

TROUBLESHOOTING

MT06M-01

PROBLEM SYMPTOMS TABLE

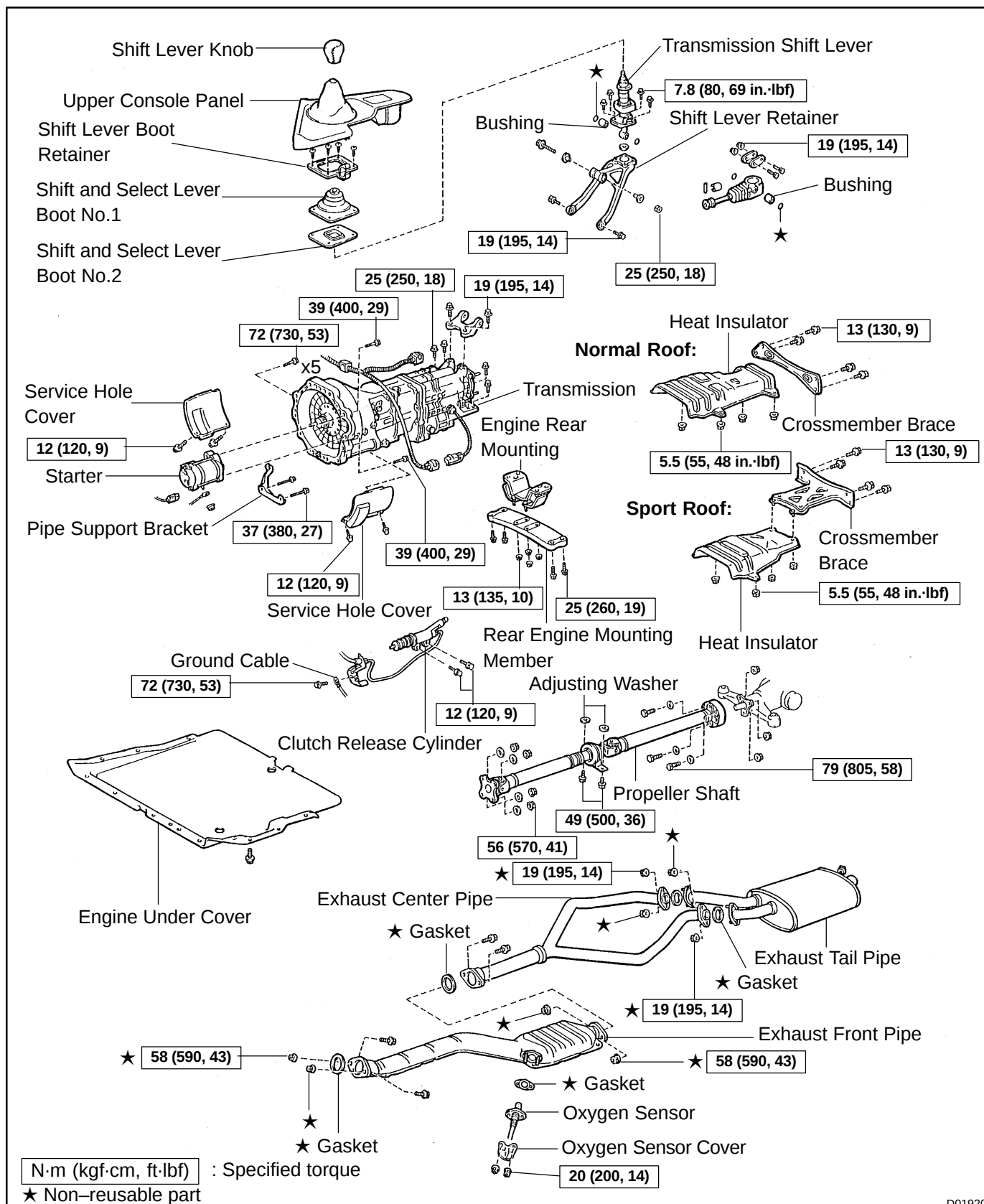
Use the table below to help you find the cause of the problem. The numbers indicate the priority of the likely cause of the problem. Check each part in order. If necessary, replace these parts.

