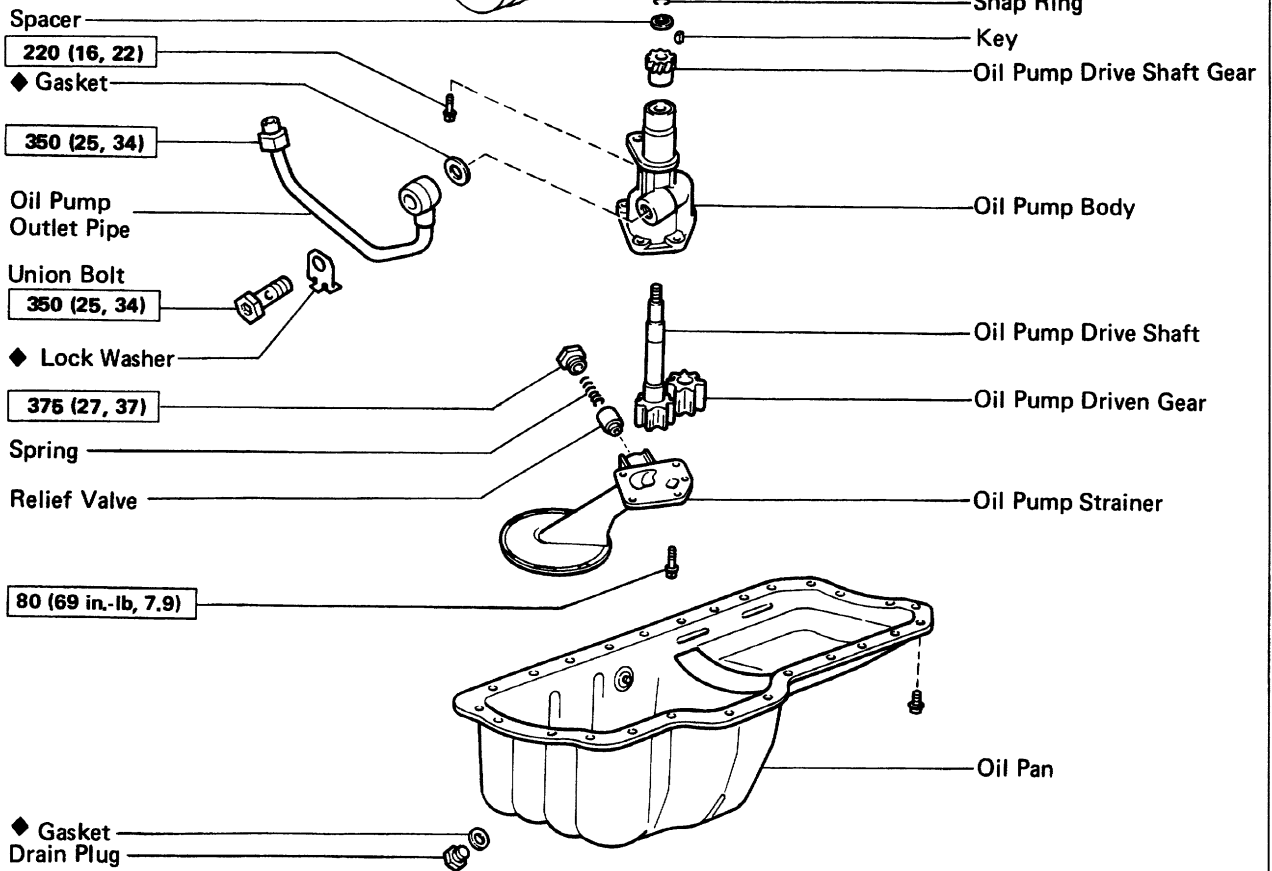
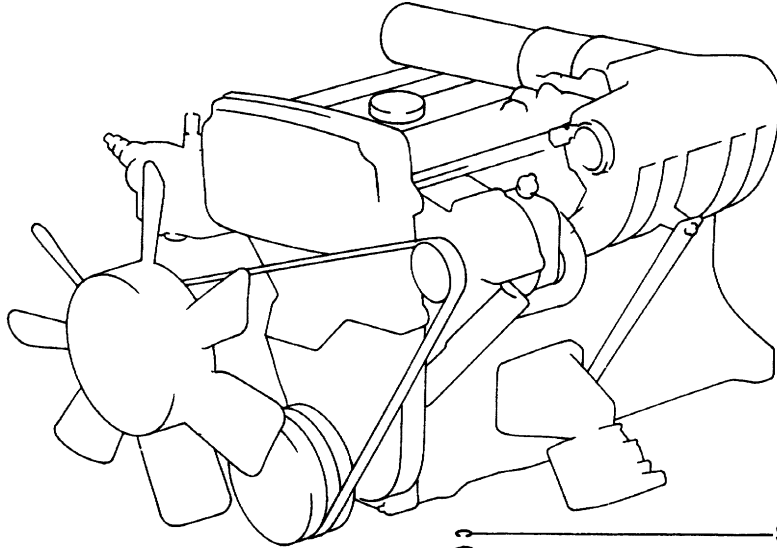
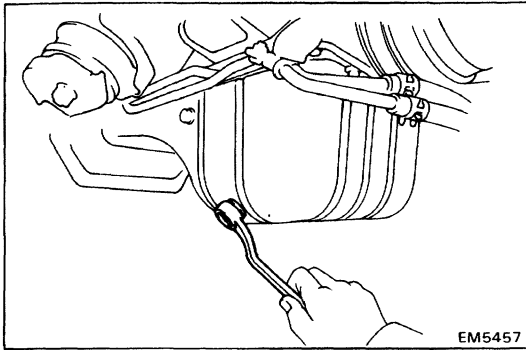


