SECTION B

THE FUEL SYSTEM

Section B.1

REMOVING THE FUEL TANK

Drain the fuel from the tank.

Extract the eleven Phillips screws retaining the fuel tank cover in the luggage boot ; withdraw the cover.

Remove the rear seat squab and insulation to obtain access to the tank set bolts between the tank and body.

Disconnect the flexible fuel line from tank to pump.

Disconnect the wire from the fuel indicator unit on the tank.

Unscrew the filler hose clips and slide the hose up the filler pipe away from the tank.

Withdraw the eight set bolts holding the tank ; lift out the tank.

Section B.2

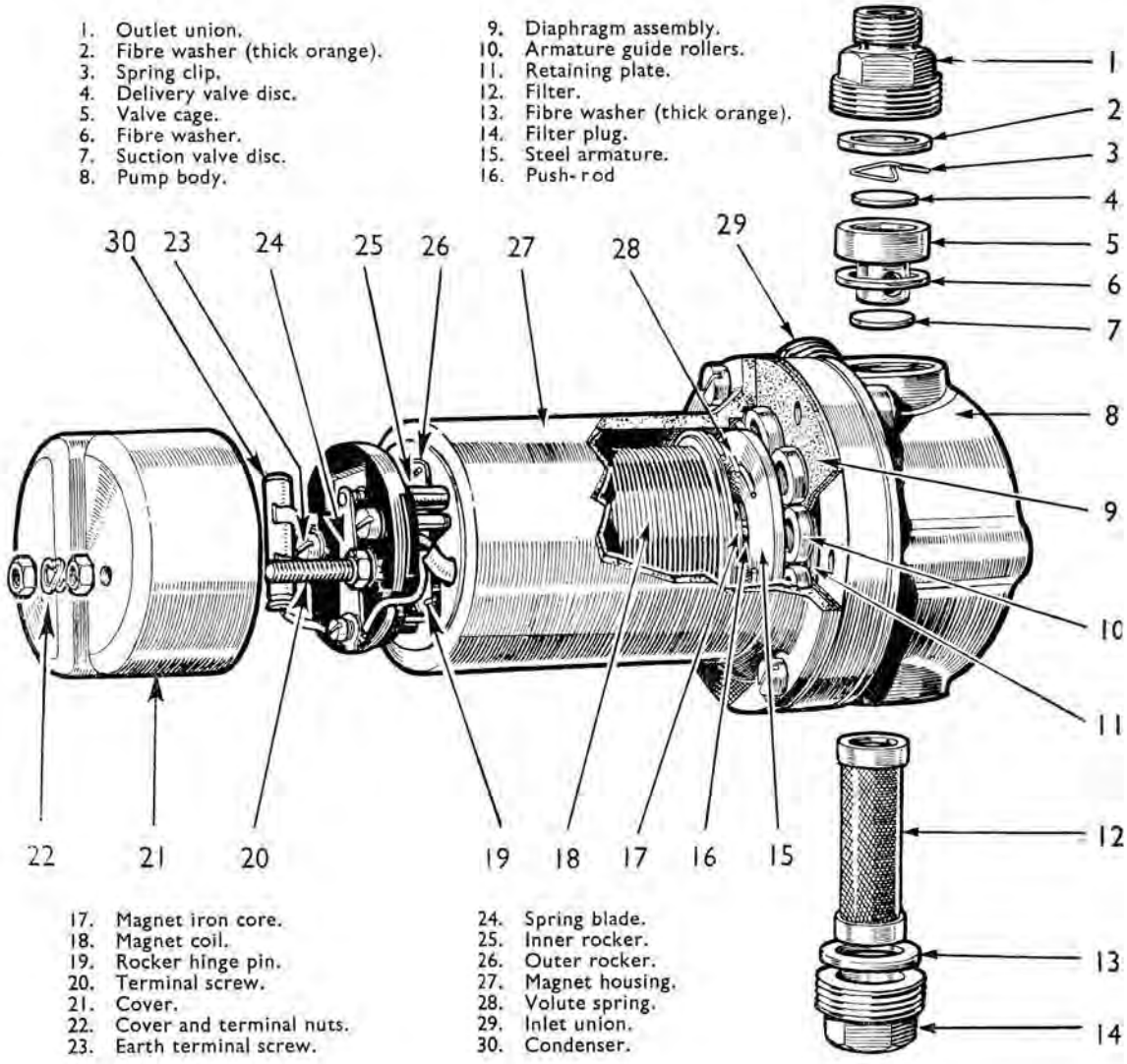
CONSTRUCTION OF THE FUEL PUMP

The 12-volt fuel pump is an S.U., Type H.P.

The pump consists of three main assemblies, the body, the magnet assembly, and the contact breaker.

