


06U0J1-046

Primary 3rd gear, synchronizer ring and clutch hub assembly

Install the primary 3rd gear, synchronizer ring, and clutch hub assembly with the **SST**.

Note
- **Press to 19,620 N (2,000 kg, 4,400 lb).**
- **Align the synchronizer ring groove and clutch housing hub key when installing.**

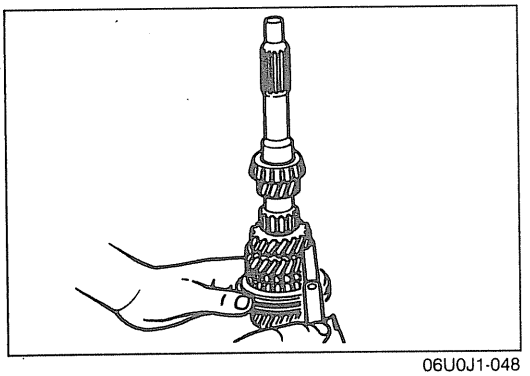


06U0J1-047

Synchronizer ring, primary 4th gear and bearing inner race

1. Install the synchronizer ring, primary 4th gear, and bearing inner race with the **SST**.

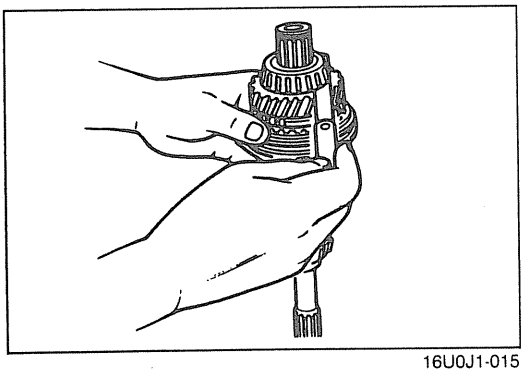
Note
- **Press to 19,620 N (2,000 kg, 4,400 lb).**



06U0J1-048

2. Measure the clearance between the primary 3rd gear and primary 2nd gear.

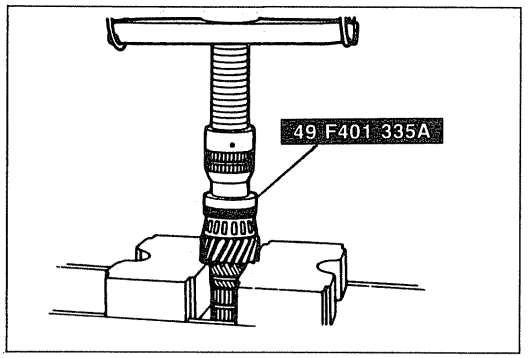
Clearance: 0.05—0.20mm (0.0020—0.0079 in)
Maximum : 0.25mm (0.0098 in)



16U0J1-015

3. Measure the clearance between the primary 4th gear and bearing inner race.

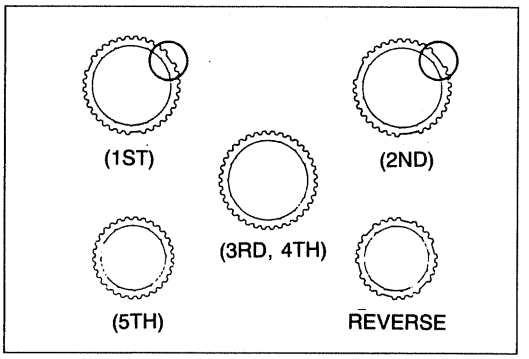
Clearance: 0.165—0.365mm (0.0065—0.0144 in)
Maximum : 0.415mm (0.0163 in)



06U0J1-050

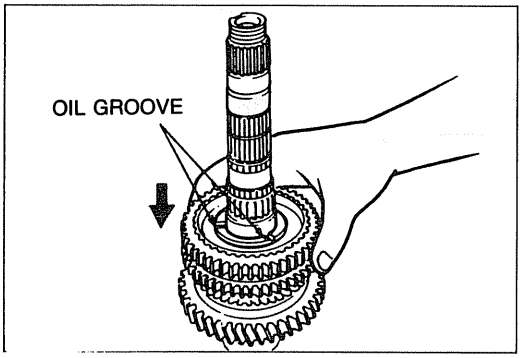
Bearing inner race
Install the new bearing inner race with the **SST**.

Note
- **Press to 19,620 N (2,000 kg, 4,400 lb).**



76F07A-048

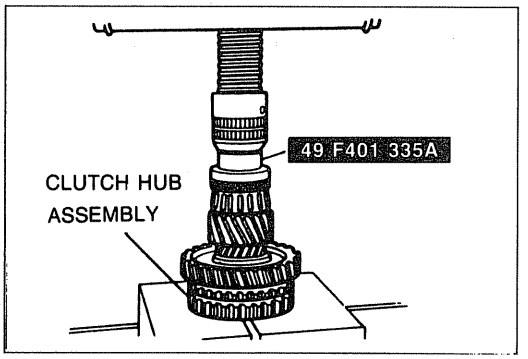
Note
- **The size of the 1st, 2nd, and 3rd/4th synchronizer rings is the same. Be careful when installing them. The 2nd ring has the larger cut-out as shown in the illustration.**



06U0J1-051

Secondary Shaft Gear
Secondary 1st gear, synchronizer ring and clutch hub assembly
1. Assemble the secondary 1st gear, synchronizer ring, and clutch hub assembly (reverse gear), as shown in the figure.

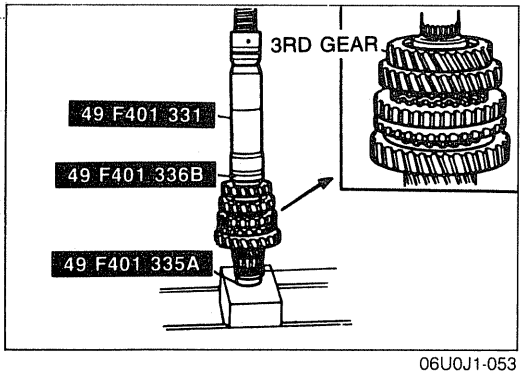
Note
- **Align the synchronizer ring, groove and clutch housing hub key when installing.**



06U0J1-052

2. Press on the clutch hub assembly (reverse gear) with the **SST**.

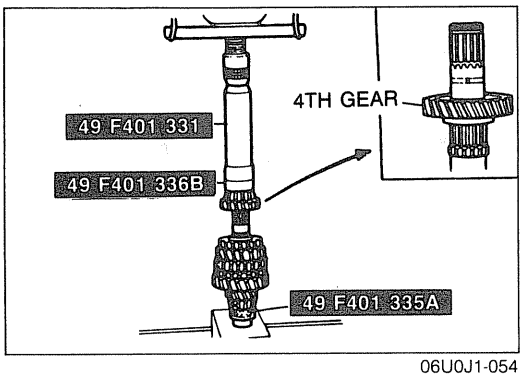
Note
- **Press to 19,620 N (2,000 kg, 4,400 lb).**



06U0J1-053

Synchronizer ring, secondary 2nd gear and secondary 3rd gear
1. Install the synchronizer ring and secondary 2nd gear.
2. Install the secondary 3rd gear with the **SST**.

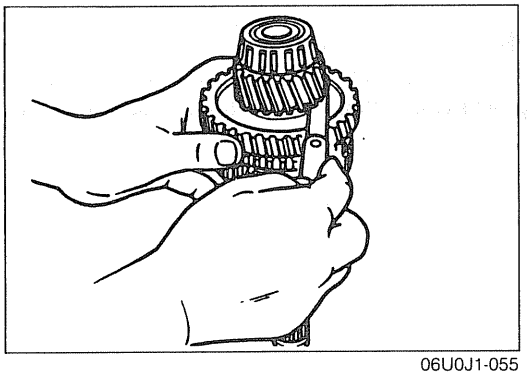
Note
- **Press to 19,620 N (2,000 kg, 4,400 lb).**



06U0J1-054

Secondary 4th gear and bearing inner race

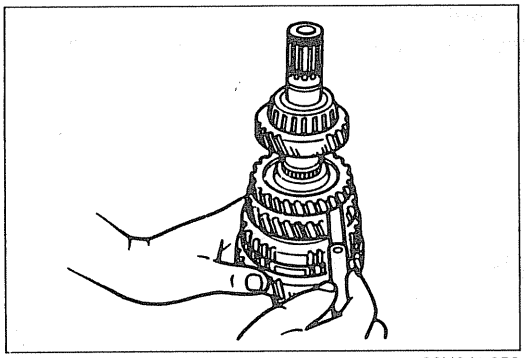
1. Install the secondary 4th gear and bearing inner race.



06U0J1-055

2. Measure the clearance between the secondary 1st gear and differential drive gear.

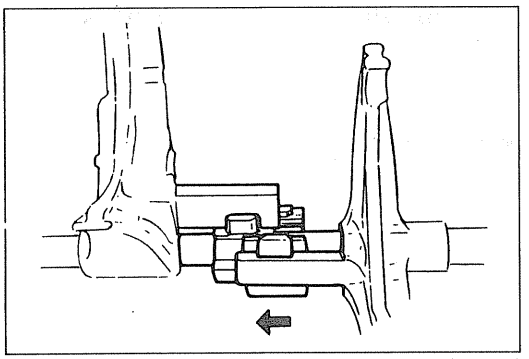
Clearance: 0.050—0.280mm (0.0020—0.0110 in)
Maximum : 0.33mm (0.0130 in)



06U0J1-056

3. Measure the clearance between the secondary 2nd gear and secondary 3rd gear.

Clearance: 0.175—0.455mm (0.0069—0.0179 in)
Maximum : 0.505mm (0.0199 in)