# OIL PUMP COMPONENTS



**kg-cm (ft-lb, N-m)** : Specified torque

◆ Non-reusable part



## REMOVAL OF OIL PUMP

(See page LU-8)

### 1. RAISE VEHICLE

**NOTICE:** Be sure the vehicle is securely supported.

### 2. REMOVE ENGINE UNDERCOVER

### 3. DRAIN ENGINE OIL

- (a) Remove the oil filler cap.
- (b) Remove the oil drain plug and drain the oil into a container.

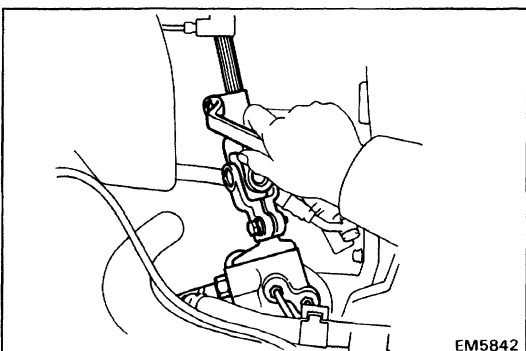
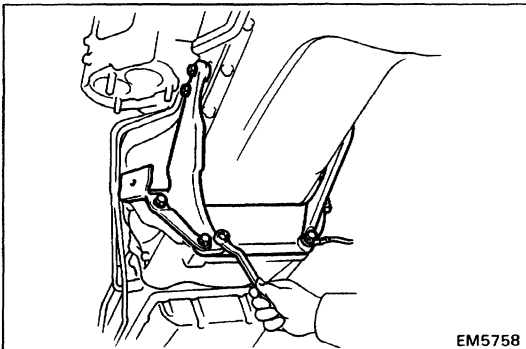
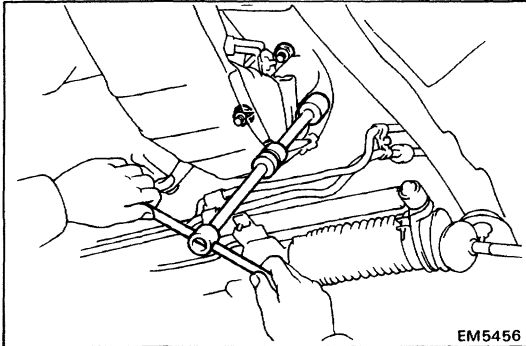
### 4. REMOVE EXHAUST PIPE

- (a) Disconnect the rubber ring.
- (b) Remove the bolt and exhaust manifold clamp.
- (c) Remove the two bolts and nuts and disconnect the exhaust pipe.
- (d) Remove the three nuts and exhaust pipe.

