Chapter 3

FLOW DISTRIBUTOR, TYPE FD.26 and FD.30 SERIES

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Introduction

1. The flow distributor meters the fuel evenly under all conditions on engines employing multiple burners, and it can be used with any type of burner.

2. When used with Simplex and Duplex 2 burners it functions essentially as a flow equaliser; the effects of manifold head on Simplex type burners being overcome by the fact that each burner is connected directly

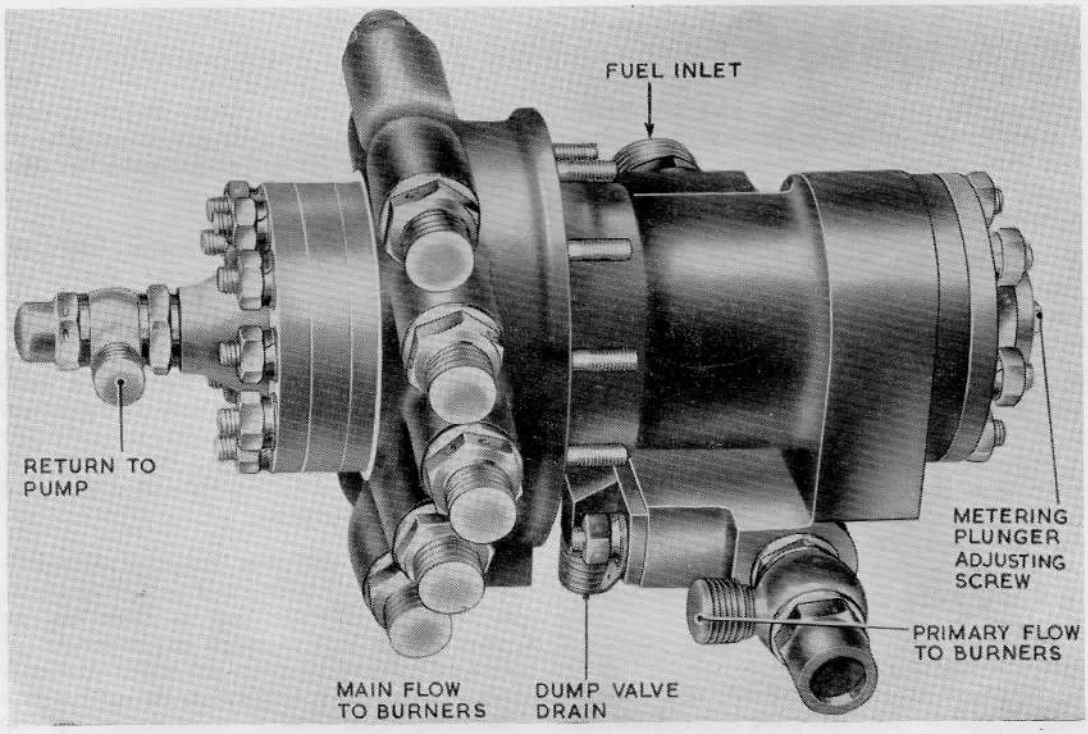

Fig. 1. Flow distributor

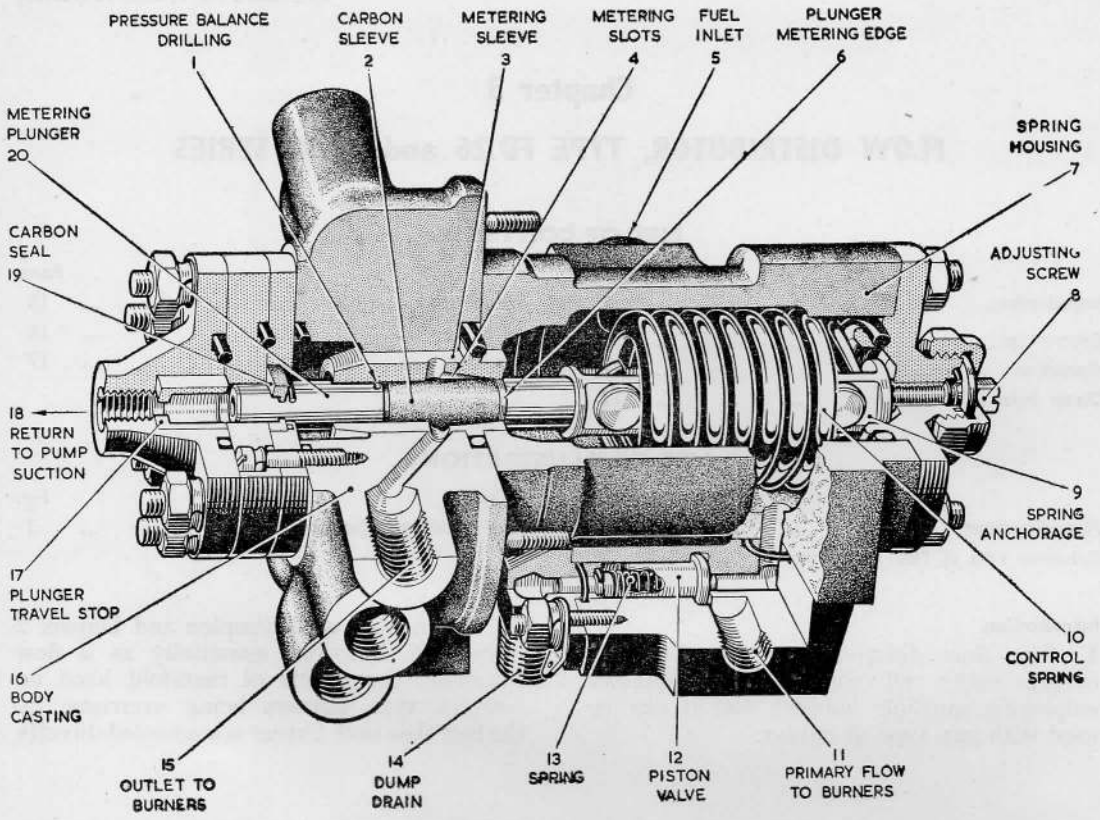

Fig. 2. Cut-away view of flow distributor

to the unit. With Duplex 1 and 3 burners it operates as a splitter or (pressurizing) valve and corrects recovery pressure variations, as all main flow passages are separate, the primary flow being tapped off the inlet supply.

3. On systems employing air/fuel ratio controls it can be arranged to produce a flow to any burner which is very nearly proportional to pressure.

4. An automatic dump valve drains excess fuel from the burners and manifolds each time the engine is stopped. In view of this it is desirable to mount the unit as low as possible on the engine. A typical unit in this series is designated FD.26/29P, FD.26 being the basic type, '29' the installation code and 'P' the calibration code. The FD.30 series have a slightly different spring and spring housing.

Description (*fig. 1*)

5. The unit, consists essentially of a spring-loaded plunger (20), operating in a cylindrical metering sleeve (3) in the distributor body (16). A carbon sleeve (2) is cemented to the plunger to reduce stiction and minimise hysteresis, the carbon portion extremity forms a metering edge (6) and controls the fuel flow to the burners.

6. The specially-shaped tapering slots (4) in the walls of the metering sleeve are uncovered progressively by the plunger metering-edge as the plunger moves under the influence of fuel pressure. The metering slots terminate in drillings through the walls of the sleeve and communicate with drillings which transfer the fuel to delivery ports (15) connected to the burners, the number of metering slots depending upon the number of burners in the engine.

7. Each slot therefore, supplies an individual burner with a metered flow of fuel and, if desired, differentiation in flow can be supplied to suit special requirements of certain burner positions; such differentiation is obtained either by calibrating the appropriate metering slots during manufacture or by fitting specially calibrated unions to the appropriate distributor outlet ports.