Symptom	Suspect Area	See page
Noise	1. Flywheel damper 1. Oil (Level low) 2. Oil (Wrong) 3. Gear (Worn or damaged) 4. Bearing (Worn or damaged)	CL-16 MT-3 MT-3 – –
Oil leakage	1. Oil (Level too high) 2. Gasket (Damaged) 3. Oil seal (Worn or damaged) 4. O-Ring (Worn or damaged)	MT-3 – MT-7 MT-2 MT-7
Hard to shift or will not shift	1. Synchronizer ring (Worn or damaged) 2. Shift key spring (Damaged)	– –
Jumps out of gear	1. Locking ball spring (Damaged) 2. Shift fork (Worn) 3. Gear (Worn or damaged) 4. Bearing (Worn or damaged)	– – – –

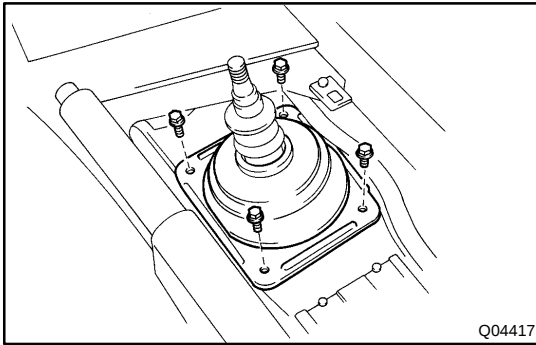
MANUAL TRANSMISSION UNIT

COMPONENTS

MT06N-01



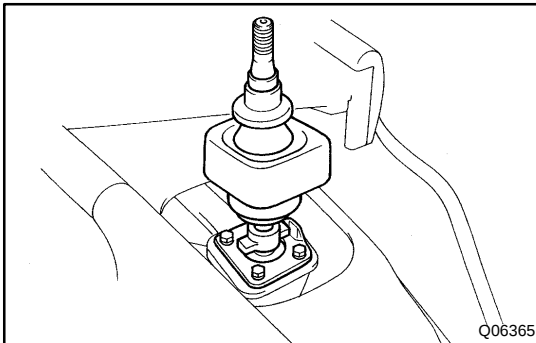
D01920



REMOVAL

1. **REMOVE UPPER CONSOLE PANEL, SHIFT LEVER BOOT RETAINER AND SHIFT AND SELECT LEVER BOOTS NO.1 AND NO.2**

- (a) Remove the shift lever knob.
- (b) Using a screwdriver, pry out the upper console panel.
- (c) Remove the 4 bolts and boot retainer.
- (d) Remove the shift and select lever boots No.1 and No.2.



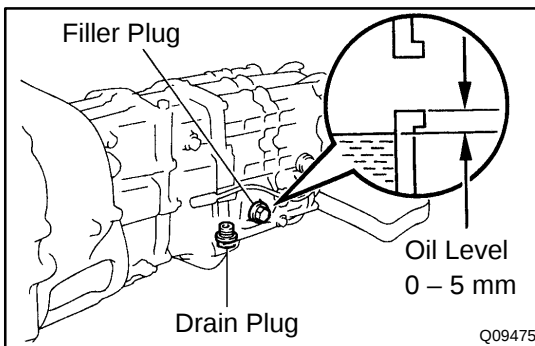
2. **REMOVE 4 TRANSMISSION SHIFT LEVER SET BOLTS**

Torque: 7.8 N·m (80 kgf·cm, 69 in·lbf)

3. **RAISE VEHICLE**

NOTICE:

Make sure that the vehicle is securely supported.



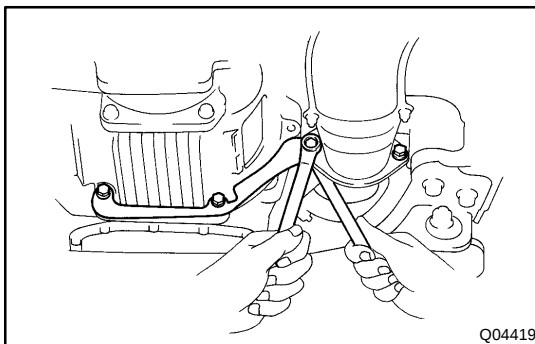
4. **DRAIN TRANSMISSION OIL**

Oil type: TOYOTA GEAR OIL V160 or ESSO ATF DEXRON®D-21065

Capacity: 1.8 liters (1.9 US qts, 1.6 Imp. qts)

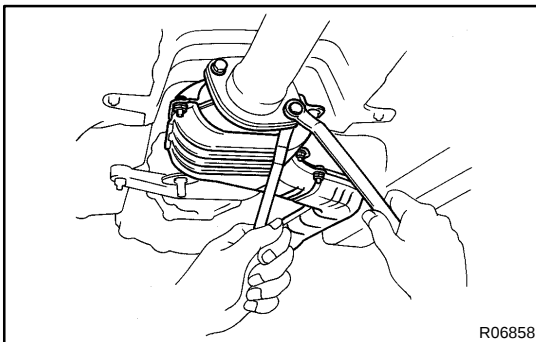
Torque: 39 N·m (400 kgf·cm, 29 ft·lbf)

