

# LUBRICATION SYSTEM (2AZ-FE)

## ON-VEHICLE INSPECTION

1701Z-02

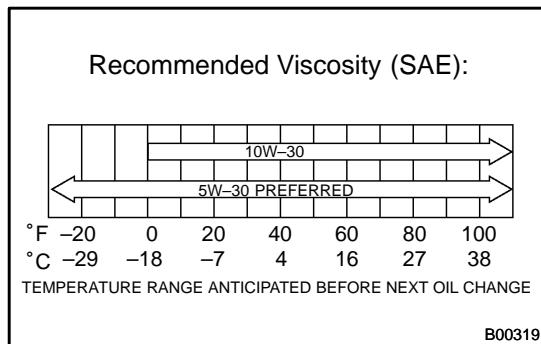
### 1. CHECK ENGINE OIL LEVEL

- (a) After warm up the engine and then 5 minutes after the engine stop, oil level should be between the low level and full level marks of the dipstick.

If low, check for leakage and add oil up to the full level mark.

#### NOTICE:

Do not fill with engine oil above the full level mark.



### 2. CHECK ENGINE OIL QUALITY

- (a) Check the oil for deterioration, entry of water, discoloring or thinning.

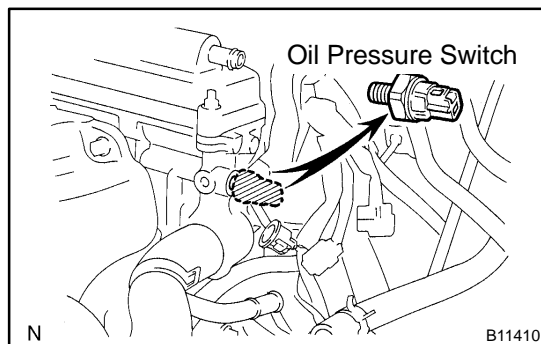
If the quality is visibly poor, replace the oil.

#### Oil grade:

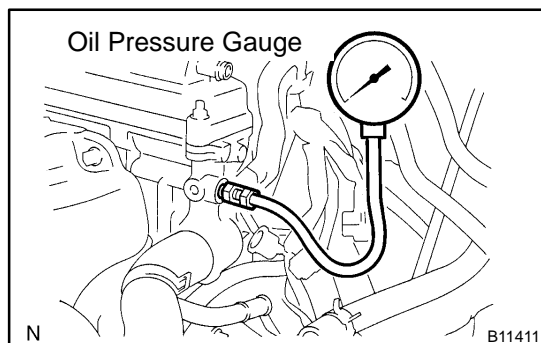
API grade SJ or SL, Energy-Conserving or ILSAC, multigrade engine oil is recommended. SAE 5W-30 is the best choice for your vehicle, for good fuel economy, and good starting in cold weather.

### 3. REMOVE OIL PRESSURE SWITCH ASSY

- (a) Disconnect the oil pressure switch connector.



- (b) Remove the oil pressure switch.



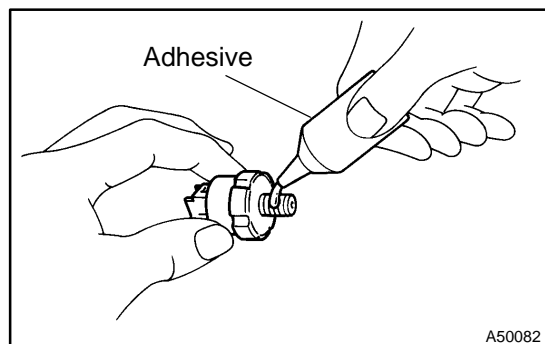
### 4. INSTALL OIL PRESSURE GAUGE

- (a) Install the oil pressure gauge.

### 5. WARM UP ENGINE

**6. CHECK OIL PRESSURE****Oil pressure:**

At idle	29 kPa (0.3 kgf·cm <sup>2</sup> , 4.3 psi) or more
At 3,000 rpm	245 – 539 kPa (2.5 – 5.5 kgf·cm <sup>2</sup> , 36 – 78 psi) or more

**7. INSTALL OIL PRESSURE SWITCH**

- (a) Remove the oil pressure gauge.
- (b) Apply adhesive to 2 or 3 threads of the oil pressure switch.

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

- (c) Install the oil pressure switch.  
**Torque: 15 N·m (152 kgf·cm, 11 ft·lbf)**
- (d) Connect the oil pressure switch connector.

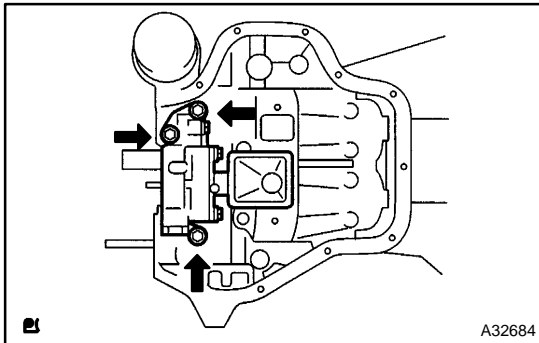
**8. START ENGINE AND CHECK FOR LEAKS**

## OIL PUMP ASSY (2AZ-FE)

### REPLACEMENT

1701V-02

1. REMOVE CHAIN SUB-ASSY  
(See page 14-74)



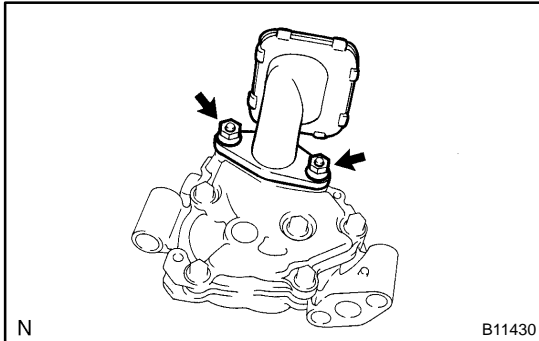
2. REMOVE OIL PUMP ASSY

- (a) Remove 3 bolts and oil pump assembly.

3. INSTALL OIL PUMP ASSY

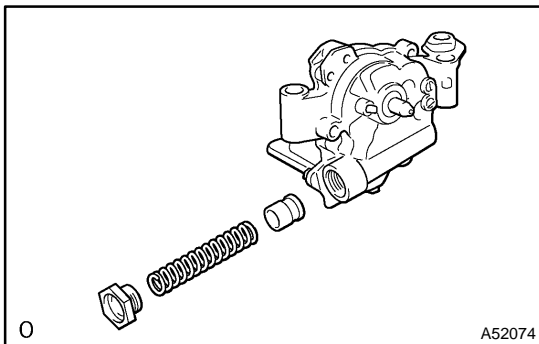
- (a) Place a new gasket on the cylinder block.
  - (b) Install the oil pump assembly with 3 bolts.  
**Torque: 19 N·m (194 kgf·cm, 14 ft·lbf)**

# OVERHAUL

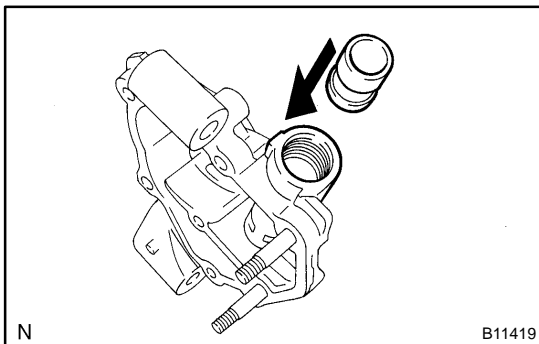


## 1. INSPECT OIL PUMP ASSY

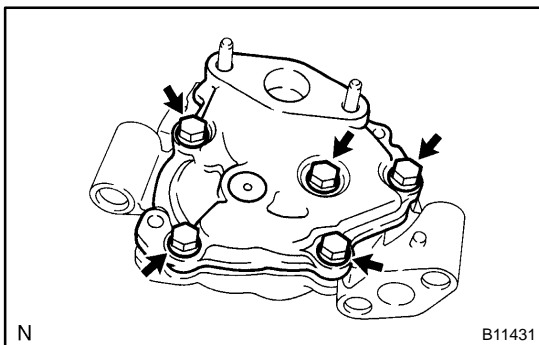
- (a) Remove oil pump strainer.  
 (1) Remove 2 nuts and oil pump strainer.



