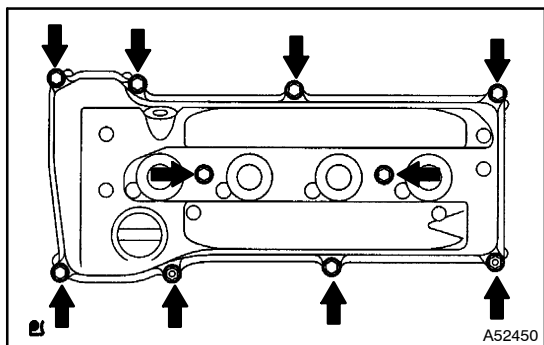
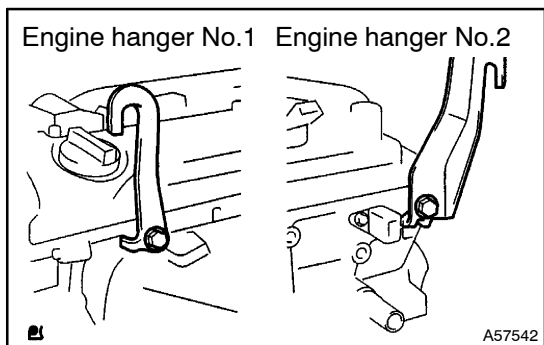


## REPLACEMENT

1. REMOVE HOOD SUB-ASSY
2. REMOVE FRONT WIPER ARM HEAD CAP (3 LINK TYPE FR WIPER)
3. REMOVE FR WIPER ARM LH (3 LINK TYPE FR WIPER)  
(See page 66-9)
4. REMOVE COWL TOP VENTILATOR LOUVER CENTER NO.1 (4 LINK TYPE FR WIPER)
5. REMOVE FR WIPER ARM LH (4 LINK TYPE FR WIPER)  
(See page 66-9)
6. REMOVE FRONT WIPER ARM HEAD CAP
7. REMOVE FR WIPER ARM RH  
(See page 66-9)
8. REMOVE COWL TOP VENTILATOR LOUVER SUB-ASSY
9. REMOVE WIPER LINK ASSY  
(See page 66-9)
10. REMOVE WINDSHIELD WIPER MOTOR ASSY
11. REMOVE COWL TOP PANEL SUB-ASSY OUTER
12. REMOVE FRONT WHEEL RH
13. REMOVE ENGINE UNDER COVER RH
14. DRAIN ENGINE OIL
  - (a) Install a new gasket and drain plug after draining engine oil.  
Torque: 25 N·m (250 kgf·cm, 18 ft·lbf)
15. REMOVE EXHAUST PIPE ASSY FRONT
16. REMOVE FAN AND GENERATOR V BELT  
(See page 14-5)  
SST 09249-63010
17. REMOVE GENERATOR ASSY  
(See page 19-7)
18. REMOVE VANE PUMP ASSY  
(See page 51-10)  
SST 09249-63010
19. REMOVE ENGINE COVER SUB-ASSY NO.1  
(See page 51-10)
20. REMOVE IGNITION COIL ASSY
21. SEPARATE VENTILATION HOSE
22. SEPARATE VENTILATION HOSE NO.2

**23. REMOVE CYLINDER HEAD COVER SUB-ASSY**

- (a) Remove the bolt and disconnect the engine wire harness clamp.
- (b) Remove the 8 bolts and 2 nuts, and disconnect the cylinder head cover.

**24. INSTALL ENGINE HANGER NO.1**

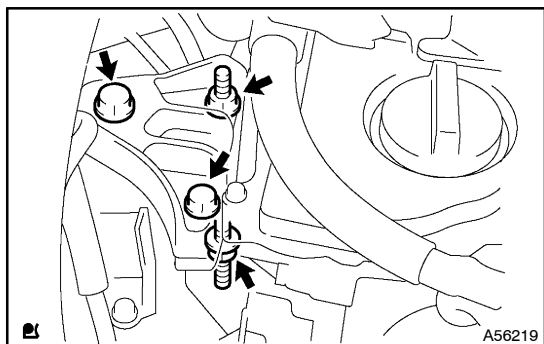
- (a) Install the engine hanger No. 1 (12281-28010, 28020, 28030), and the bolt (91512-61020).

**Torque: 38 N·m (387 kgf·cm, 28 ft·lbf)**

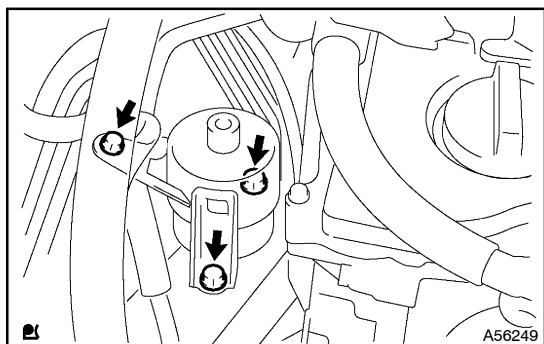
**25. INSTALL ENGINE HANGER NO.2**

- (a) Install the engine No. 2 (12282-28010, 28020, 28030), and the bolt (91512-61020).

