

Chapter 2

HIGH-PRESSURE FUEL PUMP, TYPE GC25 SERIES

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INTRODUCTION

1. The high-pressure fuel pump type GC25/21M fitted to the Python Mk. 1 engine is similar in construction and operation to the type GC12 fuel pump described in Chapter 1 of this section, except that slight differences have been incorporated to suit the engine installation requirements, denoted by suffix 21, and calibration settings, denoted by suffix M. The vaporizing system employed on this engine operates at much lower pressures and consequently calls for different calibration settings.

2. The pump has a delivery of 560 to 570 gallons per hour, at 2,500 revolutions per minute and a pressure of 500 lb. per sq. in.

GENERAL

3. The main structural differences incorporated in the GC25/21M type pump compared with the GC12 series are as follows:—

(1) A new design of amplifier valve of the cross torsional hinge type. This type of valve illustrated in fig. 1 replaces the pinched pivot pin type fitted to earlier pumps of the GC12 series.

(2) A weaker helical spring under the rocker lever to enable lower stall pressure characteristics to be obtained.

(3) A modified filter assembly in the restricting orifice.

(4) A stabilizing tube in the port insert (which is also being introduced on GC12 series pumps).

(5) Only one bleed valve is fitted on the diaphragm cover; this is situated adjacent to the fuel pump outlet.

4. Apart from these structural differences which are illustrated in fig. 1 and 2, the description, principle of operation, and servicing of the type GC25/21M pump is identical with the instructions given in Chapter 1 for the GC12 series.

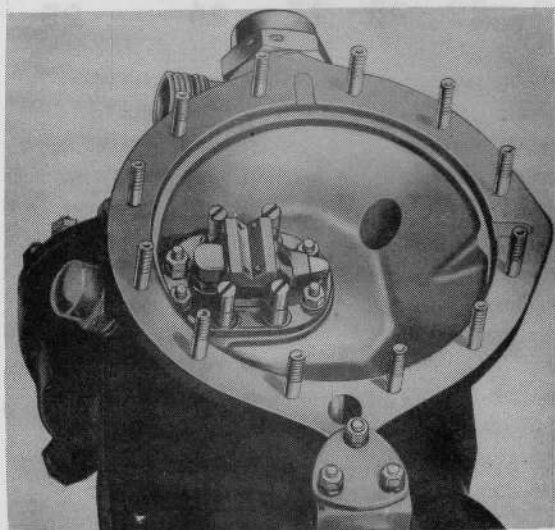
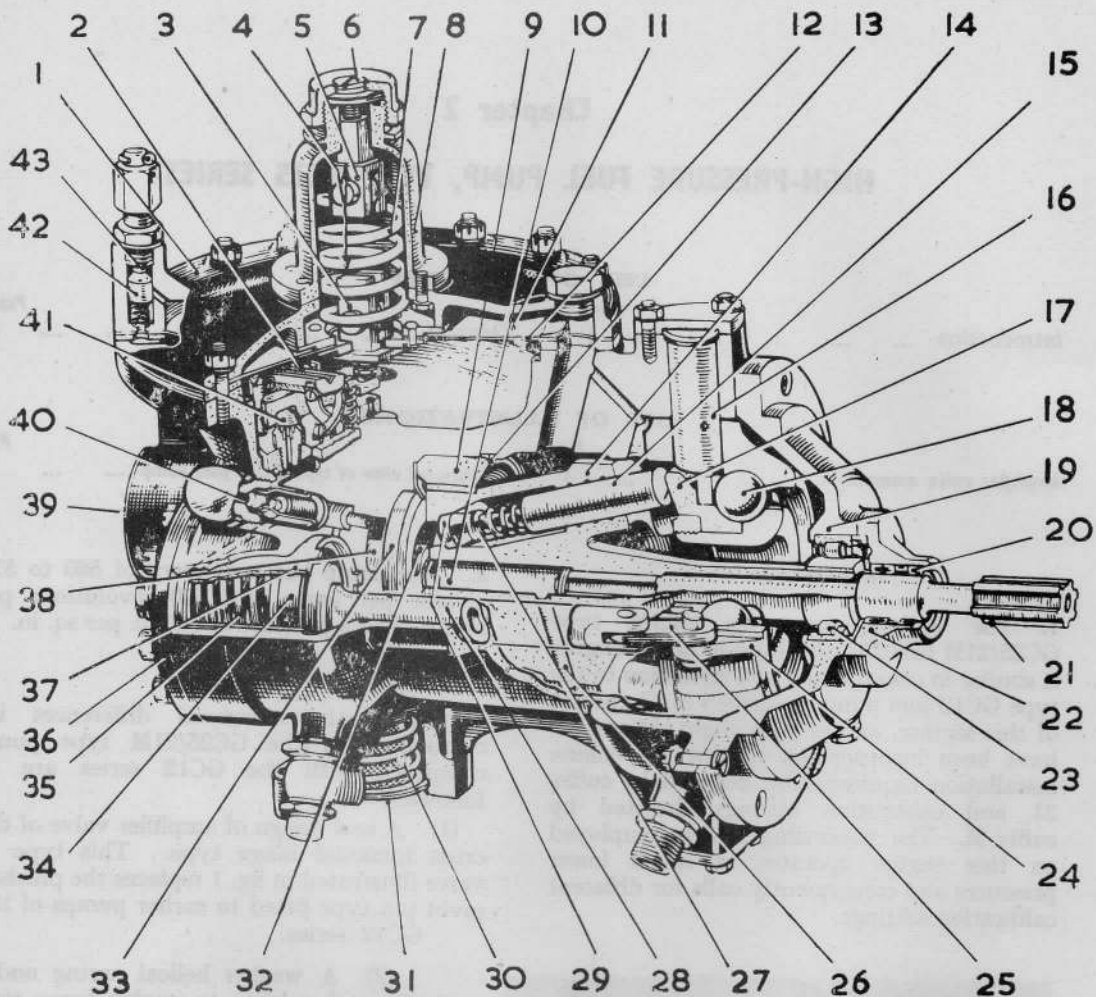


