# CHAPTER III

# Fuel System

*Fuel Feed - Fuel Filters - The Carburetter (previous to Chassis GYD-25) - Cleaning of the Air Valve-Setting of the Jets - Mixture Control- Slow Running - Starting Carburetter - Float Feed Mechanism - Crankcase Btreather Pipe to Carburetter - Dismantling the Carburetter - The Carburetter (Chassis GYD-25 and onwards) - Faulty Adjustment of Carburetter - Idling and Low-Speed Adjustment - Automatic Air Valve - Float Feed Mechanism.*

## Fuel Feed.

The fuel feed is arranged on the system by which the vacuum induced in the induction pipe of the engine raises the fuel from the main tank situated on the back of the car to a small service tank on the engine side of the dash, when it flows by gravity to the carburetter float chamber.

A cork-seated change-over tap is located on the dashboard and controlled from the driver's side, having its dial plate marked **R** (Reserve), **O** (Off), and **M** (Main). In the off position the supply from the main tank to the vacuum tank is shut off, and also that from the vacuum tank to the carburetter.

Some chassis have a 14 gallon main tank with a reserve of 2 gallons, while other chassis have an 18-gallon main tank with a reserve of 2½ gallons.

A catch must be depressed before the tap can be turned to the **R** position.

If the main fuel supplu be exhausted during a run, it should be observed that the service tank will also have been emptied, and after filling the main tank, the service tank must also be recharged before the engine can be started. This can be done by cranking over the engine for a few revolutions, a depression thereby being induced in the induction pipe, which will draw up fuel from the main tank into the service tank.

## Fuel Filters.

On the earlier models, Chassis Nos. GXO11 to GYD-23, a small conical filter gauze is located on top of the inlet chamber at the junction of the main petrol supply pipe to the vacuum supply tank, and irregularity in the wotking of the vacuum feed may be due to choking of theis filter with foreign matter.

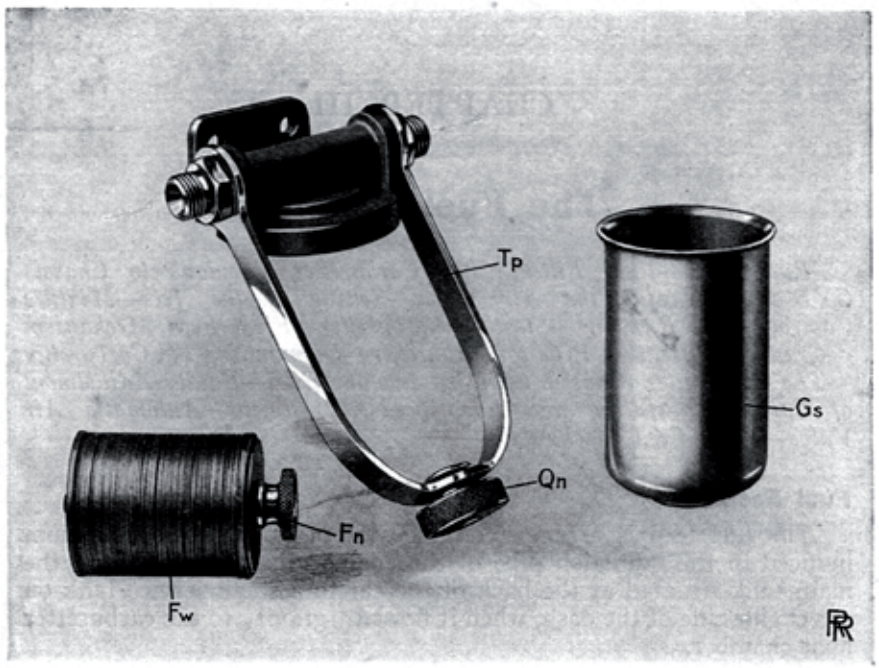


Fig.19. DASHBOARD FILTER DISMANTLED.

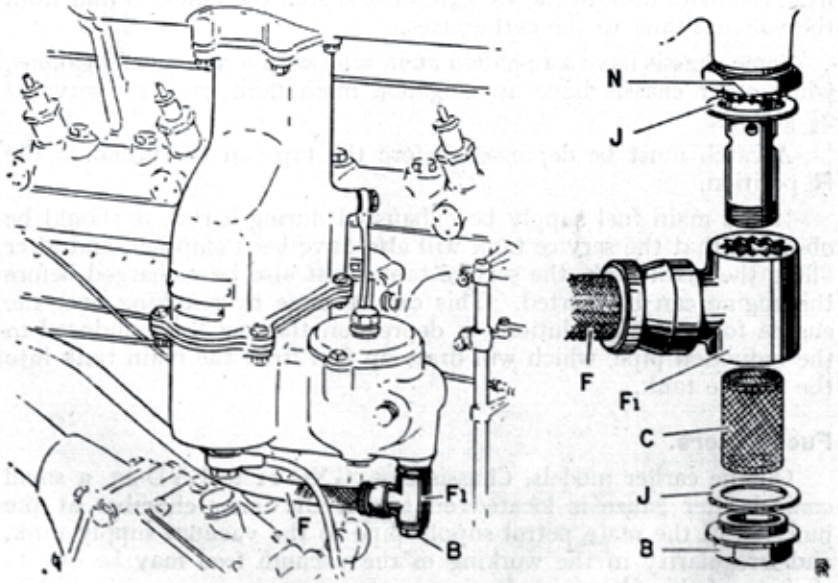


Fig.20 - CARBURETTER FILTER.