**Torque: 38 N·m (387 kgf·cm, 28 ft·lbf)**

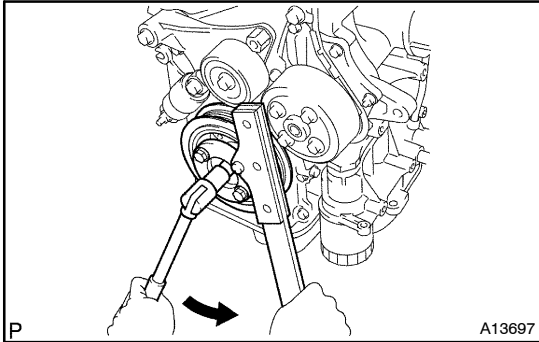
**26. REMOVE ENGINE MOUNTING BRACKET NO.2 RH**

- (a) Attach the chain block and sling device to the engine hangers.
- (b) Remove the 2 bolts, 2 nuts and the engine mounting bracket No. 2 RH.

**27. REMOVE TRANSVERSE ENGINE ENGINE MOUNTING INSULATOR**

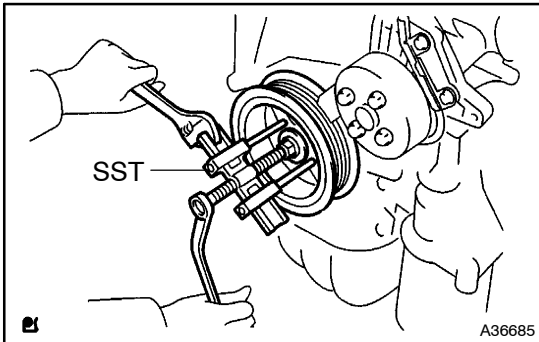
- (a) Remove the 3 bolts and the mounting insulator.

**28. SET NO.1 CYLINDER TO TDC/COMPRESSION (See page 14-6)**



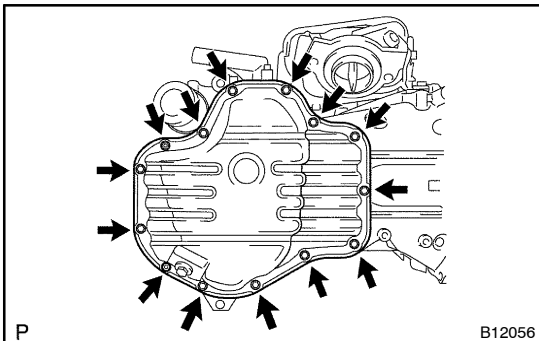
## 29. REMOVE CRANKSHAFT PULLEY

- (a) Using SST, loosen the pulley bolt.  
 SST 09213-54015 (91651-60855), 09330-00021



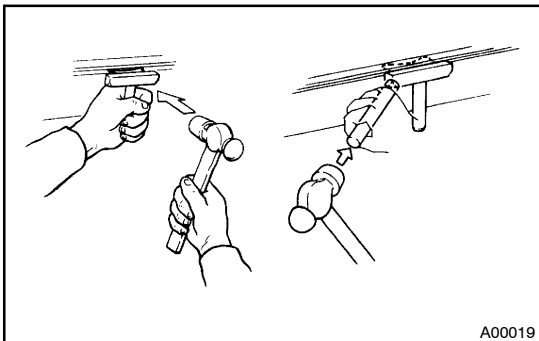
- (b) Using SST, remove the crankshaft pulley.  
 SST 09950-50013 (09951-05010, 09952-05010, 09953-05020, 09954-05021)

## 30. REMOVE CRANK POSITION SENSOR



## 31. REMOVE OIL PAN SUB-ASSY

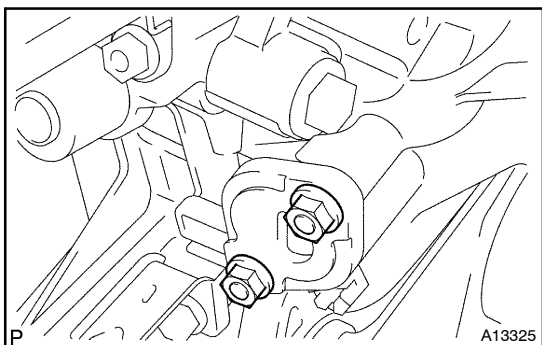
- (a) Remove the 12 bolts and 2 nuts.