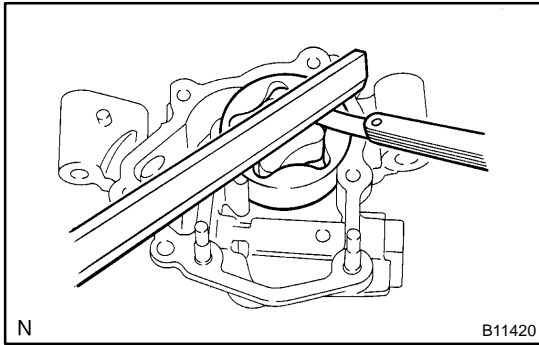
- (b) Remove oil pump relief valve.  
 (1) Using a socket wrench (27mm), remove the relief valve plug.  
 (2) Remove the oil pump relief valve spring and oil pump relief valve.



- (c) Inspect oil pump relief valve.  
 (1) Coat the valve with engine oil and check that it falls smoothly into the valve hole by its own weight.

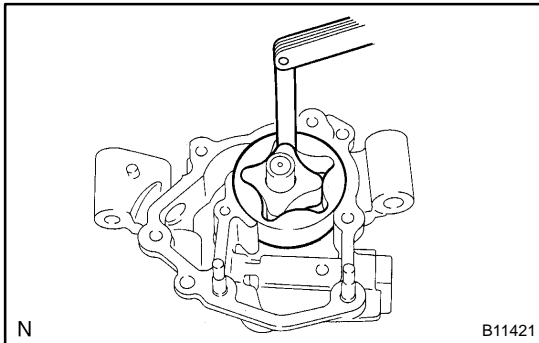


- (d) Remove the oil pump cover.  
 (1) Remove 5 bolts and oil pump body cover.



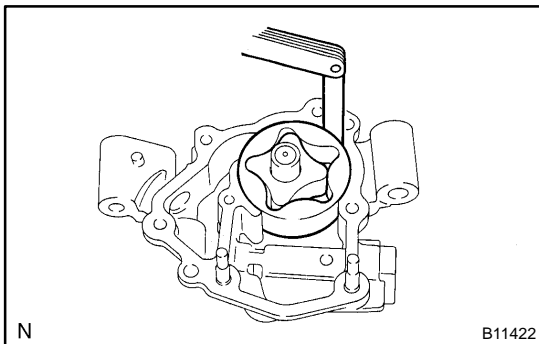
- (e) Inspect rotor side clearance.  
 (1) Using a feeler gauge and precision straight edge, measure the clearance between the rotors and precision straight edge.

**Standard side clearance:**  
**0.030–0.085 mm (0.0012–0.0033 in.)**  
**Maximum side clearance:**  
**0.16 mm (0.0063 in.)**



- (f) Inspect rotor tip clearance.  
 (1) Using a feeler gauge, measure the clearance between the drive and driven rotor tips.

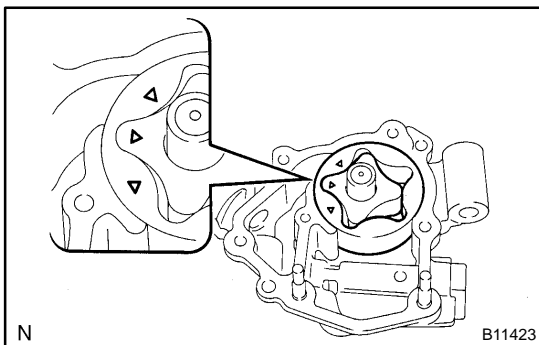
**Standard tip clearance:**  
**0.080–0.160 mm (0.0031–0.0063 in.)**  
**Maximum tip clearance:**  
**0.35 mm (0.0138 in.)**



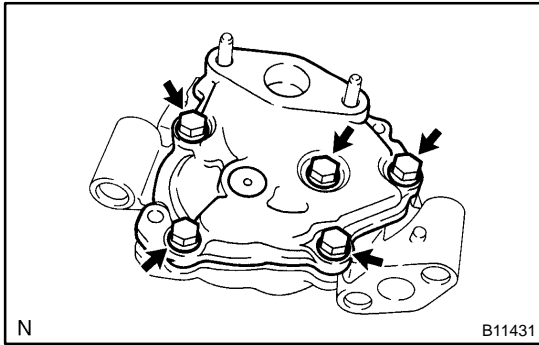
- (g) Inspect rotor body clearance.  
 (1) Using a feeler gauge, measure the clearance between the driven rotor and body.

**Standard body clearance:**  
**0.100–0.170 mm (0.00394–0.00669 in.)**  
**Maximum body clearance:**  
**0.325 mm (0.01280 in.)**

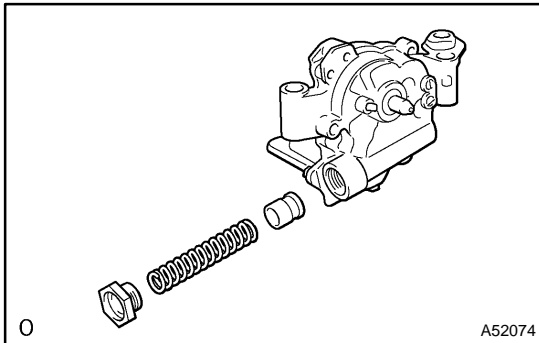
- (h) Remove the oil pump rotor set.



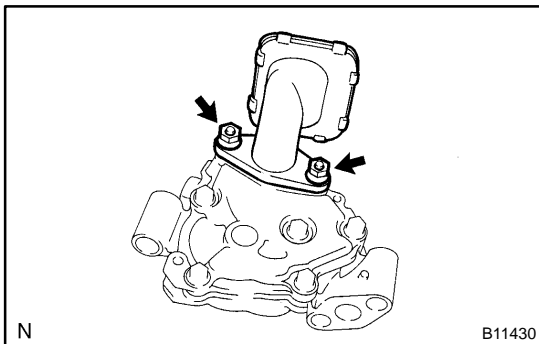
- (i) Install the oil pump rotor set.  
 (1) Coat the drive rotor and driven rotors with engine oil.  
 (2) Place the drive and driven rotors into pump body with the marks facing the pump body cover side.



- (j) Install oil pump cover.  
 (1) Install the pump body cover with 5 bolts.  
**Torque: 8.8 N·m (90 kgf·cm, 78 in·lbf)**



- (k) Install oil pump relief valve.  
 (1) Coat the oil pump relief valve with engine oil.  
 (2) Insert the relief valve and spring into the pump body hole.  
 (3) Using a socket wrench (27mm), install the relief valve plug.