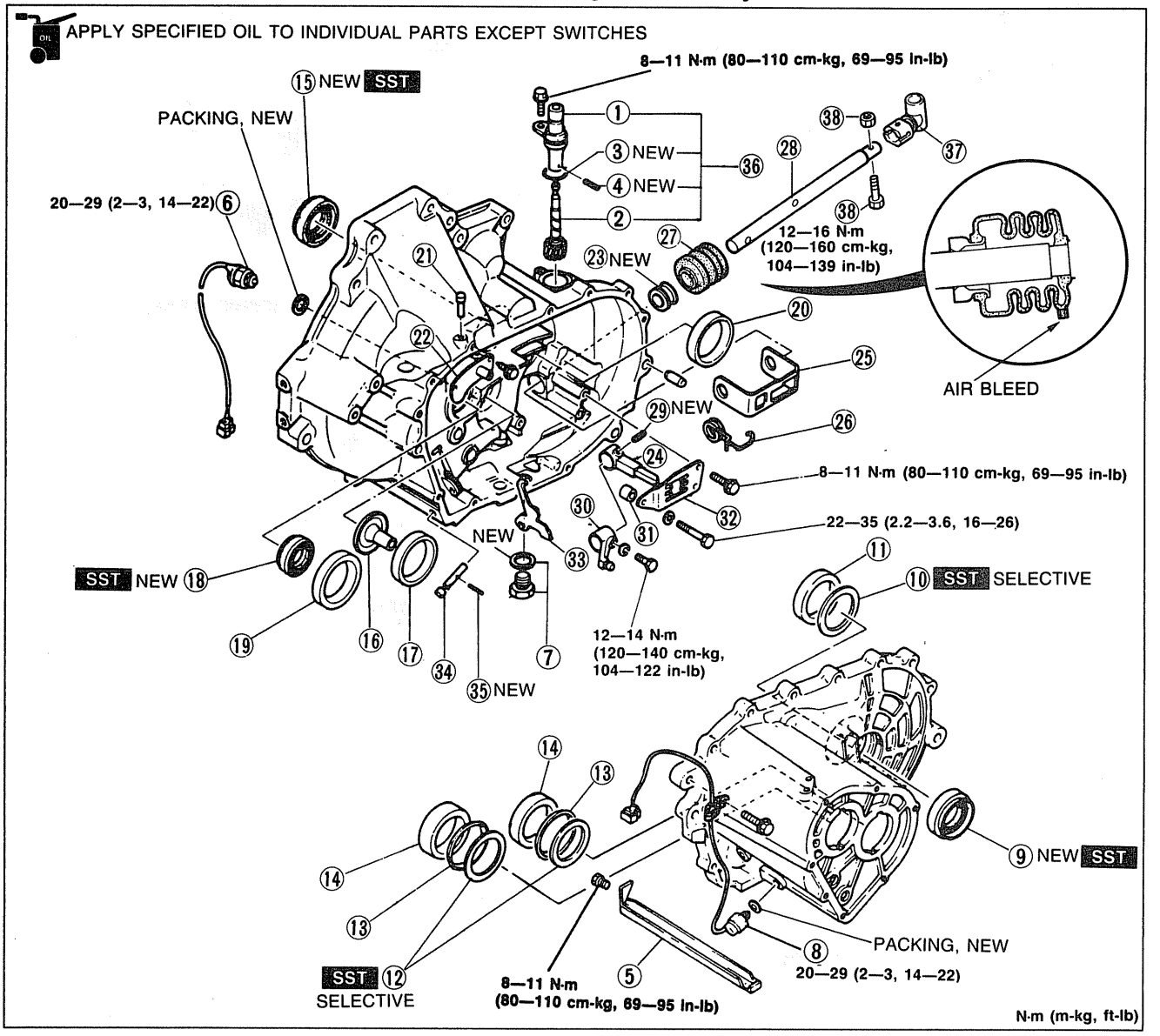
06U0J1-057

Interlock sleeve

Install both shift forks and the interlock sleeve, as in the figure.

Step 3

1. Select the adjust shim(s), referring to Adjustment of Bearing Preload.
2. Assemble in the order shown in the figure, referring to **Assembly Note**.



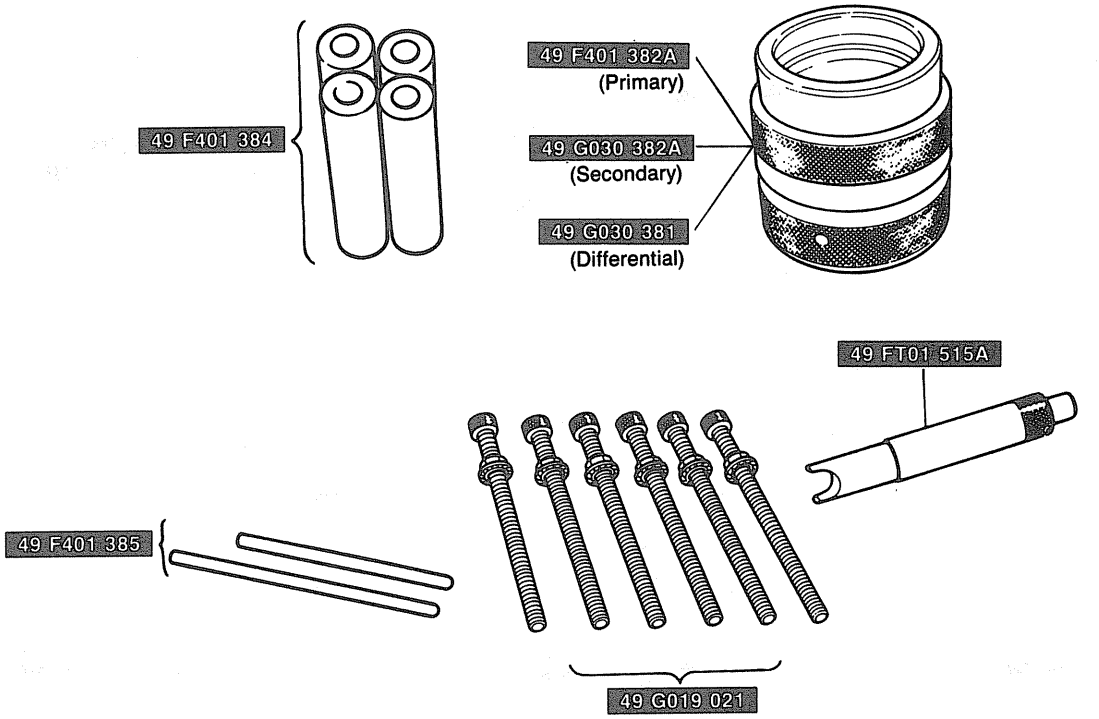
16U0J1-016

1. Gear case
2. Speedometer driven gear
3. O-ring
4. Roll pin
5. Oil passage
6. Neutral switch
7. Drain plug and washer
8. Back-up light switch
9. Oil seal
   Installation..... page J1–37
10. Adjust shim(s)
11. Bearing outer race(s)
12. Adjust shim
    Installation..... page J1–37
13. Diaphragm spring
    Installation..... page J1–37
14. Bearing outer race
    Installation..... page J1–37
15. Oil seal
    Installation..... page J1–37
16. Funnel
17. Bearing outer race
18. Oil seal
19. Bearing outer race
20. Bearing outer race
21. Bleeder
22. Bleeder cover
23. Oil seal
24. Selector
    Installation..... page J1–37
25. Reverse gate
    Installation..... page J1–37
26. Spring
    Installation..... page J1–37
27. Boot
    Installation..... page J1–37
28. Change rod
    Installation..... page J1–37
29. Roll pin
30. Change arm
31. Pipe
32. Guide plate
33. Reverse lever
34. Reverse lever shaft
35. Roll pin
36. Speedometer driven gear assembly
37. Joint
38. Bolt, nut

Bearing Preload Adjustment

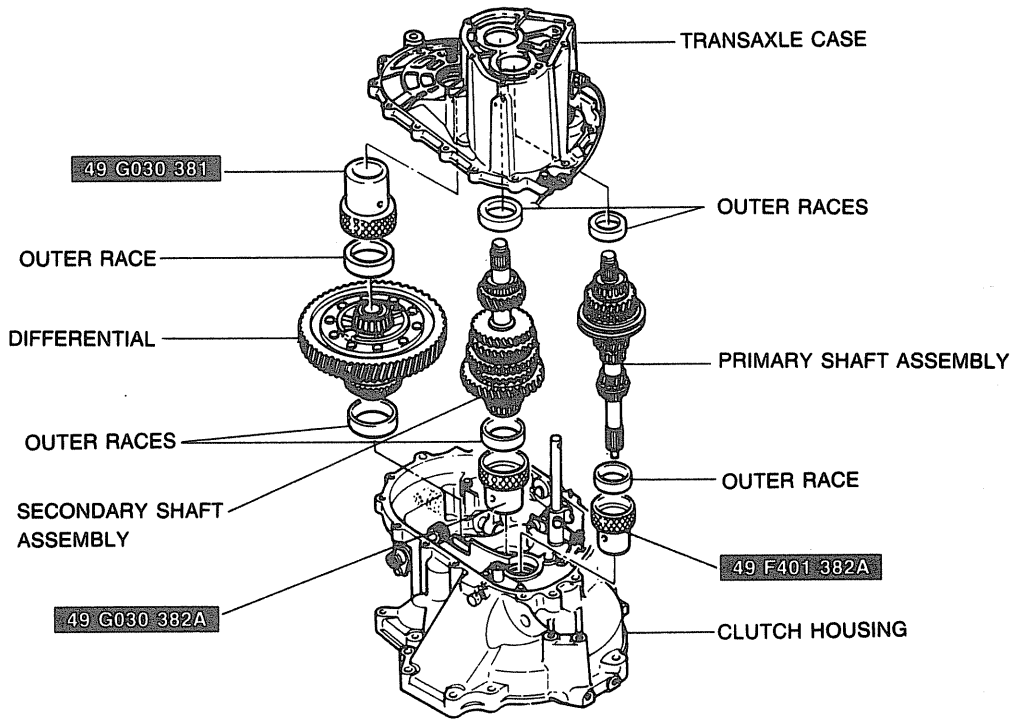
Adjust the bearing preload by selecting adjust shim(s).

SST

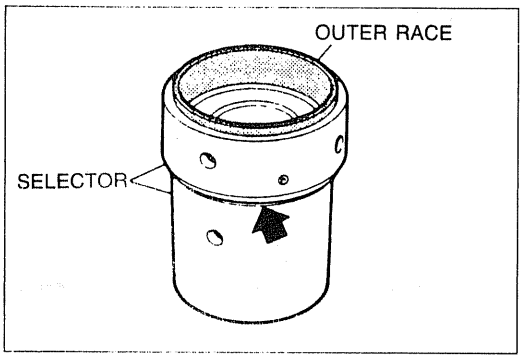


06U0J1-059

SST USAGE



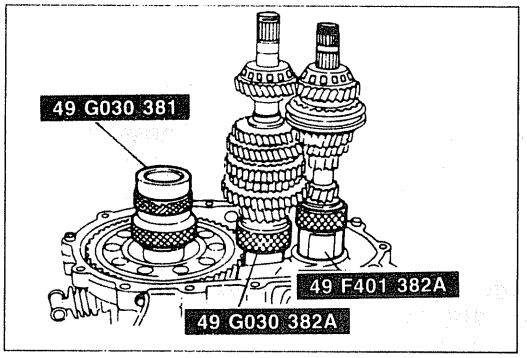
83U07A-033



86U07A-251

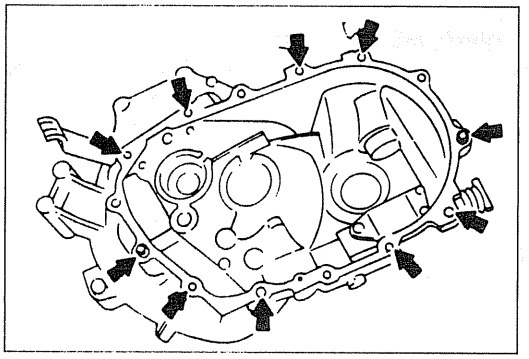
1. Install the primary and secondary shaft bearing outer races into the transaxle case (diaphragm springs and shims removed).
2. After mounting the clutch housing onto the transaxle hanger, and set the differential bearing outer race into the clutch housing.
   Next, position a piece of pipe against the outer race and tap in with a hammer until it contacts the clutch housing.
3. Assemble the outer races into the **SST** (selector) as shown in the figure.