The body is composed of a hollow stamping or casting (8), into the bottom of which the filter (12) is screwed. The pump inlet union (29) is screwed in at an angle on one side. The outlet union (1) is screwed into the top and tightens down on the delivery valve cage (5) which is clamped between the two fibre washers (2 and 6). In the top of the delivery cage is the delivery valve and spring, a thin brass disc (4) held in position by a spring clip (3). Inserted in

1. Outlet union.
2. Fibre washer (thick orange).
3. Spring clip.
4. Delivery valve disc.
5. Valve cage.
6. Fibre washer.
7. Suction valve disc.
8. Pump body.
9. Diaphragm assembly.
10. Armature guide rollers.
11. Retaining plate.
12. Filter.
13. Fibre washer (thick orange).
14. Filter plug.
15. Steel armature.
16. Push-rod



17. Magnet iron core.
18. Magnet coil.
19. Rocker hinge pin.
20. Terminal screw.
21. Cover.
22. Cover and terminal nuts.
23. Earth terminal screw.
24. Spring blade.
25. Inner rocker.
26. Outer rocker.
27. Magnet housing.
28. Volute spring.
29. Inlet union.
30. Condenser.

Fig. B.1.

The S.U., Type H.P., fuel pump. In later models a light spring is fitted above the suction valve (7).

the bottom of the cage is the suction valve (7), being a similar disc to (4) retained on a seating machined in the body by a light spring. Holes connect the space between the valves to the pumping chamber with a shallow depression on the forward face of the body. This space is closed by a diaphragm assembly (9) which is clamped at its outside edge between the magnet housing (27) and body (8) and at its centre between the retaining plate (11) and the steel armature (15). A bronze rod (16) is screwed through the centre of the armature, to which the diaphragm is attached, and it passes through the magnet core to the contact breaker, located at the other end. A volute spring (28) is interposed between the armature and the end plate of the coil to return the armature and diaphragm.

The magnet consists of a cast-iron pot (27) having an iron core (17), on which is wound a coil of copper wire which energises the magnet. Between the magnet

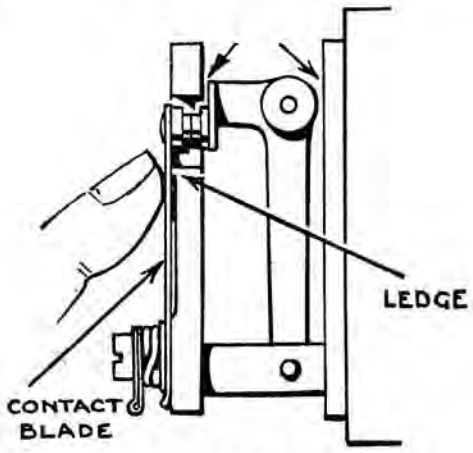


Fig. B.2.

The correct armature setting.

housing and the armature are fitted eleven spherical-edged brass rollers (10). These locate the armature centrally within the magnet at all times, and allow absolute freedom of movement in a longitudinal direction. The contact breaker consists of a small bakelite moulding carrying two rockers (25) and (26), which are both hinged to the moulding at one end and are connected together at the top end by two small springs, arranged to give a " throw over " action. A trunnion is fitted into the centre of the inner rocker, and the bronze push-rod (16) connected to the armature is screwed into this. The outer rocker (26) is fitted with a tungsten point, which makes contact with a further tungsten point on a spring blade (24). This spring blade is connected to one end of the coil, and the other end of the coil is connected to the terminal (20), which also serves to hold the bakelite moulding onto the magnet housing.

A short length of flexible wire is connected to the outer rocker and to the other terminal (23) to provide the earth return when the contacts are closed.

The rocker mechanism is insulated by fibre bushes. Two fibre bushes are fitted to one of the spindles of the " throw over " mechanism in order to silence the operation of the contact breaker.

Section B.3

ACTION OF THE FUEL PUMP

The action of the pump is as follows :—

When the pump is at rest, the outer rocker lies in the outer position and the tungsten points are in contact. The current passes from the terminal through the coil back to the blade, through the points and to the earth return, thus energising the magnet and attracting the armature. This comes forward, bringing the diaphragm with it and sucking fuel through the suction valve into the pumping chamber. When the armature has advanced nearly to the end of its stroke the " throw over " mechanism operates, and the outer rocker flies back, separating the points and breaking the circuit. The spring (28) then pushes the armature and diaphragm back, forcing fuel through the delivery valve at a rate determined by the requirements of the engine. As soon as the armature gets near the end of this stroke the " throw over " mechanism again operates, the points again make contact, and the cycle of operations is repeated.

Section B.4

TO DISMANTLE AND REASSEMBLE THE FUEL PUMP

When a pump comes in for reconditioning the first thing to do is to determine whether the parts in contact with the fuel have become coated with gum, a substance similar to varnish. This deposit will cause the eventual destruction of the neoprene diaphragm. The easiest way to locate the presence of gum is by smelling the outlet union. If an unpleasant, stale smell is noticed it will indicate that there is some gum present in the pump. The ordinary sharp acrid smell of petrol (gasoline) denotes that no gum is present.

Assuming that trouble with gum formation is indicated, the whole of the parts (NOT ALUMINIUM) coming into contact with fuel will have to be dismantled, boiled in 20 per cent. caustic solution, given a dip in strong nitric acid and then washed in boiling water. Aluminium parts must be cleaned in methylated spirits.