- (l) Install oil pump strainer.  
 (1) Place a new gasket on the oil pump.  
 (2) Install the oil pump strainer with 2 nuts.  
**Torque: 8.8 N·m (90 kgf·cm, 78 in·lbf)**

# OIL FILTER SUB-ASSY (2AZ-FE)

## REPLACEMENT

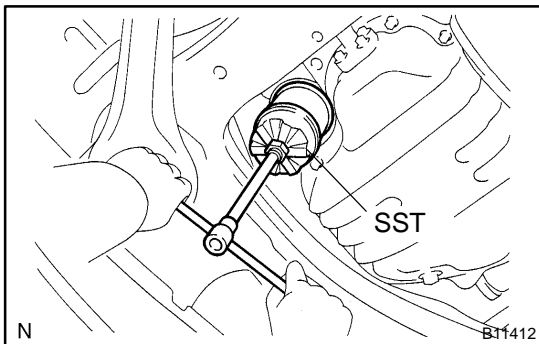
1701X-02

### CAUTION:

- Prolonged and repeated contact with mineral oil will result in the removal of natural fats from the skin, leading to dryness, irritation and dermatitis. In addition, used engine oil contains potentially harmful contaminants which may cause skin cancer.
- Exercise caution in order to minimize the length and frequency of contact of your skin to used oil. Wear protective clothing and gloves. Wash your skin thoroughly with soap and water, or use water-less hand cleaner to remove any used engine oil. Do not use gasoline, thinners, or solvents.
- In order to preserve the environment, used oil and used oil filter must be disposed of only at designated disposal sites.

### 1. DRAIN ENGINE OIL

- Remove the oil filler cap.
- Remove the oil drain plug, and drain the oil into a container.

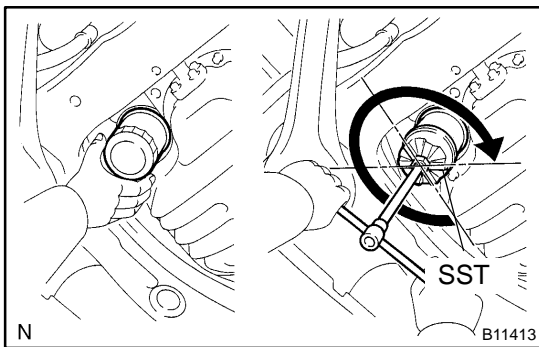


### 2. REMOVE OIL FILTER SUB-ASSY

- Using SST, remove the oil filter.  
SST 09228-06501

### 3. INSTALL OIL FILTER SUB-ASSY

- Check and clean the oil filter installation surface.
- Apply clean engine oil to the gasket of a new oil filter.
- Lightly screw the oil filter into place, and tighten it until the gasket contacts the seat.
- Using SST, tighten it an additional 3/4 turn.  
SST 09228-06501



### 4. ADD ENGINE OIL

- Clean and install the oil drain plug with a new gasket.  
**Torque: 25 N·m (255 kgf·cm, 18 ft·lbf)**
- Fill with fresh engine oil.

#### Capacity:

**Drain and refill w/ Oil filter change 3.8 liters (4.0 US qts, 3.3 Imp. qts)**

**Drain and refill w/o Oil filter change 3.6 liters (3.8 US qts, 3.2 Imp. qts)**

**Dry fill 4.5 liters (4.8 US qts, 4.0 Imp. qts)**

- Install the oil filler cap.

### 5. INSPECT OIL LEAK

2002 CAMRY REPAIR MANUAL (RM881U)

# LUBRICATION SYSTEM (1MZ-FE)

## ON-VEHICLE INSPECTION

17020-02

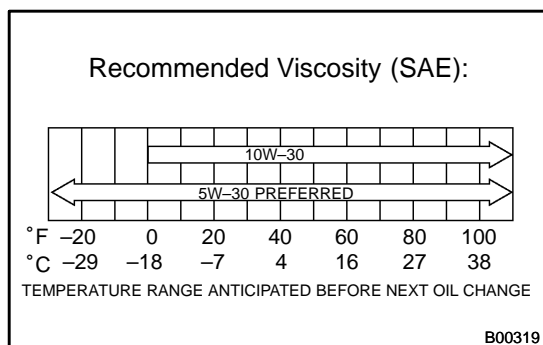
### 1. CHECK ENGINE OIL LEVEL

- (a) After warm up the engine and then 5 minutes after the engine stop, oil level should be between the low level and full level marks of the dipstick.

If low, check for leakage and add oil up to the full level mark.

#### NOTICE:

**Do not fill with engine oil above the full level mark.**



### 2. CHECK ENGINE OIL QUALITY

- (a) Check the oil for deterioration, entry of water, discoloring or thinning.

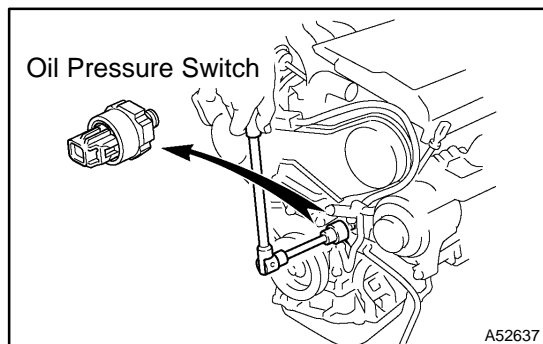
If the quality is visibly poor, replace the oil.

#### Oil grade:

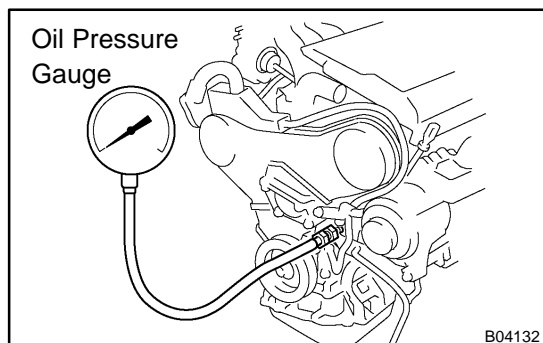
**API grade SJ or SL, Energy-Conserving or ILSAC, multigrade engine oil is recommended. SAE 5W-30 is the best choice for your vehicle, for good fuel economy, and good starting in cold weather.**

### 3. REMOVE OIL PRESSURE SWITCH ASSY

- (a) Disconnect the oil pressure switch connector.



- (b) Remove the oil pressure switch.



### 4. INSTALL OIL PRESSURE GAUGE

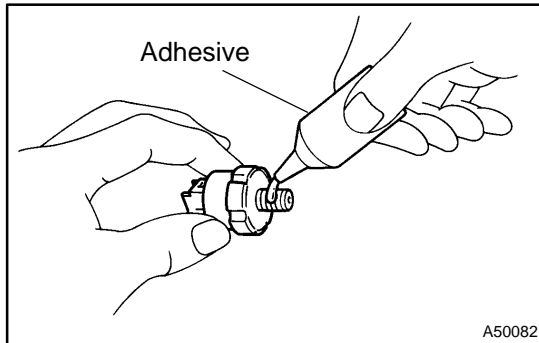
- (a) Install the oil pressure gauge.

### 5. WARM UP ENGINE



**6. CHECK OIL PRESSURE****Oil pressure:**

At idle	29 kPa (0.3 kgf·cm <sup>2</sup> , 4.3 psi) or more
At 3,000 rpm	294 – 539 kPa (3.0 – 5.5 kgf·cm <sup>2</sup> , 43 – 78 psi)

**7. INSTALL OIL PRESSURE SWITCH**

- (a) Remove the oil pressure gauge.
- (b) Apply adhesive to 2 or 3 threads of the oil pressure switch.