5. **REMOVE ENGINE UNDER COVER**

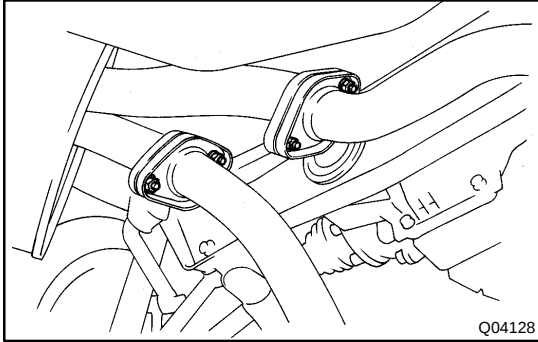


6. **REMOVE EXHAUST FRONT PIPE AND PIPE SUPPORT BRACKET**

- (a) Remove the 2 nuts, cover, oxygen sensor and gasket.
Torque: 20 N·m (200 kgf·cm, 14 ft·lbf)
- (b) Remove the 2 bolts, nuts and gasket.
Torque: 58 N·m (590 kgf·cm, 43 ft·lbf)
- (c) Remove the 2 bolts and pipe support bracket from the clutch housing.
Torque: 37 N·m (380 kgf·cm, 27 ft·lbf)



- (d) Remove the 2 bolts, nuts and gasket.
Torque: 58 N·m (590 kgf·cm, 43 ft·lbf)
- (e) Remove the exhaust front pipe.

**7. REMOVE EXHAUST CENTER PIPE**

- (a) Remove the 4 nuts and 2 gaskets.
Torque: 19 N·m (195 kgf·cm, 14 ft·lbf)
- (b) Disconnect the exhaust center pipe from the 2 rings.
- (c) Remove the exhaust center pipe.

8. REMOVE HEAT INSULATOR

Remove the 4 nuts and heat insulator.

Torque: 5.4 N·m (55 kgf·cm, 48 in·lbf)

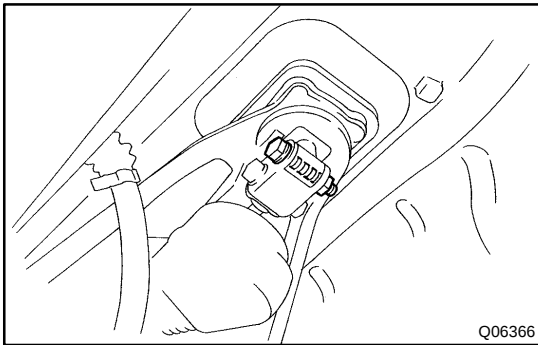
9. REMOVE CROSSMEMBER BRACE

Remove the 4 bolts (Normal Roof) or 6 bolts (Sport Roof) and crossmember brace.

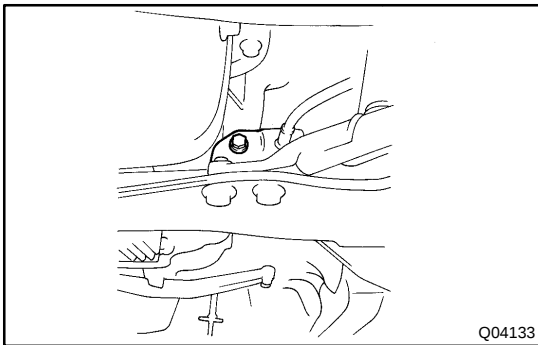
Torque: 13 N·m (130 kgf·cm, 9 ft·lbf)

10. REMOVE PROPELLER SHAFT

(See page [PR-2](#))

**11. REMOVE TRANSMISSION SHIFT LEVER**

- (a) Remove the bolt and nut.
- (b) Remove the transmission shift lever, inside the vehicle.
Torque: 19 N·m (195 kgf·cm, 14 ft·lbf)

