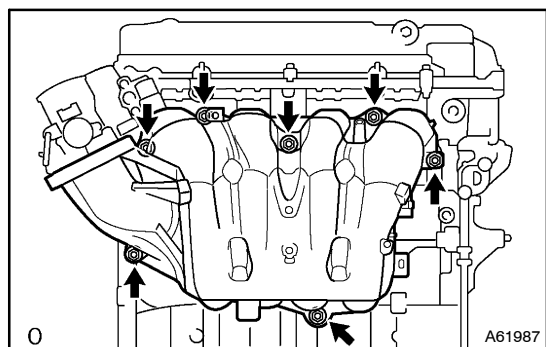


# CYLINDER HEAD GASKET (2AZ-FE)

140UJ-01

## REPLACEMENT

1. WORK FOR PREVENTING GASOLINE FROM SPILLING OUT (See page 11-25)
2. REMOVE FRONT SUSPENSION UPPER BRACE CENTER (W/ FRONT SUSPENSION BRACE UPPER CENTER)
3. REMOVE CHAIN SUB-ASSY  
(See page 14-105)
4. DRAIN COOLANT (See page 16-18)
5. DISCONNECT RADIATOR HOSE OUTLET
6. DISCONNECT UNION TO CONNECTOR TUBE HOSE
7. DISCONNECT HEATER INLET WATER HOSE
8. DISCONNECT FUEL TUBE SUB-ASSY  
(See page 11-25)



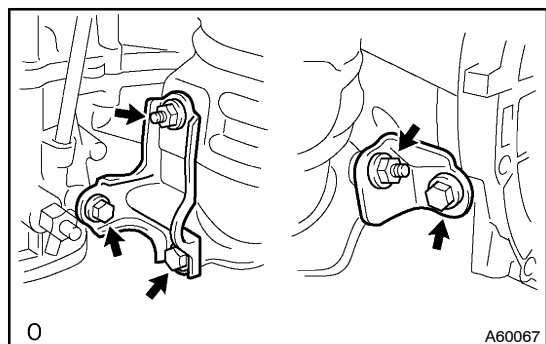
### 9. REMOVE INTAKE MANIFOLD

- (a) Disconnect the 2 water by-pass hoses of the throttle body.
- (b) Remove the 5 bolts, 2 nuts, intake manifold and gasket.

### 10. DISCONNECT ENGINE WIRE

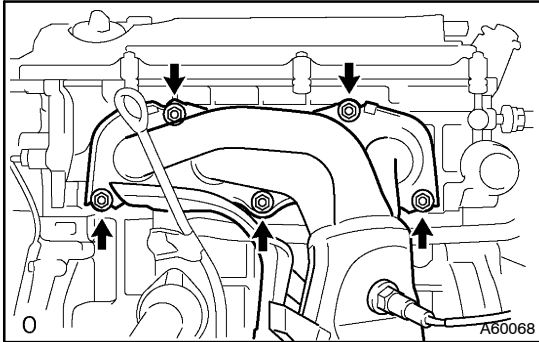
### 11. REMOVE INTAKE MANIFOLD INSULATOR NO.1

### 12. REMOVE EXHAUST MANIFOLD HEAT INSULATOR NO.1

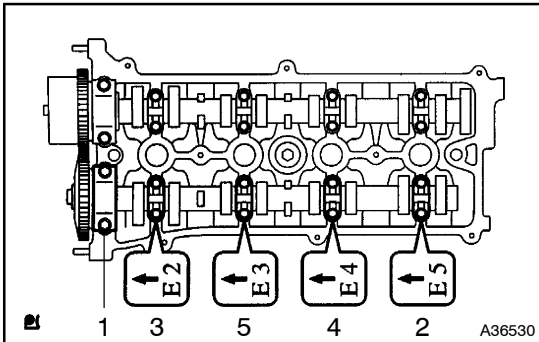


### 13. REMOVE EXHAUST MANIFOLD CONVERTER SUB-ASSY

- (a) Remove the 3 bolts, 2 nuts No.1 and No.2 exhaust manifold stay.

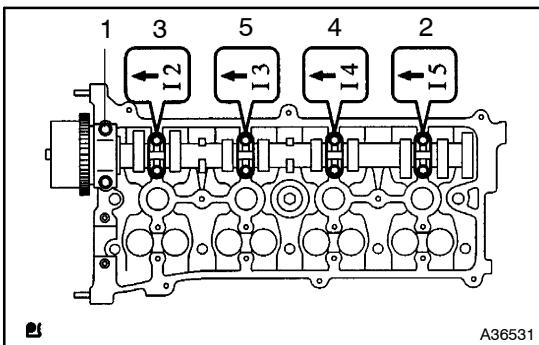


- (b) Remove the 5 nuts, exhaust manifold and gasket.