**Adhesive:**

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

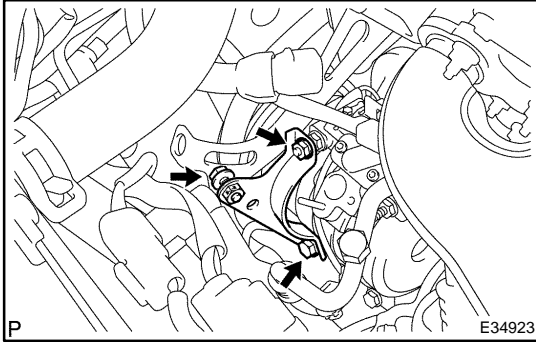
- (c) Install the oil pressure switch.  
**Torque: 15 N·m (152 kgf·cm, 11 ft·lbf)**
- (d) Connect the oil pressure switch connector.

**8. START ENGINE AND CHECK FOR LEAKS**

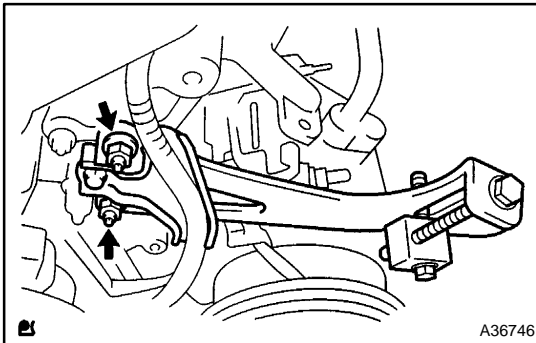
## OIL PUMP ASSY (1MZ-FE)

### REPLACEMENT

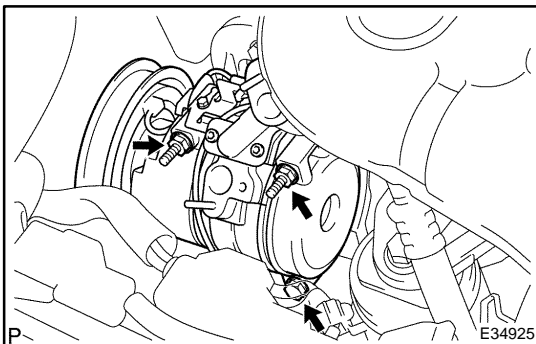
1. REMOVE FRONT WHEEL RH
2. REMOVE FRONT FENDER APRON SEAL RH
3. REMOVE ENGINE UNDER COVER RH
4. DRAIN ENGINE OIL
  - (a) Install a new gasket after draining engine oil.  
**Torque: 45 N·m (459 kgf·cm, 33 ft·lbf)**
5. REMOVE FRONT SUSPENSION UPPER BRACE CENTER  
(W/ FRONT SUSPENSION BRACE UPPER CENTER)
6. REMOVE V (COOLER COMPRESSOR TO CRANKSHAFT PULLEY) BELT NO.1  
(See page [14-140](#))
7. REMOVE VANE PUMP V BELT  
(See page [14-140](#))
8. REMOVE ENGINE MOVING CONTROL ROD  
(See page [14-155](#))
9. REMOVE ENGINE MOUNTING STAY NO.2 RH  
(See page [14-155](#))
10. REMOVE GENERATOR BRACKET NO.2
11. REMOVE CRANKSHAFT PULLEY  
(See page [14-206](#))  
SST 09213-54015 (91651-60855), 09330-00021, 09950-50013 (09951-05010, 09952-05010,  
09953-05010, 09954-05030)
12. REMOVE TIMING BELT NO.1 COVER
13. REMOVE TIMING BELT NO.2 COVER  
(See page [14-206](#))
14. REMOVE TRANSVERSE ENGINE ENGINE MOUNTING BRACKET
15. REMOVE TIMING BELT GUIDE NO.2
16. REMOVE TIMING BELT  
(See page [14-243](#))
17. REMOVE EXHAUST PIPE NO.1 SUPPORT BRACKET
18. REMOVE EXHAUST PIPE ASSY FRONT
19. REMOVE EXHAUST PIPE SUPPORT BRACKET NO.1

**20. SEPARATE COMPRESSOR AND MAGNETIC CLUTCH**

- (a) Remove the 2 bolts, nut and drive belt adjusting bar bracket.



- (b) Remove the 2 nuts, the generator bracket adjusting bar with wire harness cramp bracket.



- (c) Disconnect the compressor, magnetic clutch connector and the wire harness cramp.

- (d) Remove the 3 bolts, the compressor and magnetic clutch.

HINT:

Hung up the hoses instead of detaching.

**21. REMOVE TIMING BELT IDLER SUB-ASSY NO.2**

(See page 16-21)

**22. REMOVE CAMSHAFT TIMING PULLEY**

(See page 14-212)

SST 09960-10010 (09962-01000, 09963-01000), 09249-63010

**23. REMOVE TIMING BELT IDLER SUB-ASSY NO.1**

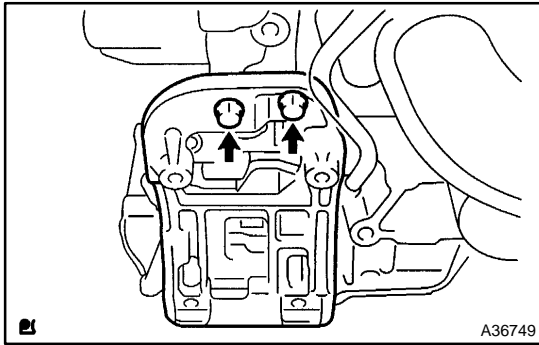
- (a) Using a 10mm socket hexagon wrench, remove the timing belt idler sub-assembly No. 1 and the plate washer.

**24. REMOVE CRANKSHAFT TIMING PULLEY**

(See page 14-243)

SST 09950-50013 (09951-05010, 09952-05010, 09953-05020, 09954-05010)

**25. REMOVE TIMING BELT NO.3 COVER**

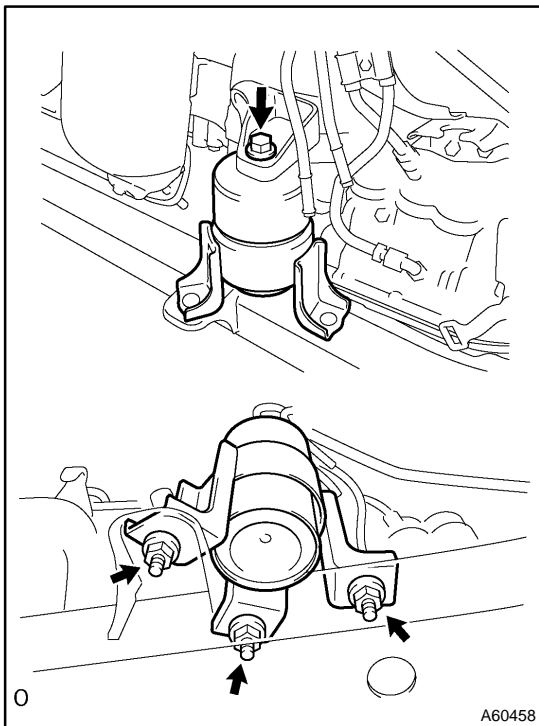


## 26. REMOVE COMPRESSOR MOUNTING BRACKET NO.1

- (a) Remove the 2 bolts and compressor mounting bracket No. 1.