### 5. DISCONNECT AIT OIL COOLER PIPE

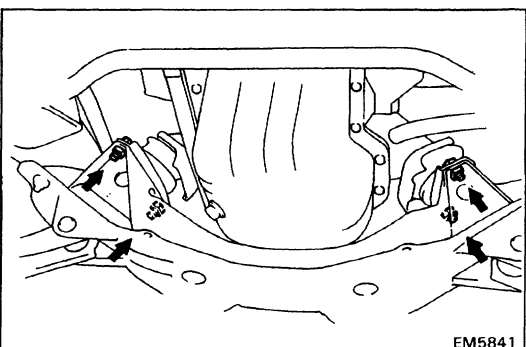
### 6. REMOVE STIFFENER PLATES

Remove the nine bolts, grand strap, exhaust pipe stay, engine rear end plate and stiffener plates.

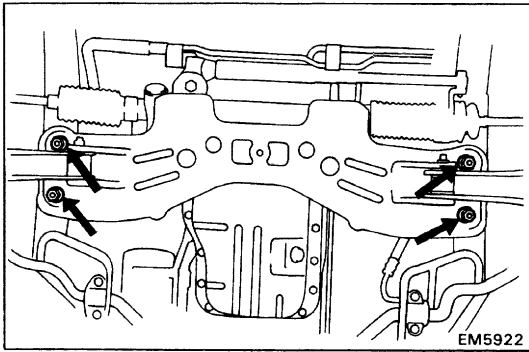


### 7. DISCONNECT INTERMEDIATE SHAFT

Loosen the bolt, and disconnect the intermediate shaft.

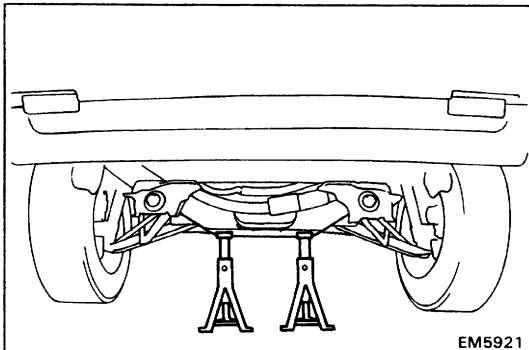


### 8. REMOVE FOUR BOLTS HOLDING ENGINE MOUNTING TO FRONT SUSPENSION MEMBER

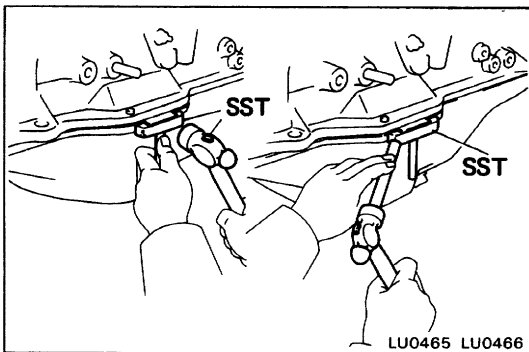


## 9. DISCONNECT FRONT SUSPENSION MEMBER

- (a) Hold the front suspension member with a jack.
- (b) Remove the four nuts holding the suspension member to the body.



- (c) Lower the front suspension member, and hold the member with safety stands.