Fig. 1. Amplifier valve assembly



- | | | |
|--------------------------|------------------------|------------------------|
| 1 COVER PLATE | 16 TRUNNION PIN | 30 GAUZE STRAINER |
| 2 ROCKER LEVER | 17 CAM-PLATE | 31 PUMP INLET |
| 3 FORKED MEMBER | 18 CAM-PLATE BEARING | 32 KIDNEY-SHAPED PORTS |
| 4 SPRING ASSEMBLY | 19 CAM-PLATE HOUSING | 33 PORT INSERT |
| 5 FORKED MEMBER | 20 OIL SEALS | 34 CONTROL PISTON |
| 6 ADJUSTING SCREW | 21 SPLINED QUILL SHAFT | 35 SPRINGS |
| 7 HELICAL SPRING | 22 SEAL HOUSING | 36 END COVER |
| 8 HOUSING | 23 ROLLER BEARING | 37 STEEL LINER |
| 9 CARBON RING | 24 CONTROL RING | 38 OUTLET PASSAGE |
| 10 AXIAL BORE | 25 LINK | 39 PUMP OUTLET |
| 11 SPACE ABOVE DIAPHRAGM | 26 RADIAL DRILLINGS | 40 RESTRICTING ORIFICE |
| 12 DIAPHRAGM | 27 RETURN SPRING | 41 HALF-BALL VALVE |
| 13 CIRCLIP | 28 PISTON ROD | 42 PISTON |
| 14 ROTOR | 29 SPRING GUIDE | 43 BLEED VALVE |
| 15 PISTON | | |

Fig. 2. Sectional view of type GC25 fuel pump

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