Chapter 6

TEMPERATURE CONTROL UNIT, TYPE TC.2/2A

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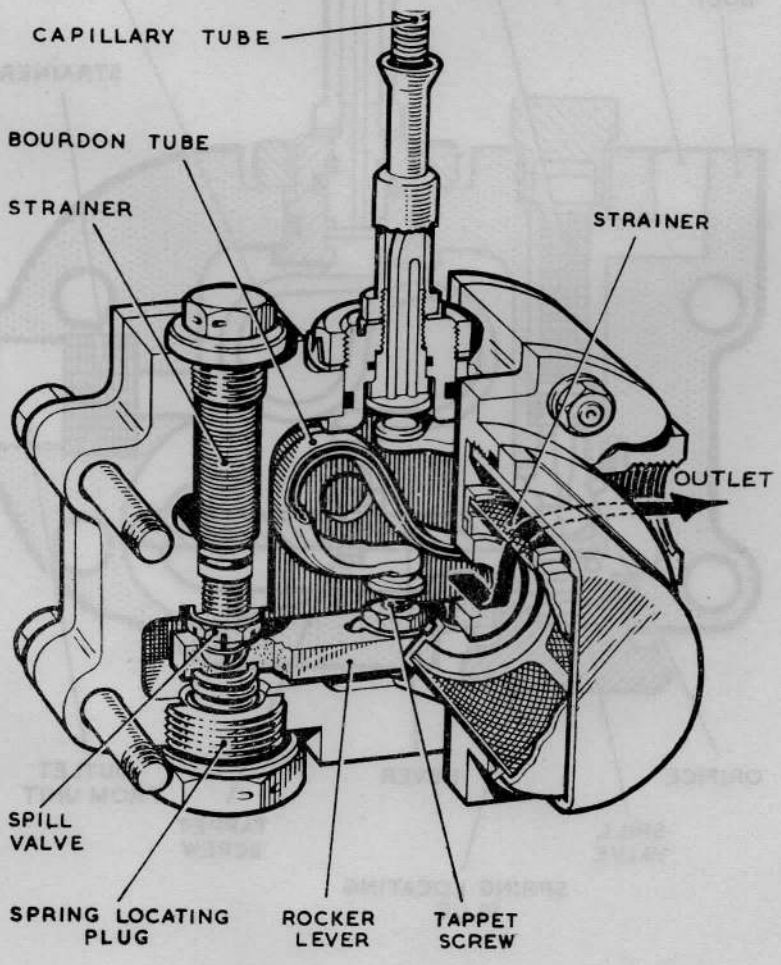

Fig. 1. Sectional view

Description

1. This temperature control is included in the fuel systems of small turbine engines of aircraft auxiliary power plants. By controlling the flow of fuel to the burners it prevents the engine exceeding its maximum temperature.

2. The unit consists of a half-ball valve and orifice which is controlled by a spring-loaded rocker lever. The lever is pivoted at one end and is recessed at the other to carry the half-ball valve. Midway along the lever is an adjustable tappet which contacts the free end of a Bourdon tube. The fixed end of the tube

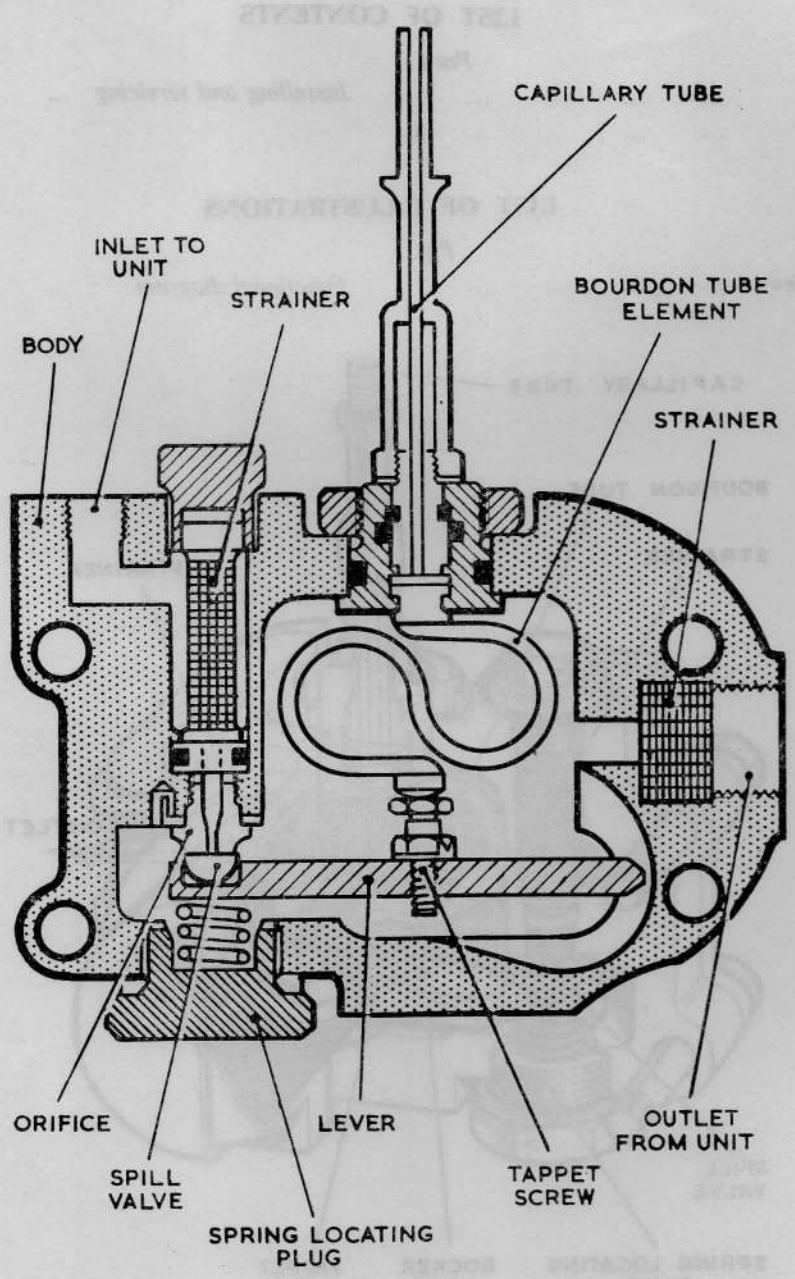

Fig. 2. Functional diagram

is connected by a capillary to a mercury-vapour thermometer bulb situated in the exhaust cone of the engine.

Operation

3. Fuel from the burner supply line is fed to the temperature control unit, which it enters through a strainer and is then held by the spill valve.

4. When the temperature in the exhaust cone reaches a certain figure, the vapourisation of mercury in the bulb exerts a force which, through the capillary, expands the Bourdon tube and opens the spill valve. This allows fuel from the burner supply to escape to the inlet side of the fuel pump, and thereby reduce engine speed and temperature. The temperature at which the unit will operate is set by means of the tappet.

Installing and servicing

5. The unit is secured to the power plant by four bolts which pass through holes in the body. The capillary tube is screwed into the top of the unit and is sealed and locked. The inlet and outlet fuel connections are standard pipe fittings.

6. No servicing of the unit is necessary apart from checking that the attachment bolts and the connections are secure.

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