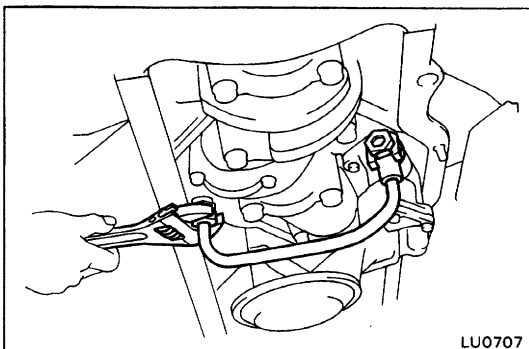


## 10. REMOVE OIL PAN

- (a) Remove the bolts and nuts.
- (b) Insert the blade of SST between the cylinder block and oil pan, and cut off applied sealer.  
SST 09032-00100

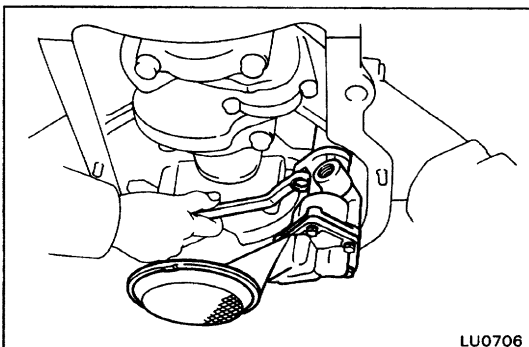
**NOTICE:** Be careful not to damage the oil pan flange.

- (c) Raise the transmission housing with a jack.
- HINT:** Be sure to put a wooden block between the jack and the transmission housing.
- (d) Remove the oil pan.



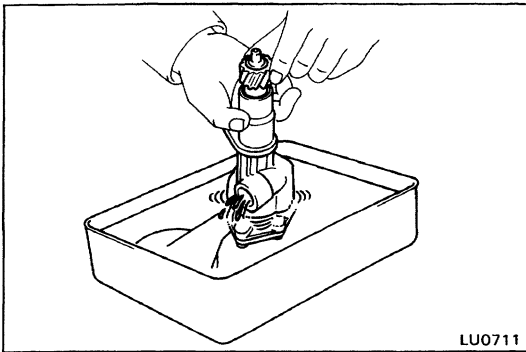
## 11. REMOVE OIL PUMP OUTLET PIPE

- (a) Unstake the lock washer.
- (b) Loosen the union nut.
- (c) Remove the union bolt, lock washer, oil pump outlet pipe and gasket.



## 12. REMOVE OIL PUMP

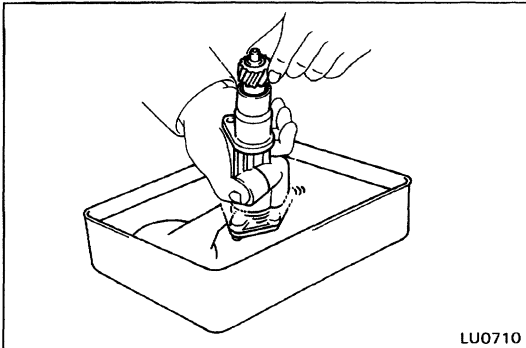
Remove the bolt and oil pump.



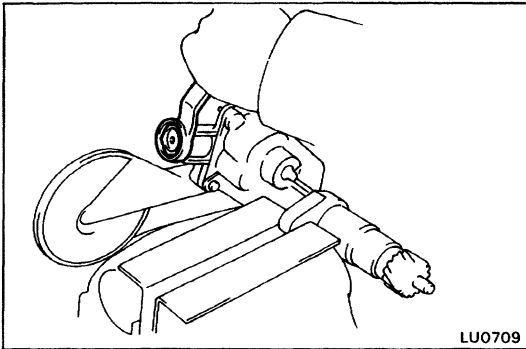
## OPERATION CHECK OF OIL PUMP

### CHECK PUMP OPERATION

- (a) Immerse the suction end of the pump into clean engine oil and turn the shaft counterclockwise. Oil should come out of the discharge hole.



- (b) Close the discharge hole with your thumb, and turn the shaft as before. The shaft should be difficult to turn.