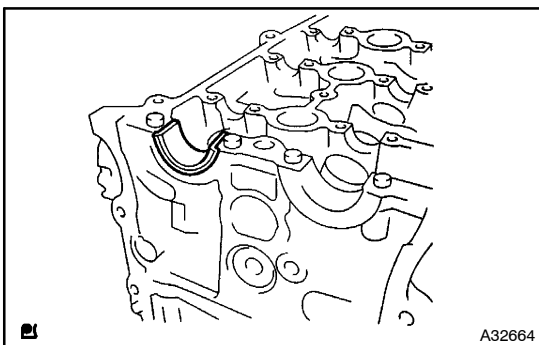
#### 14. REMOVE NO.2 CAMSHAFT

- (a) Remove the No.2 and No.3 camshaft bearing cap in the sequence shown in the illustration.  
(b) Remove the No.2 camshaft.



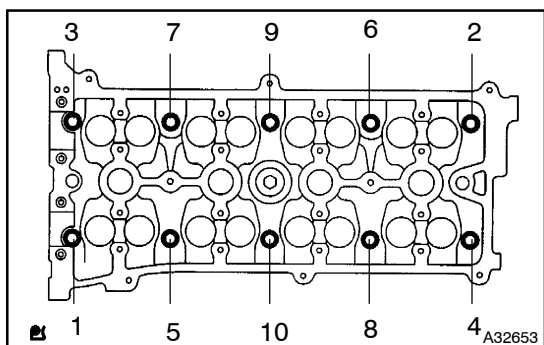
#### 15. REMOVE CAMSHAFT

- (a) Remove the No.1 and No.3 camshaft bearing cap in the sequence shown in the illustration.  
(b) Remove the No.1 camshaft.



#### 16. REMOVE CAMSHAFT BEARING NO.2

#### 17. REMOVE CAMSHAFT TIMING OIL CONTROL VALVE ASSY



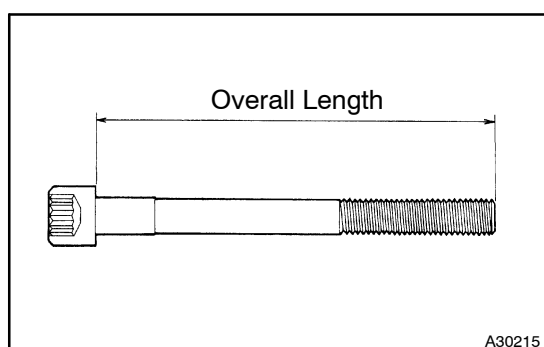
## 18. REMOVE CYLINDER HEAD SUB-ASSY

- (a) Using a 10 mm bi-hexagon wrench, uniformly loosen and remove the 10 cylinder head bolts, in several passes, in the sequence shown. Remove the 10 cylinder head bolts and plate washers.

### NOTICE:

- **Be careful not to drop washers into the cylinder head.**
- **Head warpage or cracking could result from removing bolts and installing in incorrect order.**

## 19. REMOVE CYLINDER HEAD GASKET



## 20. INSPECT CYLINDER HEAD SET BOLT

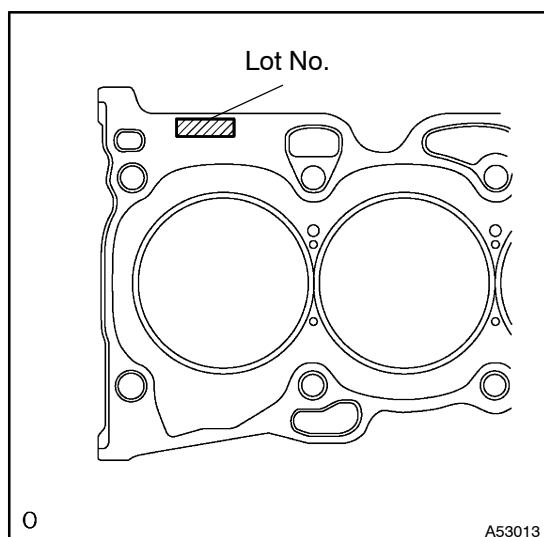
- (a) Using vernier calipers, measure the length of head bolts from the seat to the end.

