N/42

Hints on Fitting and Adjusting the ZENITH Carburetter

STANDARD TYPE

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REVISED EDITION

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If this is not the case owing to the choke tube or the Carburetter having received a blow, it can be removed as shown in Fig. 1. First unscrew the main jet and the main jet cover, and then place a metal washer, a halfpenny, for example, against the choke tube, and force it out with a thin rod passing through the main jet hole as shown. Care should be taken not to damage the thread of the main jet and cover.

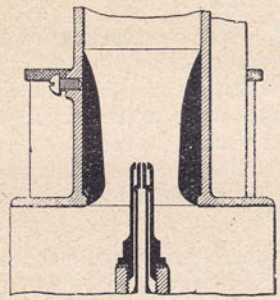

Fig. 2—Section showing position of choke tube in vertical Carburetters.

When replacing the choke tube **take great care to make sure that the narrowest internal part is downwards,** and that the groove around it rests on the ledge cut for that purpose in the body of the Carburetter (Fig. 2). Tighten the pressure screws to hold the choke tube in place, and then put back the spindle and throttle. It is important that the latter should be properly refitted, and when it is correctly replaced the lower edge when fully shut should just cover the outlet from the slow-running tube, and the number stamped on the throttle should be uppermost.

In the horizontal type of Carburetter it is much easier to take out the choke tube. First of all unscrew the dome air intake or air strangler on the back of the Carburetter, then take out the main jet below, and after this unscrew the main jet cover, when it will be found that by turning this to one side the choke tube will pull out of the Carburetter with the main jet cover. The choke tube is put in at the same time as the jet cover.

TAKING OUT THE JETS.—A jet key is sent out with each Carburetter for the purpose of taking out the jets.

The hexagonal nuts below the jets must be first removed by means of an ordinary spanner, when the jets can be unscrewed by the special jet key.

When replacing the jets make sure that they have a washer on them, and that it is well down on the shoulder.

We can supply a special box spanner for removing the plugs under the jets. Price 2/2 post free.

TUNING UP THE CARBURETTER.

Each Carburetter is sent out fitted with a main jet, compensating jet, choke tube and main jet cover best suited for that particular engine according to our experience with same, and the combination of these four parts constitute what we call a "setting."

The Zenith Carburetter being automatic in principle, it is necessary, in order to obtain all the advantages it affords in respect of flexibility, power and economy that the Carburetter should be adjusted to suit the particular engine on which it is to work. We would also mention that the Carburetter need only be properly adjusted once and for all, as it cannot vary or alter of its own accord.

If we receive correct details of the engine when a Carburetter is ordered, the setting that we put in the Carburetter as a rule is the correct one, because this has been carefully tested on similar cars in the past, and therefore generally a Carburetter with this setting should not be altered.

If such a Carburetter does not give good running, it is very likely the faults are not due to carburation at all, but owing to some other part of the engine being out of adjustment.

As, however, individual engines vary slightly, we think it advisable to make a few remarks on the general adjustment of the Carburetter.

Fig 3

Fig. 4

Fig. 5

The Zenith is adjusted by determining the correct sizes of choke tube (Fig. 3), main jet (Fig. 4), compensating jet (Fig. 5), and by adjustment of the slow-running tube (Figs. 8, 9, 10).

Normally speaking, the purpose of the choke tube is to measure the correct quantity of air entering the Carburetter and to regulate the velocity of same.

The main jet exerts most influence at high speed, whilst the compensator corrects the irregularities of the main jet at low speed, and therefore has great influence at low pulling speed such as when climbing hills, picking up, etc.

Most of the Carburetters supplied by us are fitted with an open main jet cover (Fig. 6), but sometimes in the case of old two-cylinder engines, where the suction stroke occurs at irregular intervals, we fit a dome cap as Fig. 7.

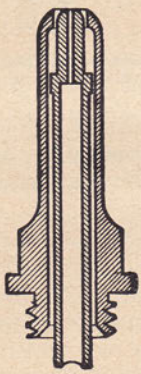

Fig. 6—Section of open cap.

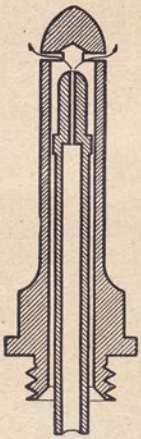

Fig. 7—Section of dome cap.

The standard open main jet cover is supplied with an internal diameter of 3.3 m/m., but sometimes an improvement is obtained on small engines in acceleration by fitting a main jet cover with a slightly smaller orifice, say 3.2 m/m. or even 3.1 m/m.

The actual size of the main jet cover is found stamped on one side of the hexagon at the base of same.

A fuller description of the principle of the Zenith will be gladly sent on application.

If the Carburetter has been properly fitted in accordance with the instructions previously given, and contains the setting we recommend for the engine on which it is to be used, we may now proceed to start the engine.

STARTING UP.

With a cold engine the best method is as follows :—

Close the Air Strangler. Open the throttle a very slight amount until a sort of sucking noise is heard when the engine is cranked over.

This indicates that the petrol is being sucked through the slow-running tube, and if the ignition and valves are in order the engine should start immediately.