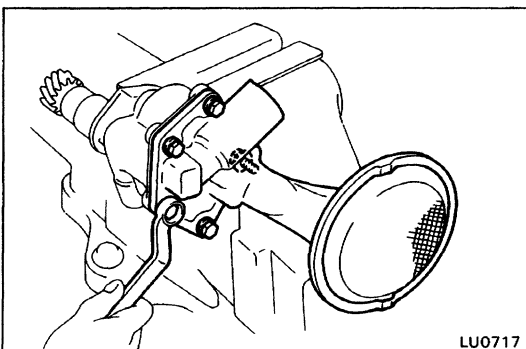


## DISASSEMBLY OF OIL PUMP

(See page [LU-8](#))

### 1. REMOVE RELIEF VALVE

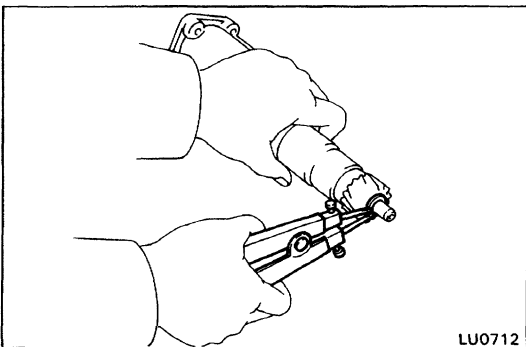
Unscrew the relief valve plug, and remove the spring and relief valve.



### 2. REMOVE OIL PUMP STRAINER

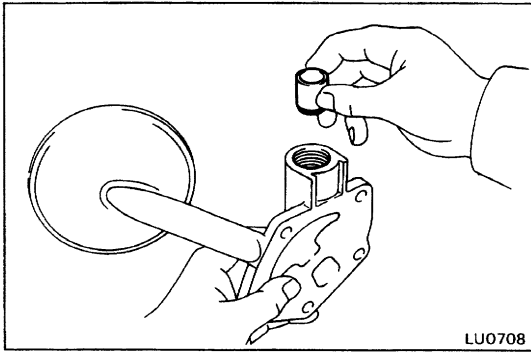
Remove the five bolts and oil pump strainer.

### 3. REMOVE OIL PUMP DRIVEN GEAR



### 4. REMOVE OIL PUMP DRIVE SHAFT

Using snap ring pliers, remove the snap ring, spacer, shaft drive gear, key and oil pump drive shaft.



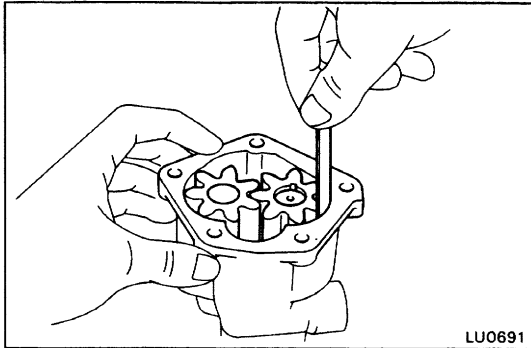
LU0708

## INSPECTION OF OIL PUMP

### 1. INSPECT RELIEF VALVE

Coat the valve with engine oil and check that it falls smoothly into the valve hole by its own weight.

If it does not, replace the relief valve. If necessary, replace the oil pump assembly.



LU0691

### 2. INSPECT BODY CLEARANCE

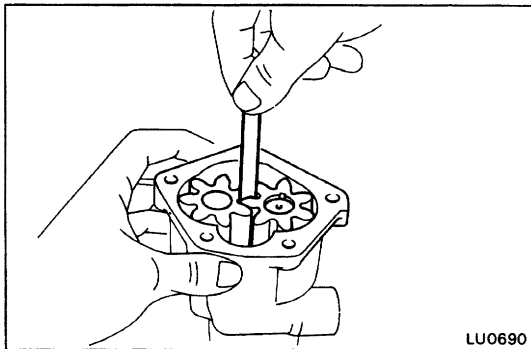
Using a thickness gauge, measure the clearance between the driven gear and pump body.

**Standard clearance: 0.105 – 0.175 mm**

**(0.0041 – 0.0069 in.)**

**Maximum clearance: 0.2 mm (0.008 in.)**

If the clearance is greater than maximum, replace the gear or oil pump assembly.



