Chapter 7

GOVERNOR, TYPE DDG.1/1A

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LIST OF ILLUSTRATIONS

Introduction

1. The airborne auxiliary power plant to which this governor is fitted, operates at a constant speed and does not have a throttle valve. The speed is therefore controlled by the governor, and this functions at two settings or datums. The lower datum is used for normal running conditions and the higher datum for occasions when the power plant is required to start the main engines of the aircraft.

Note . . .

On later type power plants, the lower datum valve is rendered inoperative, the solenoid removed, and the speed is then governed only at the higher setting. This is achieved by fitting a blanking plate in place of the solenoid, replacing a fuel transfer bobbin with a solid bobbin, and fitting a balance weight to the rotor in place of the lower datum half-ball valve, orifice and spring.

Description

2. The governor has one connection to the burner supply line and one to the inlet side of the high pressure fuel pump. The rotor receives its drive through gears from the high pressure fuel pump.

3. Spaced around the body of the rotor are two half-ball valves which are controlled by leaf springs. Each valve has an adjusting screw to allow it to be set to the required datum. High pressure fuel passes along the axis of the rotor and passes through transfer bobbins.

4. A shut-off cock is fitted in the supply line to the lower-datum valve. The shut-off cock is spring-loaded and is actuated, through a push rod, by a solenoid. Connections to the solenoid are made through a plug mounted on a bracket on the side of the solenoid case.

Operation

5. The double-datum valves on the rotor are set to open at speeds of 46000 and 50000 rev/min. The leaf springs are biased to open each valve at a certain centrifugal load as the rotor speed increases. The valve set at the higher datum is supplied with fuel from the burner line whilst the lower-datum valve receives its supply via the solenoid operated

shut-off cock which remains open unless the solenoid is energized.

6. When the power plant is started and it reaches the required speed, the lower-datum valve opens and allows fuel to escape to the inlet side of the fuel pump, after which the power plant speed will continue to be governed at that setting.

7. If and when the solenoid is energized, the shut-off cock will close and isolate the lower-datum valve. This will allow the speed to increase until it causes the higher-datum valve to open and bleed off the fuel supply to the burners. The power plant will then be governed at the higher speed.

Installing and servicing

8. The governor is attached by its flange to the power plant. The solenoid also is flange mounted to the governor body and the electrical connection is through a two-pin plug.

9. No servicing is necessary other than checking the security of the attachment nuts and the electrical and pipe connections.