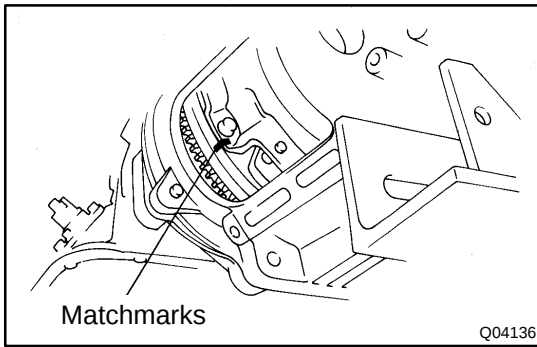
**12. REMOVE CLUTCH RELEASE CYLINDER AND GROUND CABLE**

- (a) Remove the bolt, clamp and ground cable.
Torque: 72 N·m (730 kgf·cm, 53 ft·lbf)
- (b) Remove the 2 bolts and clutch release cylinder.
Torque: 12 N·m (120 kgf·cm, 9 ft·lbf)

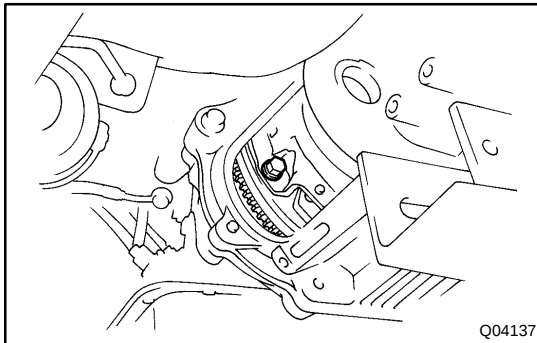
13. DISCONNECT STARTER WIRE

- (a) Remove the nut and disconnect the starter wire.
- (b) Disconnect the starter wire connector.

14. DISCONNECT VEHICLE SPEED SENSOR AND BACK-UP LIGHT SWITCH CONNECTORS

**15. REMOVE CLUTCH COVER SET BOLT**

- (a) Remove the 2 bolts and service hole cover.
Torque: 12 N·m (120 kgf·cm, 9 ft·lbf)
- (b) Place matchmarks on the flywheel and clutch cover.

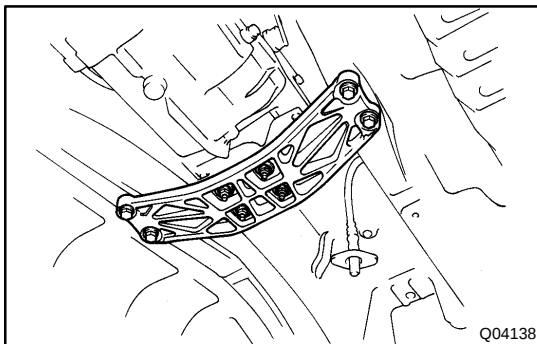


- (c) Remove the 6 bolts.

Torque: 19 N·m (195 kgf·cm, 14 ft·lbf)

16. JACK UP TRANSMISSION SLIGHTLY

Using a transmission jack, support the transmission.

**17. REMOVE REAR ENGINE MOUNTING MEMBER**

Remove the 4 nuts, bolts and rear engine mounting member.

Torque:

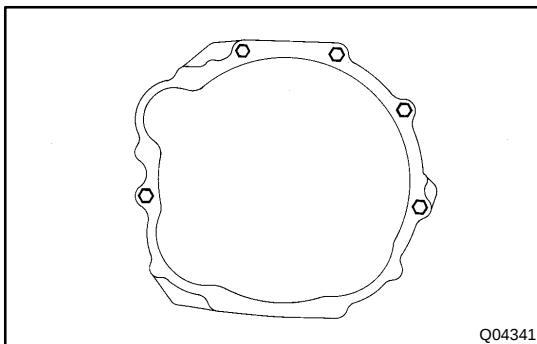
Nut: 13 N·m (135 kgf·cm, 10 ft·lbf)

Bolt: 25 N·m (260 kgf·cm, 19 ft·lbf)

18. REMOVE STARTER

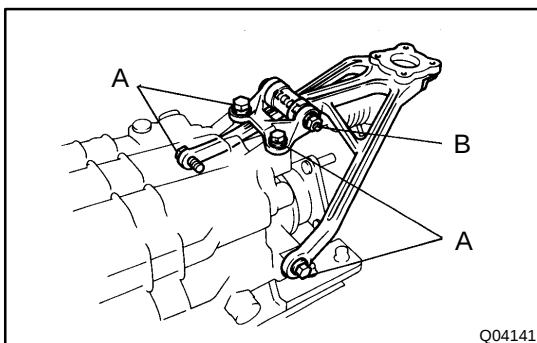
Lower the engine rear side and remove the 2 bolts and starter.

