

IBC 711 SEP 44

Fig. 2.—CAR, SCOUT, HUMBER II, LEFT SIDE VIEW.

# CHAPTER 1A

## THE POWER UNIT

### Part I

### THE ENGINE

The engine is a six cylinder side valve type.

The cylinder block and detachable cylinder head are cast iron, and the head is secured by 22 nuts, the joint being sealed by a copper asbestos gasket.

Small lugs cast on the side of the head are to assist in breaking this joint when necessary.

It is possible to fit new gaskets to the exhaust and induction manifolds without removing the manifolds from the exhaust pipe, by unscrewing the nuts securing the manifolds to the cylinder block and carefully pulling the manifolds away from the block. The induction manifold drain tap B (Fig. 9) remains open in all normal conditions.

Two plates covering the valve chest at the right side of the engine can be removed to facilitate valve adjustments. This adjustment to the valves is further assisted if the exhaust and induction manifolds are also removed complete. (First see note on two-speed dynamo control unit, page 45.)

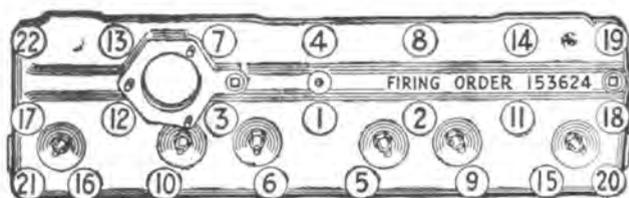


Fig. 7.—CYLINDER HEAD NUTS.  
Order for tightening.

The engine is supported at the rear end by rubber blocks from the rear cross member of the chassis, while the gear box forming the engine front support is also mounted on rubber blocks.

It is essential that the engine is kept clean so that any leakage of oil or fuel is quickly apparent, and also to facilitate maintaining all screwed connections of the engine and its accessories tight.

Care must be taken not to damage the small metal tubes from the thermostat in the cylinder head and the oil pressure gauge on the right side of the engine. It is impossible to repair these when damaged.