Note
- **Turn the selector to eliminate the gap indicated by the arrow in the figure.**



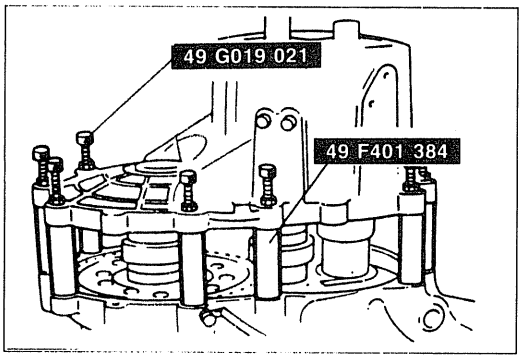
86U07A-252

4. Set the differential assembly onto the clutch housing, then mount the bearing outer race and the selector on the differential.
   Set the assembled selectors for the primary and secondary shaft in the clutch housing.
   Mount the shaft gear assemblies as shown in the figure.



86U07A-253

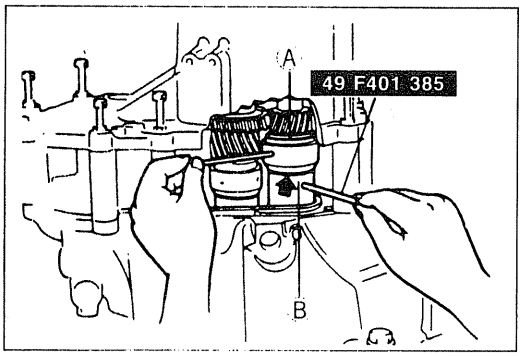
5. Set the **SST** (collars) in the positions shown in the figure.



86U07A-254

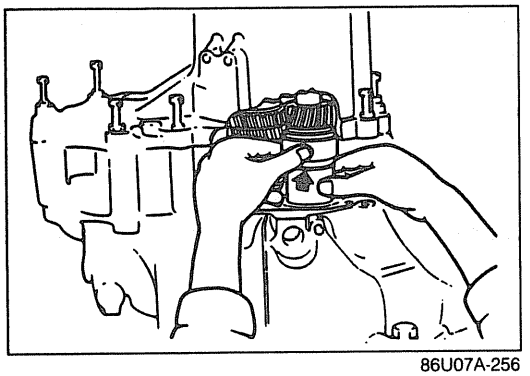
Install the transaxle case then tighten the **SST** (bolts) to the specified torque.

Tightening torque:
37—52 N·m (3.8—5.3 m-kg, 27—38 ft-lb)

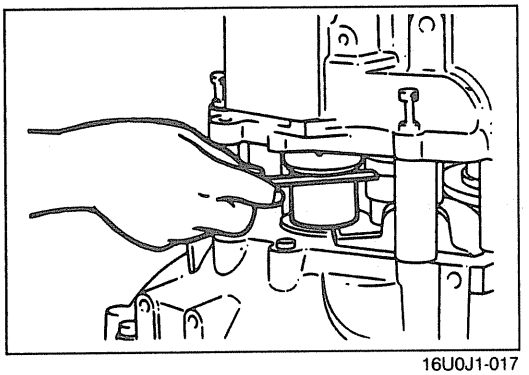


86U07A-255

6. To seat the bearings, mount the **SST** (bars) on parts Ⓐ and Ⓑ of the selector, and then turn the selector so the gap is widened.
   Then turn it in the reverse direction until the gap is eliminated.



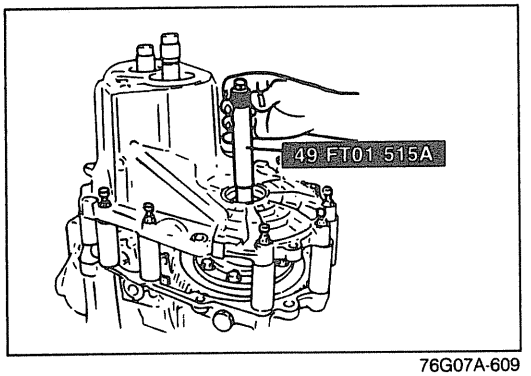
86U07A-256



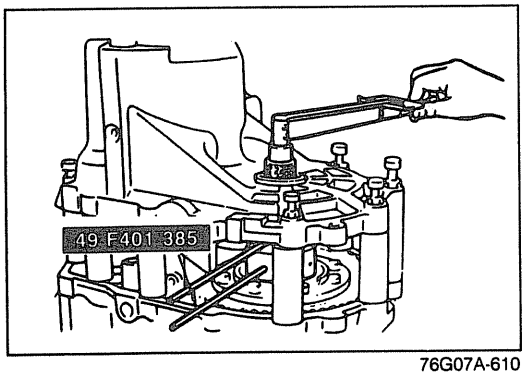
16U0J1-017

Thickness (Shaft gears)	mm (in)
0.20 (0.008)	0.50 (0.020)
0.25 (0.010)	0.55 (0.022)
0.30 (0.012)	0.60 (0.024)
0.35 (0.014)	0.65 (0.026)
0.40 (0.016)	0.70 (0.028)
0.45 (0.018)	

16U0J1-018



76G07A-609



76G07A-610

7. Manually expand the selector until the selector no longer turns by hand.

Note
- **Check that each shaft turns smoothly.**

8. Use a feeler gauge and measure the gap in the selector.

Note
- **Measure the gap around the entire circumference of the selector.**

9. Take the maximum reading and determine the shim to be used as follows:

< Primary shaft adjust shim >
- Subtract the diaphragm spring thickness (0.70mm [0.0276 in]) from the gap determined in Step 8.
- Select the closest thicker shim from the table.

Example
1.22mm (0.0480 in) – 0.70mm (0.0276 in)
= 0.52mm (0.0205 in)
Shim: 0.50mm (0.020 in)

< Secondary shaft adjust shim >
- Subtract the diaphragm spring thickness (0.70mm [0.0276 in]) from the gap determined in Step 10.
- Select the closest thicker shim from the table.

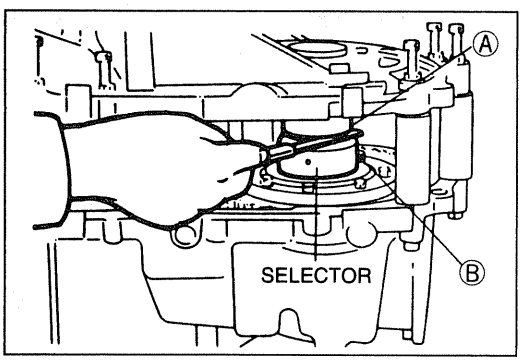
Example
1.22mm (0.0480 in) – 0.70mm (0.0276 in)
= 0.52mm (0.0205 in)
Shim: 0.55mm (0.022 in)

Note
- **Use a maximum of two shims.**

10. Install the **SST**.

11. Adjust the selector with the **SST** until the specified preload is obtained.

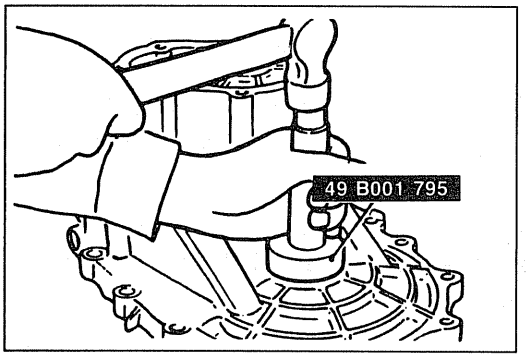
Preload: 0.5 N·m (5 cm-kg, 4.3 in-lb)



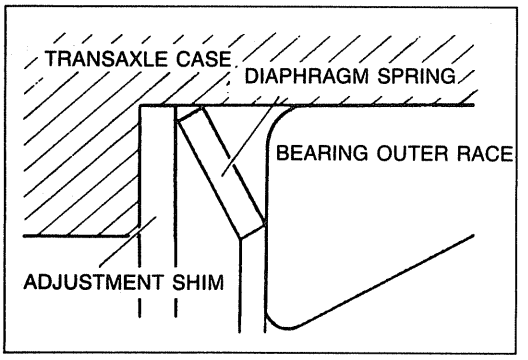
76G07A-611

Thickness	mm (in)
0.10 (0.004)	0.70 (0.028)
0.20 (0.008)	0.75 (0.030)
0.25 (0.010)	0.80 (0.031)
0.30 (0.012)	0.85 (0.033)
0.35 (0.014)	0.90 (0.035)
0.40 (0.016)	0.95 (0.037)
0.45 (0.018)	1.00 (0.039)
0.50 (0.020)	1.05 (0.041)
0.55 (0.022)	1.10 (0.043)
0.60 (0.024)	1.15 (0.045)
0.65 (0.026)	1.20 (0.047)

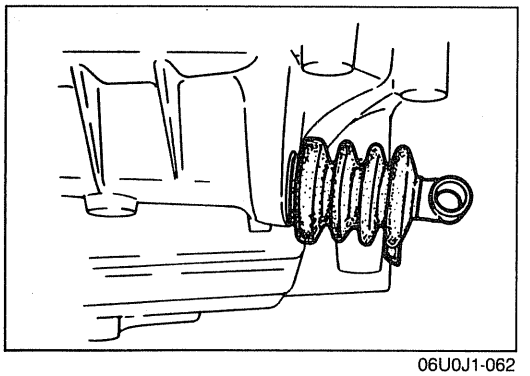
96U07A-016



06U0J1-060



16U0J1-019



06U0J1-062

12. Use a feeler gauge to measure the gap in the selector for the differential.

Note
- **Measure the gap around the entire circumference of the selector**

13. Add **0.15mm (0.0059 in)** to the measured clearance and select the combination of shims closest in value to that measurement.
See the table below for available shim sizes.