It should be removed and carefully cleaned every 5,000 miles as directed on page 28.

A filter is arranged on all models, in the pipe line between the vacuum feed tank and the carburetter float chamber, and is mounted on the front of the dashboard, under the steering column.

The filter is shown dismantled for cleaning in Fig. **19**. It should be cleaned every 5,000 miles, as directed on page 28.

On the later models, Chassis GYD-25 and onwards, a small gauze strainer is arranged in the fuel inlet to the float chamber of the carburetter.

This should be removed and cleaned every 5,000 miles as directed on page 28.

On certain chassis two strainers are arranged in the main fuel tank, as shown in Fig. **21**.

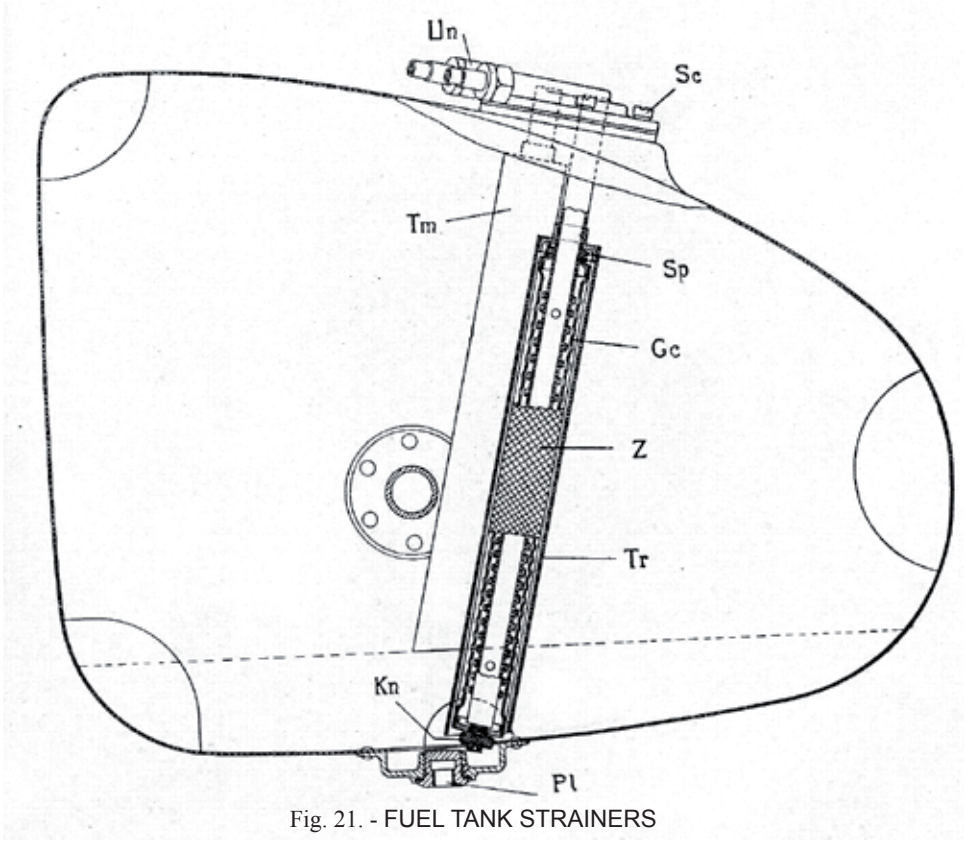


Fig. 21. - FUEL TANK STRAINERS

To remove them for cleaning every 5,000 miles as directed on page 28, the unions **U**n should be disconnected and the six screws Sc, removed.

The strainers may then be lifted out of the tank, care being taken not to damage the leather joint washer.

Each gauze is retained in position by a knurled nut **K**n, which is prevented from coming adrift by a split cotter. After removal of the latter, and unscrewing the knurled nut, the gauze may be removed, care being taken not to lose the small coil spring, which is arranged on top of the gauze carrier.

Remove and clean the gauze by washing in petrol or parrafin, using a brush.

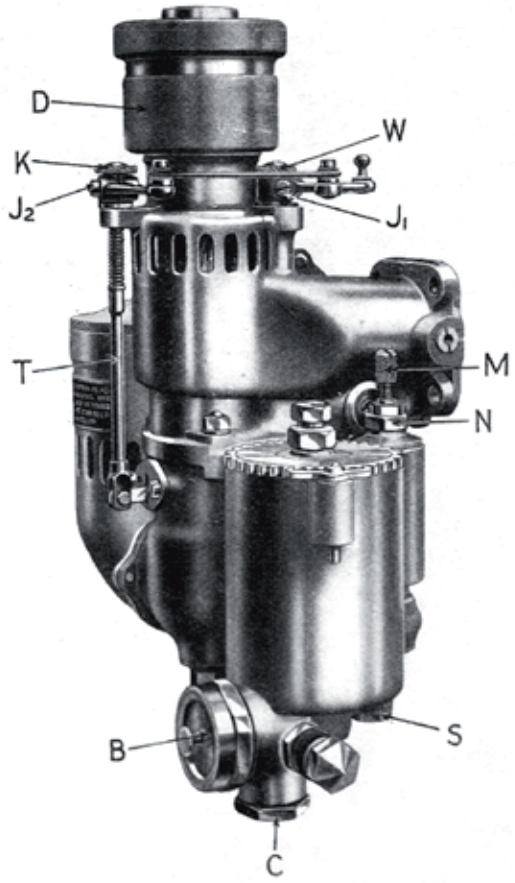


Fig. 22. - CARBURETTER (Chassis previous to GYD-25.)