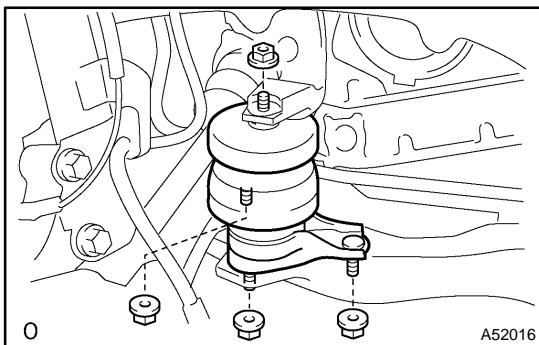
## 27. REMOVE OIL LEVEL GAGE GUIDE

- (a) Remove the bolt and oil level gage guide.



## 28. SEPARATE TRANSVERSE ENGINE ENGINE MOUNTING INSULATOR

- (a) Remove the 3 nuts and a bolt, and separate the engine mounting insulator front.

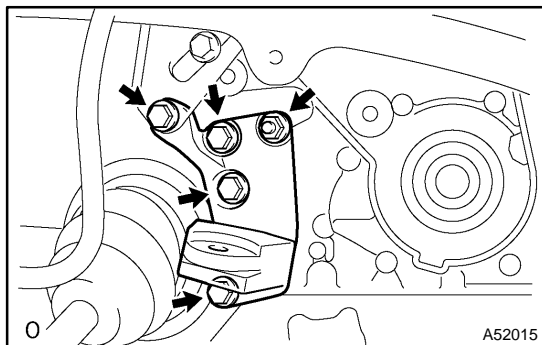


## 29. REMOVE TRANSVERSE ENGINE ENGINE MOUNTING INSULATOR

- (a) Remove the bolt and disconnect the power steering return hose cramp from the frame.
- (b) Remove the 4 nuts.
- (c) Place a wooden block between the jack and engine, and set the jack, then remove the engine mounting insulator.
- (d) Handle a jack up to remove the engine mounting insulator RH.

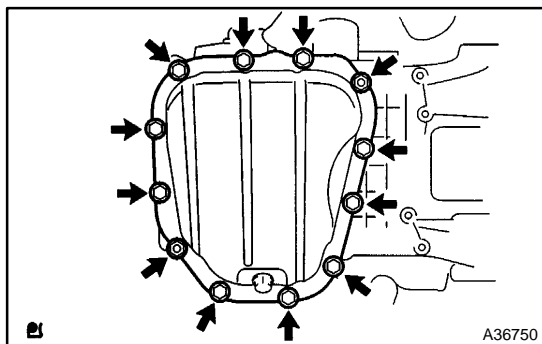
### NOTICE:

Be careful not to damage the contact surfaces of the oil pan.



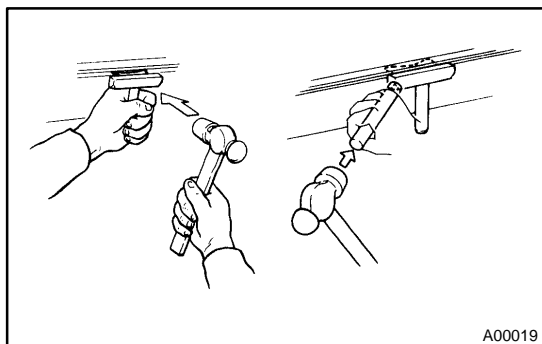
### 30. REMOVE TRANSVERSE ENGINE ENGINE MOUNTING BRACKET

- (a) Remove the 4 bolts, nut and bracket.



### 31. REMOVE OIL PAN SUB-ASSY NO.2

- (a) Remove the 10 bolts and 2 nuts.



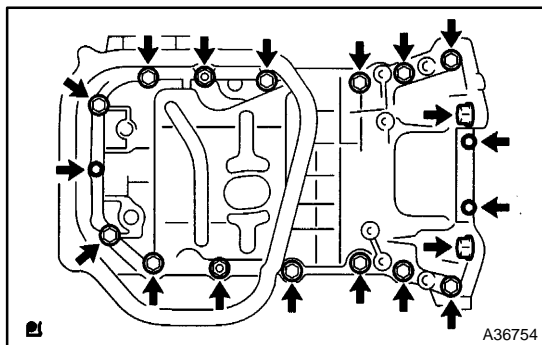
- (b) Using SST, remove the oil pan No. 2.  
SST 09032-00100

#### NOTICE:

Be careful not to damage the oil pan No. 2 flange.

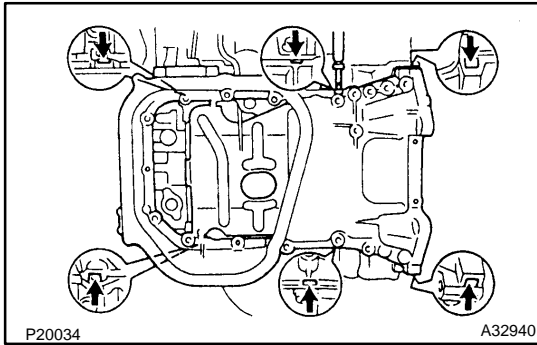
### 32. REMOVE OIL STRAINER SUB-ASSY

- (a) Remove the bolt, 2 nuts and oil strainer sub-assembly.



### 33. REMOVE OIL PAN SUB-ASSY

- (a) Remove the 17 bolts and 2 nuts.



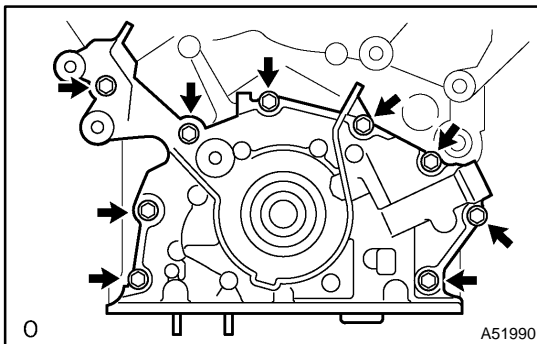
- (b) Using a screwdriver, remove the oil pan by prying the portions between the cylinder block and oil pan.

**NOTICE:**

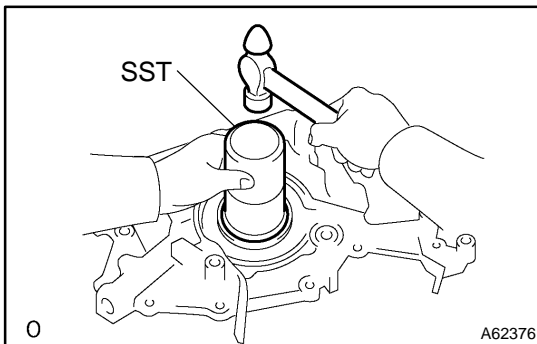
**Be careful not to damage the contact surfaces of the cylinder block and oil pan.**

**34. REMOVE CRANK POSITION SENSOR**

- (a) Disconnect the crank position sensor connector.  
 (b) Remove the bolt and crank position sensor.

**35. REMOVE OIL PUMP ASSY**

- (a) Remove the 9 bolts, O-ring and oil pump.

**36. INSTALL OIL PUMP ASSY**

- (a) Using SST and a hammer, tap in a new oil seal until its surface is flush with the oil pump body edge.

