Valve

2. Insert the valves, with their stems coated with high quality molybdenum disulfide lubricant (SUZUKI MOLY PASTE) all around and along the full stem length without any break. Similarly oil the lip of the stem seal.

CAUTION
When inserting each valve, take care not to damage the lip of the stem seal.

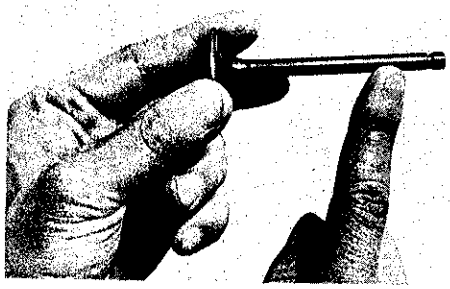

Fig. 7-36.

Valve springs

3. Position valve springs in place, making them rest on lower spring seat ① by their closed-pitch ends ②. Both springs, inner ③ and outer ④, have varied coil pitches: coil turns are progressively closes from one end to the other. Large-pitch portions are indicated as ⑤: small-pitch portions as ⑥.

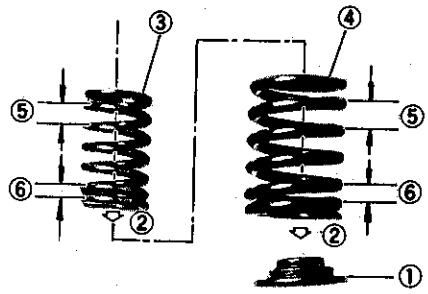

Fig. 7-37.

Valve cotter to valve stem

4. Put on the upper valve seat and, using the valve lifter, press down the springs, fit the two cotter halves to the stem end, and release the lifter to allow the cotter ① to wedge in between seat and stem. Be sure that the rounded lip ② of the cotter fits snugly into the groove ③ in the stem end.

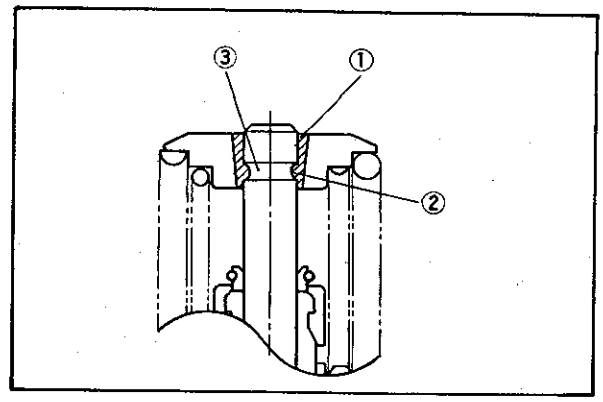

Fig. 7-38.

5. Oil each valve tappet and the bore in which it slides. Push the tappet into the bore with your fingertips. Only a light force is required to push it in.

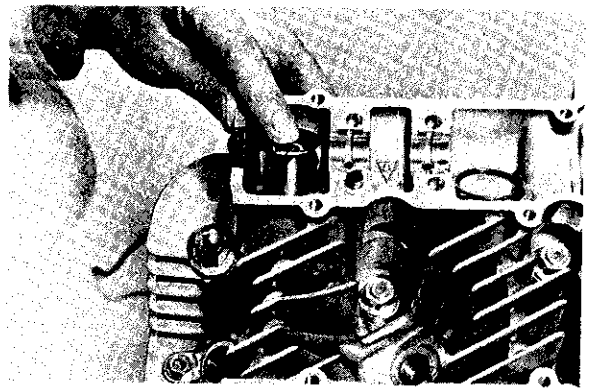

Fig. 7-39.

Cylinder head

- After thus installing the intake and exhaust valves in the cylinder head, mount the head on the cylinder block as follows:
- Be sure to replace cylinder head gasket by new one to prevent gas leakage. Gasket is installed with the wider side of metal ring around cylinder opening toward the cylinder.

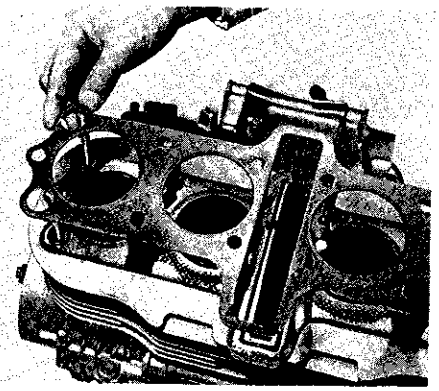

Fig. 7-40.

- Install the four crown nuts and copper washers in the positions Ⓐ (oil passages) indicated.
- With the head snugly seated on the cylinder block, secure it by tightening the twelve 8-mm nuts sequentially in the ascending order of numbers.
- Tighten the twelve 10-mm nuts to the specified torque with a torque wrench sequentially in the ascending order of numbers, when the engine is cold.