B. Filter.
C. Drain Plug.
D. Piston Cylinder.
J1. Clamping Screw.
J2. Clamping Screw.
K. Knurled Nut.
M. Regulator - Starting Carburetter Jet.
N. Piston - Starting Carburetter.
T. High-speed Jet Control.
W. Low-speed Jet Control.



When rplacing the strainers in their tubes, care must be taken that the coil springs are in position. The knurled nuts are intended for turning with the fingers only, and on no account must any tool be used on them. After they are replaced, brass split cotter must be fitted in the holes provided.

When replacing the strainers in the tank, care must be taken that the leather joint washer is in position.

**The Carburetter.** (*For Chassis previous to GYD-25.*)

The carburetter is of the Rolls-Royce automatic expanding type provided with two jets adjustable by a single lever under the driver's control.

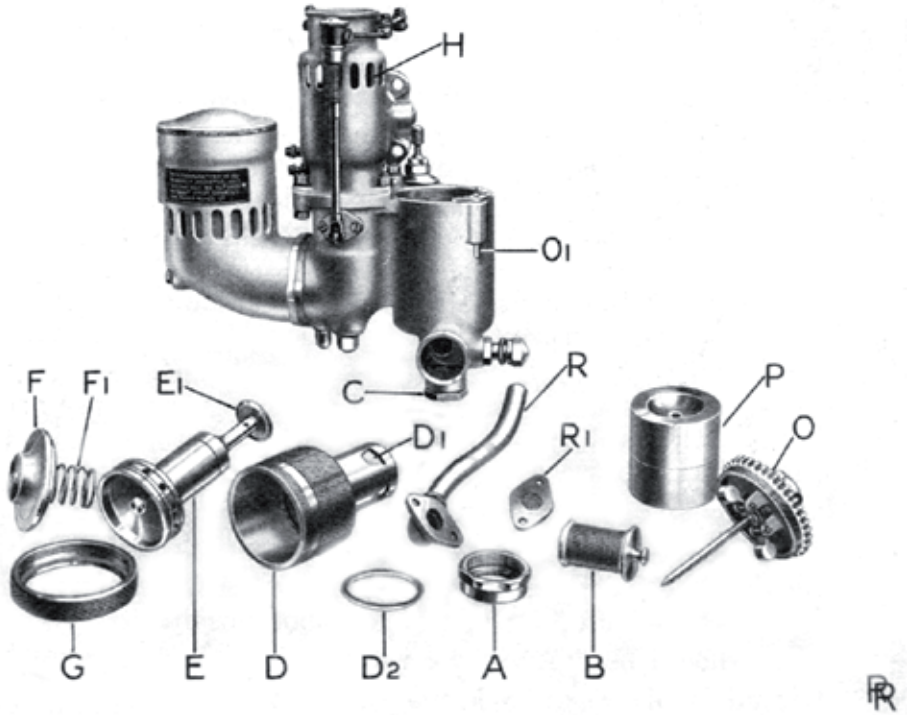


Fig. 23. - CARBURETTER WITH CERTAIN PARTS DISMANTLED.

A. Retaining Nut - Filter.
B. Filter.
C. Drain Plug.
D. Cylinder.
D1. Cylinder Ports.
D2. Joint Washer.
E. Piston.
E1. Diaphram.
F. Cap - Cylinder
F1. Spring.
G. Retaining Ring - Cap
H. Air Ports.
O. Cover - Float Chamber
O1. Catch - Cover.
P. Float
R. Crankcase Breather.
R1. Gauze Filter.

Each of these jets is located in a venturi tube, the smaller one always being in action, and the larger one being automatically brought

into action by an increase, beyond a certain value, in the depression existing within the carburetter, due to an increase of engine speed or throttle opening, or both.

The complete carburetter is shown in Fig. **22**, and in Fig. **23** it is shown with certain parts removed.

The outlets of the jets are regulated by taper needle valves, that for the small or low-speed jet being shown at **W**1 (Fig. **22**), and the control for the large or high-speed jet needle at **T**.

The automatic expanding effect is attained by the provision of a suction-operated piston working in a cylinder, **D** (Figs. **22** and **23**), located above the high-speed jet.

The cylinder **D** and piston **E** are shown removed for cleaning in Fig. **23**. The cap **F** carrying the spring **F**1 fits over the top of the cylinder, and is retained by a knurled nut **G**.

