2) Oil Pump

a. General Construction and Operation

Crankshaft rotational speed is reduced by the oil pump pinion on the right end of the crankshaft, meshing with the oil pump gear on the oil pump shaft. The other end of the shaft turns the pump worm, which meshes with the worm gear teeth cut into the center portion of the plunger. The plunger spring pushes the plunger follower against the plunger. In this manner the plunger is kept against the camshaft, and as the plunger is turned, its cam face riding on the camshaft causes it to reciprocate. The follower, which is joined to the plunger by a mortise-and-tenon-like joint, follows plunger movement, turning and reciprocating to pump oil.

Since there are two high points on the plunger face cam, there are two complete pumping cycles for each single revolution of the plunger.

The rate at which oil is pumped depends on the speed of plunger rotation, which varies with engine speed, and on the position of the control cam, which varies with throttle opening.

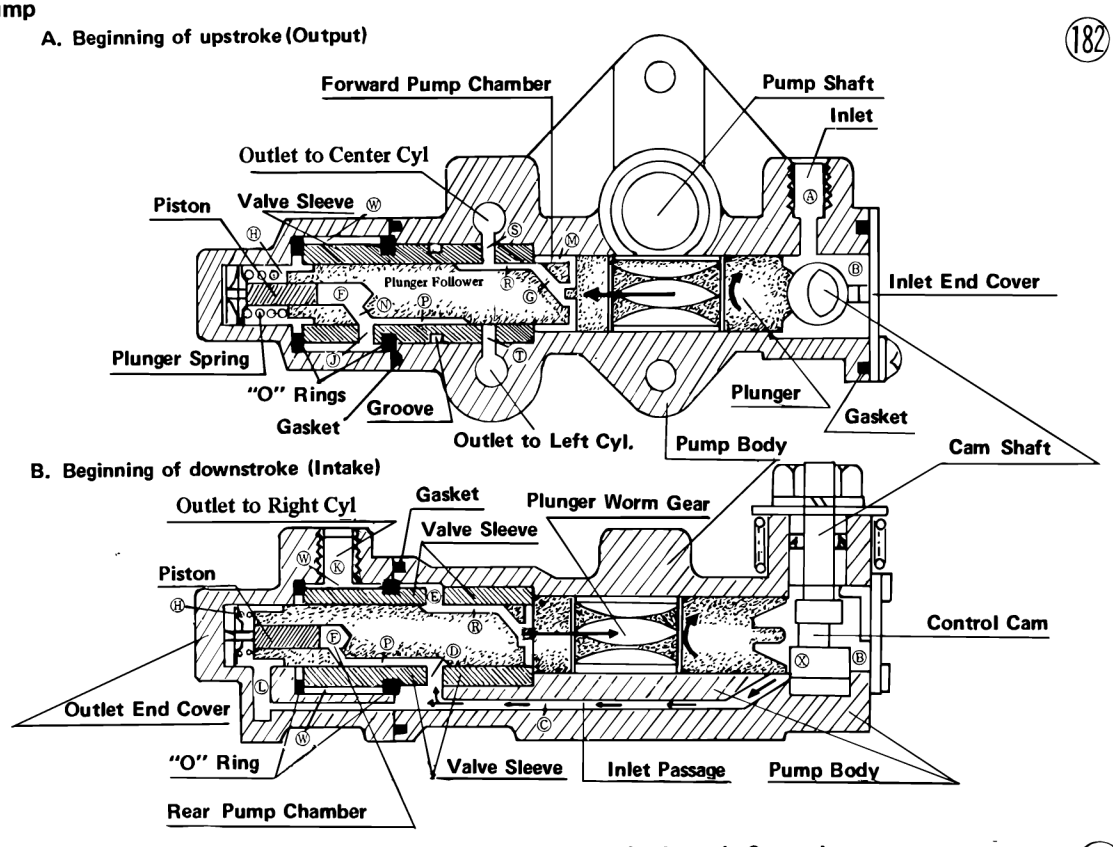
b. Plunger/Cam

The pump lever is connected by a control wire to the throttle grip, so that as the grip is twisted the set lever moves with it and turns the camshaft.

When the lowest part of the control cam is facing the plunger as shown in "D", the plunger tip never touches the control cam and the cam on the plunger face can ride at point Ⓧ from its highest to lowest point – the distance between the arrows. Accordingly, maximum plunger stroke occurs at maximum throttle opening.

In Fig. 183 "C" the motorcycle is idling with the throttle grip fully closed, and the highest part of the control cam is toward the plunger. When the plunger moves down, the plunger tip hits the control cam and stops the plunger before it reaches the bottom of its cam, thus preventing the plunger from making a full stroke. At this time the plunger can only move the distance between the arrows in Figure 183 "C".

Oil Pump



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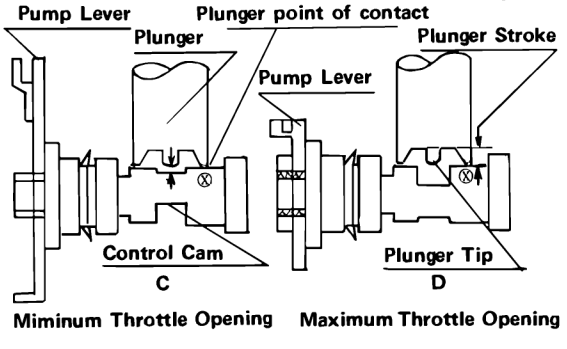
Stroke Length Control



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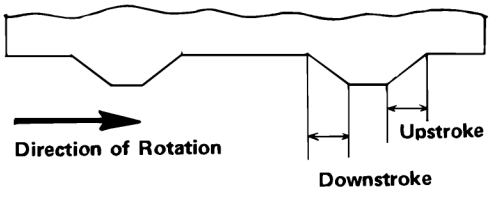
Plunger Cam Face



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