Torque: 39 N·m (400 kgf·cm, 29 ft·lbf)

**19. REMOVE TRANSMISSION**

Remove the 5 transmission mounting bolts and transmission from the engine.

Torque: 72 N·m (730 kgf·cm, 53 ft·lbf)

**20. REMOVE SHIFT LEVER RETAINER**

Remove the 5 bolts, nut and shift lever retainer from the transmission.

Torque:

Bolt A: 19 N·m (195 kgf·cm, 14 ft·lbf)

Nut B: 25 N·m (250 kgf·cm, 18 ft·lbf)

21. REMOVE ENGINE REAR MOUNTING

Remove the 4 bolts and engine rear mounting from the transmission.

Torque: 25 N·m (250 kgf·cm, 18 ft·lbf)

INSTALLATION

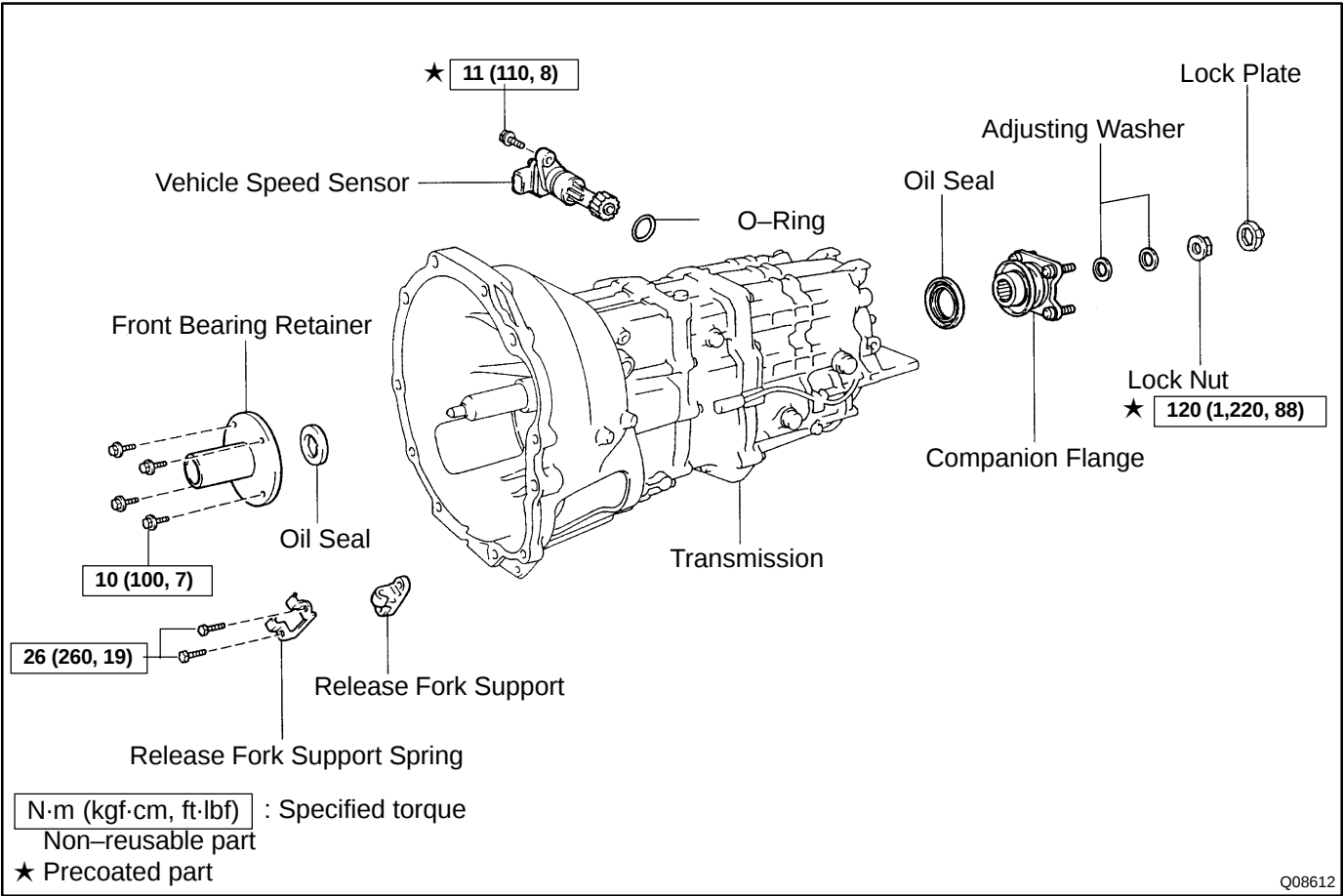
Installation is in the reverse order of removal. (See page [MT-3](#))