- (b) Insert the blade of SST between the crank case and oil pan, cut off applied sealer and remove the oil pan.  
 SST 09032-00100

### NOTICE:

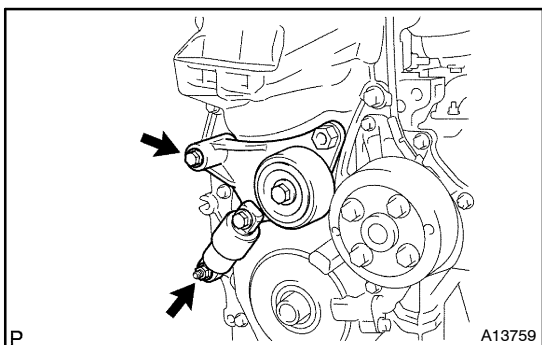
**Be careful not to damage the contact surface of the cylinder block and oil pan.**

**32. REMOVE CHAIN TENSIONER ASSY NO.1**

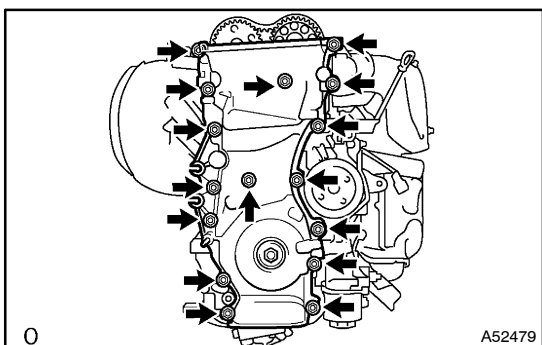
- (a) Remove the 2 nuts, timing chain tensioner and gasket.

**NOTICE:**

**Be sure not to revolve the crankshaft without the chain tensioner.**

**33. REMOVE V-RIBBED BELT TENSIONER ASSY**

- (a) Remove the bolt, the bolt and drive belt tensioner.

**34. REMOVE TIMING CHAIN OR BELT COVER SUB-ASSY**

- (a) Remove the stud bolt for drive belt tensioner from the cylinder block.  
 (b) Remove the 14 bolts and 2 nuts.  
 (c) Remove the timing chain cover with a screwdriver.

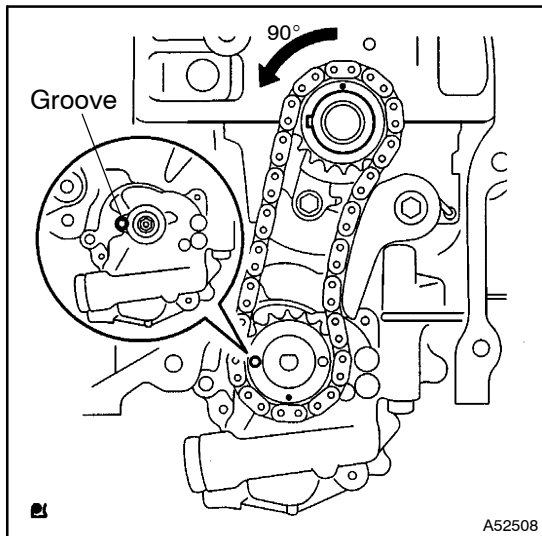
**NOTICE:**

**Be careful not to damage the contact surfaces of timing chain cover, cylinder block and cylinder head.**

**35. REMOVE CRANKSHAFT POSITION SENSOR PLATE NO.1****36. REMOVE CHAIN TENSIONER SLIPPER****37. REMOVE CHAIN VIBRATION DAMPER NO.1****38. REMOVE TIMING CHAIN GUIDE**

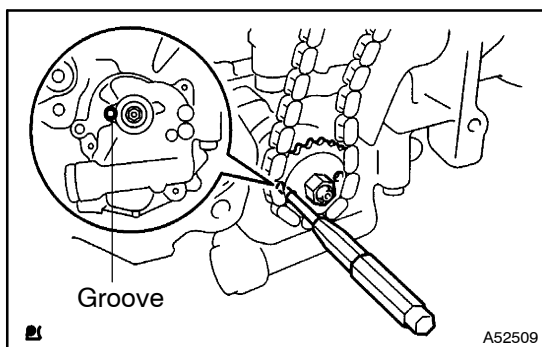
- (a) Remove the bolt and chain guide.

**39. REMOVE CHAIN SUB-ASSY****40. REMOVE CRANKSHAFT TIMING GEAR OR SPROCKET**

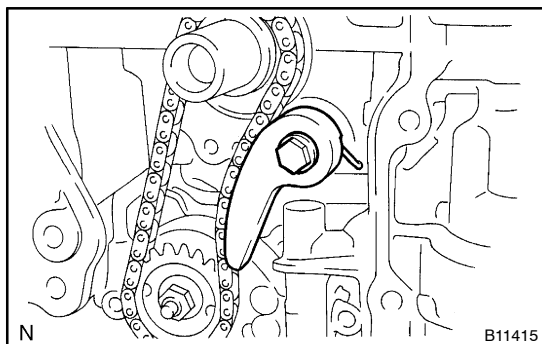


#### 41. REMOVE NO.2 CHAIN SUB-ASSY

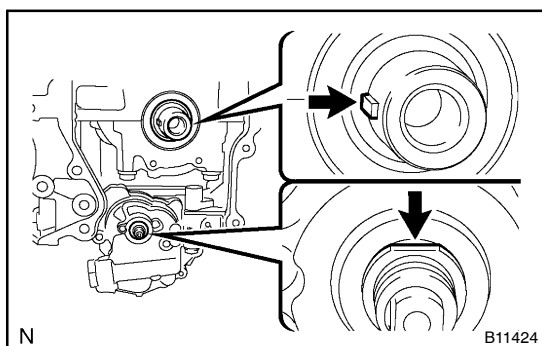
- (a) Turn the crankshaft counterclockwise 90°, and align an adjusting hole of the oil pump drive shaft gear with the groove of the oil pump.