Example: 0.32mm (0.013 in)
0.32mm (0.013 in) + 0.15mm (0.006 in) = 0.47mm (0.019 in).
So the nearest shim (on the thick side) to 0.47mm (0.019 in) is 0.50mm (0.020 in).

Note
- **Use a maximum of two shims.**

14. Remove the **SST** and transaxle case.
15. Remove the selectors, the primary shaft assembly and the differential.
16. Remove the bearing outer races.

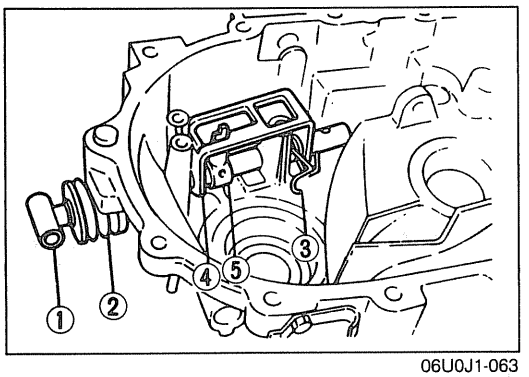
Assembly note
Oil seals
Install the new oil seals with the **SST**.

Adjust shims, diaphragm spring, and bearing outer races
Install the adjust shims, diaphragm spring, and bearing outer races.

Note
- **Install the diaphragm spring as shown in the figure.**

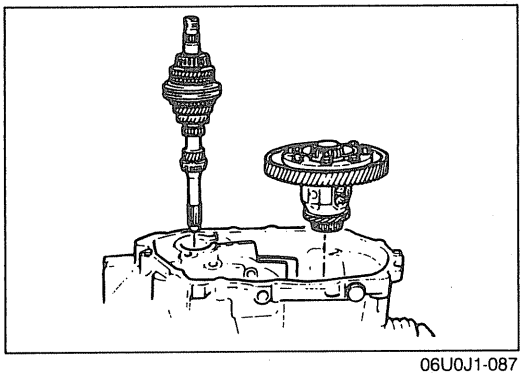
Change rod, boot, spring, reverse gate, and selector

Note
- **Install the boot with the air bleed downward as shown in the figure.**



06U0J1-063

Install the change rod ①, the boot ②, the spring ③, the reverse gate ④, and selector ⑤, as shown.



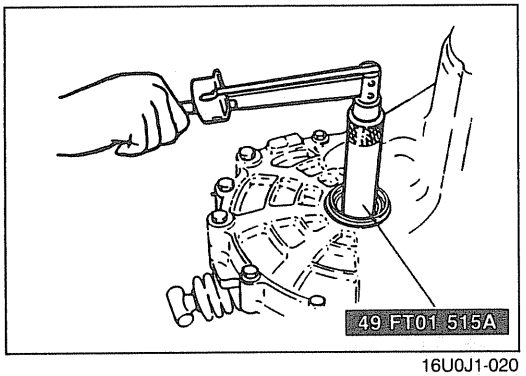
06U0J1-087

Rechecking of bearing preload
Check the shaft gears and the differential bearing preload.

Note
- **Check that the correct adjust shims were selected.**
- **If the bearing preload is not within specification, adjust again.**

1. Set the primary shaft gear and the differential into the clutch housing.
2. Install the transaxle case, and tighten to the specified torque.

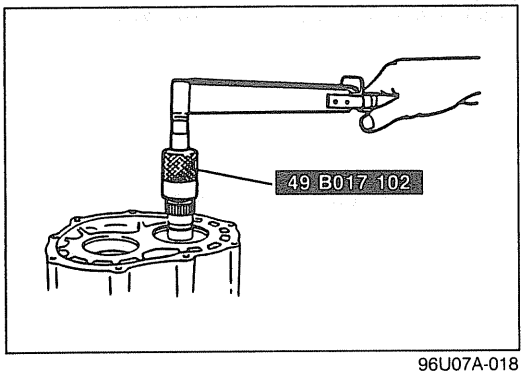
Tightening torque:
37—52 N·m (3.8—5.3 m-kg, 27—38 ft-lb)



16U0J1-020

3. Connect the **SST** and install it through the driveshaft hole.
4. Hook a spring scale to the attachment and measure the preload.

Preload:
1.4—2.0 N·m (14—20 cm-kg, 12.2—17.4 in-lb)

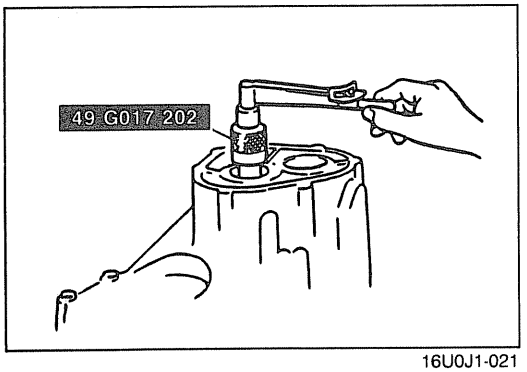


96U07A-018

5. Remove the **SST**.
6. With the transaxle facing in the direction shown in the figure, install the **SST** to the primary shaft gear.
7. Measure the preload.

Preload:
0.1—0.25 N·m (1.0—2.5 cm-kg, 0.87—2.17 in-lb)

Note
- **Extend the handle fully and hook the pull scale to the end of the handle.**



16U0J1-021

8. Remove the **SST**, transaxle case, primary shaft gear and differential.
9. Install the secondary shaft gear and transaxle case then tighten to the specified torque.

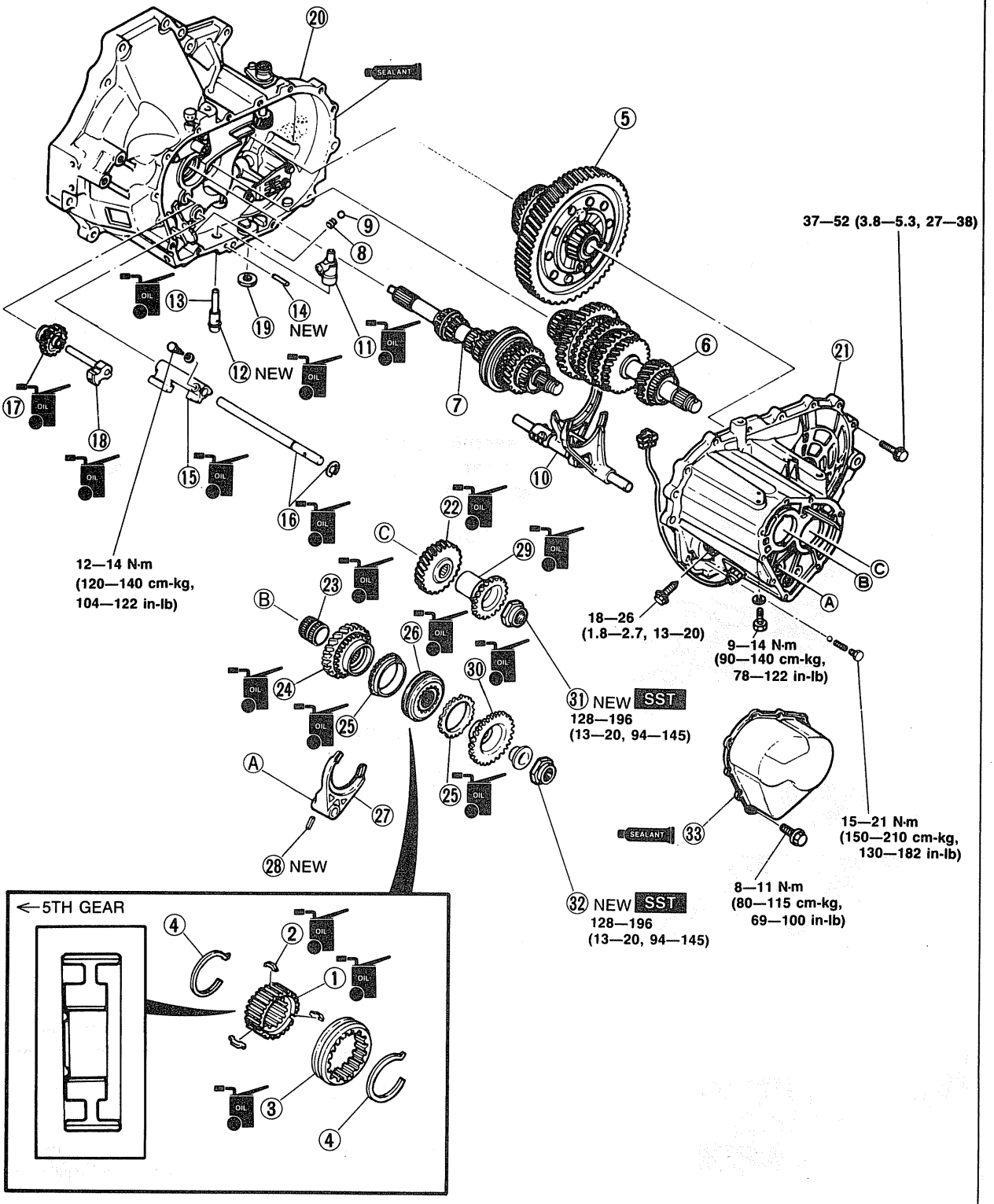
Tightening torque:
37—52 N·m (3.8—5.3 m-kg, 27—38 ft-lb)

10. Check the secondary shaft preload with the **SST**.

Preload:
0.2—0.4 N·m (2.0—4.0 cm-kg, 1.7—3.5 in-lb)