HINT:

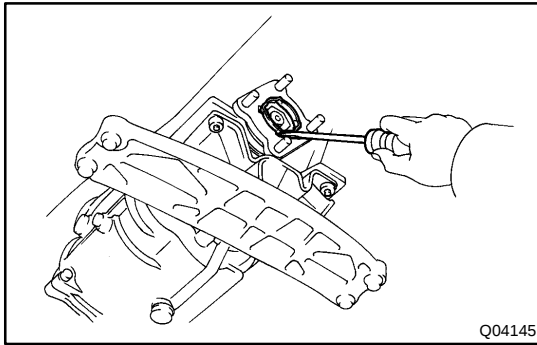
After installation, do the road test.

OIL SEAL COMPONENTS

MT06Q-01



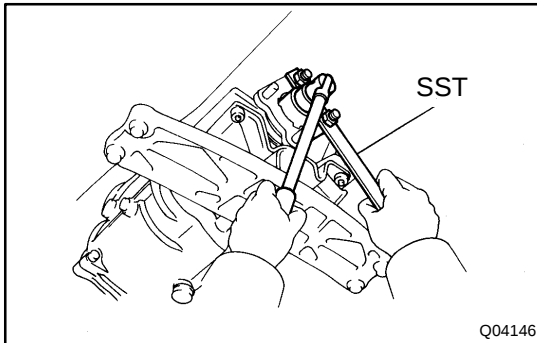
Q08612



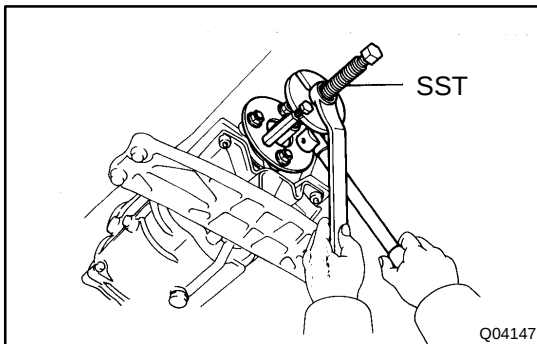
REPLACEMENT

1. REPLACE TRANSMISSION REAR OIL SEAL

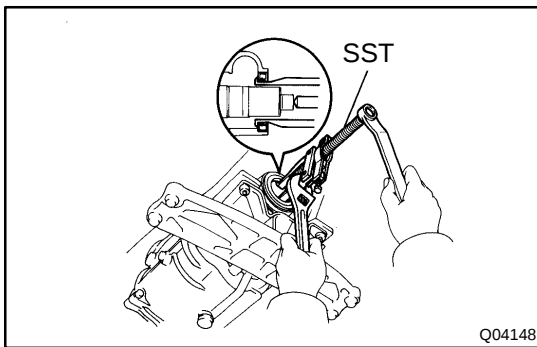
- (a) Remove the propeller shaft.
(See page [PR-2](#))
- (b) Using a screwdriver, remove the lock plate.



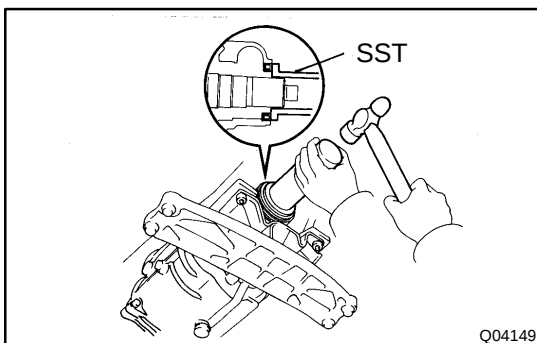
- (c) Using SST to hold the flange, remove the lock nut.
SST 09330-00021
- (d) Remove the 2 adjusting washers.