- (b) Put a screwdriver in the adjusting hole of the oil pump drive shaft gear to lock in position, and remove a nut.

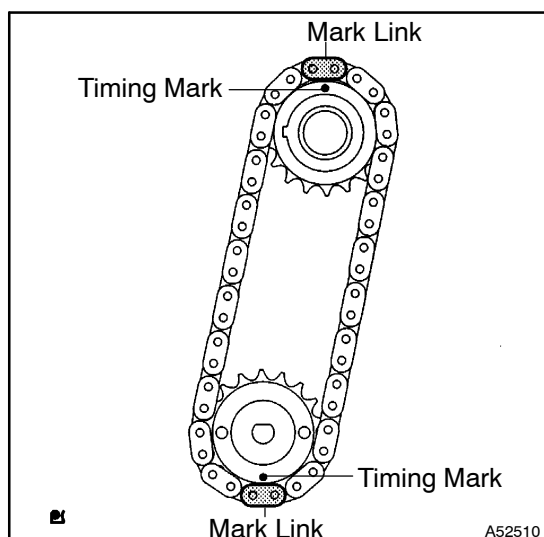


- (c) Remove the bolt, chain tensioner plate and spring.  
(d) Remove the chain tensioner, oil pump drive shaft gear and No. 2 chain.

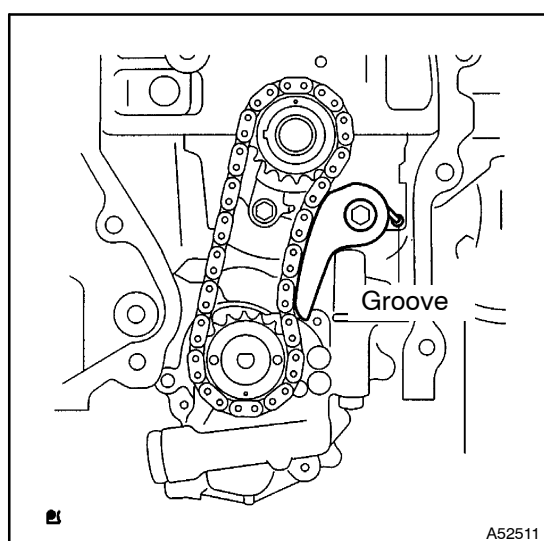


#### 42. INSTALL NO.2 CHAIN SUB-ASSY

- (a) Set the crankshaft key into the left horizontal position.  
(b) Turn the cutout of the drive shaft to the top.

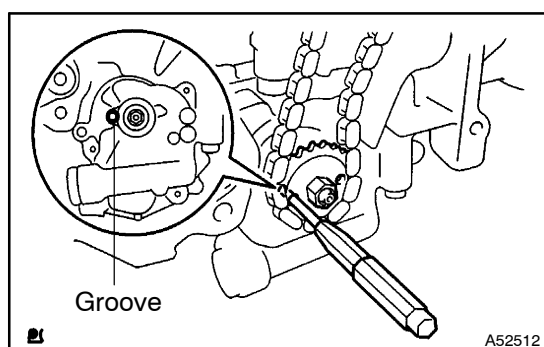


- (c) Align the mark links (yellow colored links) with the timing marks of the gear as shown in the illustration.
- (d) Insert the gears with chain to the crankshaft and oil pump shaft.
- (e) Temporarily tighten the oil pump drive shaft gear by a nut.



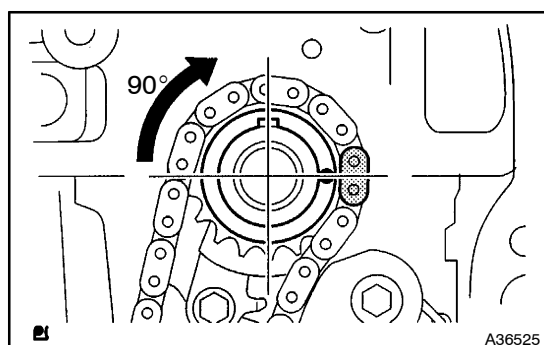
- (f) Inset the damper spring into the adjusting hole, and install the chain tensioner plate by a nut.

**Torque: 12 N·m (122 kgf·cm, 9 ft·lbf)**



- (g) Align an adjusting hole of the oil pump drive shaft gear with the groove of the oil pump.
- (h) Put a screwdriver in the adjusting hole of the oil pump drive shaft gear to lock in position, and assemble a nut.