Cylinder head nut tightening torque	3.7 kg-m (27.0 lb-ft)

- After firmly tightening the 12 nuts, insert three 6-mm bolts (indicated as B) and tighten them to the following torque value:

Cylinder head bolt tightening torque	0.9 ~ 1.4 kg-m (6.5 ~ 10.0 lb-ft)

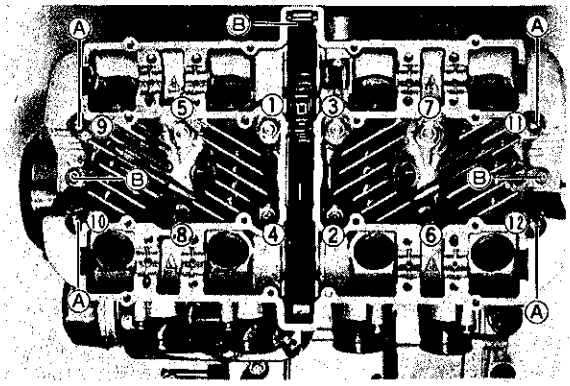

Fig. 7-41.

Sprockets on camshafts

- Exhaust camshaft has its own sprocket, as does the intake camshaft. Do not confuse the two sprockets.

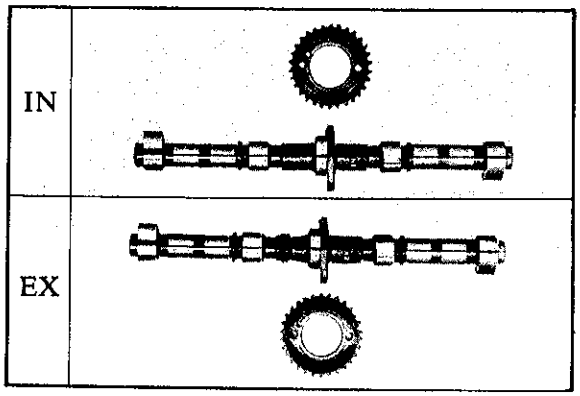

Fig. 7-42.

- It is very important that each sprocket be positioned angularly on its camshaft as illustrated. Its correct position is determined by arrow mark "3" (on INTAKE sprocket) or arrow marks "1" and "2" (on EXHAUST sprocket) located (as shown) in reference to the notch ① in the camshaft end.
- Apply THREAD LOCK SUPER "1361A" to the threads of Allen-head bolts, and tighten them to the following torque value:

99104-32020	THREAD LOCK SUPER "1361A"

Camshaft sprocket bolt tightening torque	0.8 ~ 1.1 kg-m (6.0 ~ 8.0 lb-ft)

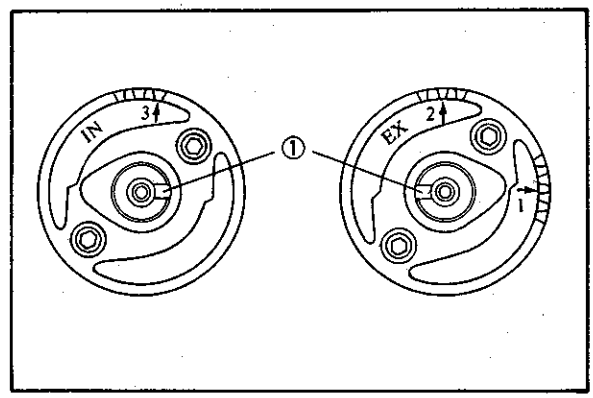

Fig. 7-43.

Positioning camshaft in place

NOTE:
Just before placing the camshaft on the cylinder head, apply high quality molybdenum disulfide lubricant (SUZUKI MOLY PASTE: 99000-25140) to its journals, fully coating each journal with the paste taking care not to leave any dry spot. Apply engine oil to the journal bearings.

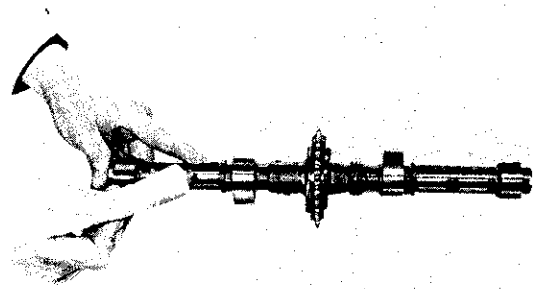

Fig. 7-44.

- The exhaust camshaft can be distinguished from that of the intake by the embossed letters "EX" (for exhaust) as against letters "IN" (for intake). Similarly, the right end can be distinguished "R" from the left end "L" of each camshaft.

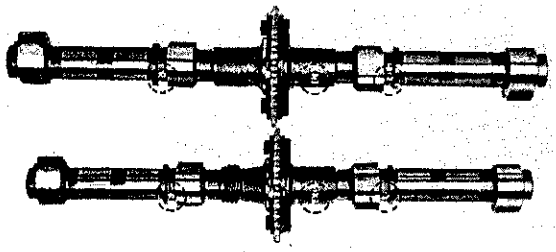

Fig. 7-45.