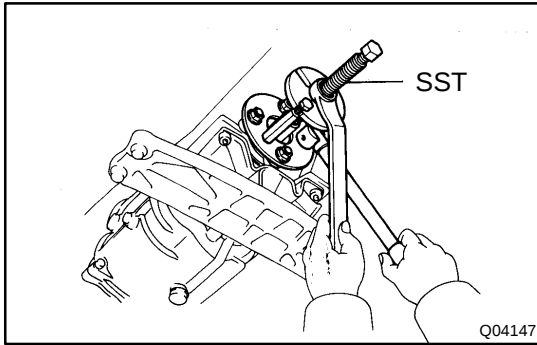
- (e) Using SST, remove the companion flange.
SST 09950-30010 (09951-03010, 09953-03010, 09954-03010, 09955-03030, 09956-03030)



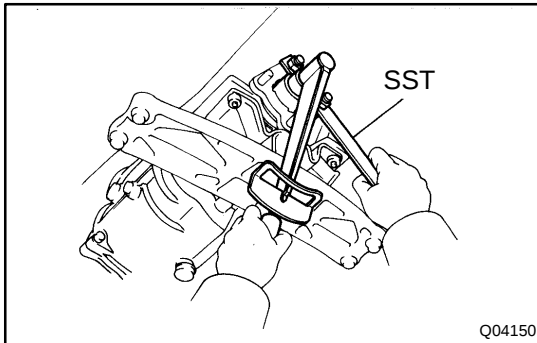
- (f) Using SST, remove the oil seal.
SST 09308-10010



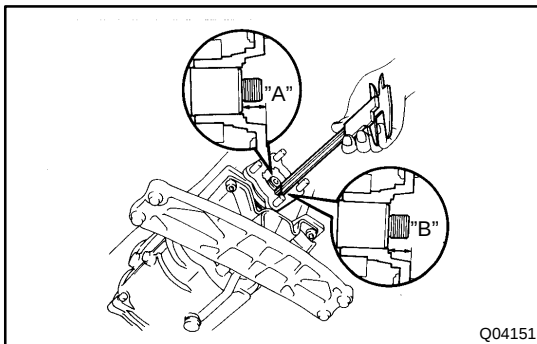
- (g) Using SST and a hammer, install a new oil seal.
SST 09308-14010, 09309-14040



- (h) Heat the companion flange in an oven.
Companion flange temperature:
80 – 90°C (176 – 194°F)
- (i) Apply gear oil to the output shaft and install the companion flange.
- (j) Using SST, install the companion flange to the output shaft.
 SST 09950-30010 (09951-03010, 09953-03010, 09954-03010, 09955-03030, 09956-03030)



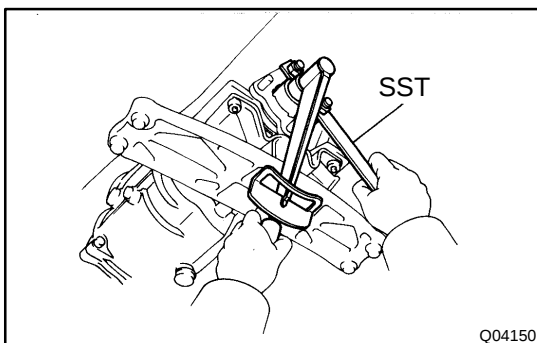
- (k) Using SST to hold the flange, temporary install and torque the lock nut.
 SST 09330-00021
Torque: 190 N·m (1,940 kgf·cm, 140 ft·lbf)



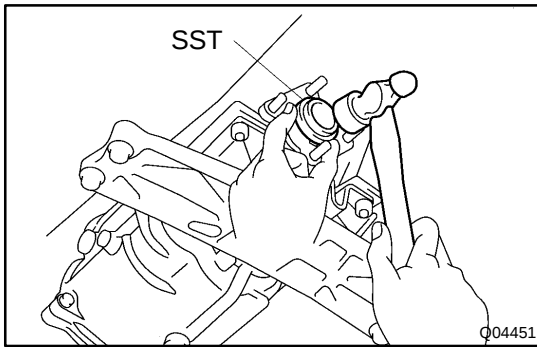
- (l) Remove the lock nut.
- (m) Using a caliper gauge, measure dimension "A" and dimension "B".
- (n) Calculate the required thickness of the adjusting shim.
Thickness:
(Dimension "A" – Dimension "B") – (0.05 ~ 0.14 mm, 0.0020 ~ 0.0055 in.)

