

## SECTION 2

# TROUBLE SHOOTING

### NOTICE:

Refer to the Section "2. TROUBLE SHOOTING" of 99500-84000-01E SERVICE MANUAL (ALTO) for necessary information concerning the subject of this section.

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## SECTION 3

# ENGINE

### NOTICE:

For the items not found in this section, refer to the Section "3. ENGINE" of 99500-84000-01E SERVICE MANUAL (ALTO).

### ENGINE DISASSEMBLY

When removing camshaft timing belt pulley, use special tools "A" and "B" to lock camshaft as shown below.

"A" : Camshaft lock holder  
(09930-40113)

"B" : Camshaft lock holder  
attachment  
(09930-40120)

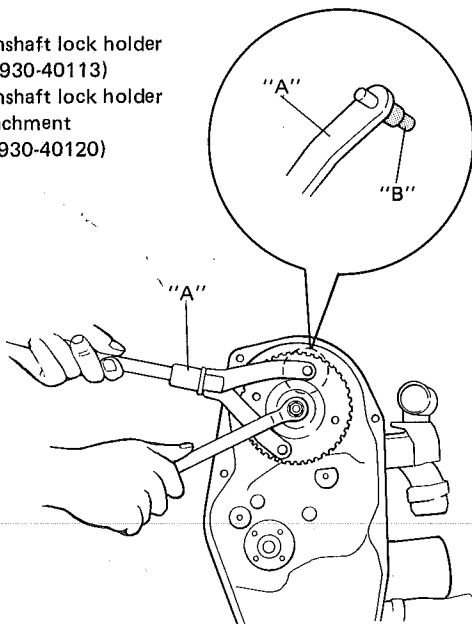


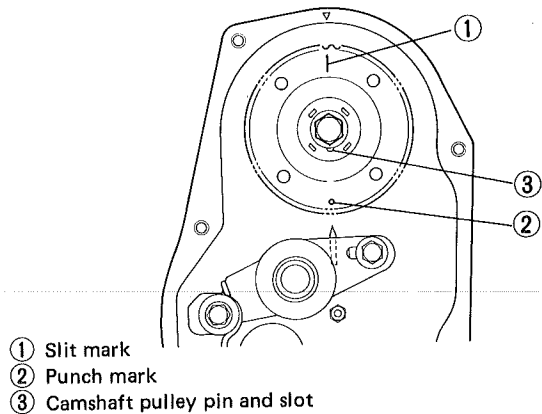
Fig. 3-1

### ENGINE REASSEMBLY

**Camshaft and crankshaft timing belt pulleys**  
Make sure that pulley pin is installed into camshaft, and direct marks ① and ② on camshaft pulley to timing belt outside cover side and install it.

### CAUTION:

Before installing pulley as above, check to be sure that crankshaft keyway "A" is in the 50° – 70° range. (Refer to fig. 3-3)



- ① Slit mark
- ② Punch mark
- ③ Camshaft pulley pin and slot

Fig. 3-2

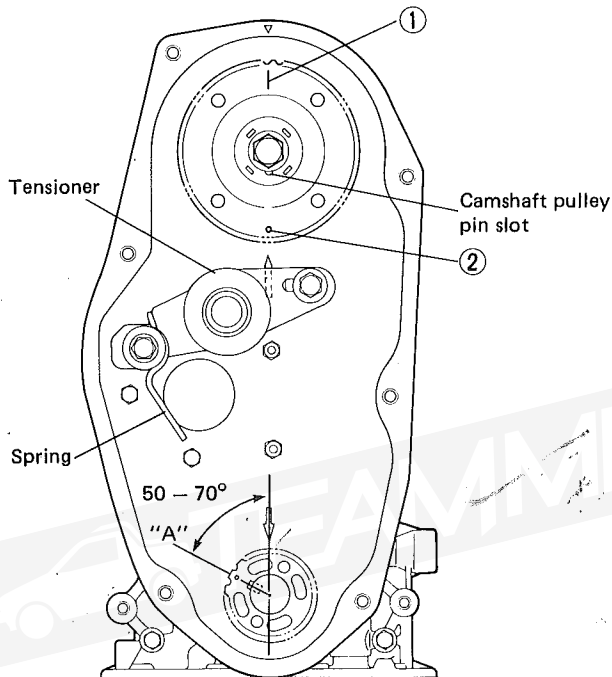
## Timing belt

A certain sequence must be followed when installing timing belt. Here's the sequence:

- 1) Put tensioner and spring together before installing them as one to timing belt cover. Tighten bolts to the extent that tensioner can be moved by hand easily.

### NOTICE:

When carrying out above job, make sure to loosen each lock nut and then each valve clearance adjusting screw so that camshaft and pulley can rotate freely.



- ① Slit mark
- ② Punch mark

Fig. 3-3

- 2) Timing belt inside cover has an embossed mark ④.

Turn camshaft timing belt pulley to the position where mark ① meets mark ④.

- 3) Inside cover has another embossed mark ⑤. Turn crankshaft to match key-way ⑥ and punch mark ⑦ of crankshaft timing belt pulley to mark ⑤.