To dismantle the pump

Undo the filter plug, and remove the filter plug washer and the filter. The latter may be found to be clogged completely with gum. Remove the inlet union and its washer, followed by the outlet union, outlet union washer, valve cage, valve cage washer and suction valve. Dismantle the valve cap by removing the circlip retaining the delivery valve in place, and the valve itself can then be withdrawn.

Undo the six screws holding the two main components of the pump together. All the components of the pump body—with the exception of the washer, but including the pump body itself—should now be given the caustic soda and nitric acid treatment. New fibre washers should be used on replacement.

If there is no evidence of gum formation, proceed as follows :—Undo the six screws holding the two parts of the pump together. The action of the valves can then be checked by blowing and sucking in the inlet union, which will check the suction valve ; carrying out the same procedure with the outlet union will check the delivery valve. In the case of the former it should be possible to blow freely but not suck air back, and with the latter to suck freely and not blow air back. If such is the case it is best to leave the valves alone.

Clean the fuel filter with a brush and swill out the body of the pump.

Unscrew the diaphragm, assembly from its trunnion in the contact breaker. This is done by rotating the whole assembly in an anti-clockwise direction. While doing this, take care not to lose the brass rollers fitted behind the diaphragm.

Remove the contact breaker cover by taking off the nut which holds it in place on the terminal, and then undo the further nut on the terminal, which acts as a seating for the cover. Beneath this will be found a lead washer squeezed into the thread on the terminal. Cut this away with a pocket-knife, allowing the terminal to be pushed down a short way so that the tag on the coil end is free on the terminal.

Remove the 5 B.A. screw holding the contact blade in position, together with its spring washer and the contact blade.

The two long 2 B.A. screws holding the bakelite pedestal in place should now be removed, together with their spring washers. This will enable the contact breaker assembly to be taken off, using great care to get the coil end tag over the terminal without damaging the coil end.

The hinge pin on which the rocker pivots can now be pushed out sideways and the pump is completely dismantled, since the rocker mechanism is supplied only as a complete assembly.

In no circumstances should any attempt be made to disturb the core of the magnet. The core can only be located in position correctly with special press tools, and in any case there should be no need to interfere with it.

To reassemble the pump

When reassembling, see that all parts are clean. The valves (4 and 7) should be fitted with the smooth side downwards. Care should be taken that the valve retaining clip (3) in the delivery valve cage (5) is correctly located in its groove. The thin hard red fibre washer (6) should be fitted under the valve cage, a thick one (2) above the valve cage and a thicker one above the filter plug. The washer on the inlet union (29) is a thick red fibre one.

The contact breaker should be assembled on its pedestal in such a manner that the rockers are free in their mountings, without appreciable side play. Any excessive side play on the outer rocker will allow the points to get out of line, while excessive tightness will make the action of the contact breaker sluggish and interfere with its action. To obtain the required freedom in cases of tightness, it may be necessary to square up the outer rocker with a pair of thin-nosed pliers. The hinge pin is case-hardened and on no account should ordinary wire be used as a replacement. Always use the correct hardened pin.

Should the spring contact breaker blade be removed, it should always be replaced bearing directly against the bakelite pedestal, i.e. underneath the tag.

When properly fitted the blade should rest against the ledge, formed below the opening in the pedestal for the contact points, when the points are separated and not sufficiently stiff to prevent the outer rocker from coming right forward when the points are in contact. The points should make contact when the rocker is in its midway position. Check this by holding the blade in contact with the pedestal, taking care not to press on the over-hanging portion, and try a ·030 in. (·76 mm.) feeler between the white rollers and the cast-iron body of the pump (see Fig. B.2). If necessary, the tip of the blade may be set to give the correct clearance.

Note.—*The spring washer on the B.A. screw, to which the earth connection is made, should be fitted between the tag and the pedestal. The reason for this is that the spring washer is not a reliable conductor, and the brass tag must therefore bear directly against the head of the screw.*

All four connections, namely the two ends of the earthing tag and the two ends of the coil, should be soldered. The coil end leading to the terminal should

be soldered to its tag and not to the retaining nut. In the case of the terminal screw which holds the bakelite cover in position, similar considerations apply, the assembly being:—Spring washer, wiring tag, lead washer, and recessed nut. A lead washer has been found necessary at this point as some few cases of bad connection have been found. In no circumstances must the spring washer be omitted, or the assembly shortened in any way. Any attempt to do so is likely to lead to breakage of the pedestal when the nut retaining the cover in position is tightened up.

The armature return spring should be fitted with its larger diameter towards the coil and its smaller diameter resting against the armature. This spring must not be stretched or otherwise interfered with, or the action of the pump will be affected.