SST 09223-00010

**NOTICE:**

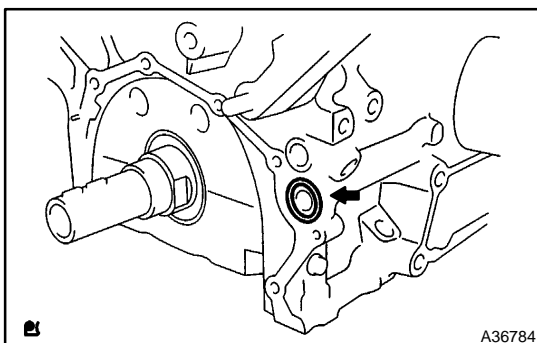
**Be careful not to tap the oil seal slantingly.**

- (b) Apply a small amount of MP grease to the oil seal lip.

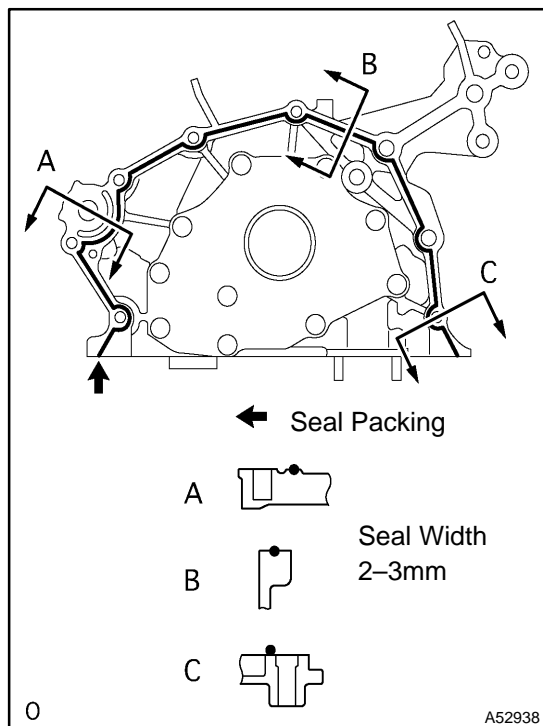
**NOTICE:**

**Keep the lip off foreign materials.**

- (c) Apply engine oil to the O-ring.



- (d) Install a new O-ring on the cylinder block.

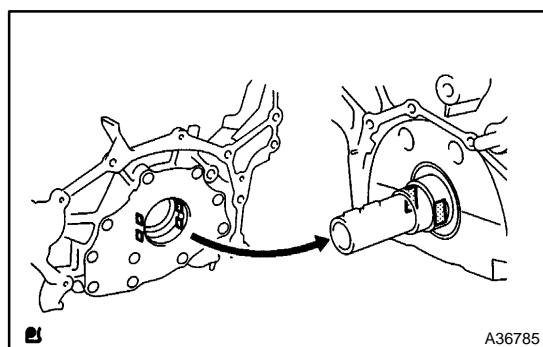


- (e) Apply seal packing to the oil pump assembly as shown in the illustration.

**Seal packing: Part No. 08226-00080 or equivalent.**

**NOTICE:**

- Install the oil pump assembly within 3 minutes after applying seal packing.
- Do not put into engine oil within 2 hours after installing.



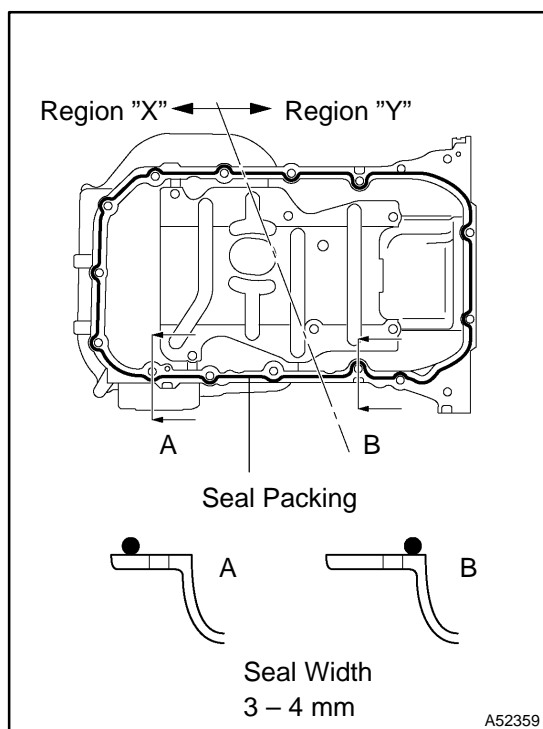
- (f) Engage the spline teeth of the oil pump drive gear with the large teeth of the crankshaft, and slide the oil pump on the crankshaft.
- (g) Install the oil pump with the 9 bolts. Uniformly tighten the bolts in several passes.

**Torque:**

**10 mm head 8 N·m (82 kgf·cm, 71 in·lbf)**  
**12 mm head 20 N·m (199 kgf·cm, 14 ft·lbf)**  
**14 mm head 43 N·m (439 kgf·cm, 32 ft·lbf)**

### 37. INSTALL CRANK POSITION SENSOR

**Torque: 8 N·m (82 kgf·cm, 71 in·lbf)**

**38. INSTALL OIL PAN SUB-ASSY**

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

**Seal packing: Part No. 08226-00080 or equivalent.**

**NOTICE:**

- Remove any oil from the contact surface.
  - Apply seal packing to the outer side of the bolt hole in the region "X".
  - Apply seal packing to the inner side of the bolt hole in the region "Y".
  - Install the oil pan within 3 minutes after applying seal packing.
  - Do not put into engine oil within 2 hours after installing.
- (b) Install the oil pan with the 17 bolts and 2 nuts.

**Torque:**

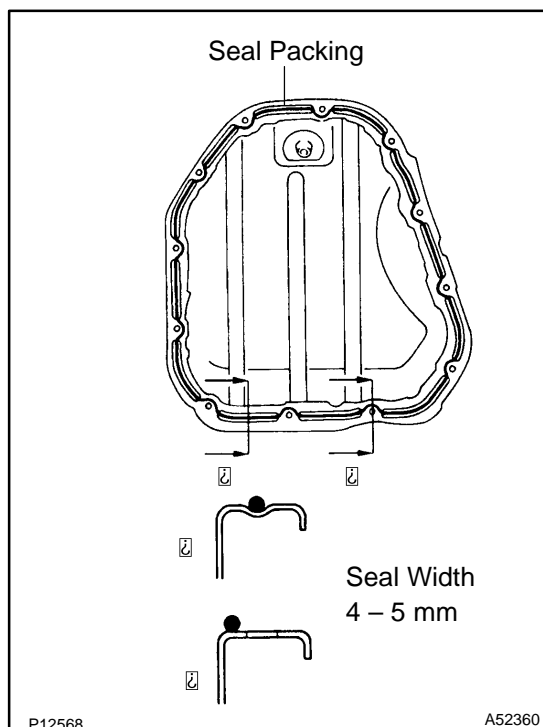
**10 mm head 8 N·m (82 kgf·cm, 71 in.·lbf)**

**12 mm head 20 N·m (199 kgf·cm, 14 ft.·lbf)**

**39. INSTALL OIL STRAINER SUB-ASSY**

- (a) Install a new gasket and the oil strainer with the bolt and 2 nuts.