Increased depression in the carburetter raises the piston **E** against the spring **F**1, carrying with it a diaphram **E**1, which fits into, and in its lowest position, blanks off the larger choke tube. The lifting of this diaphram admits air past the high-speed jet.

More movement of the piston not only opens the high-speed choke tube still further, but also admits air by uncovering the ports **D**1, and air gaining admission through ports **H** in the carburetter, thereby counteracting the tendency for the mixture to become over-rich at increased air velocity.

The various adjustments should on no acount be altered, the carburetter having been carefully set by the makers in the first instance.

The mixture control lever, which operates on both jets simultaneously, provides ample range to suit ordinary variations in running conditions, such as different atmospheric temperatures and different fuels, including the use of benzole or benzole-petrol mixtures.

## Cleaning the Air Valve.

The air valve valve and cylinder should be removed every 2,500 miles and carefully wiped with a piece of dry cloth, as directed on page 21.

No oil should be used on the valve or its cylinder.

It is advisable when replacing these parts to refit the cylinder to the carburetter without the air valve, the latter being replaced afterwards.

Care should be taken when replacing the cylinder **D** to see that the metal washer **D**2 is in position and its joint faces are perfectly clean.

It must be emphasised that great care is necessary when handling these parts, as they have been machined to fit very accurately, and any slight distortion is liable to impair the working of the carburetter.

## Setting of the Jets.

If the adjustment of the jet needles has been upset for any reason it acn be restored in the following manner: -



With the mixture control lever set half-way along its quadrant and the clamping screws **J**1 and **J**2 (Fig. 22) of the jet needle levers slack, each of the knurled nuts **K** and **W** should be turned until the line filed across them registers with the line across the end of the corresponding screwed spindle, the end of the spindle being at the same time flush with the end of the nut.

The clamping screws **J**1 and **J**2 should then be tightened, and the makers' setting will have been restored.

If, owing to damaged and replacement parts, it becomes necessary to re-set the jets with no guide in the form of markings referred to, it is strongly recommended that the makers should be consulted, and this work not attempted without their advice or assistance.

In the eveny,however, of circumstances rendering such a course impossible, or very inconvenient, proceed as follows: -

With the mixture control lever set half-way along its quadrant and the clamping screws **J**1 slack, the knurled nut **W** should be turned in a clockwise direction until its lower side just commences to lift away from the facing against which it normally rests.

The low-speed jet will now be fully closed, the tapered part of the needle resting on the mouth of the standpipe.

A preliminary setting can then be obtained by rotating the nut **W** in an anti-clockwise direction through approximately one complete turn. The clamping screw **J**1 should then be tightened.

In the case of the high-speed jet it is noy practicable to obtain a preliminary setting in this way because the tapered portion of the high-speed jet needle is arranged to pass freely inside the bore of its standpipe. This is done in order to protect these parts from damage which otherwise might result if the nut **K** were turned to force the taper of the jet needle into the standpipe.

Consequently no visible indication is available to show precisely when the high-speed jet is fully closed, and it will be necessary to discover its approximate position by running the engine.

It will be possible to start up the engine after setting the low-speed jet needle as described, and this should now be done, the mixture control lever being set half-way along its quadrant.

If, when the throttle is opened moderately by means of the lever on the steering wheel, the engine pops back through the carburetter and possibly stops, the mixture is too weak, and if black smoke comes from the exhaust and the engine misses fire and perhaps stops, the mixture is too rich.

To weaken the high-speed jet setting, the screw **J**2 should be released and the nut **K** turned in a clockwise direction; and to strengthen it nut **K** must be turned in an anti-clockwise direction.

Having arrived at a preliminary setting for the high-speed jet in this way, and with the mixture control lever again set half-way along its quadrant, the throttle should be opened by means of the lever on the steering wheel until a speed is reached at which the automatic

piston valve is on the point of lifting but has not actually lifted. Movement of this can be observed by looking through the air ports in the carburetter.

The clamping screw **J**1 of the low-speed jet needle should then be slackened, and the knurled nut turned in a clockwise direction until the engine speed becomes slightly reduced.

The clamping screw should then be tightened, and the mixture control lever moved first over to strong and then to weak. If in *both* of these positions the engine hesitates, or even possibly stops in the weak position, then the adjustment of this jet is fairly correct.

To test the high-speed jet setting the acelerator pedal should be depressed momentarily, and the lever again tried in both its extreme positions. In either position a distinct loss of power should be experienced. If these variations do not occur, or occur in only one of the extreme positions of mixture strength, the settings should be varied accordingly by slackening the clamping screw and turning the high-speed knurled nut in a clockwise or anti-clockwise direction, according as the mixture requires weakening or strengthening respectively.

The foregoing will only provide an approximate or trial setting.

When the car is taken on the road for final adjustment, the driver should bear in mind that the high-speed jet comes into operation at about four miles per hour in top gear on the level. Consequently any sign of too rich or too weak a mixture below this speed is an indication that the low-speed jet requires adjustment.

At speeds above four miles per hour, the high-speed jet has an increasing influence over the mixture.

The best all-round setting of the jets is one in which movement of the mixture control lever to either of its extreme positons will, at any speed, cause a distinct loss of power and possibly misfiring. Steady running and good power at all speeds should be obtained with the lever set half-way on its quadrant.