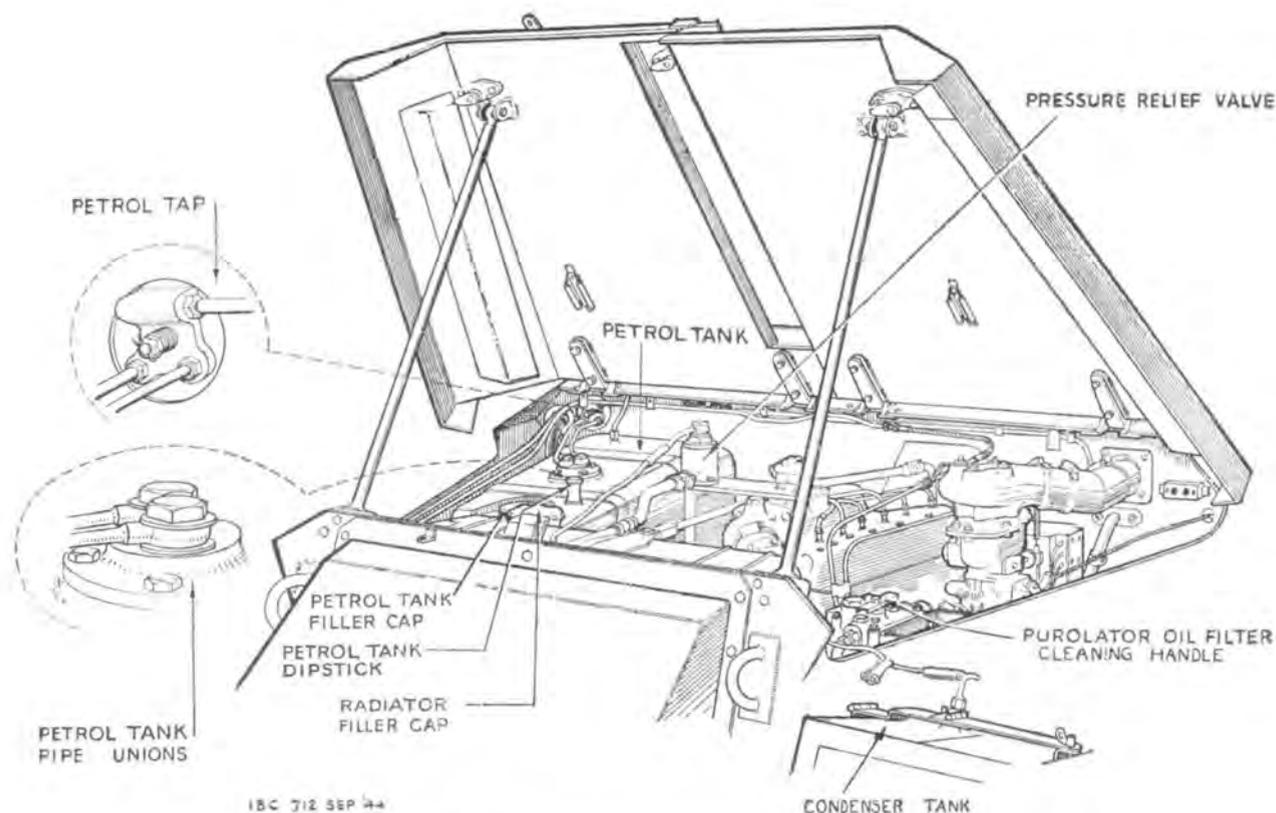


Fig. 6.—ENGINE COMPARTMENT ACCESS.

## Chapter 1B

thereby supplying a mixture of approximately 5 to 1 air petrol ratio.

In conditions of SEVERE FROST the knob is pulled out to the first stop, turned half left and pulled out again; this takes the lever (D) to the full limit of its travel (3). The large hole (F) in the disc (B) registers with the fuel way (A), the holes (G) remain in line with the channels (H), while the air jets (J) are blanked off by the disc (C), thus closing off all air from the source. There is, however, a permanent air bleed which takes the form of a small hole (M) in the top of the mixing chamber.

Immediately the engine fires, the suction in the mixing chamber, between the two discs, pulls the outer disc (C) off its seating, thus permitting the entry of air and weakening the mixture.

This weakening process is progressive; as engine speed rises, so the suction in the mixing chamber increases and, in turn, the disc is pulled farther off its seating against the pressure of the spring (K).

The initial mixture strength is approximately 1 to 1 air petrol. It is important, therefore, that the starter carburettor control may be pushed back to the normal position as soon as possible.