LU0690

### 3. INSPECT GEAR BACKLASH

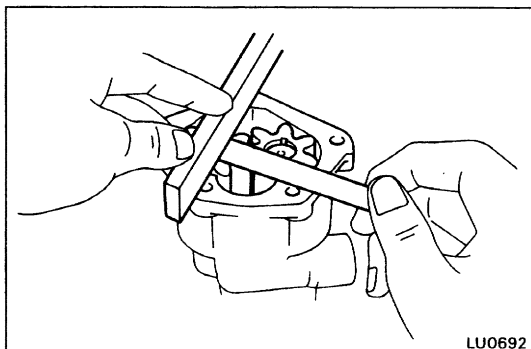
Using a thickness gauge, measure the backlash as shown in several places.

**Standard backlash: 0.5 – 0.6 mm**

**(0.020 – 0.024 in.)**

**Maximum backlash: 0.9 mm (0.035 in.)**

If the backlash is greater than maximum, replace the oil pump drive shaft and driven gear.



LU0692

### 4. INSPECT SIDE CLEARANCE

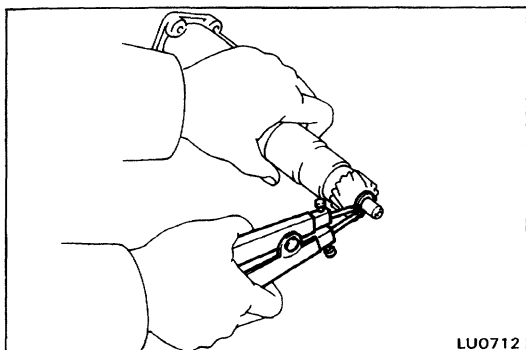
Using a thickness gauge and precision straight edge, measure the clearance between the gears and precision straight edge.

**Standard clearance: 0.03 – 0.09 mm**

**(0.0012 – 0.0035 in.)**

**Maximum clearance: 0.15 mm (0.0059 in.)**

If the clearance is greater than maximum, replace the drive shaft and driven gear. If necessary, replace the oil pump assembly.



LU0712

## ASSEMBLY OF OIL PUMP

(See page [LU-8](#))

### 1. INSTALL OIL PUMP DRIVE SHAFT

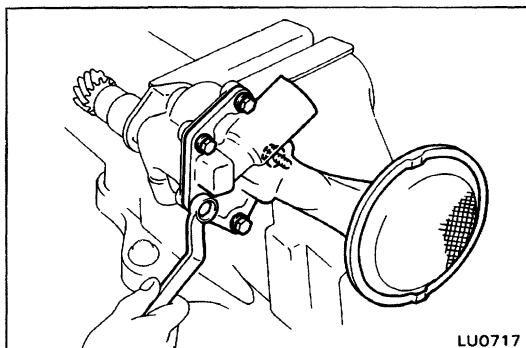
Install the oil pump drive shaft, key, shaft drive gear, and spacer, and using snap ring pliers, install the snap ring.

### 2. INSTALL OIL PUMP DRIVEN GEAR

### 3. INSTALL OIL PUMP STRAINER

Install the oil pump strainer with the five bolts. Torque the bolts.

**Torque: 80 kg-cm (69 in.-lb, 7.8 N-m)**



LU0717

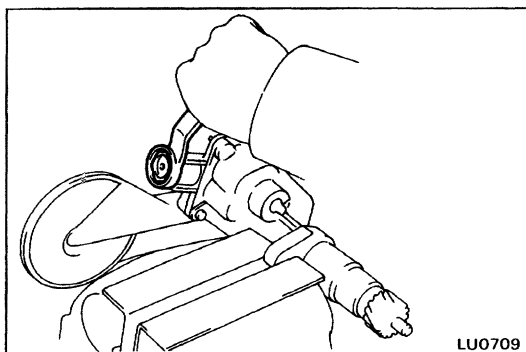
### 4. INSTALL RELIEF VALVE

Install the relief valve and spring with the relief valve plug. Torque the plug.