### Mixture Control

Utilised in a proper manner, very economical running can be obtained.

When starting the engine from cold, especially in cold weather, the mixture lever should be moved over to **Strong** before changing from the starting to the main carburetter.

As the engine warms up it will be found that the lever can be moved towards the half-way position, until, with a well-warmed engine and normal touring conditions, it can be taken up a few notches towards **Weak.**

A weak mixture burns more slowly than a normal one, and to get the best power from such a mixture, the ignition needs to be well advanced. Consequently, the most economical running is obtained when the ignition lever is fully advanced and the mixture control set as



far towards **Weak** as the conditions allow without seriously reducing the power available.

If, on the other hand, weakening of the mixture is carried too far, then, apart from the probability of misfiring and popping in the carburetter, similar road conditions will call for a bigger throttle opening, and the economy desired be thereby nullified.

Under severe conditions, such as a long ascent which calls for full throttle, too weak a mixture may cause overheating. So the control lever may with advantage be set a little **Strong** under these circumstances.

### Slow Running.

The best slow running will be obtained with the mixture control set two or three notches **Strong.** If difficulty is experienced in getting the enfgine to run slowly, this may be due to the flow of petrol past the low-speed jet needle being restricted by the presence of foreign matter.

To remove this, the jet needle should be raised with the fingers by lifting knurled nut **W** (Fig. **22**), and the throttle simultaneously opened to race the engine momentarily.

If this effects a cure, it would be advisable to clean the petrol filters, as these are probably dirty.

The trouble may also be due to sticking of the carburetter air valve, or faulty tappet adjusment.

### Starting Carburetter.

A special auxiliary jet and expanding choke tube is incorporated in the carburetter for starting purposes only.

This jet can be regulated by means of the knurled screw **M** (Fig. **22**), which carries a taper needle running into the jet. Turning this screw in a clockwise direction reduces the jet opening, and in an anti-clockwise direction increases it.

Should occasion arise to re-set this jet adjustment, the screw should be turned with the fingers in a clockwise direction until it is felt that the needle is entirely closing the jet. It should then be rotated in the opposite direction for about one-and-a-half complete turns. This will give a setting at which the engine can be started. Then, with the engine running, the screw may be turned to weaken or strengthen the mixture slightly as may be required.

It is important that the setting of the needle should not be such as to provide an over-rich mixture. Although an average setting is one-and-a-half turns from the closed position as stated, this may be reduced to one-and-a-quarter turns in warm weather. On the other hand, in very cold weather, it may be increased to one-and-three-quarter turns, but must be again reduced when the weather becomes warm.

Adjustment of the starting carburetter should only be performed when the engine is cold.

The variable choke or throat of theis small carburetter consists of a suction-operated piston, which is lifted against gravity and automatically adjusts the choke area to suit the engine speed.

Access to this throat is obtained by unscrewing the cap **N**, which may then be lifted out with the jet needle. It is advisable occasionally to remove and carefully wipe the piston, but no oil should be used on it.

As the succesful working of this small carburetter is dependent on an air-tight induction system, it is essential that the main throttle should be fully closed when starting the engine.

When changing over to the main carbutetter, the throttle should be moderately opened and the starting carburetter lever turned to the **Running** or **Off** position, where it should always remain, except for starting. If the engine hesitates or tends to stop, the starting carburetter should be opened again and the main throttle closed until the temperature conditions of the engine are suitable for steady running on the main carburetter.

Cases have arisen of piston seizure which have been traced to excessive use of the starting carburetter. It should be appreciated that the object of the starting carburetter is to facilitate starting when the engine is quite cold, the mixture it provides under such conditions being on the rich side. Consequently, excessive use of the starting carburetter, or its use with a hot engine, is liable to cause liquid petrol to be drawn into the cylinders and wash away the engine oil.

Further, if used with a hot engine, starting may be difficult, due to the over-rich mixture.

The starting carburetter should not be used for more than half a minute before changing over to the main carburetter, and not used at all with a hot engine, in which circumstances starting will be found quite easy on the main carburetter only.

### Float Feed Mechanism.

The float chamber should be cleaned out every 5,000 miles as directed on page 25, by unscrewing the cover **O** (after raising the catch **O**1, if such is fitted) and removing the float **P** (Fig. **23**). The interior of the float chamber should be wiped out with a piece of clean, damp wash-leather.

No provision is made for flooding the carburetter by agitating the float needle, as this is never necessary. The starting carburetter is provided to supply suitably rich mixture for starting purposes.

If flooding occurs, it is probably due to foreign matter having lodged on the needle valve seating, and steps should be taken accordingly.



### Crankcase Breather Pipe to Carburetter.

In order to reduce the emission of oil fumes from the engine, a pipe is carried from the crankcase to the carburetter air inlet.

This pipe is shown removed at **R** in Fig.**23**.

A small gauze, **R**1, is arranged between the pipe flange and the carburetter, which in course of time may require cleaning. It should be removed and cleaned every 10,000 miles, as directed on page 29.