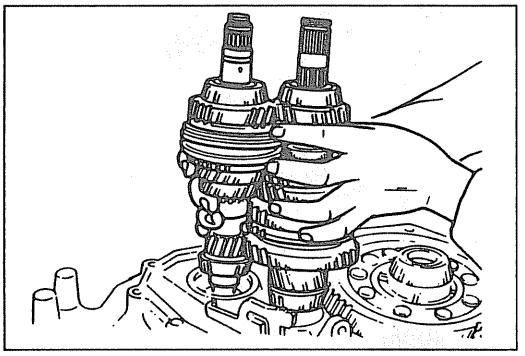
Step 4

1. Assemble in the order shown in the figure, referring to **Assembly Note**.



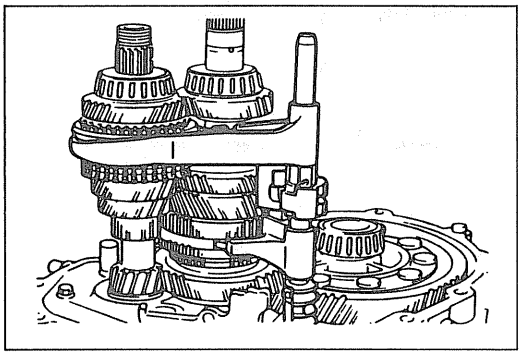
1. Clutch hub
2. Synchronizer key
3. Clutch hub sleeve
4. Synchronizer spring
5. Ring gear and differential assembly
6. Secondary shaft gear assembly
   Installation..... page J1–40
7. Primary shaft gear assembly
   Installation..... page J1–40
8. Spring
9. Steel ball
10. Shift fork and shift rod assembly
    Installation..... page J1–40
11. Crank lever assembly
    Installation..... page J1–41
12. O-ring
13. Crank lever shaft
    Installation..... page J1–41
14. Pin
15. Shift rod end (5th/Rev.)
    Installation..... page J1–41
16. Shift rod (5th/Rev.) and clip
    Installation..... page J1–41
17. Reverse idler gear
    Installation..... page J1–41
18. Reverse idler shaft
    Installation..... page J1–41
19. Magnet
20. Clutch housing
    Installation..... page J1–41
21. Transaxle case assembly
    Installation..... page J1–41
22. Secondary 5th gear
    Installation..... page J1–42
23. Gear sleeve
24. Primary 5th gear
25. Synchronizer ring
26. Clutch hub assembly
    Installation..... page J1–42
27. Shift fork
    Installation..... page J1–42
28. Roll pin
29. Secondary reverse synchronizer gear
30. Primary reverse synchronizer gear
31. Locknut
    Installation..... page J1–42
32. Locknut
    Installation..... page J1–42
33. Rear cover

16U0J1-022



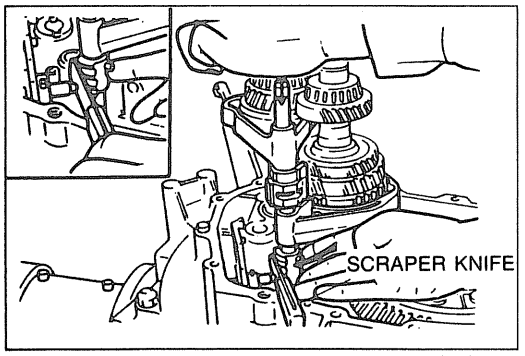
06U0J1-066

Assembly note
Primary shaft gear assembly and Secondary shaft gear assembly
Install the primary shaft gear assembly and the secondary shaft gear assembly together.



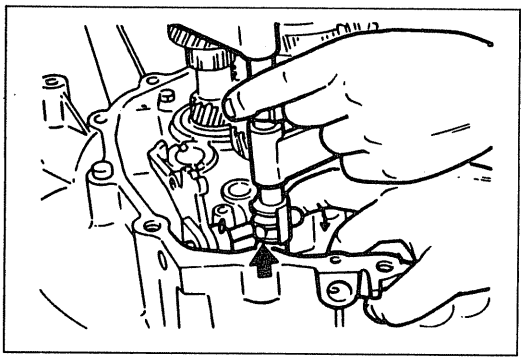
06U0J1-067

Shift fork and Shift rod assembly
1. Shift to 2nd gear and position the shift fork and shift rod assembly as shown.



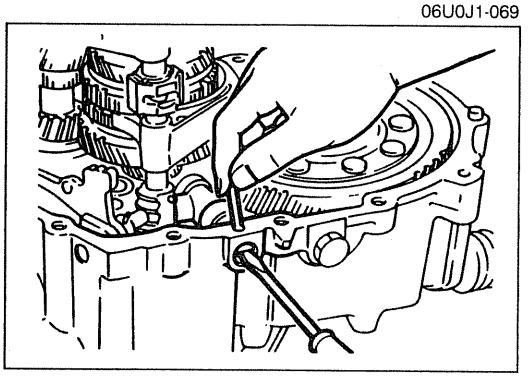
06U0J1-068

2. Insert the spring seat and spring into the reverse lever shaft, install the steel ball, and place a scraper knife so that it contacts the steel ball.
3. With the edge of the control end against the knife, when the control end is pushed in the direction of the arrow in the figure so that the ball goes into the shaft, the rod will at the same time line up with the shift rod coupling hole in the clutch housing.



06U0J1-069

4. Set each clutch hub sleeve to the neutral position, and tap the shift rod from above so that the steel ball goes into the center groove (of the 3 grooves in the control end).
5. Pull the ball part of the control end forward so that the steel ball goes into the detent in the groove.



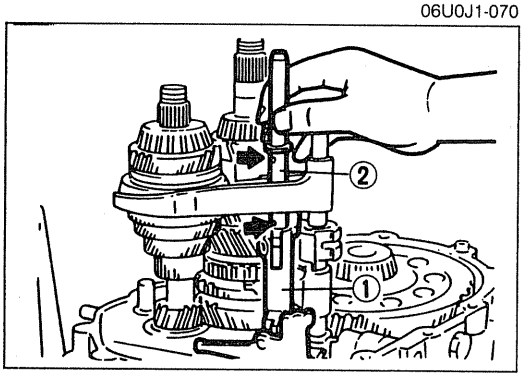
06U0J1-070

Crank lever assembly and Crank lever shaft

1. Fit the crank lever in between the change arm and the control end, and connect the crank lever shaft to the crank lever.
2. Align the pin holes of the crank lever shaft and the clutch housing, and insert the pin.

Note

- **Use a new O-ring for the crank lever shaft.**



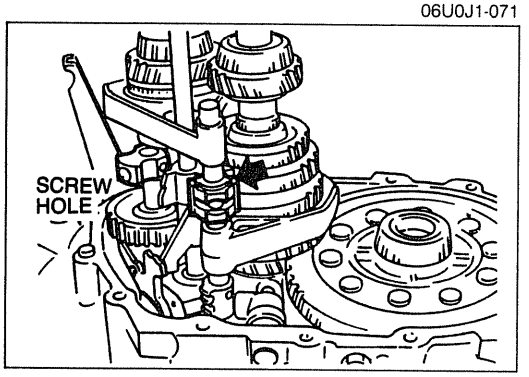
06U0J1-071

Shift rod end and Shift rod

Install the shift rod end (1) and the shift rod (2), and tighten the shift rod end mounting bolt.

Note

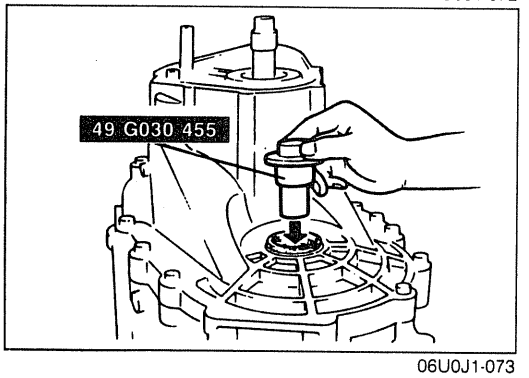
- **The mark (indicated by the arrow in the figure) and the shift rod end mounting bolt hole must be in the same direction.**



06U0J1-072

Reverse idle gear and Reverse idle shaft

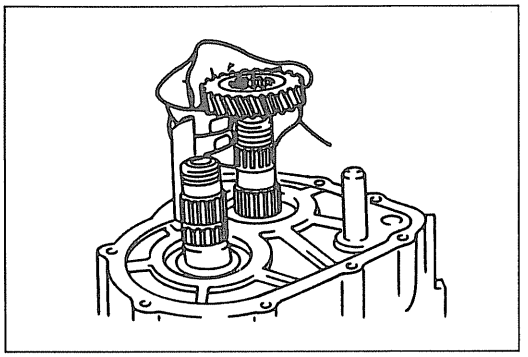
1. Install the reverse idle gear and the reverse idle shaft.
2. Connect the magnet to the clutch housing.
3. Align the end of the interlock sleeve with the control lever indicated by the arrow, and, at the same time, face the reverse idle shaft screw hole in the direction shown in the figure.



06U0J1-073

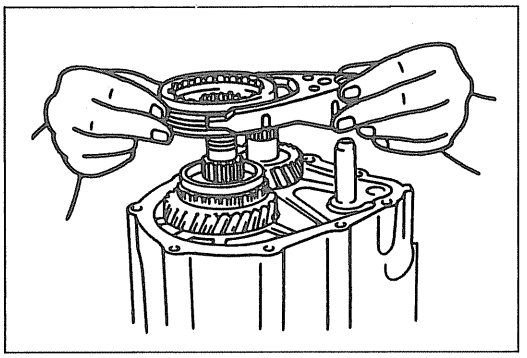
Clutch housing and Transaxle case

1. Apply a thin coat of sealant to the contact surfaces of the clutch housing and transaxle case, tighten the transaxle case installation bolts to the specified torque.
2. Insert the **SST** to driveshaft coupling hole.



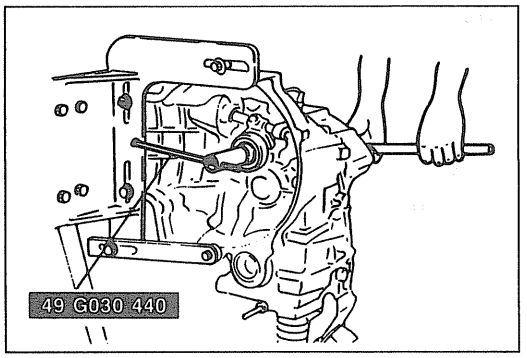
06U0J1-074

Secondary 5th gear
Install the secondary 5th gear as shown.



06U0J1-075

Clutch hub assembly and Shift fork
Install the clutch hub assembly and the shift fork together.