**Torque: 375 kg-cm (27 ft-lb, 37 N-m)**

### 5. CHECK OIL PUMP OPERATION

(See page [LU-11](#))



LU0709

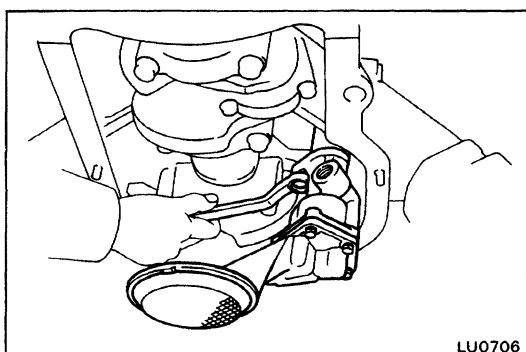
## INSTALLATION OF OIL PUMP

(See page [LU-8](#))

### 1. INSTALL OIL PUMP

Install the oil pump with the bolt. Torque the bolt.

**Torque: 220 kg-cm (16 ft-lb, 22 N-m)**



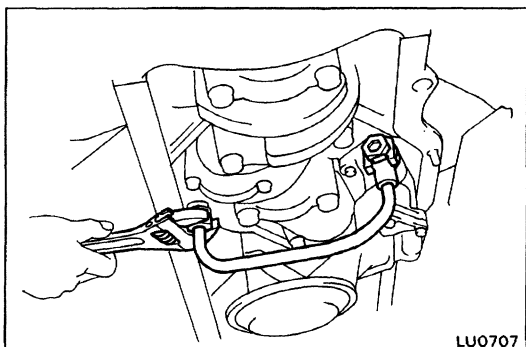
LU0706

### 2. INSTALL OIL PUMP OUTLET PIPE

(a) Install the oil pump outlet pipe with a new lock washer, gasket, the union bolt and nut. Torque the union bolt and nut.

**Torque: 350 kg-cm (25 ft-lb, 34 N-m)**

(b) Stake the lock washer.



LU0707

### 3. INSTALL OIL PAN

- (a) Remove any old packing (FIPG) material and be careful not to drop any oil on the contact surfaces of the oil pan and cylinder block.
- Using a razor blade and gasket scraper, remove all the packing (FIPG) material from the gasket surfaces, and sealing groove.
  - Thoroughly clean all components to remove all the loose materials.
  - Using a non-residue solvent, clean both sealing surfaces.

**NOTICE: Do not use a solvent which will affect the painted surfaces.**

- (b) Apply seal packing to the oil pan as shown in the illustration.

**Seal packing: Part No. 08826-00080 or equivalent**

- Install a nozzle that has been cut to a 5 mm (0.20 in.) opening.

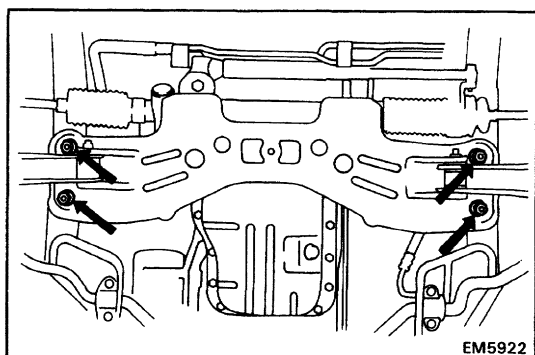
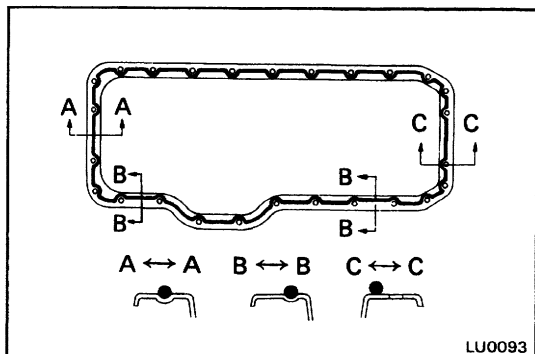
**HINT:** Avoid applying an excess amount to the surface.

- If parts are not assembled within 5 minutes of applying the seal packing, the effectiveness of the seal packing is lost and the seal packing must be removed and reapplied.
- Immediately remove the nozzle from the tube and reinstall the cap after using the seal packing.

- (c) Install the oil pan with the bolts and nuts.