### Dismantling the Carburetter.

Normally it should not be necessary to dismantle the carburetter to a further extent than that already mentioned. On the other hand, it sometimes occurs that the jet needles become sticky in operation, due to sediment and impurities in the fuel, and the correct functioning of the carburetter is impaired.

Under such circumstances the carburetter should be removed bodily from the engine for dismantling.

The plugs below bioth jet needles should then be removed and cleaned of sediment. At the same time it should be ascertined that the spring plunger below the high-speed jet needle is working quite freely. The upward pressute of this spring is relied upon to open the high-speed jet, and its freedom of movement is therefore of great importance.

After removing the air valve and its chamber two countersunk set-screws near the low-speed jet needle should be unscrewed. The jet needle can then be carefully lifted out.

The high-speed jet needle is removed by taking outthe pin from the jaw at the lower end of control rod **T**(Fig. **22**) and unscrewing the two countersunk set-screws which secure the bearing of the operating lever to the side of the carburetter. The needle jet may then be lifted out.

It is advisable to clean both jet needles carefully in paraffin. The jets themselves should also be cleaned out by using a small wooden stick and a piece of rag soaked in paraffin.

There should be no need to separate the two parts of the carburetter body, but if this is done, it is of vital importance to remove the air valve and its chamber first of all, and also the low-speed jet needle. The latter will almost certainly be damaged if left in position when the carburetter body is divided.

### The Carburetter (For Chassis GYD-25 and onwards.)

The carburetter is of the single jet expanding type, and is of Rolls-Royce design and manufacture.

Reliable idling of the engine is ensured by the provision of "Throttle-edge" carbutation.

Air passes from the air cleaner and silencer into the carburetter in a horizontal direction across the main jet orifice, the latter being regulated by a taper needle valve attached to the air valve. A trunk or extension carried by the air valve protrudes into the air-way above the jet and acts to vary the effective choke area.

The position of the air valve when the engine is running is determined by the depression of the induction pipe, the valve being connected by passage ways to a point between the butterfly throttle valve and the carburetter.

The air valve assembly is normally prevented from falling lower than a certain point by means of a stop which encircles the jet needle and abuts the main jet orifice. When the engine is idling or operating at small throttle openings, the air valve rests on this stop. An independent, miniature carburetter having a fixed jet and adjustable choke then comes into action, its mixture being delivered through

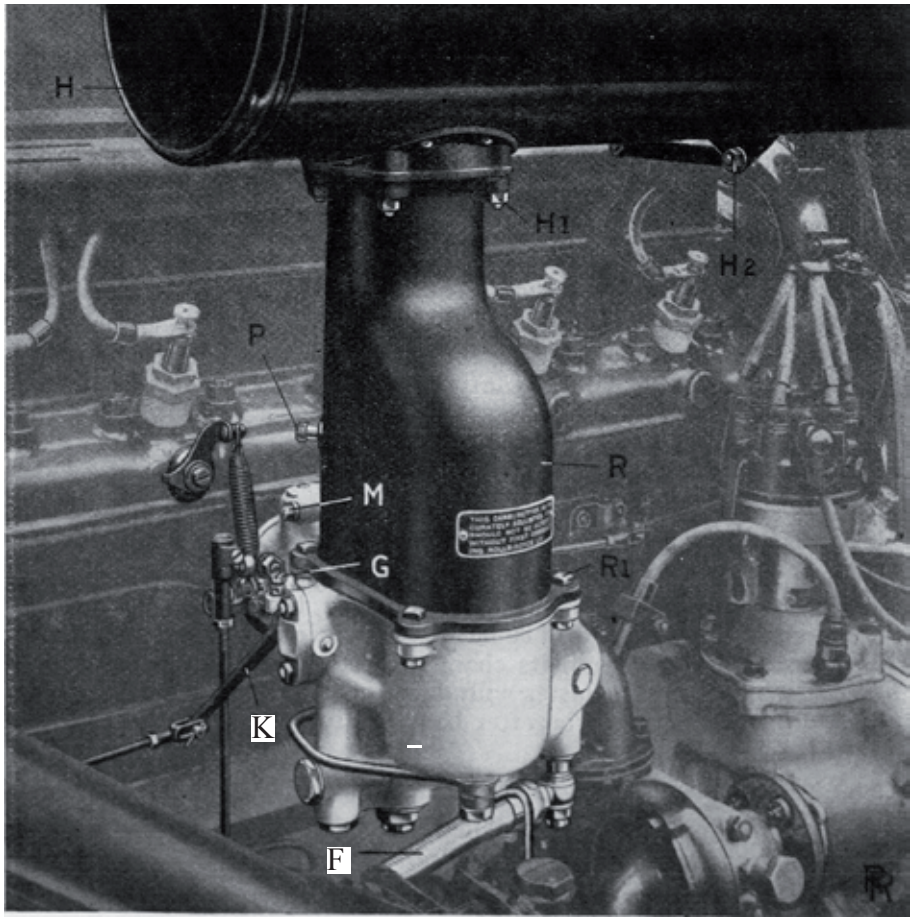


Fig. 24 - CARBURETTER IN POSITION ON ENGINE



a small hole adjacent to the edge of the butterfly throttle when this is nearly closed. The position of this small discharge hole relative to the edge of the throttle is arranged to be adjusable, in a manner to be described, in order to secure reliable idling and a smooth "change-over" from the idling jet to the main jet on opening up.