- While holding down the timing chain, rotate the crankshaft in normal running direction to bring the "T" mark on Nos. 1 and 4 side (of the advance governor) to the timing mark. Use a 19-mm wrench to turn the crankshaft.

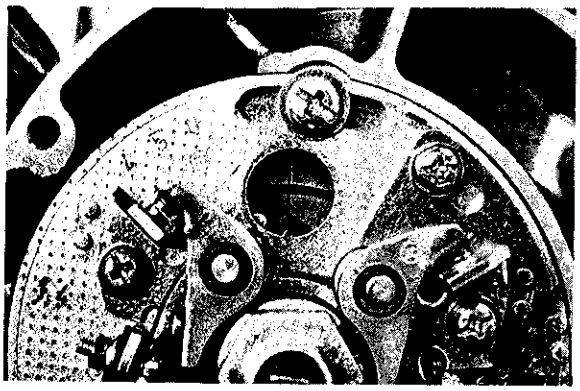

Fig. 7-46.

CAUTION:
To turn over the crankshaft, torque nut ① with a 19-mm wrench. Never try to rotate the crankshaft by putting a 12-mm wrench to bolt ②.

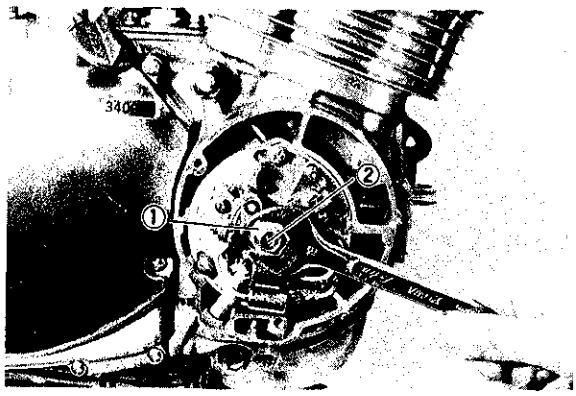

Fig. 7-47.

- With "T" mark accurately lined up with the timing mark, hold the crankshaft steady and lightly pull up the chain to take up the sag between the crank sprocket and exhaust sprocket.

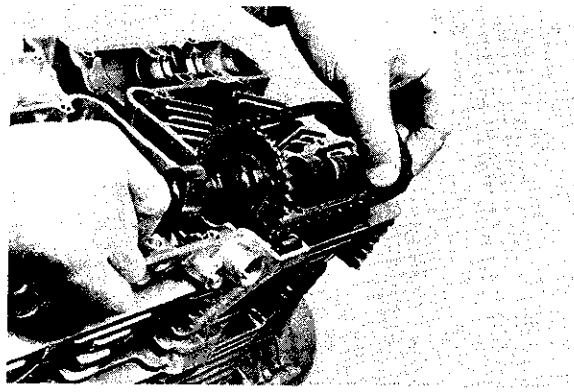

Fig. 7-48.

- Exhaust sprocket bears an arrow mark "1" indicated as ①. Turn over the exhaust camshaft so that the arrow points flush with the joint surface of the cylinder head. Engage the timing chain with this sprocket.

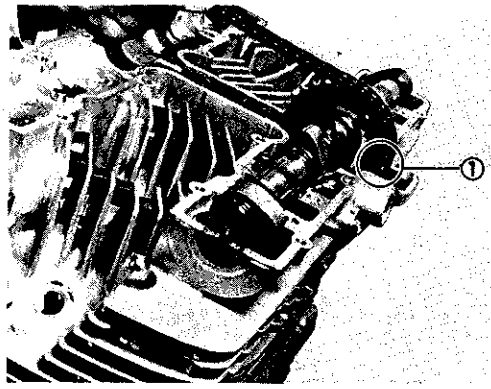

Fig. 7-49.

- The other arrow mark "2" is now pointing straight upward. Count the chain roller pins toward the intake camshaft, starting from the roller pin directly above this arrow mark "2" and ending with the 20th roller pin. Engage the chain with intake sprocket, locating the 20th pin at and above the arrow mark "3" on the intake sprocket.

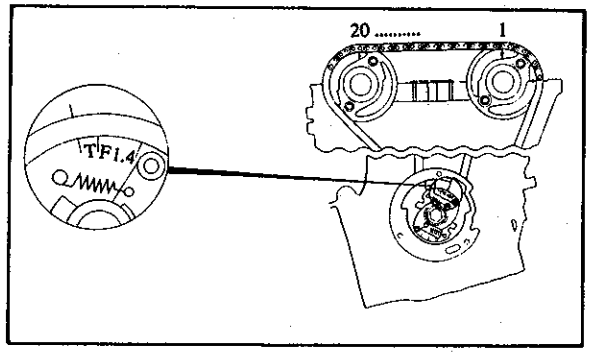

Fig. 7-50.