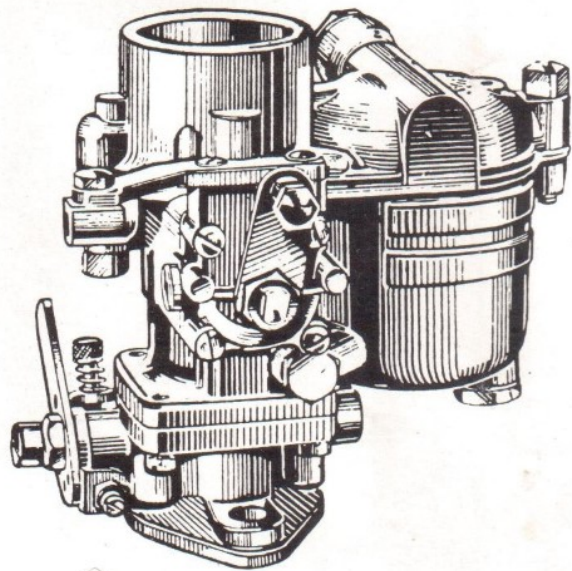




**DESCRIPTIVE
LEAFLET**



SOLEX

Models

26 AIC and FAI

(30, 35 & 40 m/m)

**Bi-starter
(Downdraught)**

GENERAL NOTES

Starting the engine when cold.

Pull out the dashboard control fully. Switch on the ignition, but do not touch the accelerator pedal, i.e., *the throttle must be kept closed* whilst attempting to start the engine. The engine will start immediately when the electric starter button makes contact, and as soon as it gathers speed, the dashboard control should be pushed in to the half-way position. During this process it is possible, and in fact recommended, to drive off at *moderate speed*. Do not *race* the engine if the vehicle is stationary and you prefer to warm up in this way. To drive away after starting is better—but at a moderate speed, thus stimulating oil fling.

Do not forget to push in fully the dashboard control as soon as the engine is hot enough to run satisfactorily on the main carburettor output.

On warm days, if the engine is not stone cold, it is usually possible to start up with the dashboard control pulled out only to the half-way position.

If an instant start is not forthcoming, check up on the following possible causes :—

1. Remove and clean the Gs starter petrol jet. Blow through it with compressed air or cycle pump—do not probe with a pin.
2. If the engine has not been run for some time, prime the petrol pump.
3. Clean plugs and check the gap at the points.
4. The battery may be low and need recharging (a point frequently overlooked is that whilst strong enough to operate the electric starter, the current may in consequence be completely absorbed, so leaving none to give a spark at the plug electrodes).

Starting the engine when hot.

If, particularly in summer, the engine does not start immediately, depress the foot accelerator, operate the electric starter button, and do not release the accelerator until the engine starts. (With a hot engine, however, if the carburettor is correctly adjusted and the ignition is in good order, it is normally possible to start the engine on the pilot jet output, i.e., without the use of the Solex starting device.)

Adjusting the Idling

This adjustment is of considerable importance, and depends upon the mechanical perfection of the engine. Compressions should be equal, ignition in good order, and the induction system free from air leaks. The throttle "pull-off" spring must pull the throttle back to its stop, i.e., closed position, and all nuts, screws, etc., used in the assembly of the carburettor must be tight. Note particularly that the volume control screw (W) has not been broken or distorted by over-tightening. If it has, a new screw must be obtained.

Normal adjustment is carried out as follows:—

1. Wait until the engine is hot.
2. Set the throttle adjustment screw until the idling speed is on the high side.
3. Slacken the volume control screw (W) until the engine begins to hunt.
4. Screw it in very gradually until the hunting just disappears.
5. If the engine speed is too high, reset the screw adjustment to slow it down to idling speed of about 500 r.p.m.
6. This may cause a resumption of slight hunting. If so, then turn the volume control screw gently in a clockwise direction until the idling is perfect.

These adjustments must never be made with a cold engine.

Detecting and Remedying Defects

The carburettor should be kept in good condition. To clean it remove the jets and blow through the channels with compressed air or a cycle pump. Make sure that all the assembly screws are tight. See that there is no undue wear in the throttle spindle or bearings.

Do not forget to check and adjust, if necessary, the ignition. Plugs and valve timing are two factors which play a considerable part in the performance of an engine.

