

**Main spraying circuit** (See Fig. 5)

As the throttle is opened further and air speed through the venturi (choke tube) (19) increases, depression on the spraying orifice (37) brings the main spraying system into operation.

Under this condition fuel flows from the float chamber and is metered by the main jet (32) or (38) before passing into the main spraying well (30) where it mixes with air metered by the air correction jet (13), the air entering the fuel stream by means of small holes in the emulsion tube below the air correction jet (13). From the main well the mixture finally discharges through orifice (37) into the main air stream. As engine speed increases the fuel level in the well (30) drops and uncovers the remaining holes in the emulsion tube. In this way additional air enters the fuel stream and corrects the output from the main jet according to engine speed and load requirements.

**Accelerator pump** (See Fig. 5)

The accelerator pump is mechanically operated and consists of the pump diaphragm (24) pump spring (26), and pump actuating lever (25) connected by a rod to a lever on the throttle spindle.

On depressing the accelerator pedal the movement of the pump operating lever (25) displaces the pump diaphragm (24) which forces fuel through the calibrated injector tube (22) into the main air stream thereby ensuring rapid, smooth acceleration.

A non-return valve (27) prevents fuel from returning to the float chamber when the diaphragm (24) is forcing fuel through the injector tube (22). An anti-reversal valve (23) above the pump unit prevents air from entering this system when the pump is drawing fuel from the float chamber.

**Econostat circuit** (See Fig. 5)

The econostat allows maximum economy to be maintained over the cruising range of the engine and at the same time provides accuracy of metering under full throttle conditions. It is non-mechanical in operation.

The system has a separate jet (20) that discharges fuel into the air intake at a point (21) above the choke tube (19). As the engine speed increases the discharge will take place only when depression inside the discharge tube (21) has become great enough to lift the fuel up to its inner end. The position of the tube (21) together with the effect of the depression existing in the air intake, determine the point at which the econostat comes into operation and the petrol jet (20) controls the rate at which fuel is supplied.

**STARTING THE ENGINE****From cold—with automatic choke** (See Fig. 5)

1. Fully depress the accelerator pedal once before operating the starter. This allows the small bi-metal spring (2) to move the stepped cam (7) so that it holds the throttle open to its correct position for starting, when the accelerator pedal is released.
2. Switch on the ignition and operate the starter. Do not move the accelerator pedal. The engine will start and run at fast idling speed. The car should be driven away as soon as possible.

**From cold—with manual choke**

Move the choke control lever backwards as far as possible from its normal position. Operate the starter. The engine should start immediately and continue to run at a fast idling speed. Move the choke control forward far enough to give even running, and as the engine warms up gradually return the choke control to its normal fully forward position.

**When warm or hot**

Do not "agitate" the accelerator pedal as this will cause the accelerator pump to inject neat fuel into the hot inlet manifold and make starting very difficult.

If the engine is still warm switch on the ignition and operate the starter without moving the accelerator pedal. Should the engine hesitate to start depress the accelerator pedal a short way, and release it when the engine starts.

If the engine is difficult to start when hot fully depress the accelerator while operating starter and release it directly the engine starts.

**DIAGNOSIS OF FAULTS**

Since the function of the carburettor is closely connected with other items of engine operation, troubles are sometimes difficult to trace and the carburettor is often blamed when it is not at fault.

Unless known to be in perfect condition, the following items should be checked before making carburettor adjustments:—

**Ignition system**

- Check spark plug condition. Clean and set gaps.
- Check condition and tightness of H.T. and L.T. leads.
- Check condition and setting of contact breaker points and contact moving point spring tension.