Chapter 7

SPILL BURNER AND SHUT-OFF COCK, TYPE SCC. 1/1A

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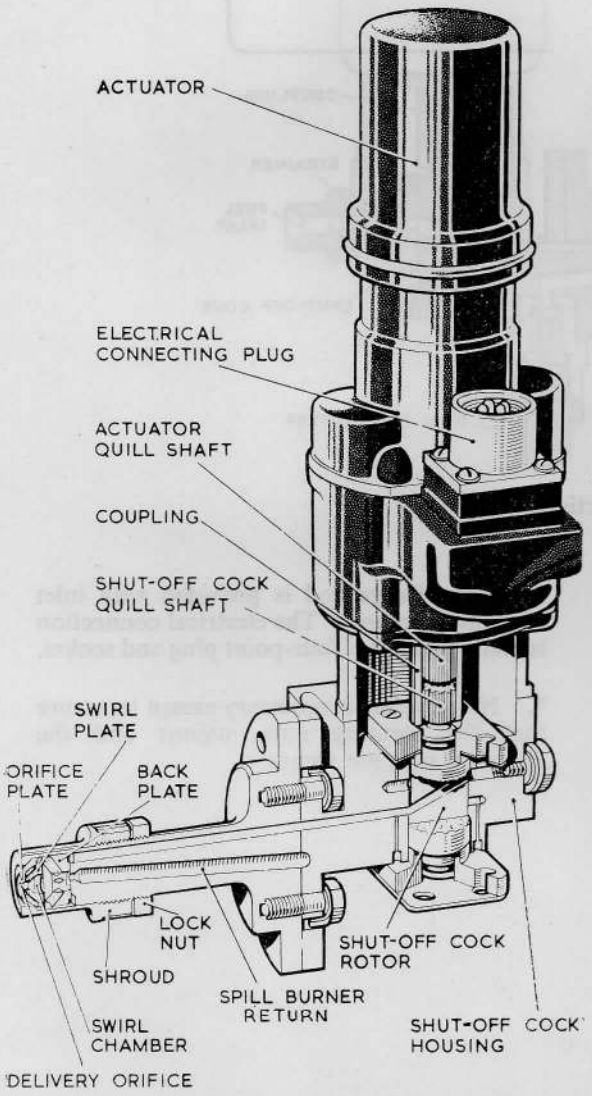

Fig. 1. Sectional view

Description

1. The main feature of the spill type of burner is that at low engine speeds or high altitude conditions when more fuel is being supplied to the burners than is required, the excess fuel is spilled to the circulating pump in the system. It is by this means that a sufficiently high fuel pressure is maintained to give good atomization at very low fuel flows.

2. The electrically actuated shut-off cock is operated when the engine is being started or stopped. It assists the starting by keeping the fuel line primed as near as possible to the burner.

3. The burner is of the Simplex type, having a swirl chamber fed by tangential ports. The atomizer comprises a back plate with supply and spill ports, a swirl plate, and an orifice plate in which is formed the delivery orifice. A strainer is fitted in the inlet to the burner, and a spring-loaded plate valve in the spill fuel outlet prevents any reversal of flow.

4. The shut-off cock is of the rotary type and is situated in the inlet passage. It is operated by the actuator through splined shafts and a female coupling.

5. Operation of the actuator opens the shut-off cock and allows fuel to enter the burner and to pass through the back plate and swirl plate into the swirl chamber. It then passes through the delivery orifice as a finely atomized conical spray. The angle of the spray formation varies according to the ratio of fuel supplied to fuel required for combustion. Thus, at a constant inlet flow, the spray angle would be widest at the

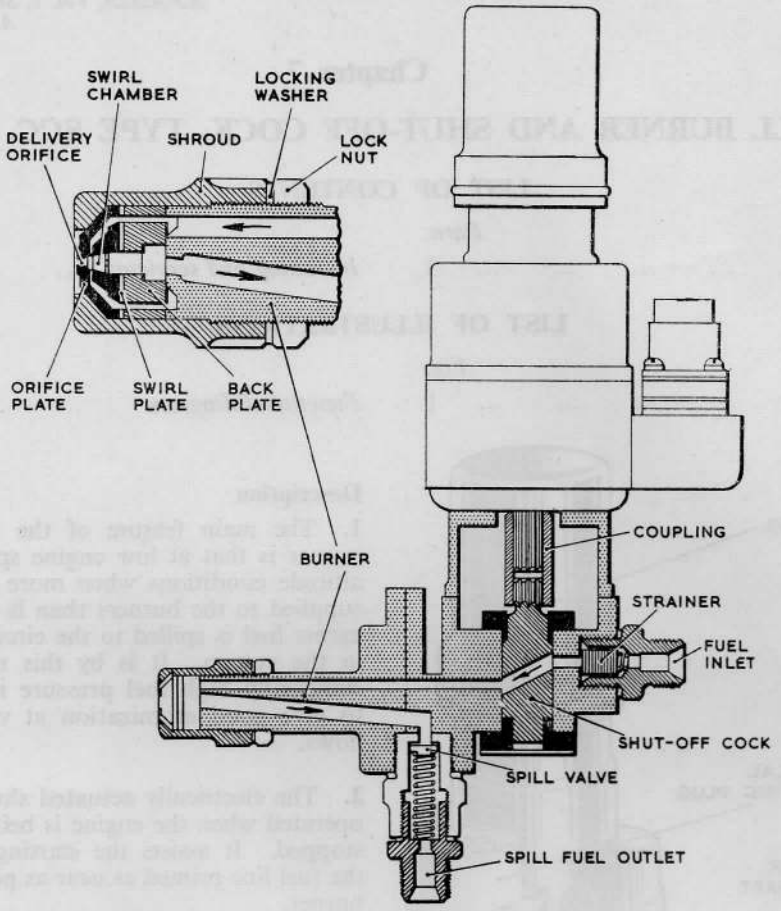

Fig. 2. Functional diagram

minimum value of fuel consumed and, therefore, the quantity of fuel being consumed is dependent upon the ratio of the fuel required and the fuel spilled.

Installing and servicing

6. The unit is secured in position by its mounting flange and is provided with inlet and outlet unions. The electrical connection is made through a four-point plug and socket.

7. No servicing is necessary except to ensure that the securing nuts, unions and the electrical plug are secure.