**Standard bolt length:**

**161.3–162.3 mm (6.350–6.390 in.)**

**Maximum bolt length: 164.2 mm (6.465 in)**

If the length is greater than maximum, replace the bolt.



## 21. INSTALL CYLINDER HEAD GASKET

- (a) Place a new cylinder head gasket on the cylinder block surface with the Lot No. stamp upward.

### NOTICE:

- **Remove any oil from contact surface.**
- **Be careful of the installation direction.**
- **Place the cylinder head quietly in order not to damage the gasket with the bottom part of the head.**

## 22. INSTALL CYLINDER HEAD SUB-ASSY

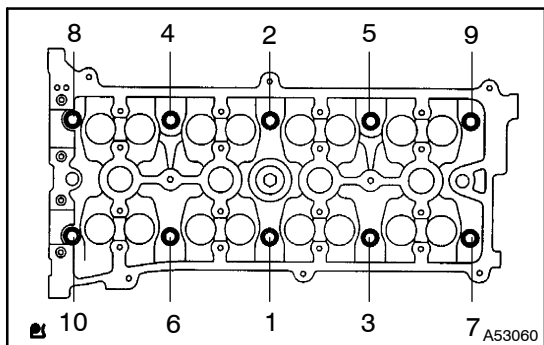
### HINT:

The cylinder head bolts are tightened in 2 progressive steps.

- (a) Apply a light coat of engine oil on the threads and under the heads of the cylinder head bolts.
- (b) Install bolts and plate washers to the cylinder head.

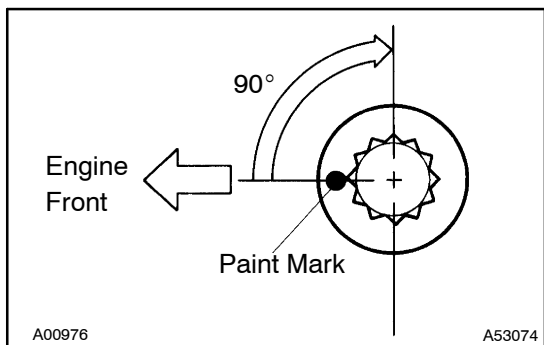
### NOTICE:

**Do not drop the washers into the cylinder head.**



- (c) Using a 10 mm bi-hexagon wrench, install and uniformly tighten the 10 cylinder head bolts and plate washers, in several passes, in the sequence shown.

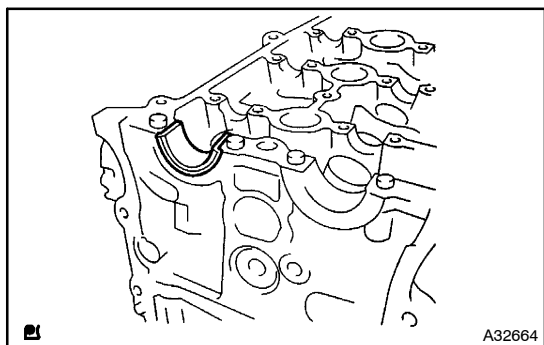
**Torque: 79 N·m (806 kgf·cm, 58 ft·lbf)**



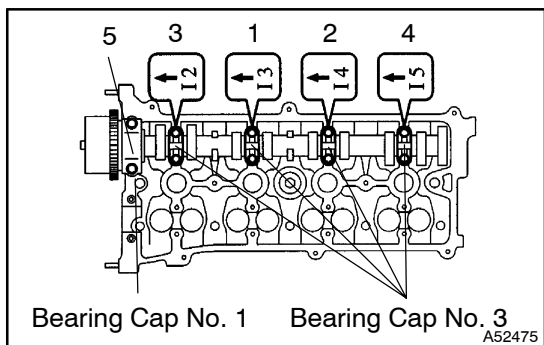
- (d) Mark the front side of the cylinder head bolt with paint.  
 (e) Retighten the cylinder head bolts by 90° in the sequence shown.  
 (f) Check that the paint mark is now at a 90° angle to the front.

## 23. INSTALL CAMSHAFT TIMING OIL CONTROL VALVE ASSY

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



## 24. INSTALL CAMSHAFT BEARING NO.2



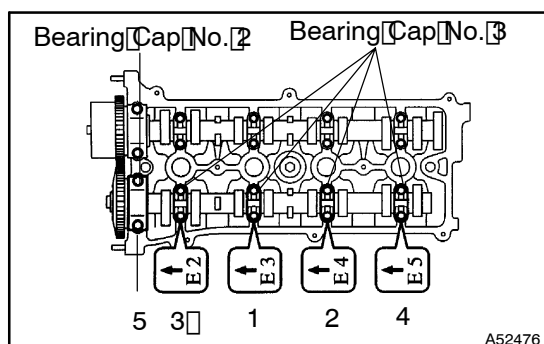
## 25. INSTALL CAMSHAFT

- (a) Tighten the camshaft bearing cap No.1 and No.3 as the sequence shown in the illustration.

