

## SECTION 17B . . FUEL PUMP

(“David” Mechanical, Types P.50, 51, 52 and 53)

### SERVICEABILITY CHECKS

Disconnect the fuel delivery pipe to the carburettor and, with the ignition switched off, turn the engine by hand. A well defined spurt of petrol should be emitted at each working stroke of the pump—i.e. every two revolutions of the engine.

If the supply of petrol emitted is not satisfactory, check the inlet pipe and unions for leakage, then disconnect the pipe and check the main fuel supply line for obstruction.

If the inlet pipe is satisfactory, remove the pump for further investigation.

### REMOVAL

Disconnect the inlet and delivery pipes from the pump, then unscrew the two nuts securing the pump to the crankcase and withdraw the unit, taking care that the push rod which operates the pump, does not slide out of the crankcase and fall to the floor.

### DISMANTLING

Before attempting to dismantle the fuel pump and to ensure the re-assembly of the details in their original angular positions, the pump body and circular flange of the end casting should be marked with a scribe or indelible pencil.

To dismantle the pump, unscrew the six nuts around the pump body, then, to avoid damaging the diaphragms, screw out the bolts.

Separate the various components as shown in fig.2 and wash them in clean petrol. The flanged end assembly, comprising operating plunger, spring, main diaphragms and priming device should not be dismantled unless the diaphragms are unserviceable.

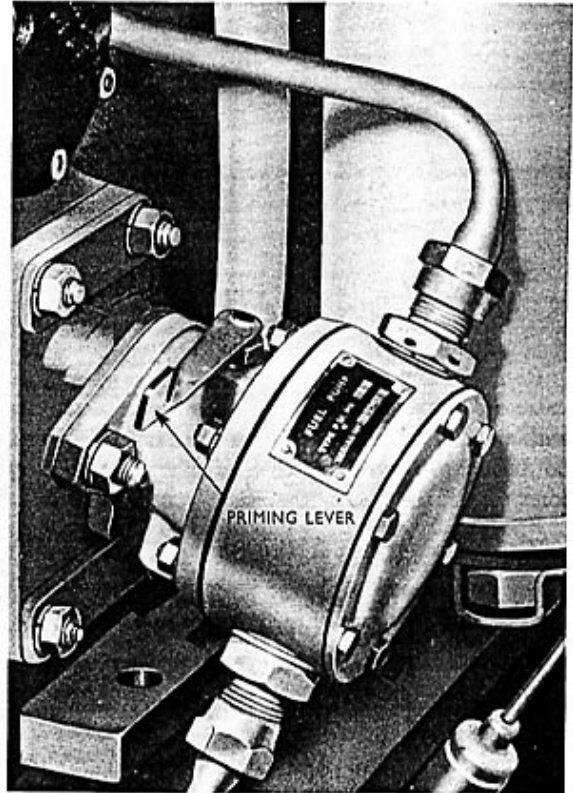


Fig. 1 Fuel pump

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### INSPECTION

Examine the main and pulsometer diaphragms for general perforation and wear around the inner edge of the flange, and check the front and rear diaphragm plates for corrosion. Perforated or excessively warped diaphragms and corroded plates should be changed.