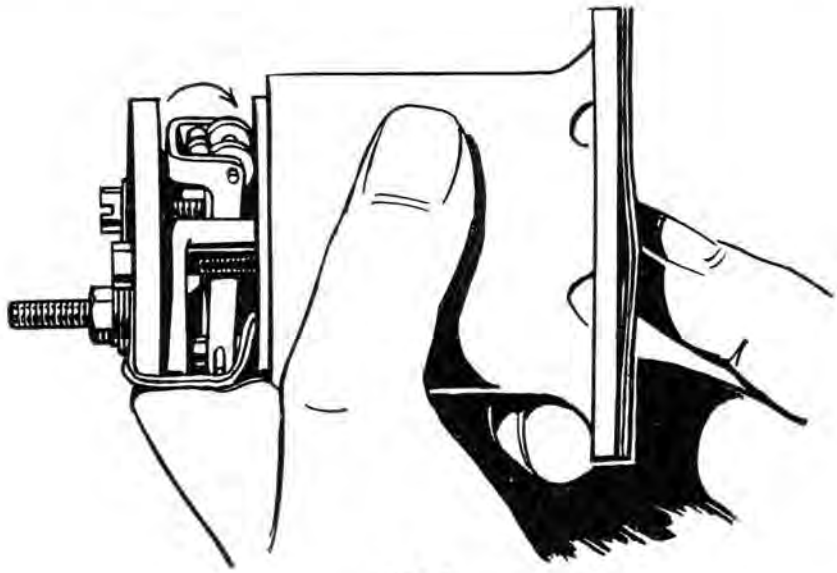


Fig. B.3.
Checking the armature setting.

Section B.5

FUEL PUMP ADJUSTMENT

The correct adjustment for the armature, if it has been removed, is carried out as follows :—

1. Swing the contact blade on the pedestal to one side while the adjustment is being made.
2. Fit the impact washer in the armature recess.
3. Screw the armature into position.
4. Place the eleven guide rollers in position around the armature. **No jointing compound may be used on the diaphragm.**
5. Hold the magnet assembly in the left hand, in an approximately horizontal position.
6. Push the armature in with the thumb of the right hand, pushing firmly but steadily. If the contact breaker throws over, the armature should be screwed in farther until it ceases to do so ; it should then be unscrewed one-sixth of a turn at a time, until a position is found where the contact breaker rocker just throws over, care being taken to avoid jerking the armature. The armature should then be unscrewed a further two-thirds of a turn, when the setting is correct. **Do not forget that this setting must be carried out.**

   When a new diaphragm is fitted, it is probable that considerable pressure will be required to push the armature right home. If there is any doubt concerning the point at which the contact breaker throws over, come back one-sixth of a turn.
7. Place the cast-iron body in position on the main body, taking care to see that the drain hole in the cast-iron body is at the bottom in line with the filter plug of the main body, and that all the rollers are still in their correct positions.

If a roller drops out of position it will get trapped between the two ports, and this will cut a hole in the diaphragm.

Make sure that the cast-iron body is seating properly on the main body, and insert the five coupling screws and the earth terminal screw. These screws should not be screwed up tightly in the first instance as it is absolutely necessary at this stage to stretch the diaphragm to its outermost position. This is best effected by using a special forked wedge to keep the armature in its extreme position (see Fig. B.4). The wedge is inserted between the white rollers of the outer rocker and pressed under the tips of the inner rocker until it lifts the trunnion in the centre of the inner rocker as far as it will go. If this wedge is not available the diaphragm may be stretched by holding the points in contact by inserting a matchstick under one of the white fibre rollers and passing the current through the pump. This will excite the magnet, actuate the armature, stretching the diaphragm, and the screws may then be tightened down fully while the diaphragm is held in this position.

The spring blade rests against a small projection on the bakelite moulding, and it should be so set that when the points are in contact it is deflected back from the moulding. The width of the gap at the points is approximately ·030 in. (·76 mm.).

8. The pump should now be placed on test, using a cut-away cover to enable the contact breaker action to be observed, and at the same time prevent the rocker hinge pin from falling out.

A test rig of the type illustrated in Fig. B.5 is advised. Either petrol (gasoline) or paraffin (kerosene) may be used for testing purposes, and the pump should be mounted approximately 3 ft. (91 cm.) above the test tank. The use of a glass tube and rubber connections between the pump and the test tank is advised. When the pump is switched on it should prime itself promptly and the paraffin (kerosene), which is normally used for testing, should rise in the glass container until it flows over the top of the pipe having the $\frac{5}{32}$ in. (4 mm.) hole drilled in it 2 in. (5 cm.) below the top of the pipe. If the output of the pump is not up to normal, the $\frac{5}{32}$ in. (4 mm.) diameter hole will be able to deal with all the paraffin (kerosene) pumped and the liquid will not flow over the top of the pipe. The test rig is obtainable from the manufacturers.

This, therefore, constitutes a simple form of flow-meter which establishes in a simple manner whether the pump is giving a sufficient output or not. If there is any air-leak in the pump or in its connections, bubbles will be seen coming out of the pipe projecting downwards into the flow-meter. Bubbles will certainly come through here for a short while after starting up, but they should cease after the pump has been running for a minute or so. The tap should then be turned right off and the pump should stand without repeating its action for at least fifteen seconds. If it repeats within this time the suction valve is not seating correctly.