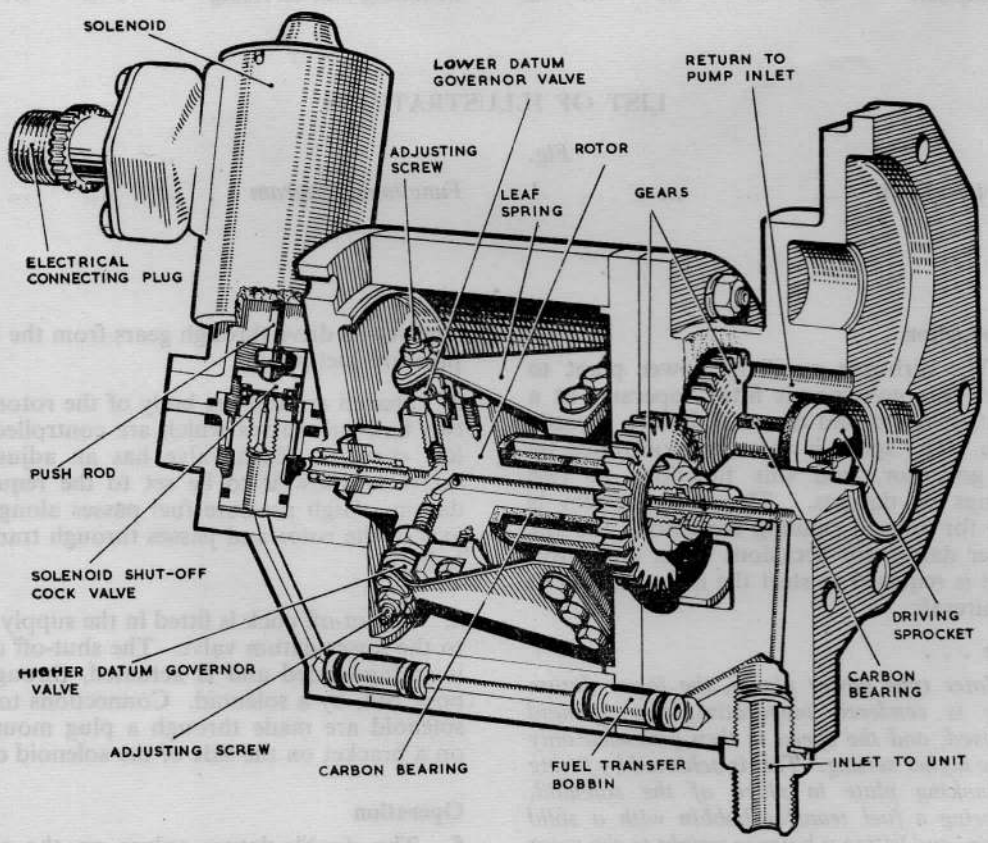

Fig. 1. Interior of unit

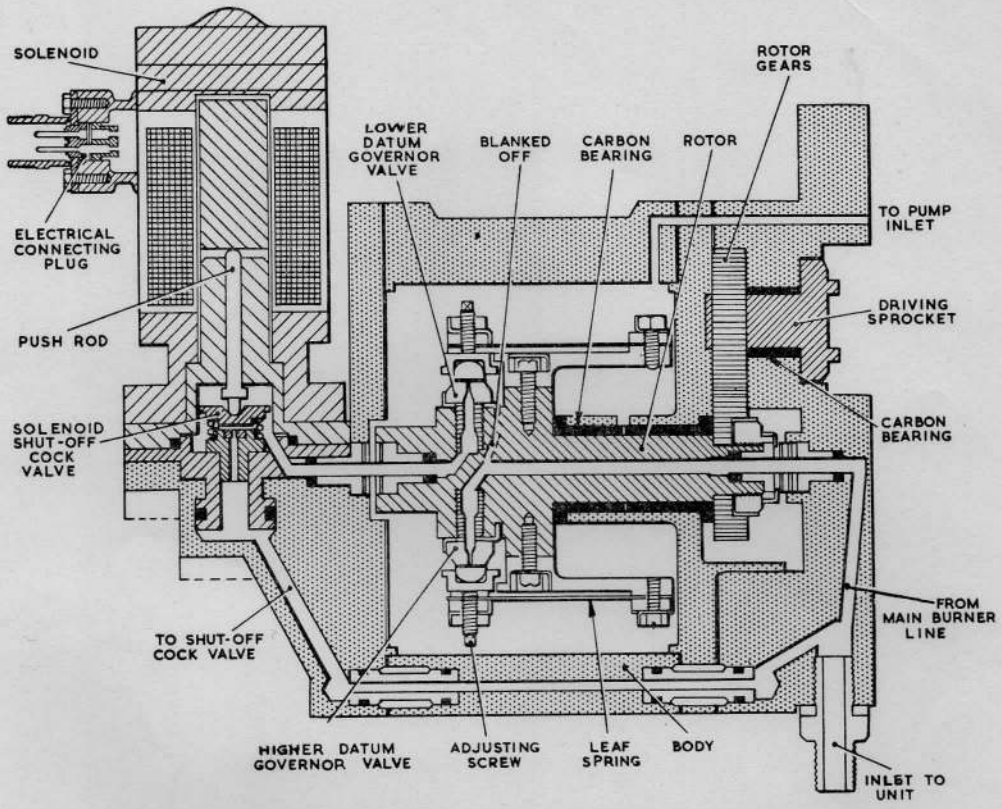

Fig. 2. Functional diagram

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