Downdraught SOLEX Carburettor Models 26 AIC and FAI

(30, 35 and 40 m/m)

DESCRIPTION . . .

Bi-starter. The Solex "bi-starter" unit is a small auxiliary carburettor integral with the main carburettor to ensure easy starting from cold and to assist "get-away" until the engine is warm enough to function satisfactorily without its aid.

It has two adjustable units to provide a correct balance of air and petrol for the above purposes.

The air jet Ga meters the air supply. The petrol jet Gs meters the petrol.

It is to be emphasized that the bi-starter should be operated in two positions during the process of starting from cold and driving away, as follows :-

(a) To start the engine when cold, pull out *fully* the dashboard control to which the bi-starter lever is connected. In this position it gives a very rich mixture, which is essential for cold starting.

(b) Almost immediately after starting, the engine begins to warm up and the dashboard control should be pushed in to the "bi-starter" position, *i.e.*, approximately half way, when a marked resistance will be felt indicating that the control position has been reached as determined by the location of the spring ball (sb) in a notch in the outer rotating valve disc (dd) provided to register at the correct position. At this stage the mixture strength is considerably reduced, for the volume of air inspired by the engine increases proportionately with the rise in engine speed as it continues to warm up, whilst the petrol supply is restricted. Without any possibility of "overdosing", the mixture strength is thus sufficient to ensure immediate "get-away" without risk of the engine stalling as the foot pedal is depressed.

(c) As soon as the engine is warm enough (usually after driving a few hundred yards) to dispense with the aid of the bi-starter, the dashboard control must be pushed fully home, thus putting the starting device completely out of action.

Slow Running (Idling). When idling the mixture is provided by the pilot jet (g), the air bleed (u) and the volume control screw (W), the last decreasing the mixture strength by clockwise rotation and *vice versa*.

Normal Running. For normal running above idling speed the engine is provided with the correct mixture for all speeds by the main spraying assembly. Petrol is provided by the main jet (G) and the main air supply for disintegration of the petrol by the choke tube (K). The correct balance of mixture is further automatically maintained by an additional air supply in the form of a calibrated jet, called the air correction jet (a).

Main Carburettor Operation. Study now the diagram in conjunction with the following description.

. . . OPERATION

It is not possible in the illustration to depict the float chamber, but it is of conventional design carrying a float which closes a needle valve when the float chamber is full of petrol.

Petrol from the float chamber passes through the main jet (G) into the spraying well (A) via the reserve well (v) where it meets air drawn downwards via the calibrated air correction jet (a). This passes out through the emulsion holes (ch) into the annulus, where an emulsion is formed with the petrol, and the resultant mixture rises to the four spraying orifices, of which two are shown (oo) in the waist of the choke tube (K). Here the emulsion is absorbed by the main air current and passes down to the induction pipe of the engine via the Butterfly throttle (V).

Setting the Idling. The idling is effected by petrol drawn from the reserve well (v) via a small channel which will be seen emerging therefrom immediately above the larger horizontal lead from the main jet. This it will be noted turns upwards and eventually passes through the pilot jet (g) into the downwardly disposed tract communicating with the idling orifice (io) controlled by the spring loaded and hurled-headed taper screw (W).

(W). It will be noted that this orifice is on the engine, *i.e.*, suctional, side of throttle butterfly. A branch lead communicates with another orifice (bp) which enters the airway slightly on the atmospheric side of the almost closed throttle.