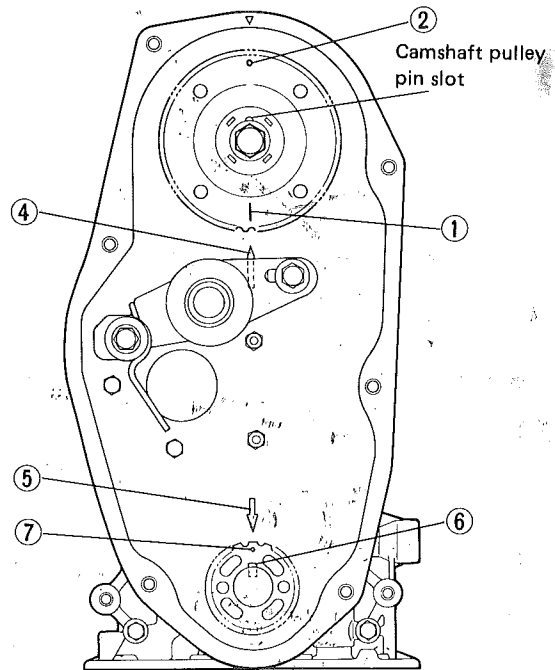


Fig. 3-4

- 4) You now have two pulleys correctly related to each other in angular sense. Under this condition, put on timing belt in such a way that portion of belt indicated as "A" is free of any slack.

### NOTICE:

When installing timing belt, match arrow mark (⇒) on timing belt with rotating direction of crankshaft.

- 5) After putting belt, hook spring on water pump securing bolt as shown in below figure. The spring, with its own tension, adjust belt tension to specified value. Rotate crankshaft clockwise fully twice and tighten bolt ⑧ first and then bolt ⑨.

| Tightening torque for tensioner bolts | N·m     | kg·m      | lb·ft       |
|---------------------------------------|---------|-----------|-------------|
|                                       | 15 - 23 | 1.5 - 2.3 | 11.0 - 16.5 |

### CAUTION:

After setting belt tensioner, turn crankshaft 2 rotations in clockwise direction to see if marks ① ② ④ ⑤ ⑦ and crankshaft keyway ⑥ locate themselves on the same straight line. If they do not line up straight, foregoing procedure must be repeated to satisfy this requirement.

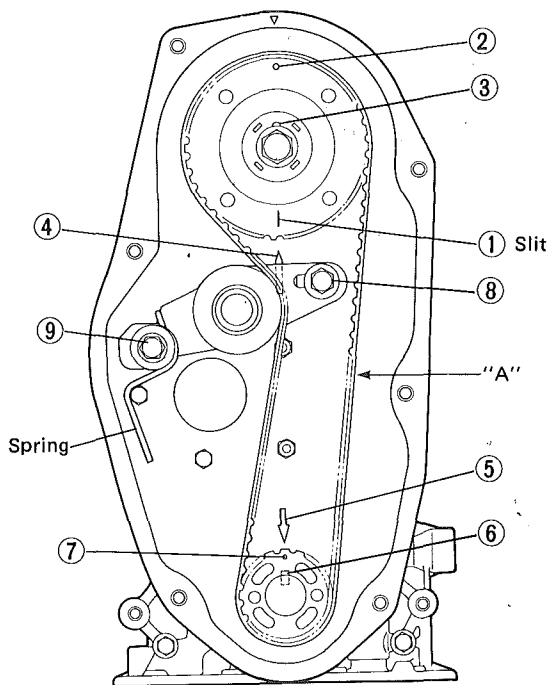


Fig. 3-5

Clearance "D" of each slit of the torque rod big rubber side should exceed 2 mm (0.079 in). If not, loosen nut B and adjust torque rod length "C" to obtain correct clearance.

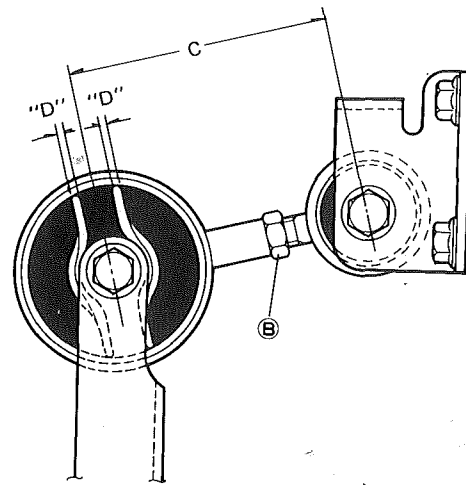


Fig. 3-7

## ENGINE MOUNTING

### Engine mounting torque rod

Install torque rod between engine and body using care for the following. Its improper installation may cause abnormal vibration and noise.

When tightening bolts ③, slide and adjust them in oblong holes A so that torque rod is at right angle to bolt ②.

Tighten bolts ③ before tightening bolts ① and ②.

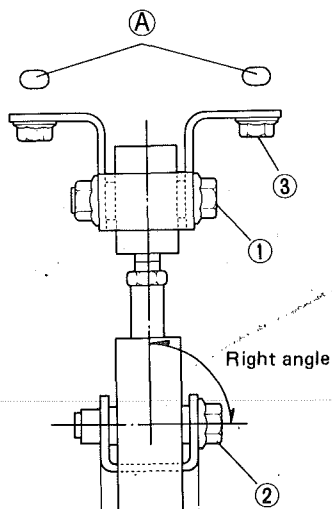


Fig. 3-6