06U0J1-076

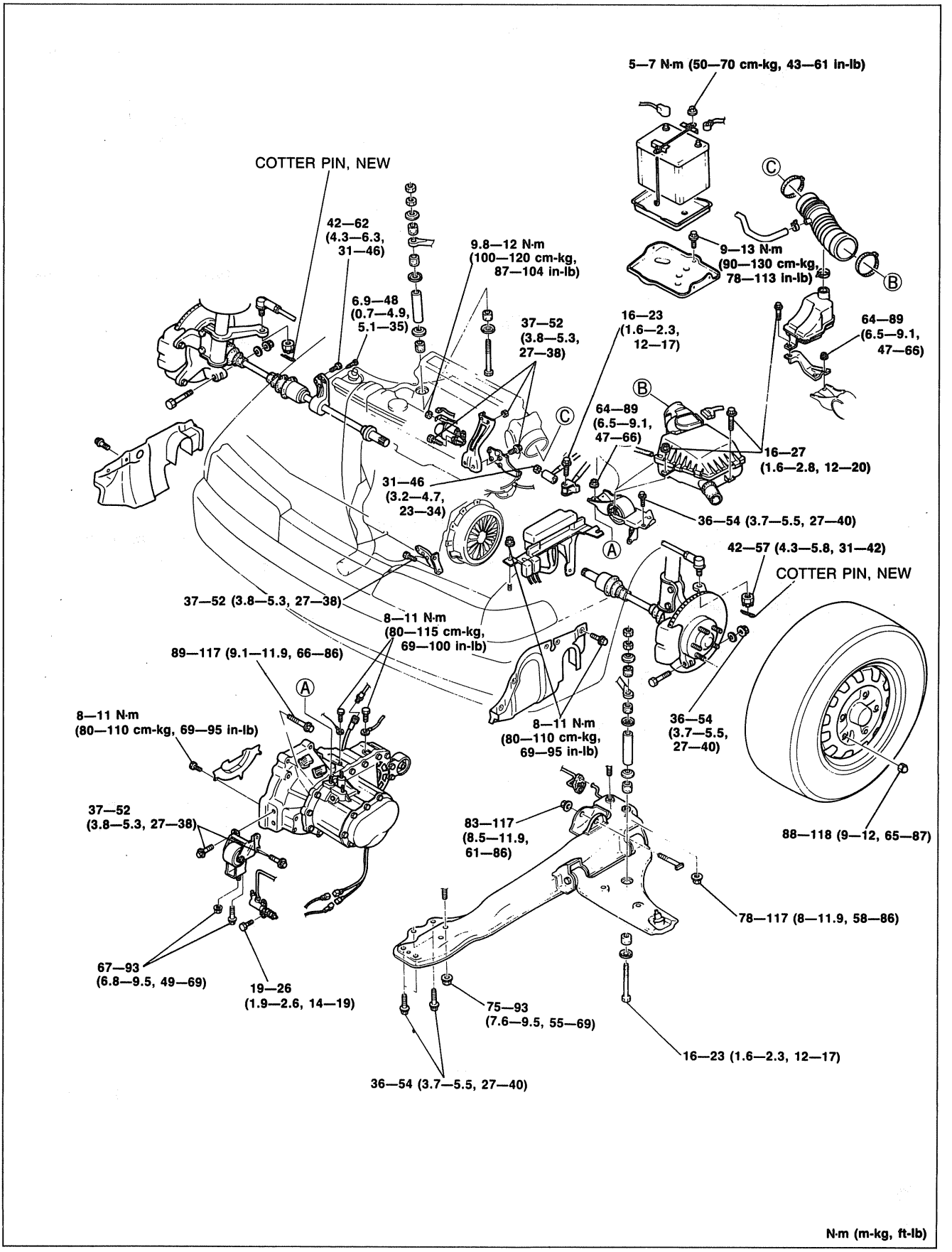
Locknut
1. Shift to 1st gear.
2. Lock the primary shaft with the **SST**.
3. Tighten new locknuts.

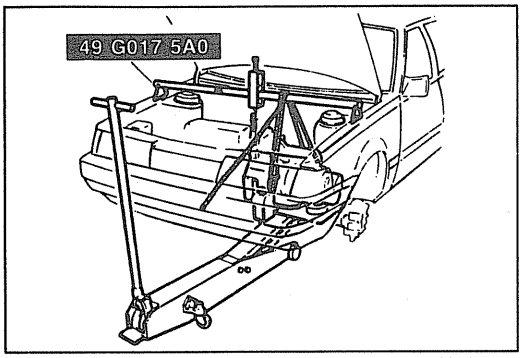
Tightening torque:
128—196 N·m (13.0—20.0 m-kg, 94—145 ft-lb)

4. Stake the locknuts.

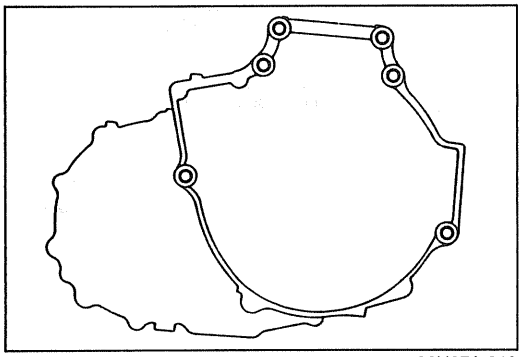
INSTALLATION

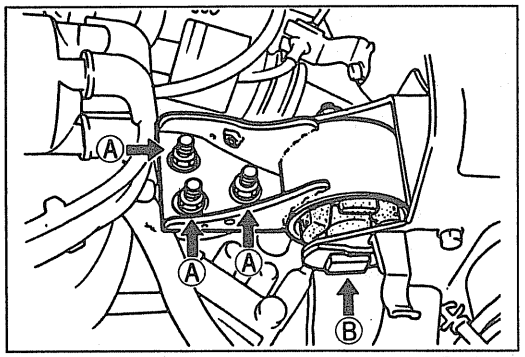
1. Install in the reverse order of removal, referring to **Installation Note**.
2. After installation, fill the transaxle with the specified oil.



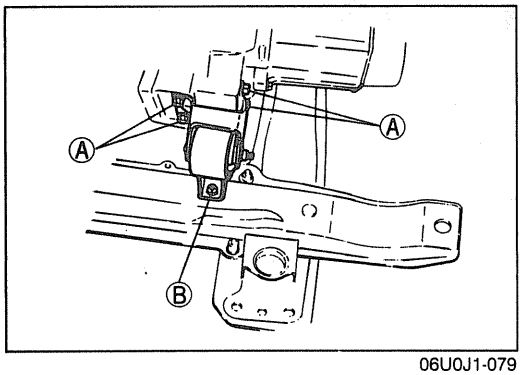


06U0J1-078

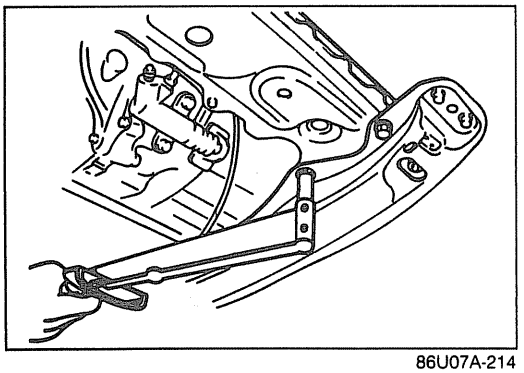

96U07A-040



76F07A-062



06U0J1-079


86U07A-214

Installation note

1. Attach rope at 2 places on the transaxle and place a board on the jack and position the transaxle on it.

   Caution
   - **The transaxle is not well balanced; be careful when positioning on the jack.**

2. Move the transaxle into the place and attach the rope (attached to the transaxle in step 1) to the **SST**.

3. Install the transaxle onto the engine.

   Note
   - **Lift the transaxle using the jack to pull the rope.**

   Tightening torque:
   89—117 N·m (9.1—11.9 m-kg, 66—86 ft-lb)

4. Install engine mount No.4.

   Tightening torque
   Ⓐ: 64—89 N·m (6.5—9.1 m-kg, 47—66 ft-lb)
   Ⓑ: 67—93 N·m (6.8—9.5 m-kg, 49—69 ft-lb)

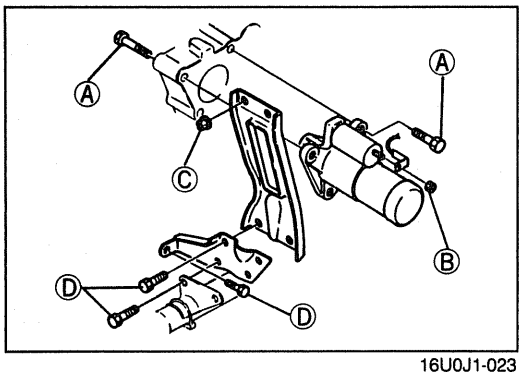
5. Install engine mount No.2.

   Tightening torque
   Ⓐ: 37—52 N·m (3.8—5.3 m-kg, 27—38 ft-lb)
   Ⓑ: 67—93 N·m (6.8—9.5 m-kg, 49—69 ft-lb)

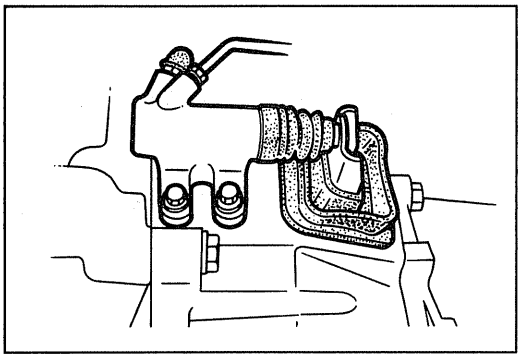
6. Install the crossmember and the left side lower arm as an assembly.

   Tightening torque:
   Bolts, 36—54 N·m (3.7—5.5 m-kg, 27—40 ft-lb)
   Nut, 75—93 N·m (7.6—9.5 kg, 55—69 ft-lb)

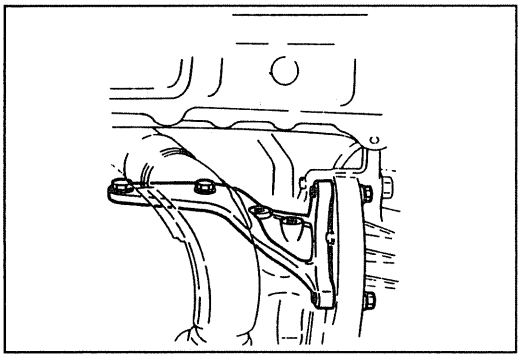
7. Remove the jack and take off the rope.
8. Remove the **SST**.



