

Fig. 6

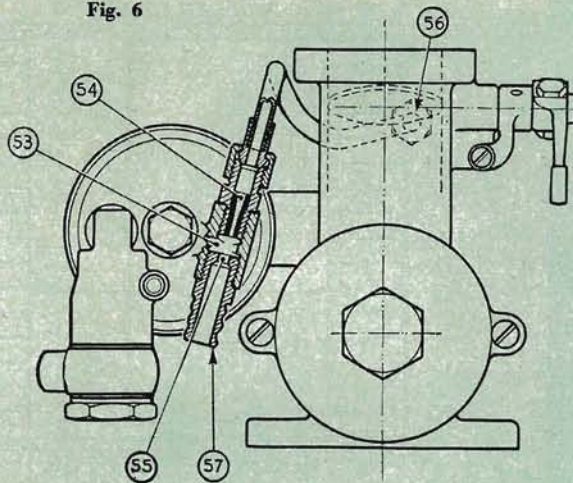


Diagram of the additional weakening device developed for certain special applications. It is not intended for use with installations not originally so equipped.

This last article in the series based on official S.U. service data describes how to adjust twin and triple installations, the air bleed device, and a weakening device for special requirements

TO make a thorough job of adjusting twin or triple S.U. carburetters it is first advisable to check all engine details which affect performance, such as tappet clearances, plug gaps and distributor gap, and to ensure that these agree with the engine manufacturer's recommendations. The carburetters should then be checked over in accordance with the instructions given in the article on pages 48 and 49 in the May issue, making sure that the pistons are perfectly free and that the jets are correctly centred.

Now slacken the clamping bolts on the universally jointed connections between the throttle spindles so that the throttles can be set independently, and disconnect the mixture control linkage by removing one or, in the case of triple carburetters, two of the fork clevis pins. While the suction chambers are off, see that the needles are located in the same position in all the pistons and that the jets are the same distance below the bridges of the carburetters when they are pushed hard against their adjusting nuts.

Check by Ear

Unscrew the throttle-adjusting screws and screw these back until they will just hold a piece of thin paper inserted between the adjusting screw and the stop lug, then screw them in one complete turn. The engine may now be started. When it is thoroughly warmed up the speed may be adjusted by turning the throttle-adjusting screws equal amounts in either direction, depending on whether a higher or lower speed is required. To check for exact synchronisation of the throttle openings it is best to listen to the intake. This is most easily done by holding one end of a piece of rubber tubing against the ear and holding the other end near the intake of each of the carburetters in turn. If the hiss on one of them is louder than on the others, unscrew its throttle-adjusting screw until the intensity of the hiss is equal. When it is obvious that this is satisfactory, the mixture should be adjusted by screwing the jet-adjusting nuts up or down to exactly the same extent, pushing the jets hard up against the nuts, until satisfactory running is obtained. As these are adjusted the engine will probably run faster, and it may therefore be necessary to unscrew the throttle-adjusting screws a little, each by

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the same amount, in order to reduce the speed. When the mixture is correct on all the carburetters, lifting the piston of one of them with a penknife blade should make the engine beat become irregular from excessive weakness. If lifting the piston on one carburettor stops the engine and lifting that of another does not, this indicates the mixture on the first carburettor is set weaker than that on the second and the first one should therefore be enriched by unscrewing the jet-adjusting nut. When the mixture is correct from all carburetters the exhaust beat should be regular and even. If it is irregular, with a splashy type of misfire and a colourless exhaust, the mixture is too weak. If there is a regular or rhythmical type of misfire in the exhaust beat, together with a blackish exhaust, then the mixture is too rich.

Before re-connecting the mixture control linkage, make sure that the jets are hard up against the adjusting nuts and, if necessary, adjust the length of the linkage so that the clevis pins may be inserted freely while the jets are in this position. The throttle spindle interconnection clamping bolts may now be tightened.

Air Bleed

On the bulk of carburetters produced after March, 1950, in both twin and single carburettor installations, a small air bleed was added to the chamber holding the main jet assembly. The top of this air bleed unit protrudes at an angle from the side of the carburettor body, and its function is to assist the mixture stability under certain conditions of throttle opening.

There are two styles of this air bleed. In the majority of cases it is a simple type of unit finishing in a small pressed brass protector cap which can readily be detached after first removing the small centre screw. When this protector cap is detached the quite small bleed hole in the side of the brass insert can be examined and checked to make sure that it is clear and unobstructed by fluff or dust—this small hole

must not, on any account, be enlarged, but a pin point may be pushed through it to clear any possible obstruction.

The second and less common type of jet bleed protrudes through the side of the carburettor body to finish with a screwed union and a small pipeline which generally leads to the lid of the float-chamber, but alternatively it may go to some portion of the air inlet pipe or air cleaner.

To inspect the orifice of this second type, it is only necessary to detach the pipeline nut at the union, close to the carburettor body, and inspect the actual bleed hole which is part of the bore of the union—it is not a radial or side hole as in the simpler type of unit.

There is nothing that can go wrong with these air bleeds apart from blockage by dirt—and the average driver would not detect the very slight deterioration of performance which results. If, however, the centre screw of the simple unit, or the screwed union of the pipeline unit, worked loose, then a drastic weakening effect on the mixture strength would immediately be noticeable.

Weakening Device

It is normally desirable to provide a somewhat richer mixture when the engine is running under full load than under cruising conditions. On the majority of installations the S.U. carburettor automatically achieves this due to the pulsating nature of the air flow on full load as against the steady flow when cruising with the throttle partly shut.