The tap should then be turned on slowly to see if the pump idles satisfactorily, and that the outer rocker comes forward till it makes contact with the pedestal, and while it is in this position the tip of the blade should be pressed inwards to reduce the stroke of the pump gradually. However much this stroke is reduced the pump should go on pumping normally until it fails altogether owing to there being no gap left. If instead of pumping it buzzes, it usually indicates excessive flexibility in the diaphragm. This, of course, is not likely to be experienced with a new diaphragm. The tap should then be turned full on again and the pump tested on 9 volts and it should work satisfactorily under these conditions, although probably with a reduced output.

It is as well to let the pump run for ten minutes or so before carrying out these various tests. The cover,

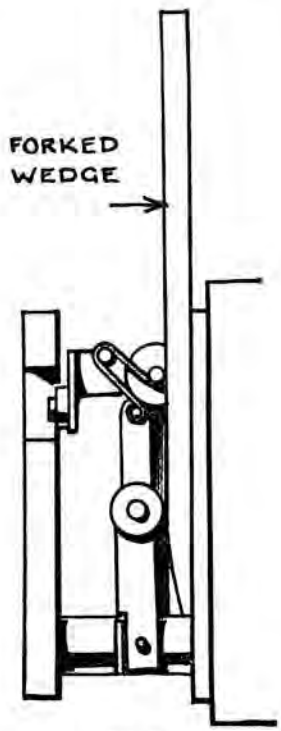


Fig. B.4.
A forked wedge is used to hold the armature in position while the diaphragm is fitted.

should then be fitted and held in place with an ordinary brass nut and an insulated dome nut fitted on the end of the terminal.

Note.—*There are three important points repeatedly overlooked by operators. These seriously affect the functioning of the pump ; they are :—*

1. *To keep the contact breaker blade out of contact while obtaining the correct diaphragm setting.*
2. *To press firmly and steadily on the armature, instead of jerking it, while obtaining the setting.*
3. *Omitting to stretch the diaphragm to the limit of its stroke while tightening up the body screws.*

Section B.6

TRACING FUEL PUMP TROUBLES

Should the pump cease to function, first disconnect the fuel delivery pipe from the pump. If the pump then works the most likely cause of the trouble is a sticking needle in the float-chamber of the carburetter. Should the pump not work, disconnect the lead from the terminal and strike it against the body of the pump after switching on the ignition. If a spark occurs it indicates that the necessary current is available at the terminals, and that the trouble arises with the pump mechanism. If no spark can be detected, then it is an indication that the current supply has failed and that attention should be given to the wiring and battery. If current is present, further investigation should be carried out by removing the bakelite cover retained by the terminal nut. Touch the terminal with the lead. If the pump does not operate and the contact points are in contact yet no spark can be struck off the terminal, it is very probable that the contact points are dirty and require cleaning. These may be cleaned by inserting a piece of card between them, pinching them together and sliding the card backwards and forwards.

If, when the wire is connected to the terminal and the tickler of one of the carburetters is depressed, the points fail to break, it is possible that there is either an obstruction in the suction pipe, which should be cleared by blowing it through with air, or some irregularity in the pump itself preventing the correct movement. This may be due either to the diaphragm having stiffened, or to foreign matter in the roller assembly which supports the diaphragm, in which case the diaphragm should be removed and the whole assembly cleaned and reassembled in accordance with the instructions in Section B.4.

On the other hand, if the points are not making

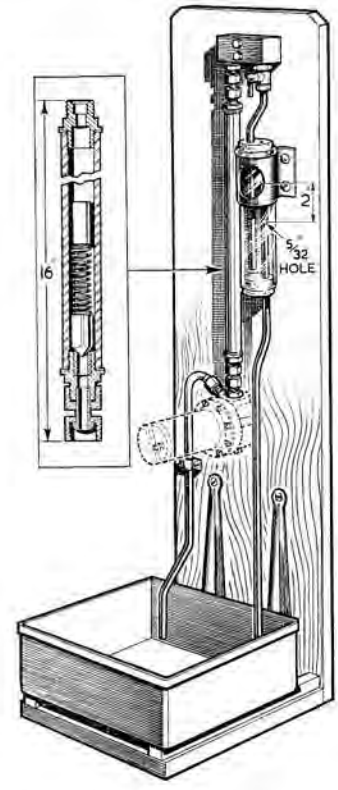


Fig. B.5.
The test rig for the H.P.-type fuel pump.

contact, see that the tips of the inner rocker (25, Fig. B.1) are in contact with the magnet housing. If they are not it is an indication that the armature has failed to return to the end of its normal travel.

To cure this, loosen the six screws which attach the magnet housing to the pump body, and make sure that the diaphragm is not sticking to the face of the magnet housing by carefully passing a pen-knife between the two. The hinge pin (19, Fig. B.1) should then be removed and the six retaining screws tightened up again. The tips of the inner rockers will probably now be found to be making contact with the face of the magnet housing, but if they are not, it will be necessary to remove and dismantle the whole magnet assembly in order to ascertain if an accumulation of foreign matter has caused a jam. Remember that whenever the magnet housing is removed, care should be taken to see that the guide rollers (10, Fig. B.1) do not drop out.