**Torque: 8 N·m (82 kgf·cm, 71 in.·lbf)**

**40. INSTALL OIL PAN SUB-ASSY NO.2**

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

**Seal packing: Part No. 08226-00080 or equivalent.**

**NOTICE:**

**Apply seal packing to the inner side of the bolt hole.**

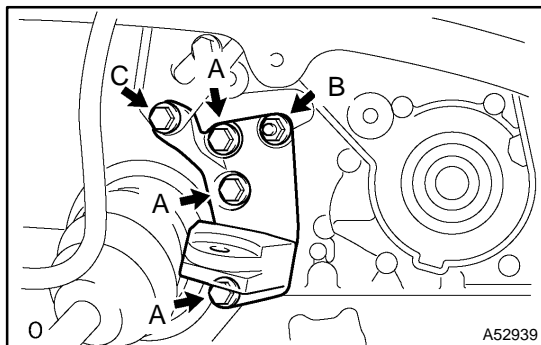
- (b) Install oil pan No. 2.

**Torque: 8 N·m (82 kgf·cm, 71 in.·lbf)**

**NOTICE:**

- Remove any oil from the contact surface.
- Do not put into engine oil within 2 hours after installing.





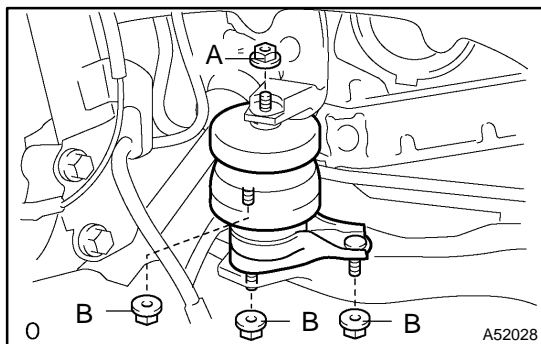
#### 41. INSTALL TRANSVERSE ENGINE ENGINE MOUNTING BRACKET

Torque:

Bolt A 54 N·m (550 kgf·cm, 40 ft·lbf)

Nut B 54 N·m (550 kgf·cm, 40 ft·lbf)

Bolt C 43 N·m (439 kgf·cm, 32 ft·lbf)

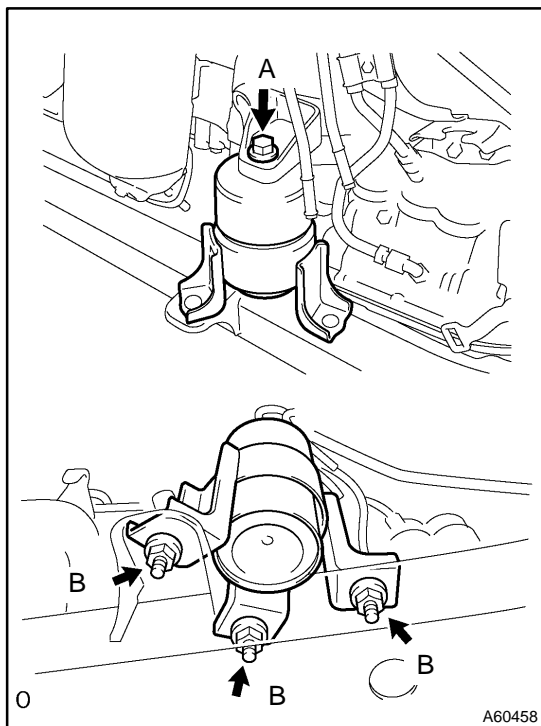


#### 42. INSTALL TRANSVERSE ENGINE ENGINE MOUNTING INSULATOR

Torque:

Nut A 95 N·m (969 kgf·cm, 70 ft·lbf)

Nut B 87 N·m (887 kgf·cm, 64 ft·lbf)



#### 43. INSTALL TRANSVERSE ENGINE ENGINE MOUNTING INSULATOR

Torque:

Bolt A 87 N·m (887 kgf·cm, 64 ft·lbf)

Nut B 52 N·m (531 kgf·cm, 38 ft·lbf)

#### 44. INSTALL OIL LEVEL GAGE GUIDE

- (a) Install a new O-ring, bolt and oil level gage guide.

Torque: 8 N·m (82 kgf·cm, 71 in·lbf)

#### 45. INSTALL COMPRESSOR MOUNTING BRACKET NO.1

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

#### 46. INSTALL TIMING BELT NO.3 COVER (See page 14-212)

**47. INSTALL TIMING BELT IDLER SUB-ASSY NO.1**

- (a) Using a 10 mm hexagon wrench, install the plate washer and idler pulley with the pivot bolt.  
**Torque: 34 N·m (347 kgf·cm, 25 ft·lbf)**

**48. INSTALL TIMING BELT IDLER SUB-ASSY NO.2**

(See page [16-21](#))

**49. INSTALL CAMSHAFT TIMING PULLEY**

(See page [14-212](#))

SST 09960-10010 (09962-01000, 09963-01000)

**50. INSTALL COMPRESSOR AND MAGNETIC CLUTCH**

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

**51. INSTALL EXHAUST PIPE SUPPORT BRACKET NO.1**

(See page [14-155](#))

**52. INSTALL EXHAUST PIPE ASSY FRONT**

(See page [15-5](#))

**53. INSTALL EXHAUST PIPE NO.1 SUPPORT BRACKET**

(See page [15-5](#))

**54. INSPECT TIMING BELT**

(See page [14-206](#))

**55. INSTALL TIMING BELT**

(See page [14-243](#))

SST 09960-10010 (09962-01000, 09963-01000)

**56. INSTALL CHAIN TENSIONER ASSY NO.1**

(See page [14-206](#))

**57. INSTALL TIMING BELT GUIDE NO.2****58. INSTALL TRANSVERSE ENGINE ENGINE MOUNTING BRACKET****59. INSTALL TIMING BELT NO.2 COVER**

(See page [14-206](#))

**60. INSTALL TIMING BELT NO.1 COVER****61. INSTALL CRANKSHAFT PULLEY**

(See page [14-206](#))

SST 09213-54015 (91651-60855), 09330-00021

**62. INSTALL GENERATOR BRACKET NO.2**

**Torque: 28 N·m (286 kgf·cm, 21 in·lbf)**

**63. INSTALL ENGINE MOUNTING STAY NO.2 RH**

(See page [14-155](#))

**64. INSTALL ENGINE MOVING CONTROL ROD**

(See page [14-155](#))

**65. INSTALL VANE PUMP V BELT**

(See page [14-140](#))

**66. INSTALL V (COOLER COMPRESSOR TO CRANKSHAFT PULLEY) BELT NO.1**

(See page [14-140](#))

**67. INSPECT DRIVE BELT DEFLECTION AND TENSION(REFERENCE) (See page [14-136](#))**

**68. INSTALL FRONT SUSPENSION UPPER BRACE CENTER  
(W/ FRONT SUSPENSION BRACE UPPER CENTER)**

**Torque: 80 N·m (816 kgf·cm, 59 ft·lbf)**

**69. ADD ENGINE OIL**

**70. INSPECT OIL LEAK**

**71. INSTALL FRONT WHEEL RH**

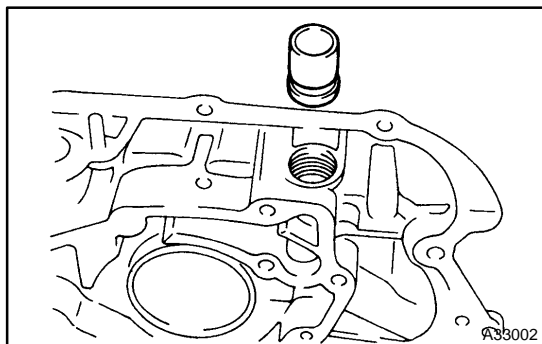
**Torque: 103 N·m (1,051 kgf·cm, 76 ft·lbf)**

**72. CHECK EXHAUST GAS LEAK**

## OVERHAUL

### 1. REMOVE OIL PUMP RELIEF VALVE

- (a) Remove the plug, spring and relief valve.