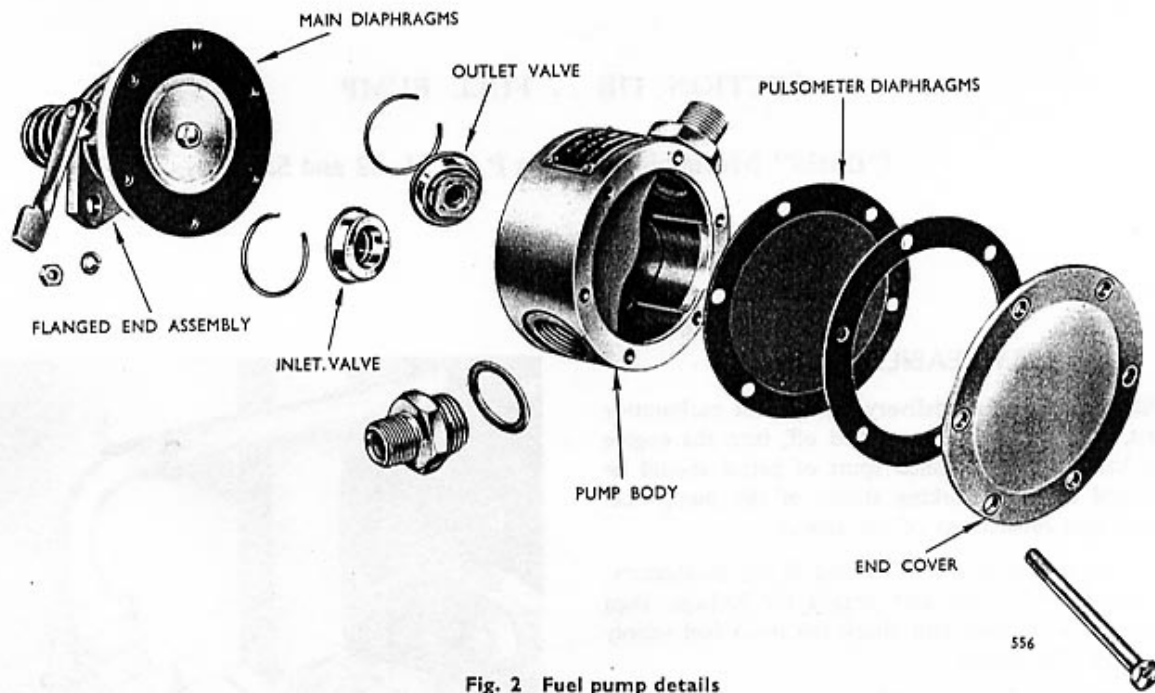


Fig. 2 Fuel pump details

Remove and examine the suction and delivery valve assemblies in turn. The circlips can be removed with the aid of a small screwdriver, but care should be taken to prevent their springing out and the screwdriver damaging the valve assemblies.

If the valve spring is distorted, the valve grooved or the seating damaged, the complete valve assembly should be changed.

Examine the mushroom end of the operating plunger for wear. Slight score marks can be removed by stoning.

Examine the plunger spring for damage and distortion.

If excessive oil leakage from the engine is apparent along the plunger stem and behind the main diaphragms, the flanged end assembly should be changed.

#### Changing the main diaphragms

Lift the diaphragm assembly by fully compressing the spring and insert the claw spanner (Part No. UE.4084) under the diaphragm to hold the diaphragm

bolt. Unscrew the securing nut and remove the diaphragm, the front and rear plates and the joint washer.

To fit a new diaphragm, assemble the components in the reverse order of removal.

Use a new joint washer, lightly smearing its face adjacent to the diaphragm bolt face with jointing compound and fit the front and rear plates with their flat faces towards the diaphragm membranes.

Before tightening the centre retaining nut, line up the holes in the diaphragm membranes with those in the casing, using the six bolts and screwing them through the diaphragm to avoid damaging the membranes.

It should be noted that the diameter of the pitch circle of the holes in the diaphragm is slightly larger than the pitch circle diameter of the body drillings. When assembled this allows free flexing of the diaphragm without stressing the fabric.

Tighten the retaining nut and, if necessary, file the end of the bolt flush with the nut face, then centre punch the bolt in two places to lock the assembly.

NOTE: As a precaution against tearing during fitting, the outside diameter of a replacement diaphragm is greater than that of the pump body. The excess material can be trimmed off after assembling.

### ASSEMBLY AND REFFITTING

Before assembling the pump and to ensure its free operation, lubricate the plunger with a few drops of engine oil.

To assemble the unit, mount the circular valve chamber in its original angular position on the

flanged end assembly, as indicated by the marks made during dismantling, then carefully fit the pulsometer diaphragm, a new joint washer and the end cover.

Fit the six securing bolts, screwing them through the diaphragms and tighten the diametrically opposite nuts in turn, at the same time operating the plunger to ensure that the diaphragms have complete freedom of movement. Do not over-tighten the nuts.

Refitting the pump is straightforward. A new joint washer should be used and the hand priming lever should be at the top as shown in fig. 1.