**Torque: 130 kg-cm (9 ft-lb, 13 N-m)**

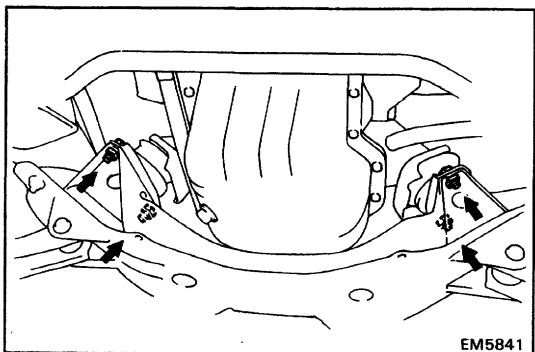
- (d) Lower the transmission.



### 4. INSTALL FRONT SUSPENSION MEMBER

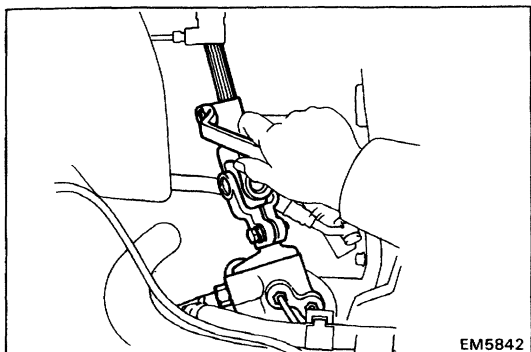
Install the front suspension member to the body.

**Torque: 1,300 kg-cm (94 ft-lb, 127 N-m)**

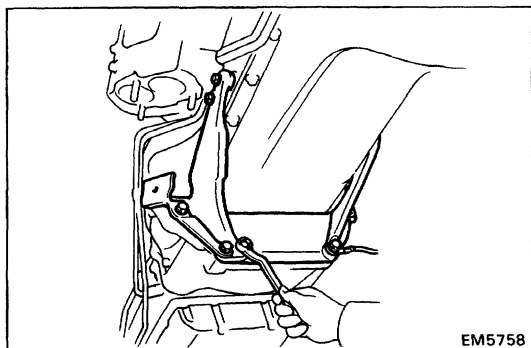
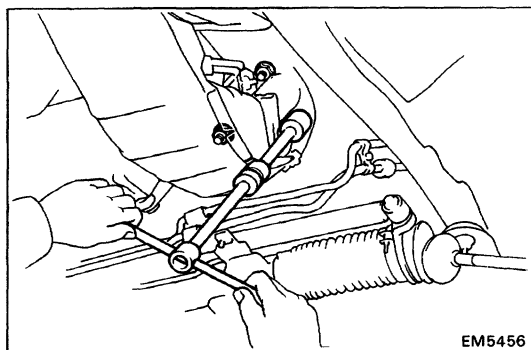


### 5. INSTALL FOUR BOLTS HOLDING ENGINE MOUNTING TO SUSPENSION MEMBER

**Torque: 375 kg-cm (27 ft-lb, 37 N-m)**

**6. CONNECT INTERMEDIATE SHAFT**

Connect the intermediate shaft with the bolt. Torque the bolt.  
**Torque: 360 kg-cm (26 ft-lb, 35 N-m)**

**8. CONNECT AIT OIL COOLER PIPE****9. INSTALL EXHAUST PIPE**

- (a) Install the exhaust pipe with the three nuts and new gasket.  
**Torque: 630 kg-cm (46 ft-lb, 62 N-m)**
- (b) Connect the exhaust pipe with the two bolts and nuts.  
**Torque: 440 kg-cm (32 ft-lb, 43 N-m)**
- (c) Install the exhaust manifold clamp with the bolt.
- (d) Connect the rubber ring.

**10. INSTALL ENGINE UNDERCOVER****11. LOWER VEHICLE****12. FILL WITH ENGINE OIL (See page [LU-7](#))****13. START ENGINE AND CHECK FOR LEAKS****14. RECHECK OIL LEVEL (See page [LU-5](#))****15. INSPECT FRONT WHEEL ALIGNMENT**

(See page [SA-3](#))