**Torque: 30 N·m (301 kgf·cm, 22 ft·lbf)**



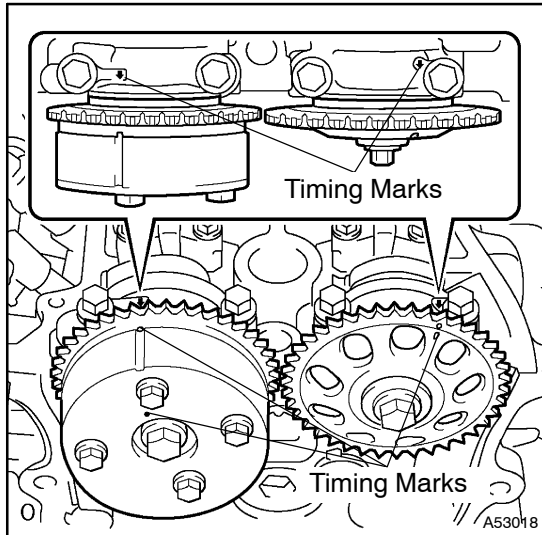
- (i) Rotate the crankshaft counterclockwise 90°, and align the crankshaft key to the top.

**43. INSTALL TIMING CHAIN GUIDE**

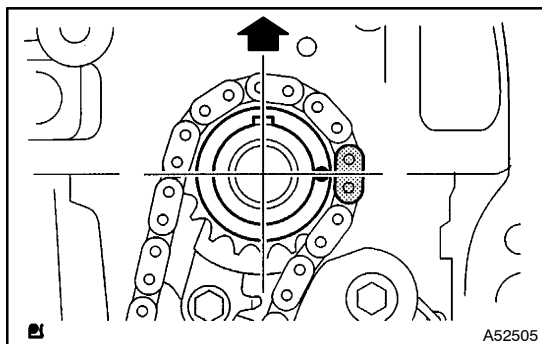
**Torque: 9.0 N·m (92 kgf·cm, 80 in·lbf)**

**44. INSTALL CHAIN VIBRATION DAMPER NO.1**

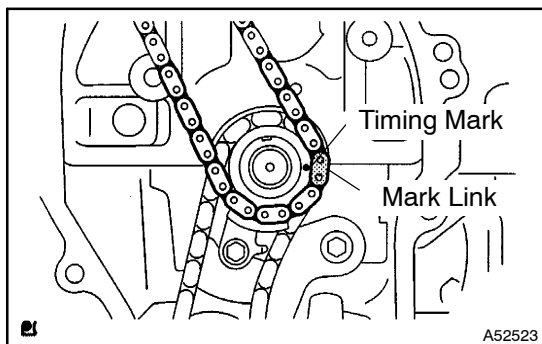
**Torque: 9.0 N·m (92 kgf·cm, 80 in·lbf)**

**45. INSTALL CHAIN SUB-ASSY**

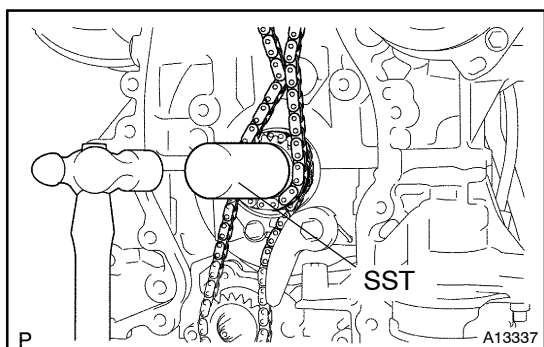
- (a) Set No. 1 cylinder to TDC/compression.  
 (1) Align the timing marks of the camshaft timing sprockets with No.1 bearing caps.



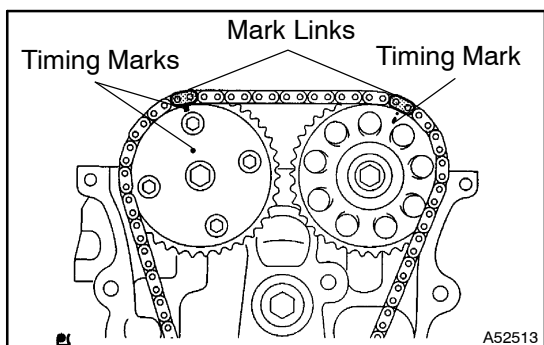
- (2) Using the crankshaft pulley bolt, turn the crankshaft and set the set key on the crankshaft upward.



- (b) Align the mark link (blue or orange colored link) with the timing mark of the crankshaft timing gear.



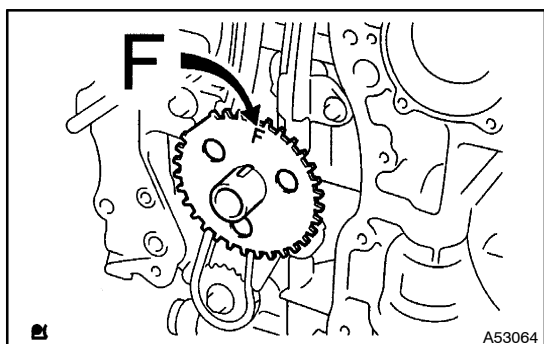
- (c) Using a SST, install the sprocket.  
SST 09309-37010



- (d) Align the mark links (gold or yellow colored links) with the timing marks of the camshaft timing gear, and install the chain.