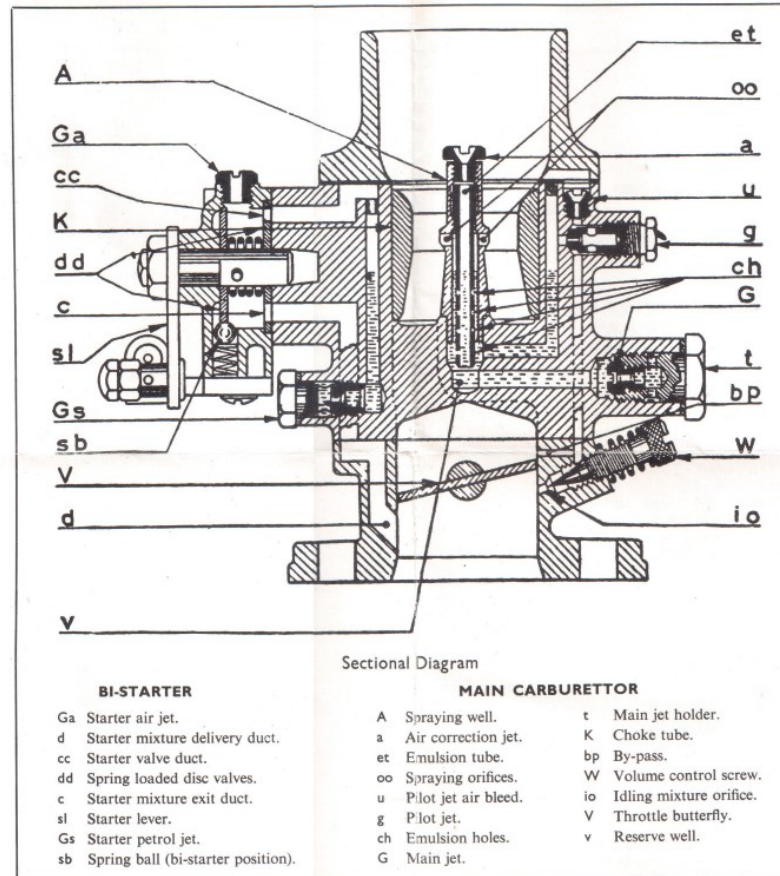
When the throttle is in the idling position, this duct, which we term the by-pass, acts as an air bleed upon the idling petrol supply and therefore prevents over-richness when the engine is actually idling. Directly the throttle opens, the butterfly passes to the atmospheric side of the by-pass orifice, so that both (bp) and (io) function as petrol delivery orifices, thereby proportionately enriching the output at the transfer position between the pilot and main supplies and preventing lean flat spot which might otherwise occur.

Dismantling the Carburettor. It will be seen that the pilot jet (g), the main jet (G), the starter air jet (Ga), and the starter petrol jet (Gs) are all accessible from the exterior without dismantling the carburettor.

Access to the interior is easy. The air cleaner, if such is fitted, must, of course, be removed, when, by removing the screws that secure the top casting to the remainder of the carburettor, access is obtained to the air correction jet (a) and the pilot jet air bleed (u).

Note that in 35 and 40 m/m FAI carburettors access to the float is obtained by removing the set of 5 or 6 screws securing the float chamber cover plate. When replacing the cover plate see that the gasket is undamaged and that the securing screws are tightened evenly.

(Both models are the same in principle and differ only in the exterior appearance because of convenience in manufacture)



BI-STARTER

- Ga Starter air jet.
- d Starter mixture delivery duct.
- cc Starter valve duct.
- dd Spring loaded disc valves.
- c Starter mixture exit duct.
- sl Starter lever.
- Gs Starter petrol jet.
- sb Spring ball (bi-starter position).

MAIN CARBURETTOR

- A Spraying well.
- a Air correction jet.
- et Emulsion tube.
- oo Spraying orifices.
- u Pilot jet air bleed.
- g Pilot jet.
- ch Emulsion holes.
- G Main jet.
- t Main jet holder.
- K Choke tube.
- bp By-pass.
- W Volume control screw.
- io Idling mixture orifice.
- V Throttle butterfly.
- v Reserve well.



SOLEX LTD.

SOLEX WORKS
223-231 MARYLEBONE ROAD
LONDON, N.W.1.

Telegrams : Solexcarb, Norwest, London. Telephone : PADdington 5011 (6 lines)

France :

SOLEX S.A.R.L.
190 AVENUE DE NEUILLY, NEUILLY-SUR-SEINE

Telephone : MAILLOT 63-71

Germany :

DEUTSCHE VERGASER G.M.B.H.
BÜDERICHER STRASSE, 15, NEUSS/RHEIN

Czechoslovakia :

MOTOKOV S.A.
PERSTYN 12, PRAGUE 1

Japan :

MIKUNI SHOKO CO. LTD.
No.4KANDA-GOKENCHO,CHIYODA-KU,TOKYO

Italy :

SOLEX S.P.A.
VIA FREIDOUR 1, TORINO (505)

Spain :

AUTOCESORIOS HARRY WALKER, S.A.E.
ROSELLON 192, BARCELONA

Australia :

BENDIX-TECNICO (Automotive) PTY. LTD.,
61/69 JAMES STREET, ROCKDALE, N.S.W.