

Fig. 3.30 Camshaft

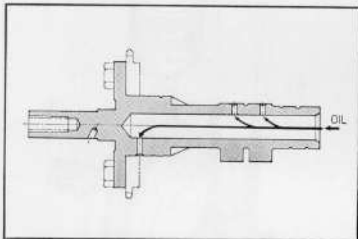
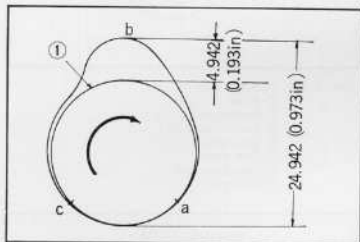


Fig. 3.31 Camshaft construction (Oil passage)

Fig. 3.32 Cam Contour  
① Base circle

## 2. Camshaft

In a four stroke cycle engine, the camshaft makes one revolution for every two revolutions of the crankshaft. The power to drive the camshaft is through the cam chain driven by the sprocket.

The lubricating oil is pressure-fed into the right side of the camshaft and is forced out of the holes in the cam to lubricate the cam surfaces, the rocker arms and the slippers. The camshaft is made of special cast steel with the cam and the bearing area being precisely ground after heat treatment. It is supported at both ends by the bearings in the cylinder head. A cam sprocket is installed on the left ends of the camshaft with 6 mm bolts and is driven at one half crankshaft speed by the timing sprocket press-fitted to the crankshaft end, through the light weight endless chain. (Fig. 3.30, 31)

The standard tappet clearances measured cold are 0.05 mm (0.002 in) for both the inlet and exhaust. This is the clearance measured when the rocker arm is against the heel of the cam lobe; in order to obtain this condition, the crankshaft must be rotated so that the "T" timing mark on the dynamo rotor is aligned with the timing mark on the stator; otherwise, the rocker arm may be on the lifting slope of the cam.

The opening and closing of the valve is determined by the piston stroke and is timed to the crankshaft rotation. During the inlet cycle, the inlet valve is opened and closed. During the exhaust cycle, the same opening and closing sequence takes place with the exhaust valve.

The open angle between the opening and closing is the same as the piston travel, however, since it is the same as the crankshaft rotation, it is expressed in terms of angular travels.

When point "a" in the Fig. 3.32 passes beyond the rocker arm, the vertical movement of the valve increases, and at a certain point where the cam lobe comes to a peak, the movement of the valve slows down and comes to a halt at point "b" on the cam.

The tappet clearance is adjusted when the rocker arm is at the exposed section of the heel of the cam between points "c" and "a".