Pump noisy

If the pump becomes noisy and works rapidly, it is usually an indication that there is an air leak on the suction side of the pump. Check the level of the fuel in the tank and see that it is not too low.

To test for air leakage disconnect the fuel pipe from the carburetter "T" piece and place its end in a glass jar (approximately 1 pint or half a litre) and allow the pump to deliver fuel into it. If air bubbles appear when the end of the pipe has become submerged in the fuel it is a clear indication of an air leak on the suction side of the sump in the fuel feed pipe between the tank and the pump, which should be found and cured. Check all the unions and joints, making sure that the filter union and inlet unions are all quite air-tight.

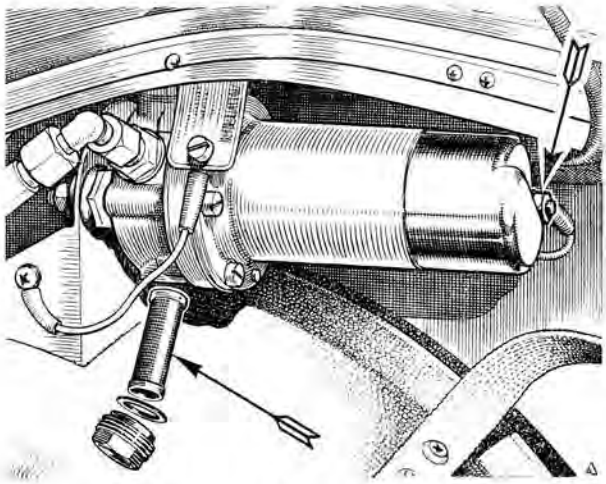


Fig. B.6.
The fuel pump filter and terminal nut.

Failure to deliver fuel

Should the pump continue beating without delivering fuel, it is probable that some dirt has become lodged under one of the valves, in which case they should be dismantled by unscrewing the top or delivery union and lifting out the valve cage, when they can be cleaned and reassembled. When replacing it see that the thin hard red fibre washer is *below* the valve cage and the thick orange one above.

If the pump struggles to pump and becomes very hot, it is probable that the filter has become clogged or there is an obstruction on the suction side. The filter is readily removed for cleaning by unscrewing its retaining plug at the bottom of the pump.

Section B.7

FUEL PUMP MAINTENANCE

Apart from keeping the contacts clean, the terminals tight, and removing the filter at regular intervals for cleaning, there is no maintenance required on the fuel pump.

Remove the filter (Fig. B.6) and clean with a brush. Never use rag to clean a filter.

Make sure that the terminals are always tight, particularly the earth lead attached to one of the pump body flange bolts.

A large percentage of the troubles encountered with electric pumps is caused by bad earth connections.

Section B.8

THE CARBURETTERS

Two S.U. carburetters of the controllable jet type, complete with an air cleaner, are fitted. They are synchronised and careful setting is needed to produce the best results. The throttle butterflies are interconnected by means of a spindle and two universal joints.

Section B.9

CARBURETTER ADJUSTMENTS

Slow running is governed by the setting of the jet adjusting nuts and the throttle stop screws, all of which must be correctly set and synchronised if satisfactory results are to be obtained.

The two throttles are interconnected by a coupling shaft and spring coupling clips enabling them to be set and correctly synchronised when adjustments are being made.

The two mixture control levers are operated by a common control wire.

Before blaming the carburetter settings for bad slow running, make certain that the trouble is not caused by badly adjusted contact points, faulty plugs, incorrect valve clearance or faulty valves and springs.

Adjusting the jets

Run the engine until it attains its normal running temperature.

Remove the air cleaner and the cleaner intake pipe.

Slacken off the pinch bolt of one of the spring coupling clips locating the carburetter inter-connecting shaft to the carburetter throttle spindles so that each carburetter can be operated independently.

Disconnect the mixture control cable from both levers.

Disconnect the hand throttle control.

Unscrew both throttle lever setting screws until the throttles are completely closed. Turn the adjusting screw of the rear carburetter in a clockwise direction approximately one turn to set the throttle for fast

idling ; lift the piston of the front carburetter ½ in. (13 mm.) to leave the carburetter out of action.

With the engine running, set the jet adjusting nut of the rear carburetter so that a mixture strength is obtained which will give the best running speed for this particular throttle opening, taking care to see that the jet head is in firm contact with the adjusting nut the whole time.

The correctness or otherwise of this setting can be checked by raising the suction piston about $\frac{1}{32}$ in. (1 mm.). This should cause a very slight momentary increase in the speed of the engine without impairing the evenness of the running. If the engine stops, the mixture is too weak. If the speed increases and continues to increase when the piston is raised as much as ¼ in. (6 mm.) the mixture is too rich.

When the setting of the mixture is correct for the rear carburetter, unscrew the throttle adjusting screw until the throttle is fully closed and lift the piston ½ in. (13 mm.) to put it out of action. Repeat the adjustment operations on the front carburetter.

When both carburetters are correctly adjusted for mixture, set the throttle adjustment screw of each to give the required slow running. Reconnect the mixture control wire. Refit the air cleaner and intake pipe.