To facilitate starting from cold, there is a control lever on the instrument board, its quadrant being marked **Start** and **Normal** which, in the **Start** position, operates to lower the main jet orifice and thereby to permit the air valve to fall lower. This causes the choke area to be reduced, so providing a rich mixture for starting. As the jet orifice is increased relative to the choke area, the enriching effect is maintained, though to a decreasing extent, as the throttle is opened and the air valve lifts. The control, however, is only intended for use when starting from cold.

In Fig. **24**, the carburetter is shown in position on the engine, and below it is shown detached from the engine and with certain parts dismantled.

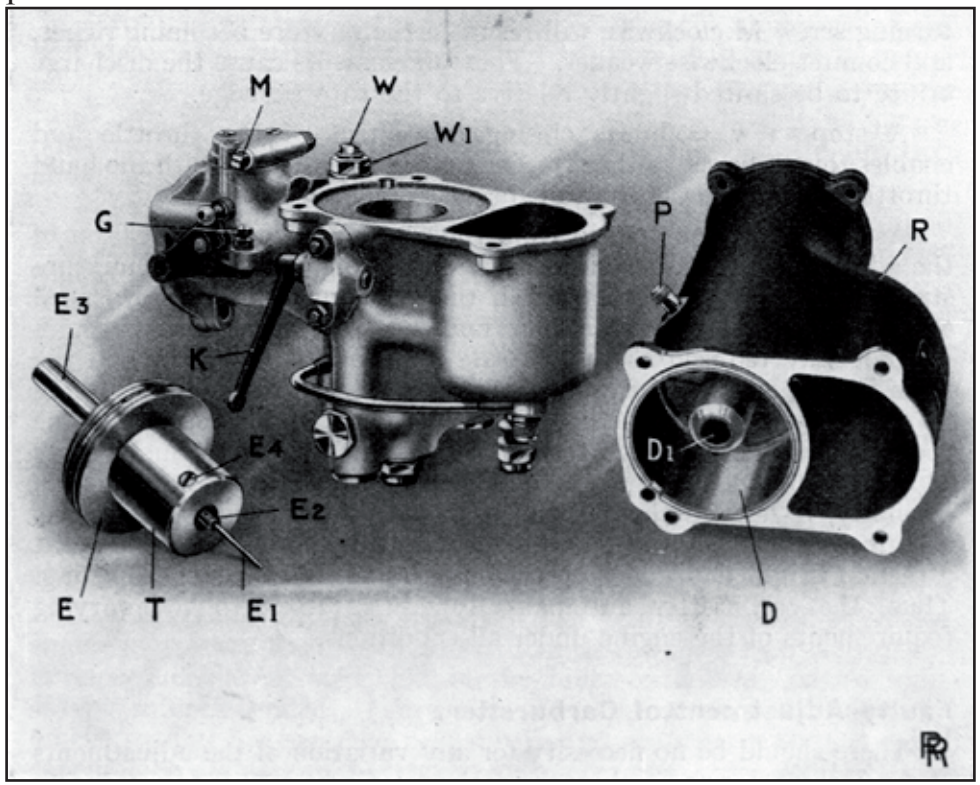


Fig. 25.- CARBURETTER, WITH CERTAIN PARTS DISMANTLED.

Formed integrally with the air inlet **R** is a cylinder **D** in which operates the air valve **E**. this carries the taper needle valve **E**1 for

control of the main jet orifice, and a trunk or extension **T** to adjust the air passage or choke in unison. A perforated sleeve **E**2 acts as the stop referred to and limits downward movement of the air valve under ordinary running conditions. There is a clearance between the air valve and its cylinder so that these parts do not actually touch, in order to avoid sluggishness in operation due to friction, the location of the piston being effected by an integral central extension **E**3, which closely fits a guide **D**1 in the cylinder.

The control lever for the main jet orifice is shown at **K**. As explained, this is only used for starting from cold, being controlled by a thumb lever on the instrument board.

The adjustable choke of the idling and low-speed carburetter is shown at **W**, the adjustment being locked by the lock nut **W**1.

The point of discharge of the idling mixture into the main airway relative to the throttle valve is rendered adjustable by forming the orifice eccentrically in a loose plug. The latter can be rotated, and the position of its hole thereby varied, by turning the screw **M** with a screwdriver. The influence of this adjustment is only felt when the engine is idling at a very low speed. Under these circumstances turning screw **M** clockwise will result in the mixture becoming richer, and counter-clockwise weaker. These movements cause the discharge orifice to be shifted slightly relative to the throttle edge.

A stop-screw **G** limits closing movement of the throttle and enables this to be set so that the engine will idle reliably with the hand throttle lever at the bottom of its quadrant.