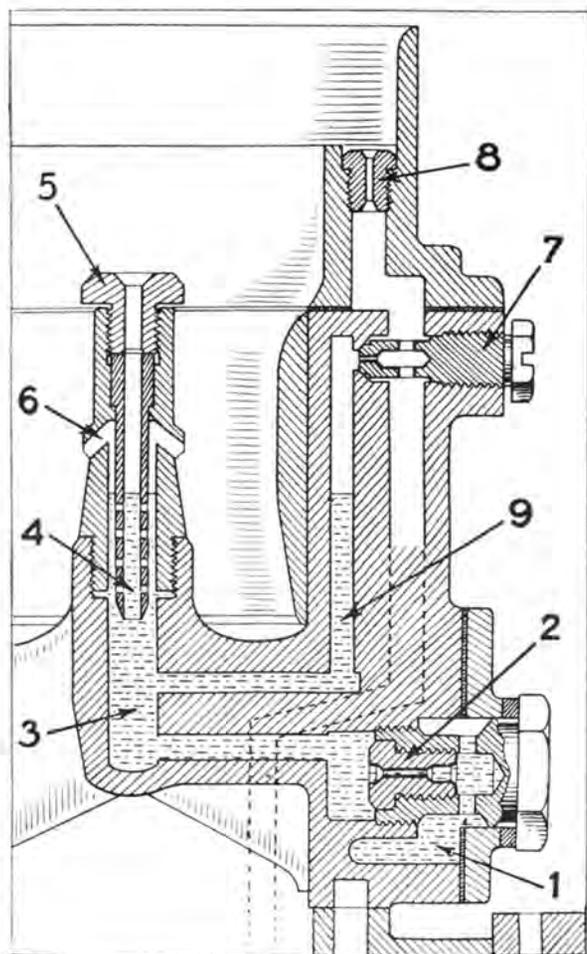


Fig. 37.—FUEL SUPPLY TO MAIN AND IDLING JETS.

During the use of the starter carburettor, the main throttle is kept shut, but if it is necessary to warm up the engine while the vehicle is stationary, slow opening of the throttle will relieve the suction on the air control disc (C) and prevent the engine stalling through over-richness. Alternatively, if it is required to drive away immediately, the starter carburettor control may be pushed to the normal, and alter the closed position while so doing.

### The Main Fuel Supply

Concerning the main fuel supply, petrol passes from the float chamber inter-connecting cavity (1) (Fig. 37), through the main jet (2) into the emulsion tube well (3). Thence it passes up the drilled emulsion tube (4), where it meets air entering via the correction jet (5). The resulting mixture passes through the six holes in the emulsion tube into the space between the tube and the wall of the petrol well. Opening of the throttle causes a high velocity air current through the choke tube, which draws the mixture upwards and into the air stream through the six radial holes (6), two of which are shown in Fig. 37.

Located immediately above the main jet holder (Fig. 35), the idling or pilot jet is easily removable without any dismantling of the carburettor. This jet (7) (Fig. 37) is supplied from the emulsion tube well by a small drilled channel (9). Above the pilot jet is the pilot air bleed (8), which provides a permanent source of air supply for the emulsion which, so formed, passes vertically downwards through the

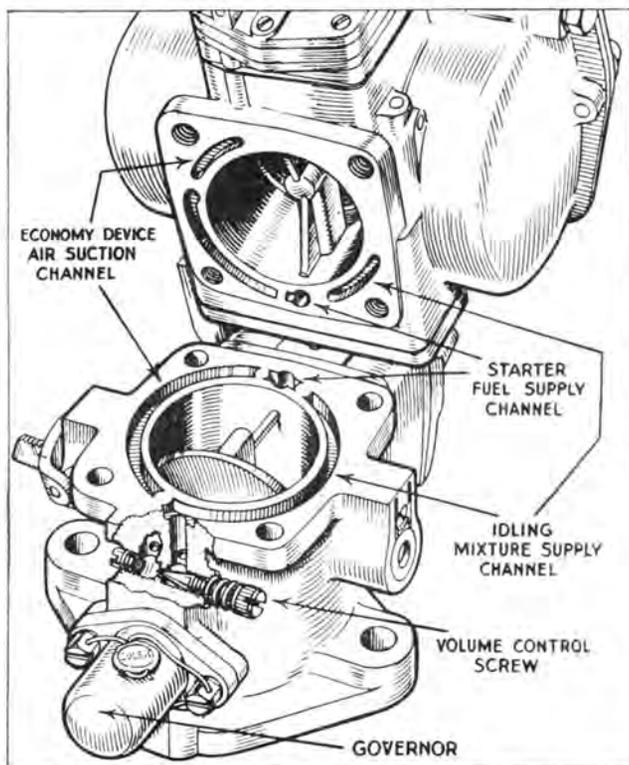


Fig. 38.—CARBURETTOR, TOP AND BOTTOM HALVES.