Slow-running and synchronisation

Turn the throttle adjustment screw of each carburetter to give a fast idling speed, taking care to turn each screw the same amount. Now unscrew each throttle lever adjustment screw an equal amount, a fraction of a turn at a time until the desired slow-running speed is obtained.

Accuracy of synchronisation can be checked by listening at each carburetter air intake in turn through a length of rubber tubing and noticing if the noise produced by the incoming air is the same at both. Any variation in the intensity of the sound indicates that one throttle is set more widely open than the other.

When the same intensity of sound is given by both carburetters the intercoupling shaft clip should be tightened firmly to ensure that the throttles work in unison.

Since the delivery characteristics when both carburetters are working together vary somewhat from those existing when each is working separately, it will be found necessary to check them again for correctness of mixture strength by lifting each piston in turn as indicated in *Adjusting the jets*, making such adjustments as are required to balance the mixture strength and to ensure that the mixture is not too rich.

Connect the hand throttle control and adjust its range by the spring-loaded screw between the slow-running screws.

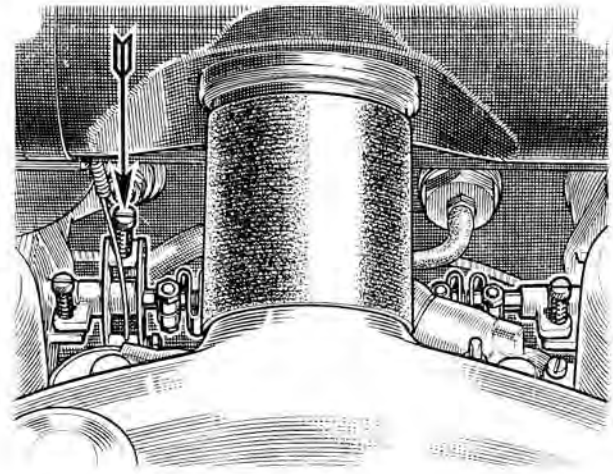


Fig. B.7.
The throttle adjustment screws. The arrow indicates the hand throttle adjustment.

Section B.10

CENTRING A JET

First remove the clevis pin at the base of the jet, which attaches the jet head to the jet operating lever ; withdraw the jet completely, and remove the adjusting nut and the adjusting nut spring. Replace the adjusting nut without its spring and screw it up to the highest position. Slide the jet into position until the jet head is against the base of the adjusting nut. When this has been done, test the piston for freedom of movement by lifting it up with the finger with the dashpot piston removed. If it does not move freely, slacken the jet holding screw and manipulate the lower part of the assembly, including the projecting part of the bottom half-jet bearing, adjusting nut and jet head. Make sure that this assembly is now slightly loose. The piston should then rise and fall quite freely as the needle is now able to move the jet into the required central position. Tighten the jet holding screw again and check that the piston is still quite free. If it is not found to be so, slacken the jet holding screw again and repeat the operation. When complete freedom of the piston is achieved remove the jet adjusting nut and jet, and refit the spring. Refit the adjusting nut and screw it back to its original position.

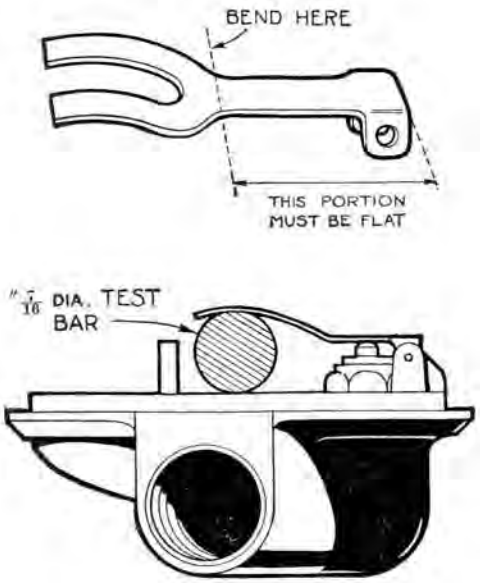


Fig. B.8.
The correct setting of the float lever.

Experience shows that a large percentage of carburetters returned for correction have had jets removed and not correctly centred on replacement.

Section B.11

SOURCES OF CARBURETTER TROUBLE

Piston sticking

The piston assembly comprises the suction disc and the piston forming the choke, and carries the hardened and ground piston rod which engages in a bearing in the centre of the suction chamber and in which is, in turn, inserted the jet needle. The piston rod running in the bearing is the only part which is in actual contact with any other part, the suction disc, piston, and needle all having suitable clearances to prevent sticking. If sticking does occur the whole assembly should be cleaned carefully and the piston rod lubricated with a spot of thin oil. No oil must be applied to any other part except the piston rod. A sticking piston can be detected by inserting a finger in the air intake and lifting the piston, which should come up quite freely and fall back smartly onto its seating when released.