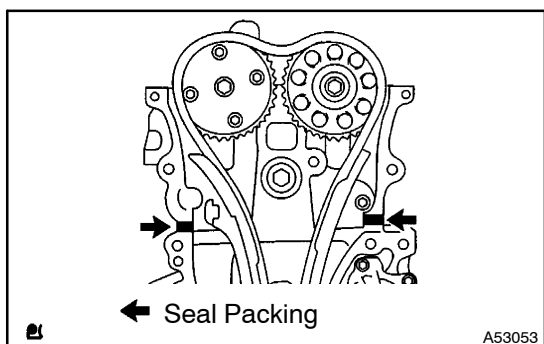
#### 46. INSTALL CHAIN TENSIONER SLIPPER

**Torque: 19 N·m (194 kgf·cm, 14 ft·lbf)**



#### 47. INSTALL CRANKSHAFT POSITION SENSOR PLATE NO.1

- (a) Install the crankshaft position sensor plate the "F" mark facing forward.

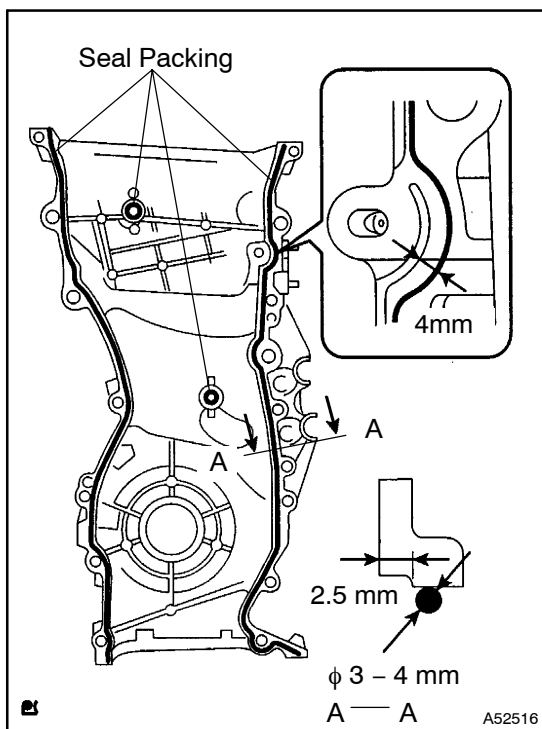


#### 48. INSTALL TIMING CHAIN OR BELT COVER SUB-ASSY

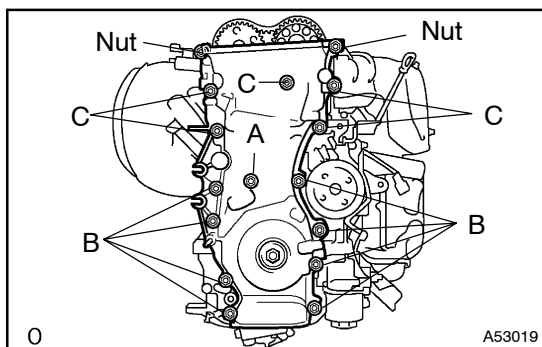
##### NOTICE:

- Remove any oil from the contact surface.
  - Install the chain cover within 3 minutes after applying seal packing.
  - Do not start the engine 2 hours after installing.
- (a) Remove any old packing (FIPG) material and be careful not to drop any oil on the contact surfaces of the timing chain cover, cylinder head and cylinder block.
- (b) Apply seal packing in the shape of bead (Diameter 2 mm (0.099 in.)) as shown in the illustration.
- Seal packing: Part No. 08826-00080 or equivalent**

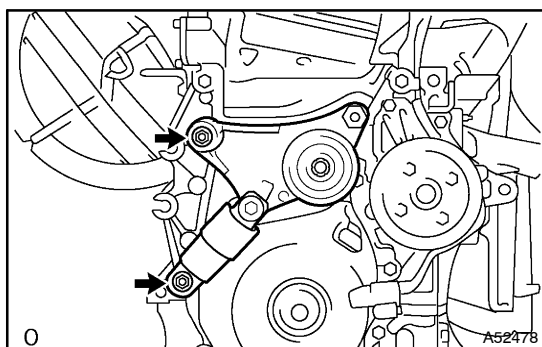




- (c) Apply seal packing in the shape of bead (Diameter 3 – 4 mm (0.118–0.157 in.)) as shown in the illustration .  
**Seal packing: Part No. 08826-00080 or equivalent**