TWO-SPEED DYNAMO TYPE DW7X-10X

DETAILED DESCRIPTION

**Dynamo.** (See Fig. 67)

This is a 12-volt machine fitted with eight brushes in four brush holders. Rotation is clockwise looking on the driving end. It has four poles, and is fitted with plain-wound field coils shunt connected in the normal manner.

Two condensers are fitted in the terminal box connected to the main positive and negative terminals. The second and body connections to the condensers are connected together and earthed to the side of the terminal box.

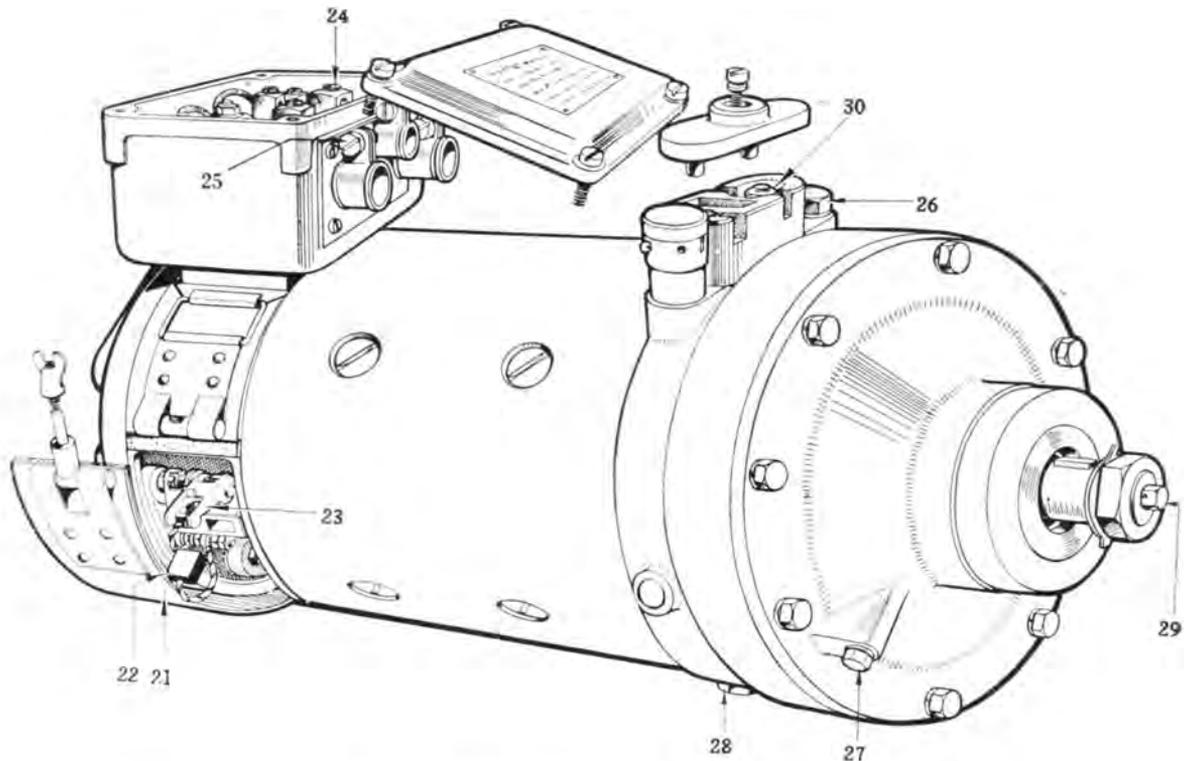


Fig. 67.—THE DYNAMO, TYPE DW7X-10X.

**Rating**

- Cutting-in speed 820 r.p.m.
- Lamp load 42 amps.
- Maximum load 55 amps.
- Maximum load speed 1,250 r.p.m.
- Weight 80 lbs.
- Outside diameter 7 inches.

Ball bearings are fitted at both ends of the armature. These bearings are packed with grease and do not require any attention between overhaul periods.

The following equipment is associated with the two-speed dynamo.