Water or dirt in the carburetters

When this is suspected, remove the air cleaner, start the engine, open the throttle, and block up the air

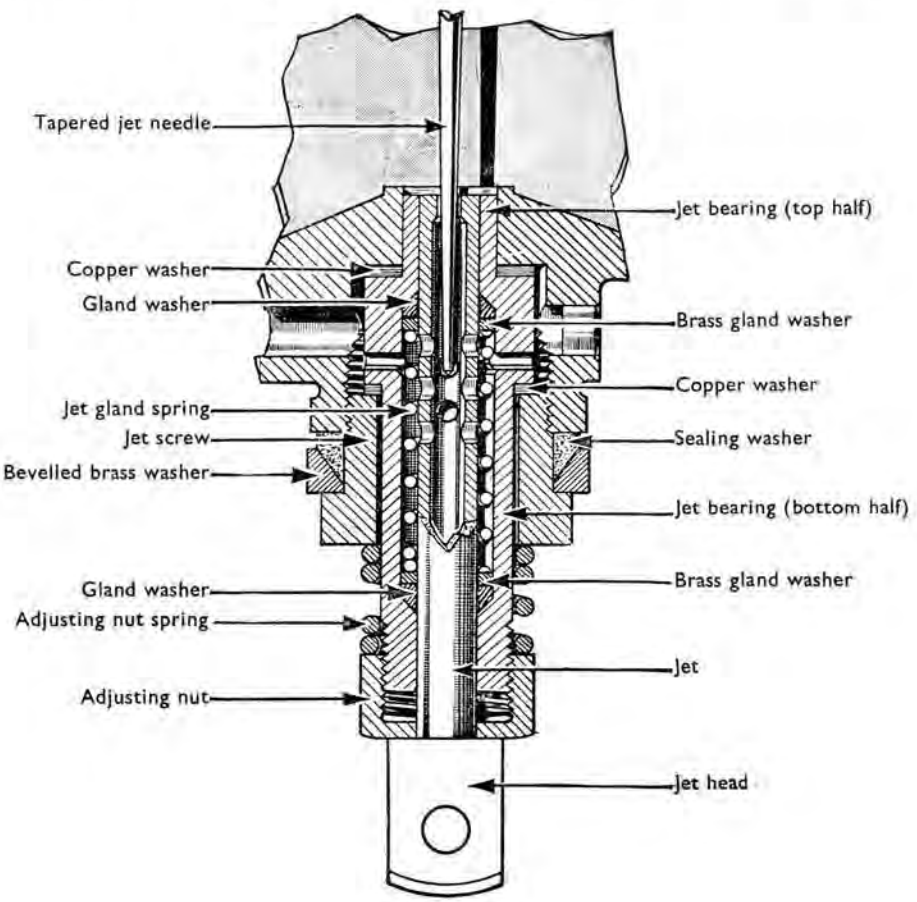


Fig. B.9.
The jet assembly.

inlet momentarily without shutting the throttle, keeping the throttle open until the engine starts to race. This trouble seldom arises with the S.U. carburetter owing to the size of the jet and fuel ways. When it does happen the above method will nearly always clear it. Should it not do so, the only alternative is to remove the jet.

Float-chamber flooding

This is indicated by the fuel flowing over the float-chamber and dripping from the air inlet, and is generally caused by grit between the float-chamber needle and its guide. This can usually be cured by depressing the float depressing plunger to allow the incoming flow of fuel to wash the grit through the guide and into the float-chamber.

Float needle sticking

If the engine stops, apparently through lack of fuel, when there is plenty in the tank and the pump is working properly, the probable cause is a sticking float needle. An easy test for this is to disconnect the pipe from the electric pump to the carburetters and switch on the ignition to check if fuel is delivered ; if it is, starvation has almost certainly been caused by a float needle sticking to its seating, and the float-chamber lid should therefore be removed, the needle and seating cleaned, and refitted. At the same time it is advisable to clean out the entire fuel feed system, as this trouble is caused by foreign matter in the fuel, and unless this is removed it is likely to recur.

Section B.12

THE AIR CLEANER

Remove the unit and wash the gauze in petrol (gasoline) every 6,000 miles (10000 km.) or every 3,000 miles (5000 km.) in exceptionally dusty conditions.

When the gauze is clean and dry, re-oil it with engine oil and allow it to drain before refitting to the engine.

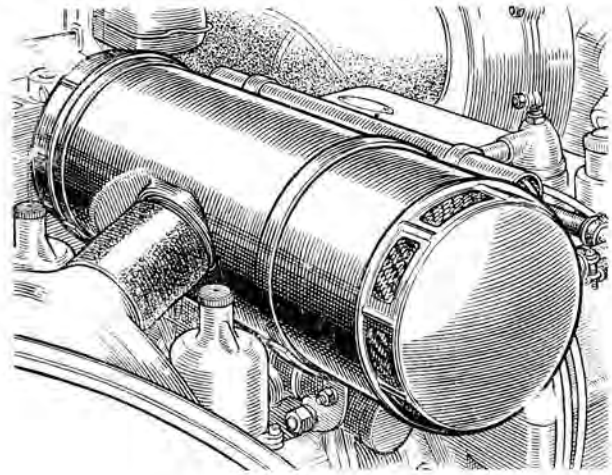


Fig. B.10.
The air cleaner.