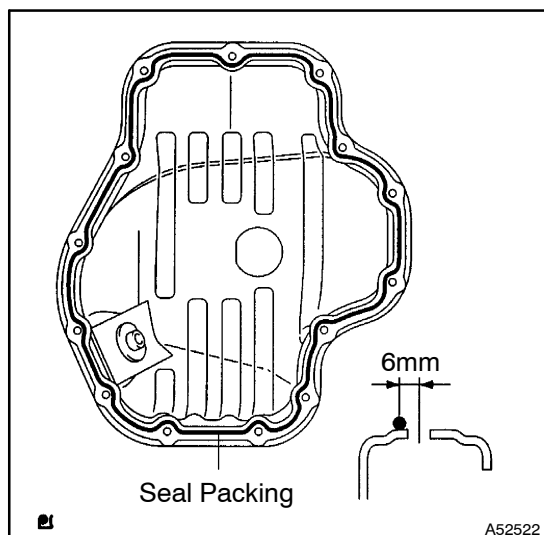
- (d) Install the timing chain cover with the 14 bolts and 2 nuts.  
**Torque:**  
**Bolt A 9.0 N·m (92 kgf·cm, 80 in.·lbf)**  
**Bolt B 21 N·m (214 kgf·cm, 15 ft·lbf)**  
**Bolt C 43 N·m (438 kgf·cm, 32 ft·lbf)**  
**Nut 9.0 N·m (92 kgf·cm, 80 in.·lbf)**  
 (e) Install the stud bolt to the drive belt tensioner.  
**Torque: 10 N·m (102 kgf·cm, 7 ft·lbf)**



#### 49. INSTALL V-RIBBED BELT TENSIONER ASSY

- (a) Install the drive belt tensioner with the bolt and nut.  
**Torque: 60 N·m (607 kgf·cm, 44 ft·lbf)**

#### 50. INSTALL CHAIN TENSIONER ASSY NO.1 (See page 14-53)



## 51. INSTALL OIL PAN SUB-ASSY

### NOTICE:

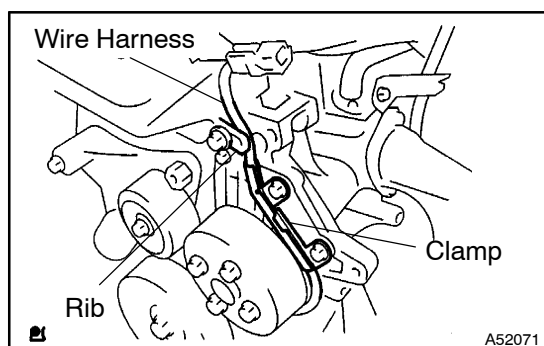
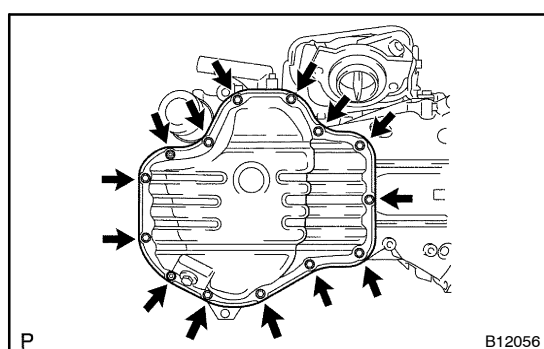
- Remove any oil from the contact surface.
  - Install the oil pan within 3 minutes after applying seal packing.
  - Do not start the engine 2 hours after installing.
- (a) Remove any old packing (FIPG) material and be careful not to drop any oil on the contact surface of the cylinder block and oil pan.
  - (b) Apply seal packing in the shape of bead (Diameter 3 – 4 mm (0.157 in.)) as shown in the illustration, and install the oil pan.

### Seal packing:

**Part No. 08826-00080 or equivalent**

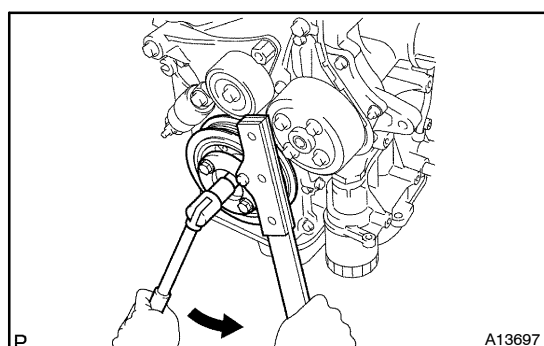
- (c) Install the oil pan with the 12 bolts and 2 nuts.

**Torque: 9.0 N·m (92 kgf·cm, 80 in·lbf)**



## 52. INSTALL CRANK POSITION SENSOR

- (a) Install the bolt and crankshaft position sensor.  
**Torque: 9.0 N·m (92 kgf·cm, 80 in·lbf)**
- (b) Confirm the wire harness of the crank position sensor is placed as shown in the illustration.