Adjusting shim thickness mm (in.)	Adjusting shim thickness mm (in.)
1.15 – 1.20 (0.0453 – 0.0472)	1.65 – 1.70 (0.0650 – 0.0669)
1.25 – 1.30 (0.0492 – 0.0512)	1.85 – 1.90 (0.0729 – 0.0748)
1.45 – 1.50 (0.0571 – 0.0591)	1.95 – 2.00 (0.0768 – 0.0787)

- (o) Install the selected shims to the output shaft.
- (p) Apply sealant to the nut threads.
Sealant:
Part No. 08833-00080, THREE BOND 1344, LOCTITE 242 or equivalent



- (q) Using SST to hold the flange, reinstall and torque the lock nut.
 SST 09330-00021
Torque: 120 N·m (1,220 kgf·cm, 88 ft·lbf)

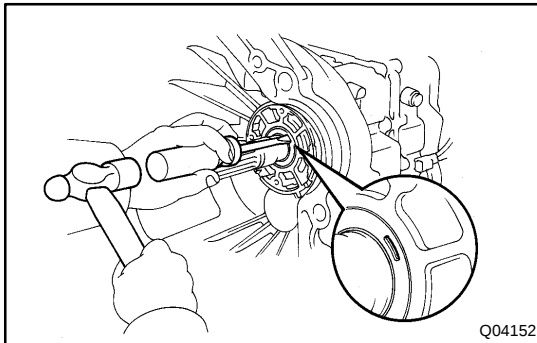


- (r) Using SST and a hammer, install a new lock plate.
SST 09309-14010

HINT:

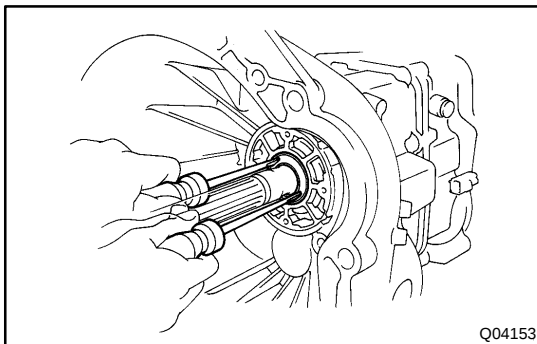
If necessary, using a pin punch and hammer, and tap the lock plate.

- (s) Install the propeller shaft.
(See page [PR-2](#))

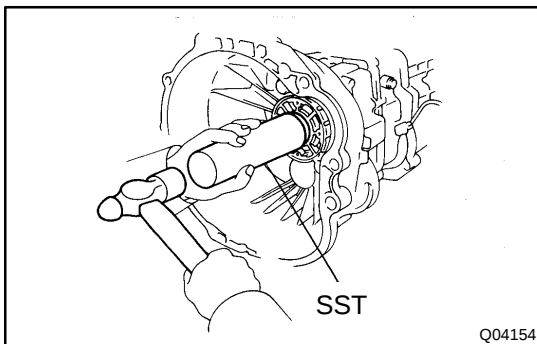


2. REPLACE TRANSMISSION FRONT OIL SEAL

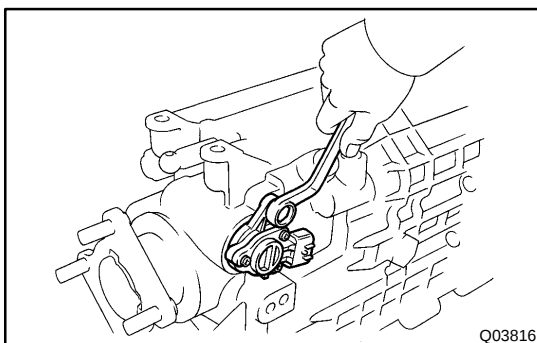
- (a) Remove the transmission.
(See page [MT-2](#))
- (b) Remove the 2 bolts and release fork support.
- (c) Remove the 4 bolts and front bearing retainer.
- (d) Using a hammer, tap in the screwdriver to the oil seal.



- (e) Pry out the oil seal.



- (f) Using SST and a hammer, install a new oil seal.
SST 09308-14010, 09309-14040
- (g) Install the transmission.
(See page [MT-2](#))
- (h) Install the front bearing retainer with the 4 bolts.
Torque: 10 N·m (100 kgf·cm, 7 ft·lbf)
- (i) Install the release fork support with the 2 bolts.
Torque: 26 N·m (260 kgf·cm, 19 ft·lbf)



3. REPLACE VEHICLE SPEED SENSOR O-RING

- (a) Remove the transmission.
(See page [MT-2](#))
- (b) Remove the set bolt and driven gear.
- (c) Remove the O-ring from the driven gear.
- (d) Install a new O-ring to the driven gear.
- (e) Apply sealant to the bolt threads.

Sealant:

Part No. 08833-00080, THREE BOND 1344, LOCTITE 242 or equivalent

- (f) Install the driven gear with the bolt.
Torque: 11 N·m (110 kgf·cm, 8 ft·lbf)