This effect, which is referred to as mixture ratio spread, can generally be achieved to exactly the right degree by careful design of the air intake and induction passages. Certain engines, however, demand a rather greater degree of mixture ratio spread than can conveniently be met in this way, and in such cases the additional weakening device, illustrated in Fig. 6, may be employed.

This comprises a fitting attached to the

float-chamber cap nut, the interior of which (53) is placed in communication with the interior of the float-chamber by suitable drillings and passages.

Apart from this communication, the float-chamber is otherwise sealed from the atmosphere by the omission of the normal atmospheric vent, and by the provision of a sealing washer between the float-chamber bowl and the lid.

Automatic Control

It will be seen from the diagram that, in addition to the communication to the interior of the float-chamber, there is a communicating orifice (55) to the atmosphere, or to the intake region at the mouth of the carburetter, by means of a neoprene tube attached to the nipple (57). A further communication is formed via the small venturi-shaped member (54) to a drilling (56) located at the throttle edge. The action of the device is as follows:—

When the throttle is shut back to the normal idling condition, the orifice (56) emerges on the carburetter side of the throttle and is therefore only subject to the slight depression on the down-stream side of the choke piston. This slight depression will cause a flow of air through the neoprene tube from the mouth of the carburetter through the orifice (55) and thence through the venturi member (54), but since the degree of depression causing this flow is small, its effect upon the pressure in the region (53), and hence in the float-chamber, is negligible, and the float-chamber is maintained substantially at atmospheric pressure, as is normally the case.

Similarly, when the throttle is fully open, or substantially fully open, or at full engine torque, or substantially full engine torque, the depression which the device produces, and its effect upon the float-chamber pressure, is negligible.

When, however, the throttle is partially shut, and at any stage between idling and full torque, a substantially higher depression is exercised at the orifice (56) and air will flow through the economiser fitting at such a velocity that a definite depression will be produced in the region (53). This depression will be communicated to the interior of the float-chamber, and will produce a diminution in the discharge from the jet.

Limited Effect

The employment of a venturi-shaped member (54) instead of a plain orifice in this situation ensures that the velocity of air passing through this member will attain a limiting maximum value at a fairly low value of depression at the orifice (56), and that there will be no substantial increase in this velocity with further increase in the depression.

This ensures that the maximum air velocity through the venturi, and, consequently, the maximum weakening effect, is produced when the throttle is shut back by a relatively small amount from the full-load position, and that further shutting of the throttle does not increase this weakening effect to a point at which misfiring would occur.

This device is not usually applicable to types of carburetter on which it was not fitted as original equipment, since the resultant weakening effect would be excessive.

TRADE WINDS

by
JAMES HAMILTON

Parion Products Limited, of Whiteham, Essex, are sole distributors of the new Chip Magnet Plug. These plugs replace without modification the existing drain plug in your car sump, gearbox or axle. The "Chip" plug incorporates a special magnet which it is claimed has a normal life of over two years, during which time it will continuously withdraw metallic particles from the circulating oil.

Coolant Filter



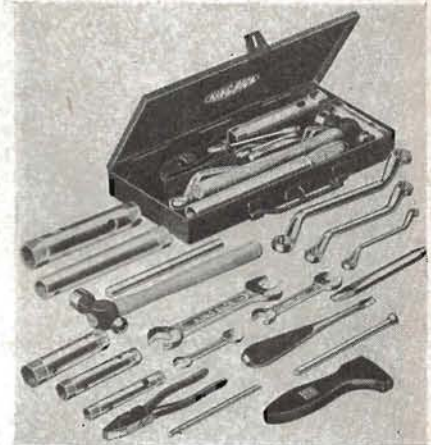
The new Fram cooling system filter.

Simmonds Aerocessories new Fram cooling system filter will have ready sales amongst discerning motorists. This filter removes all solids and assures a flow of clean water throughout the entire cooling system. It is also claimed that it inhibits corrosion and preserves the water passages in both engine and radiator. Some motorists are fortunate enough to live in areas where soft water is obtainable from the tap, but the majority of us live in hard-water areas and will welcome this new device.

Suitable kits are available for the Morris Minor, Oxford, Six, the Riley 1½ and 2½ litre, and the Wolseley Four-Fifty and Six-Eighty.

Tool Kits de Luxe

Abingdon King Dick, in addition to their extremely comprehensive range of tools, can now supply car and van tool-cases in reinforced metal boxes which are a great improvement over the present type normally



An example from the range of tool kits supplied by Abingdon King Dick in metal boxes.

supplied in canvas or leather rolls. One of these new tool-cases would make a most acceptable present for any motorist.

Arm-rest

An independent arm-rest which is simply hooked over the back of any bench-type seat to suit the comfort of the driver and passenger is available from Weathershields of Birmingham. The arm-rest itself lifts up to expose a useful receptacle for small articles and can be supplied in colour to match your car's upholstery.

Friction Dampers

Owners of M.G. "TD"s who intend to submit their cars to higher than average speeds or to the stresses of competition work may wish to fit TE1/N Andrex suspension dampers, which cost from £7 15s. a pair and are manufactured by Andrex (Components) Ltd., of Felsham, London. All owners of M.G.s will be interested to know that production Mark II M.G. "TD"s are currently available with these suspension dampers fitted ex works.



"Apollo" car polish now makes its appearance in a rectangular tin priced at 4s., or 4s. 6d. post paid, from the makers at the address shown.