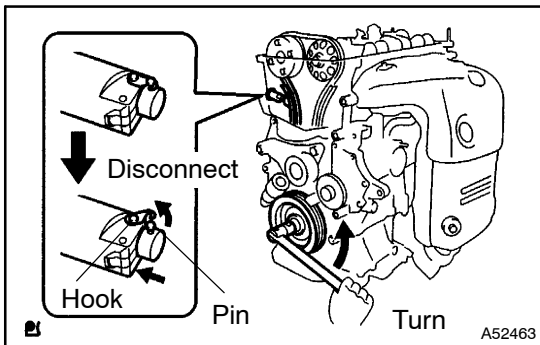


## 53. INSTALL CRANKSHAFT PULLEY

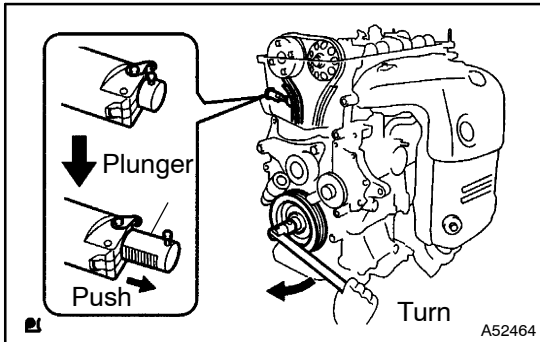
- (a) Align the pulley set key with the key groove of the pulley, and side on the pulley.
- (b) Using SST, install the pulley bolt.

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

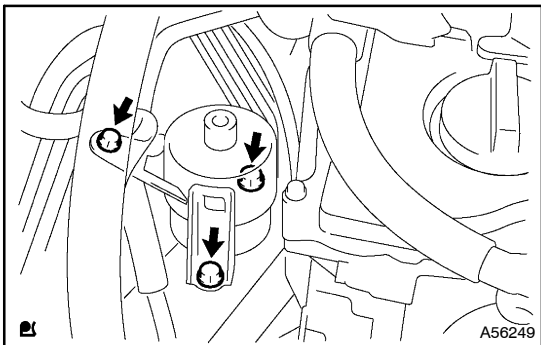
**Torque: 170 N·m (1,733 kgf·cm, 125 ft·lbf)**



- (c) Turn the crankshaft counterclockwise, and disconnect the plunger knock pin from the hook.

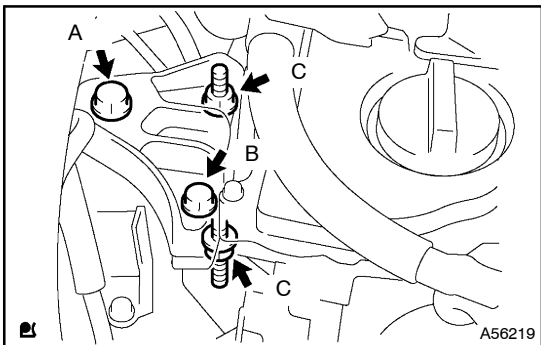


- (d) Turn the crankshaft clockwise, and check that the slipper is pushed by the plunger.



#### 54. INSTALL TRANSVERSE ENGINE ENGINE MOUNTING INSULATOR

- (a) Install the 3 bolts and mounting insulator.  
**Torque: 52 N·m (531 kgf·cm, 38 ft·lbf)**



#### 55. INSTALL ENGINE MOUNTING BRACKET NO.2 RH

- (a) Install the 2 bolts, the nut and engine mounting bracket No. 2 RH.

##### **Torque:**

**Bolt A** 113 N·m (1153 kgf·cm, 83 ft·lbf)

**Bolt B** 52 N·m (531 kgf·cm, 38 ft·lbf)

**Nut C** 52 N·m (531 kgf·cm, 38 ft·lbf)

#### 56. INSTALL CYLINDER HEAD COVER SUB-ASSY

(See [page 14-53](#))

#### 57. INSTALL IGNITION COIL ASSY

**Torque: 9.0 N·m (92 kgf·cm, 80 in·lbf)**

#### 58. INSTALL VANE PUMP ASSY

(See [page 51-10](#))

SST 09249-63010

#### 59. INSTALL GENERATOR ASSY

(See [page 19-7](#))

60. INSTALL FAN AND GENERATOR V BELT  
(See page 14-5)
61. □ INSTALL EXHAUST PIPE ASSY FRONT  
(See page 15-1)
62. INSTALL FRONT WHEEL RH  
Torque: 103 N·m (1,050 kgf·cm, 76 ft·lbf)
63. INSTALL WINDSHIELD WIPER MOTOR ASSY  
(See page 66-9)
64. INSTALL WIPER LINK ASSY  
(See page 66-9)
65. INSTALL FR WIPER ARM RH  
(See page 66-9)
66. INSTALL FR WIPER ARM LH(3 LINK TYPE FR WIPER)  
(See page 66-9)
67. INSTALL FR WIPER ARM LH(4 LINK TYPE FR WIPER)  
(See page 66-9)
68. INSPECT HOOD SUB-ASSY  
(See page 75-1)
69. ADJUST HOOD SUB-ASSY  
(See page 75-1)
70. ADD ENGINE OIL
71. INSPECT OIL LEAK