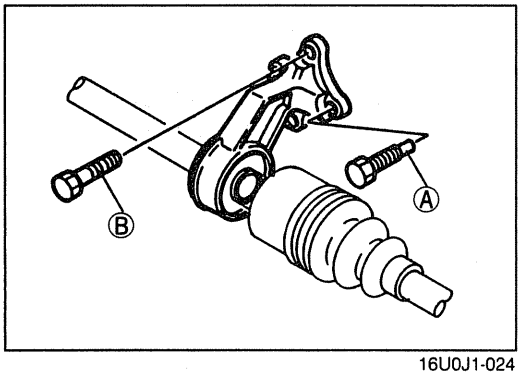
16U0J1-023



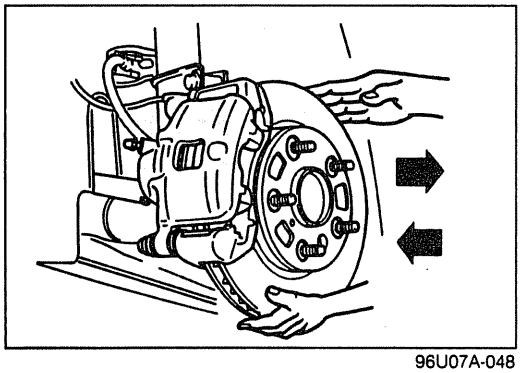
86U07A-216



86U07A-217



16U0J1-024



96U07A-048

9. Install the starter and harnesses.

Tightening torque
Ⓐ: 37—52 N·m (3.8—5.3 m-kg, 27—38 ft-lb)
Ⓑ: 9.8—12 N·m (100—120 cm-kg, 87—104 in-lb)

10. Install the surge tank bracket and the gusset plate.

Tightening torque
Ⓒ: 37—52 N·m (3.8—5.3 m-kg, 27—38 ft-lb)
Ⓓ: 37—52 N·m (3.8—5.3 m-kg, 27—38 ft-lb)

11. Install the end plate.

Tightening torque:
8—11 N·m (80—110 cm-kg, 69—95 in-lb)

12. Install the clutch release cylinder.

Tightening torque:
19—26 N·m (1.9—2.6 m-kg, 14—19 ft-lb)

13. Install the gusset plates.

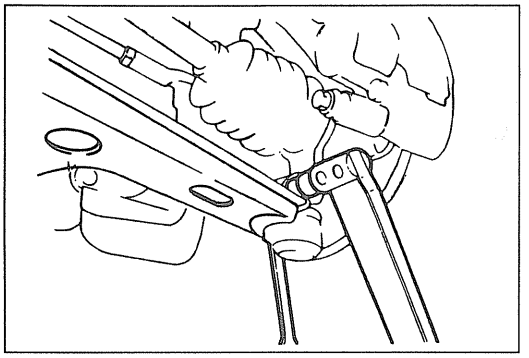
Tightening torque:
37—52 N·m (3.8—5.3 m-kg, 27—38 ft-lb)

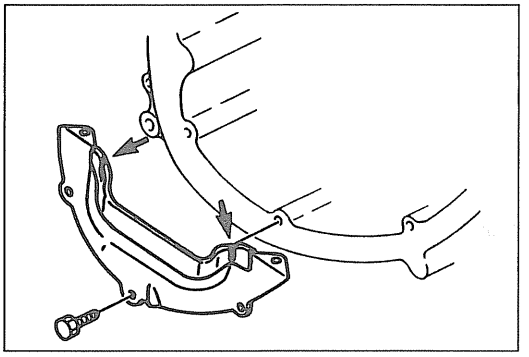
14. Replace the clips at the end of the driveshafts and joint shaft with new ones.
15. Install the joint shaft and right driveshaft as follows:
    (1) Install and tighten the reamer bolts Ⓐ; then install and tighten the standard bolts Ⓑ.

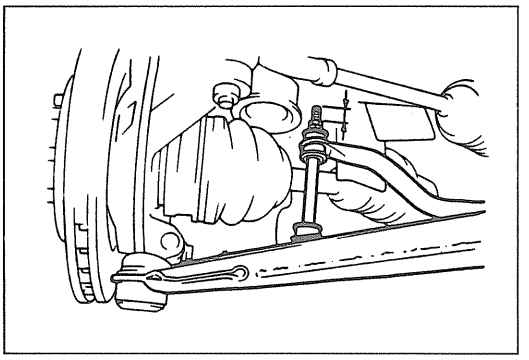
Tightening torque
Ⓐ: 6.9—48 N·m (0.7—4.9 m-kg, 5.1—35 ft-lb)
Ⓑ: 42—62 N·m (4.3—6.3 m-kg, 31—46 ft-lb)

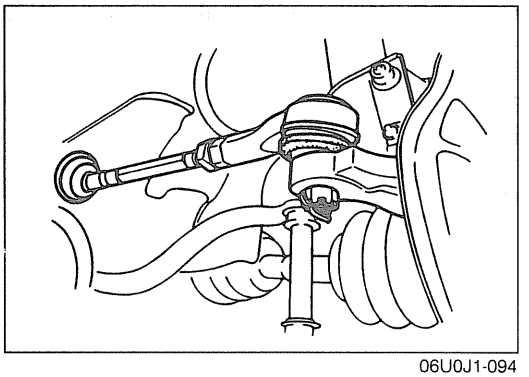
    (2) Remove the **SST** (holder) and insert the shaft into the transaxle.
    (3) Pull the front hub outward and connect the driveshaft to the joint shaft.
    (4) Push the joint at the differential side to securely connect the driveshaft to the joint shaft.

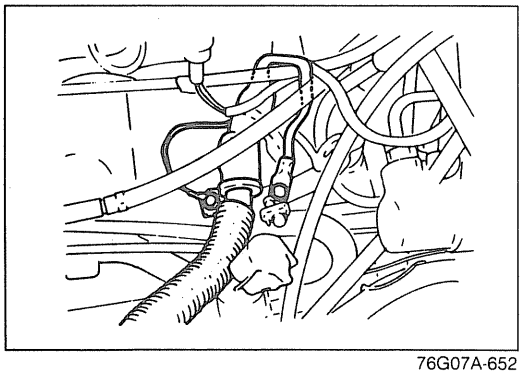
Note
- **After installation, pull the front hub outward to confirm that the driveshaft doesn't come out.**
- **Do not damage the oil seal.**


86U07A-220


06U0J1-092


06U0J1-093


06U0J1-094


76G07A-652

16. Install the left driveshaft as follows:
    (1) Pull the front hub outward and insert the driveshaft into the transaxle.
    (2) Push the joint at the differential side to connect the driveshaft to the differential side gear.

    Note
    - **Do not damage the oil seal.**
    - **After installation, pull the front hub outward to confirm that the driveshaft doesn't come out.**

17. Install the lower arm ball joints to the knuckles and tighten the bolts and nuts.

    Tightening torque:
    36—54 N·m (3.7—5.5 m-kg, 27—40 ft-lb)

18. Install the under cover.

    Note
    - **Before installation, fill the notches with silicon as shown in the figure.**

    Tightening torque:
    8—11 N·m (80—110 cm-kg, 69—95 in-lb)

19. Install the stabilizer bar control links as follows.
    (1) Install the stabilizer bar control link.
    (2) Adjust protrusion to **20.1 ± 2mm (0.79 ± 0.08 in)**.
    (3) Tighten bolt to specified torque.

    Tightening torque:
    16—23 N·m (1.6—2.3 m-kg , 12—17 ft-lb)

20. Install the tie-rod ends and new cotter pin.

    Tightening torque:
    42—57 N·m (4.3—5.8 m-kg, 31—42 ft-lb)

21. Install the splash shields.

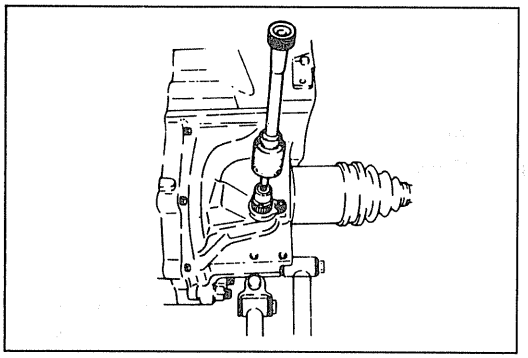
    Tightening torque:
    8—11 N·m (80—110 cm-kg, 69—95 in-lb)

22. Install the front wheels.

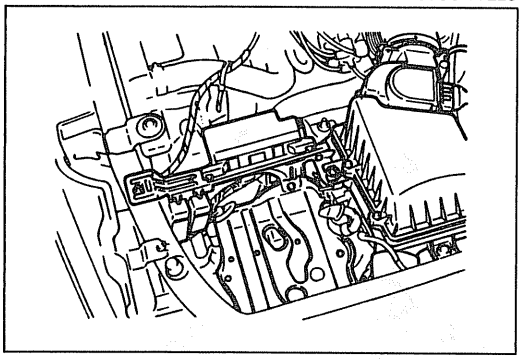
    Tightening torque:
    88—118 N·m (9.0—12.0 m-kg, 65—87 ft-lb)

23. Install the grounds to the transaxle case.

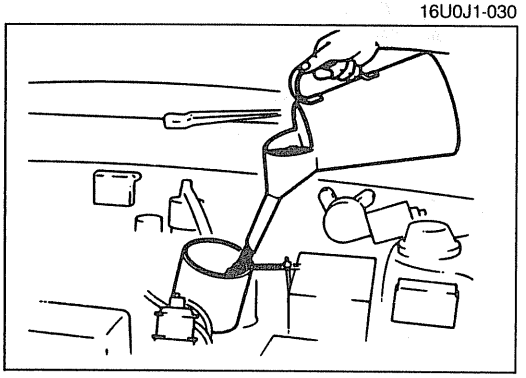
    Tightening torque:
    8—11 N·m (80—115 cm-kg, 69—100 in-lb)



86U07A-225



16U0J1-030



16U0J1-025

24. Connect the speedometer cable.

25. Install the air cleaner assembly and connect the air flow meter connector.

Tightening torque:
16—27 N·m (1.6—2.8 m-kg, 12—20 ft-lb)

26. Connect the distributor lead.
27. Connect the main fuse block.

Tightening torque:
8—11 N·m (80—110 cm-kg, 69—95 in-lb)

28. Install the battery carrier and battery.
29. Add the correct quantity of the specified transaxle oil.

Specified oil
Type
All-season
SAE 75W-90
ATF: DEXRON-II
Above −18°C (0°F):
API: GL-4 or GL-5
SAE 80W-90 or SAE 90