### 2. INSPECT OIL PUMP RELIEF VALVE

- (a) Apply a light coat of engine oil.  
 (b) Check that it falls smoothly into the valve hole by its own weight.

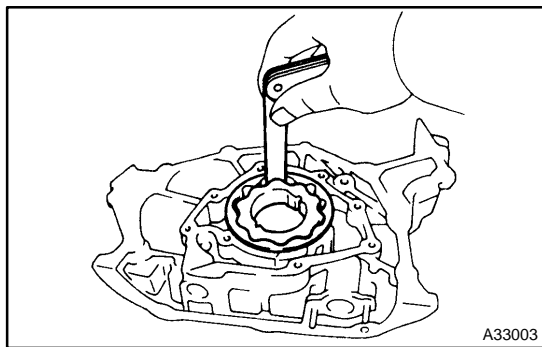
### 3. INSPECT OIL PUMP ASSY

- (a) Remove the oil pump cover.  
 (1) Remove the 10 screws and the oil pump cover.  
 (b) Remove oil pump rotor set.

#### NOTICE:

**Do not change the combination and install direction of the two rotors.**

- (c) Inspect oil pump rotor set.  
 (1) Apply a light coat of engine oil to the oil pump rotor set and place them into the oil pump body. Check that the rotors revolve smoothly.

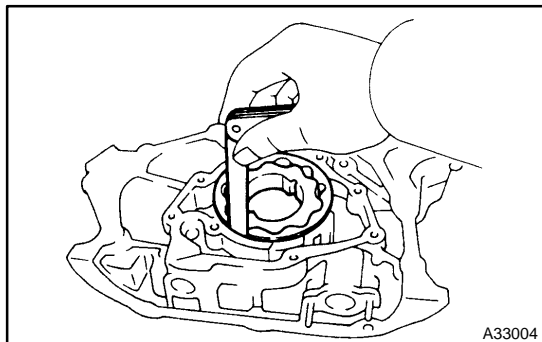


- (d) Inspect rotor tip clearance.  
 (1) Using a feeler gauge, measure the clearance between the drive and driven rotor tips.

#### Standard tip clearance:

**0.11 – 0.24 mm (0.0043 – 0.0094 in.)**

**Maximum tip clearance: 0.35 mm (0.0138 in.)**

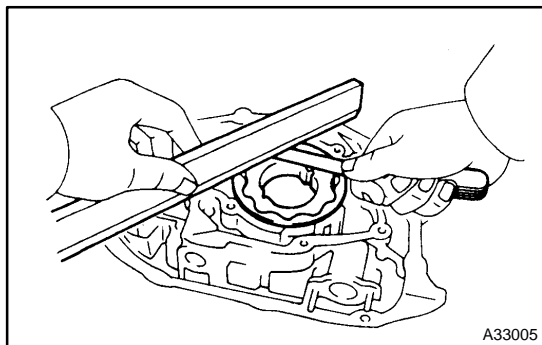


- (e) Inspect rotor body clearance.  
 (1) Using a feeler gauge, measure the clearance between the driven rotor and body.

#### Standard body clearance:

**0.125 – 0.162 mm (0.0050 – 0.0064 in.)**

**Maximum body clearance: 0.30 mm (0.0118 in.)**

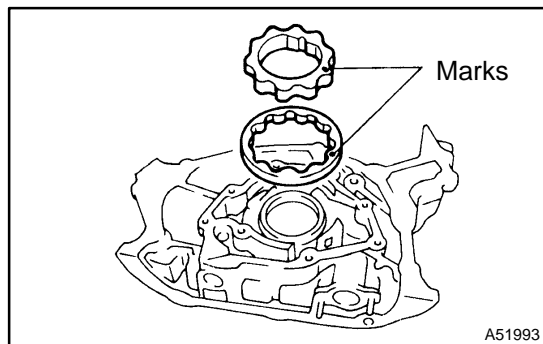


- (f) Inspect rotor side clearance.  
 (1) Using a feeler gauge and precision straight edge, measure the clearance between the rotors and precision straight edge.

**Standard side clearance:**

**0.03 – 0.09 mm (0.0012 – 0.0035 in.)**

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



- (g) Install oil pump rotor set.  
 (1) Apply a light coat of engine oil to the oil pump gear set and place it into pump body with the marks facing the pump body cover side.
- (h) Install oil pump cover.  
 (1) Install the 10 screws and oil pump cover.

**Torque: 10 N·m (105 kgf·cm, 8 ft·lbf)**

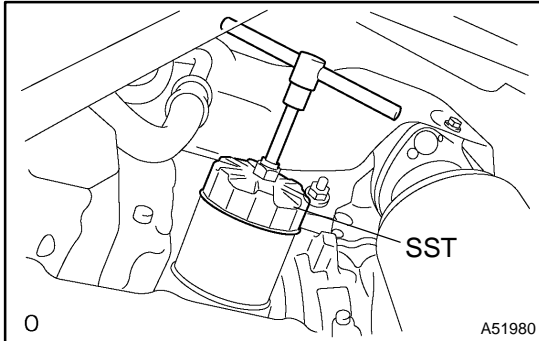
#### 4. INSTALL OIL PUMP RELIEF VALVE

- (a) Apply a light coat of engine oil to the relief valve, and insert the relief valve and spring into the pump body hole.
- (b) Install the oil pump relief valve plug.  
**Torque: 24 N·m (245 kgf·cm, 18 ft·lbf)**

## OIL FILTER SUB-ASSY (1MZ-FE) REPLACEMENT

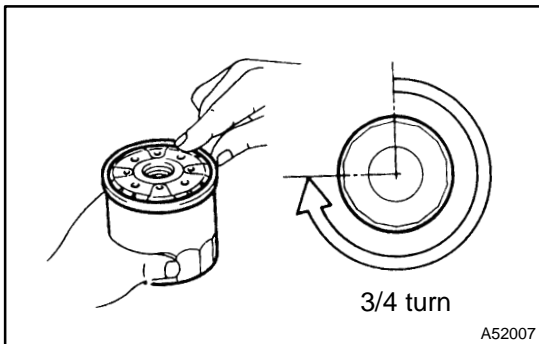
1701H-02

### 1. REMOVE ENGINE UNDER COVER RH



### 2. REMOVE OIL FILTER SUB-ASSY

- (a) Using SST, remove the oil filter.  
SST 09228-07501



### 3. INSTALL OIL FILTER SUB-ASSY

- (a) Check and clean the oil filter installation surface.  
(b) Apply clean engine oil to the gasket of a new oil filter.  
(c) Lightly screw the oil filter into place, and tighten it until the gasket contacts the seat.  
(d) Using SST, tighten it an additional 3/4 turn.  
SST 09228-07501

### 4. ADD ENGINE OIL

- (a) Add new oil.

#### Oil capacity:

**Drain and refill w/ oil filter change 4.7 liters (5.0 US qts, 4.1 Imp. qts)**

**Drain and refill w/o oil filter change 4.5 liters (4.8 US qts, 4.0 Imp. qts)**

**Dry fill 5.5 liters (5.8 US qts, 4.8 Imp. qts)**

- (b) Install the oil filler cap.

### 5. INSPECT OIL LEAK