As the throttle is opened from the idling position the location of the adjustable discharge orifice has a decreasing effect on the mixture strength, but on the other hand, the adjustment of the low-speed choke has a greater effect. The influence of this in turn becomes progressively reduced as the throttle is opened still further and the main jet comes into operation. This occurs when the engine is idling at about 750 r.p.m. Further throttle opening or increase of engine speed causes the air valve to lift, thereby increasing the fuel supply by lifting the needle **E**1, and the air supply by raising the trunk **T**. Similarly, it falls as the throttle is closed or the engine speed falls, a state of balance being maintained whereby the air valve keeps at a certain height dependent on thwe engine speed and throttle opening. Thus, the carburetter automatically adapts itself to the varying requirements of the engine under all conditions.

## Faulty Adjustment of Carburetter.

There should be no necessity for any variation of the adjustments of the carburetter as fixed by the makers. Great care is taken during testing of the car to secure the best settings, and these should not, under normal circumstances, be altered.

It is realised, however, that information as to the methods for restoring adjustments may prove valuable under special circumstances, such as



accidental derangement or damage, and is consequently given, as far as is practicable, in the following paragraph.

## Idling and Low-Speed Adjustment.

There are only three external adjustments, namely, the throttle stop screw **G**, the screw **M** for adjusting the position of the idling orifice, and the low-speed choke adjustment **W**. All of these are concerned with idling and low-speed running conditions.

Assuming these adjustments have been disturbed for any reason, the following procedure should be adopted when restoring them:-

The lock nuts **W**1 should be released, the low-speed choke **W** screwed in a closckwise direction as far as possible (in which position it will be resting on the low-speed jet) and then unscrewed one complete turn and be locked in this position by means of nut **W**1. The throttle stop screw **G** should be turned with a screwdriver, after releasing the lock nut, until it is clear of the lever on the throttle spindle. It should then be screwed in until it just comes into contact with the throttle lever and turned one complete turn further.

A trial adjustment of the plug which carries the idling orifice can be obtained by setting this in the mid-position of its range of movement. The total movement of screw **M** is about fourteen complete turns, therefore mid-position is obtained by rotating it as far as possible in one direction and then turning it in the opposite direction about seven complete turns.

The mechanical settings described, though preliminary and approximate, will at least enable the engine to be started up, and this should next be done.

The throttle should then be opened by means of the hand control until the engine is running light at about 750 r.p.m. The low-speed choke **W** should next be screwed in or out until the engine is observed to be firing evenly. The throttle should now be closed until the engine is running at a reasonably low idling speed, and screw **M** rotated one way or the other until the engine is firing perfectly regularly, as may be judged by listening to the exhaust pulsations.

Finally, the throttle stop screw **G** should be adjusted until the engine runs at a reliable idling speed in the neighourhood of 250 r.p.m.

The three adjustments described are best set finally when the engine is warm. Further, it will be found that the adjustment of the low-speed choke **W**, and that of the idling orifice **M**, are to some extent inter-dependent. Any sign of hesitation on opening up on the road at low speeds is probably due to weakness of the low-speed carburetter. This can be corrected by turning the screw **W** clockwise a little, thus reducing the low-speed choke area.

## Automatic Air Valve.

The air valve requires no attention beyond lubrication of its guide.

If defective running should develop, as evidenced by serious hesitation on pick up and posibly popping in the carburetter, it is probable that the air valve is sticking slightly. In such circumstances the air silencer H must be taken off, but before doing this the breather pipe between the silencer and the valve rocker cover must br removed with the fingers. The silencer can then be taken off after removing nuts H1 and H2. Next the bolts R1 should be removed preparatory to lifting off the inlet pipe R. Great vare must be taken when doing this that the air valve does not drop out and become damaged. The best plan is to lift off the pipe R with both hands and insert the fingers at either side beneath the lower face of the pipe as soon as this is raised sufficiently. The valve can then be prevented from falling out by the fingers of either hand, the pipe being raised vertically until the trunk and needle of the air valve are clear of the carburetter body.

The valve E, its extension E3, and the guide D1, should be carefully wiped with a piece of clean cloth dipped in petrol and the guide lubricated woth a few drops of thin oil.

*No oil should be used on the piston valve or its cylinder*, and no polishing paste or abrasives used to clean these parts. the utmosr care must be taken not to bend or damage the depending needle valve E1 or to bruise the valve in any way.

When replacing the air valve it will be noticed that there is a slot in the trunk T, which must engage a small projection on the carburetter body.

A lubricator P is provided for lubricating the guide. Every 5,000 miles, as directed on page 25, the cap of this lubricator should be turned until the oil hole is exposed and one or two drops of clean, thin oil injected. Care must be taken afterwards to close the lubricator in order to exclude dirt ot grit.

The needle valve is secured in position by means of a grub screw E4. If it should be necessary to remove this - as for instance, when replacing an accidentally damaged needle - care must be taken that the needle is gently pushed into the trunk of the air valve as far as possible and the grub screw E4 tightened.

If a needle should be accidentally damaged, a new one must be obtained from Rolls-Royce Ltd. A number is stamped on the end of the needle. On no account must one of another size be fitted.

## Float Feed Mechanism.

The float feed mechanism is of the pivoted ball type. The cover is secured by two screws, a paper joint washer being fitted between the cover and the carburetter body.

No attention should be necessary to these parts.

A flexible pipe F conveys fuel from the dashboard filter to the float chamber. *On no account must the fitting on the pipe itself be disturbed.*