**Torque:**

**Bearing cap No.1 30 N·m (301 kgf·cm, 22 ft·lbf)**

**Bearing cap No.3 9.0 N·m (92 kgf·cm, 80 in·lbf)**



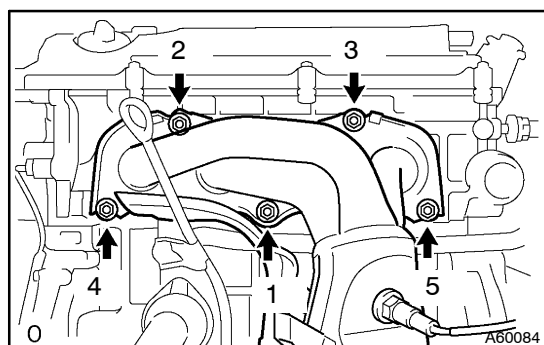
## 26. INSTALL NO.2 CAMSHAFT

- (a) Tighten the camshaft bearing cap No.2 and No.3 as the sequence shown in the illustration.

**Torque:**

**Bearing cap No.2** 30 N·m (301 kgf·cm, 22 ft·lbf)

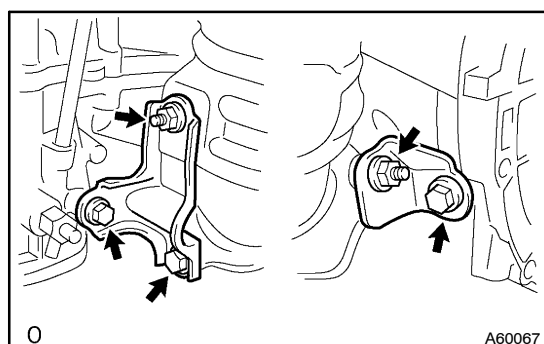
**Bearing cap No.3** 9.0 N·m (92 kgf·cm, 80 in·lbf)



## 27. INSTALL EXHAUST MANIFOLD CONVERTER SUB-ASSY

- (a) Install a new gasket and the exhaust manifold with the 5 nuts.

**Torque:** 37 N·m (378 kgf·cm, 27 ft·lbf)

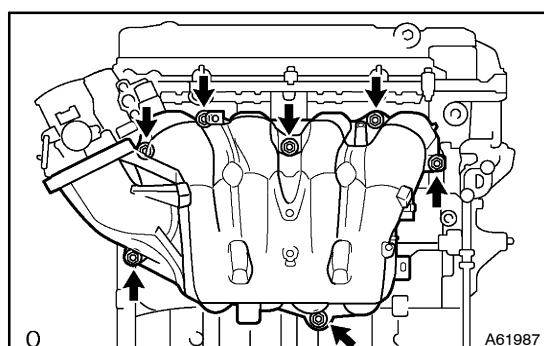


- (b) Install the No.1 and No.2 exhaust manifold stay with the 3 bolts and 2 nuts.

**Torque:** 44 N·m (449 kgf·cm, 32 ft·lbf)

## 28. INSTALL EXHAUST MANIFOLD HEAT INSULATOR NO.1

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



## 29. INSTALL INTAKE MANIFOLD

- (a) Install a new gasket and the intake manifold with the 5 bolts and 2 nuts.

**Torque:** 30 N·m (306 kgf·cm, 22 ft·lbf)

## 30. CONNECT FUEL TUBE SUB-ASSY

(See page 1-25)

## 31. INSTALL CHAIN SUB-ASSY

(See page 4-105)

SST 09309-37010

CAMRY REPAIR MANUAL (RM915E)

- 32. ADD ENGINE OIL
- 33. □ ADD COOLANT (See page 16-18)
- 34. INSPECT OIL LEAK
- 35. □ CHECK ENGINE COOLANT LEAK (See page 16-13)
- 36. □ INSPECT FUEL LEAK (See page 11-29)
- 37. □ INSPECT CHECK IDLE SPEED AND IGNITION TIMING (See page 14-66)
- 38. □ INSPECT CO/HC (See page 14-66)