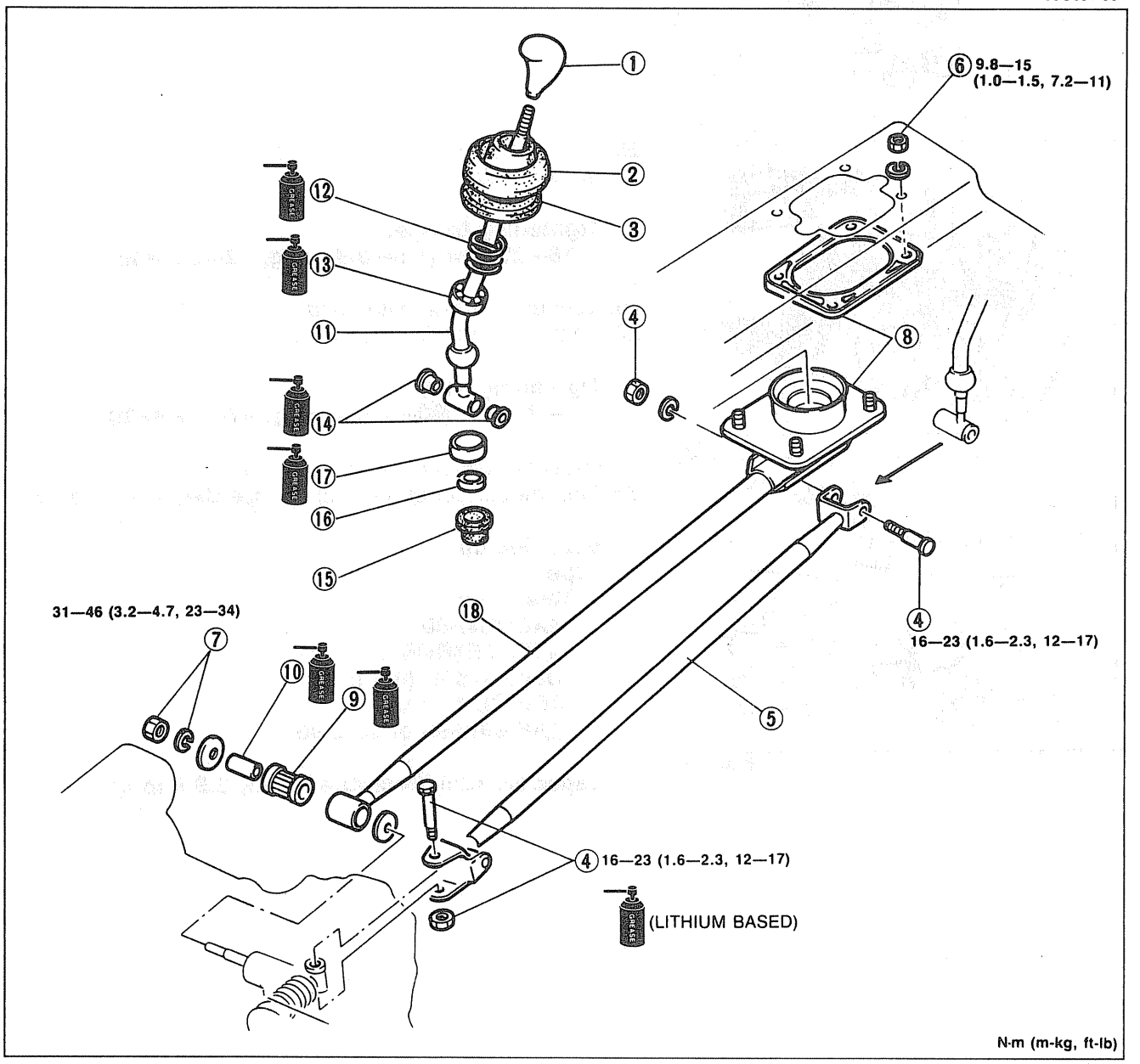
Capacity: 3.35 liters (3.4 US qt, 2.9 Imp qt)

SHIFT MECHANISM

REMOVAL / INSTALLATION

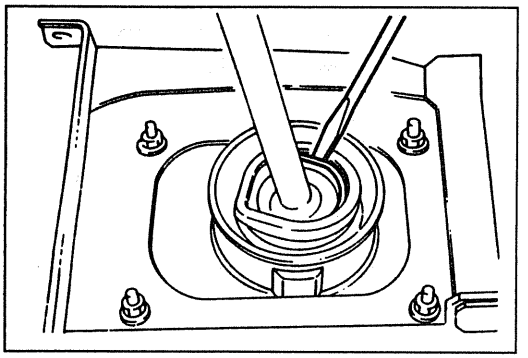
1. Jack up the vehicle and support it with safety stands.
2. Remove in the order shown in the figure, referring to **Removal Note**.
3. Install in the reverse order of removal, referring to **Installation Note**.

06U0J1-081



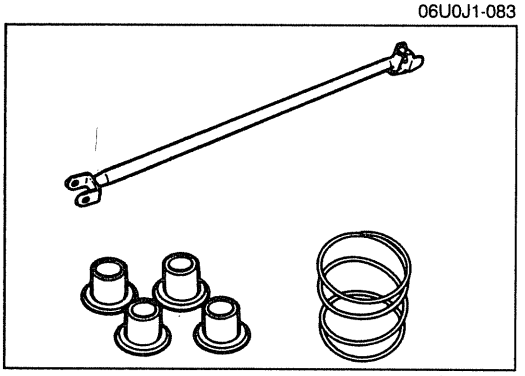
06U0J1-082

1. Change lever knob
2. Assist boot
3. Mounting rubber boot
4. Bolts and nuts
5. Change control rod
   Installation..... page J1–50
6. Bracket installation nuts
   Installation..... page J1–49
7. Nut and washer
8. Extension bar bracket assembly and gasket
   Installation..... page J1–50
9. Bushing
10. Pipe
11. Change lever
12. Spring
    Removal ..... page J1–49
    Installation..... page J1–50
13. Ball seat (upper)
    Installation..... page J1–49
14. Bushings
15. Boot
    Installation..... page J1–49
16. Holder
    Installation..... page J1–49
17. Ball seat (lower)
    Installation..... page J1–49
18. Extension bar
    Installation..... page J1–49



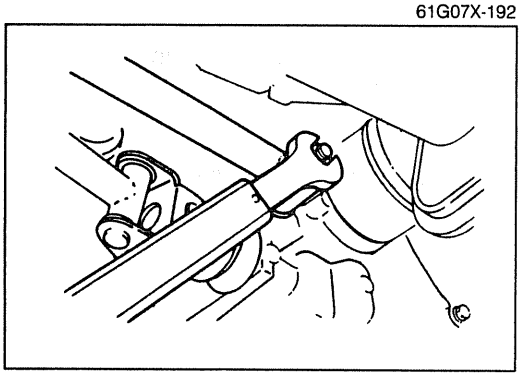
06U0J1-083

Removal note
Spring
Remove the spring by prying on the hooked part of the spring with a screwdriver.



61G07X-192

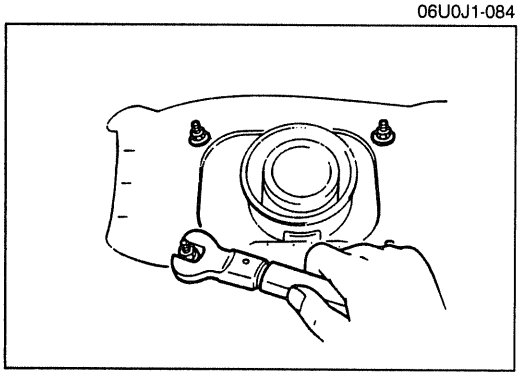
INSPECTION
Check the following, and replace if necessary:
1. Bent control rod.
2. Wear, damage, or malfunction of any joint.
3. Damaged gear shift lever ball.
4. Weak spring.
5. Wear or damage of bushing.



06U0J1-084

Installation note
Extension Bar
First, install the extension bar to the floor, and then install it onto the transaxle.

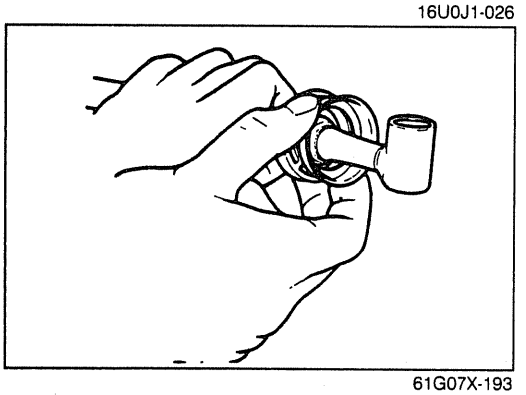
Tightening torque:
31—46 N·m (3.2—4.7 m-kg, 23—34 ft-lb)



16U0J1-026

Bracket Installation Nuts
Tighten the bracket installation nuts to the specified torque.

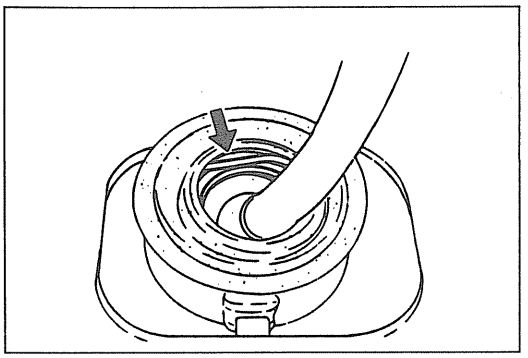
Tightening torque:
16—23 N·m (1.6—2.3 m-kg, 12—17 ft-lb)



61G07X-193

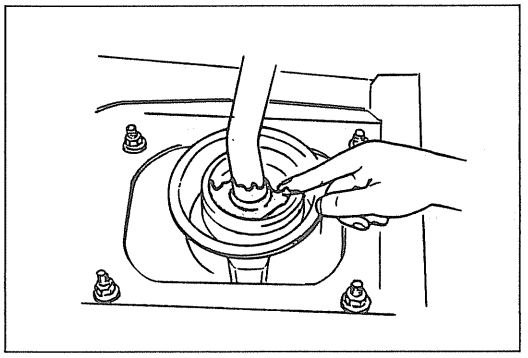
Gear Shift Lever Ball
Apply grease to the ball seat surface, and install the upper and lower ball seat, holder, and boot.

Note
- **Apply grease to all joints.**



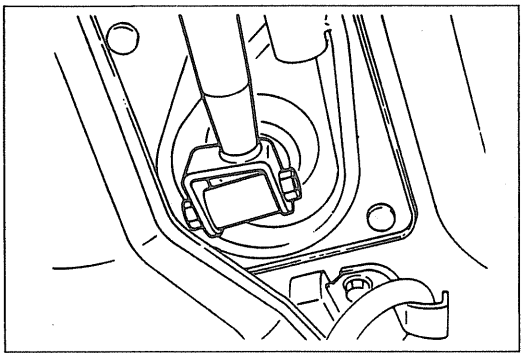
63U07A-156

Spring
Make sure that the hooked part of the spring is properly seated in the bracket groove, as shown in the figure.



63U07A-157

Bracket Cavity
Put grease in the bracket cavity.



96U07X-044

Change Control Rod
Install the change control rod so that its relationship with the shift lever is as shown in the figure.

Tightening torque:
16—23 N·m (1.6—2.3 m-kg, 12—17 ft-lb)