As soon as the engine has started the air strangler should be opened slightly, and after the engine has been running a few minutes and has become slightly warmed up, the strangler can probably be opened fully.

Should the engine start readily, but stop of its own accord shortly afterwards, it generally shows that the throttle is not opened quite sufficiently.

If the throttle is opened too much, it will always cause difficulty in starting. (Further hints on starting will be found on page 13.)

SLOW RUNNING.

Several systems of slow-running adjustment have been applied to the Zenith Carburetter since its inception, but we give below the latest methods that have been in use since 1914.

The adjustment of the slow running depends on setting the throttle in the correct position to obtain the correct quantity of mixture, and then obtaining the proper quality of mixture by adjustment of the slow-running tube. A stop screw is provided on the throttle lever, and this should be so adjusted that the engine when warm runs at its lowest speed without stopping on sudden deceleration.

This will regulate the speed at which the engine will run, but it may not be running quite evenly.

It is then that the slow-running tube should be adjusted as per the instructions given below.

It is important to note that slow running which is apparently a question of personal satisfaction has considerable effect on acceleration.

It is therefore necessary to regulate the slow running of an engine as carefully as possible.

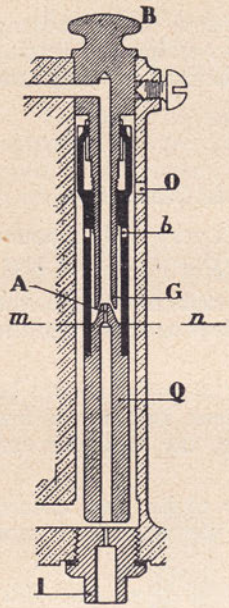

Fig. 8 — Slow-running device (vertical Carburetters ABC—DEF).

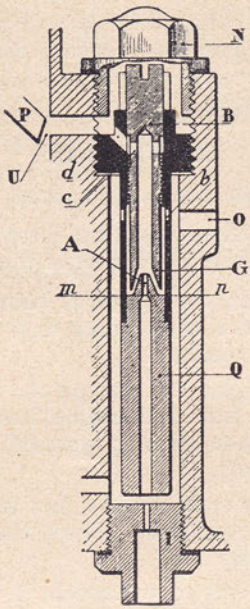

Fig. 9 — Slow-running device (horizontal Carburetters H—HA).

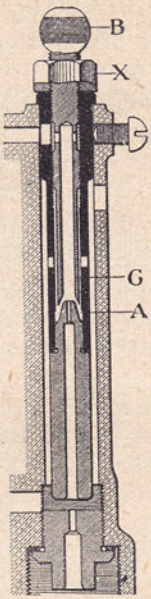

Fig. 10—Slow-running device (horizontal and vertical Carburetters). Latest type.

The slow-running tubes, Figs. 8 and 10, are only pushed into the Carburetter and held by means of a screw.

Consequently, to remove same, it is only necessary to loosen the screw and pull the tube out.

If it is rather tightly fixed the tube can be prised up by means of a screwdriver, the point of which is inserted under the knob " B " or under the nut " X " when this is loosened and using some convenient part of the Carburetter, such as the throttle boss, as a fulcrum.

In the type Fig. 9 the tube is screwed into the Carburetter and has to be removed by means of a special hexagonal key that is supplied with the Carburetter.

The method of regulating the strength of the mixture with the slow-running tube is by altering the relative position of the male and female cones " A " and " G."

The male cone " A " takes the form of a conical jet. It will be readily understood if the female cone " G " is put close to this jet, the suction on same will be greater and consequently a richer mixture will be given by the slow-running tube.

If, however, the adjustment portion " G " is unscrewed the distance is increased between " A " and " G," and the suction on the former will become less, and naturally the mixture will be weaker.

The size of the male conical jet " A " is stamped on the bottom of the tube, and if it is found that with " A " and " G " screwed close together the mixture is still not rich enough, then a larger orifice " A " is needed, and this can be supplied. Likewise, if with the adjustment unscrewed two or three complete turns the mixture is still too rich, then a smaller jet is necessary.

In the type as per Fig. 8 it is necessary to remove the complete tube from the Carburetter, when the part " Q " can be unscrewed or screwed up.

Holding the part " B " in the left hand and screwing the part " Q " with the right hand in a clockwise direction makes the mixture richer, and anti-clockwise weaker.

With the type Fig. 9, which is only employed with horizontal Carburetters, it will be necessary to first of all remove the cap " N," and then turn the screw " B " to the left or right by means of a screwdriver.

The same direction applies, *i.e.*, clockwise—richer, and anti-clockwise—weaker.

In the latest type, as per Fig. 10, the adjustment can be made whilst the engine is running by means of the knob " B." After loosening the nut " X," the knob is screwed in a clockwise direction to make the mixture richer and *vice versa*, then when the correct position has been found, can be locked in place by means of the nut " X."

There is no standard position for the adjustment of the slow-running tube as this varies on each engine, but as a rule it is somewhere between the fully closed position, which is when the female cone touches the male cone—which, of course, is the richest position —and two complete turns unscrewed.

After the slow-running tube has been adjusted it may be necessary to make another small adjustment to the stop screw on the throttle lever.

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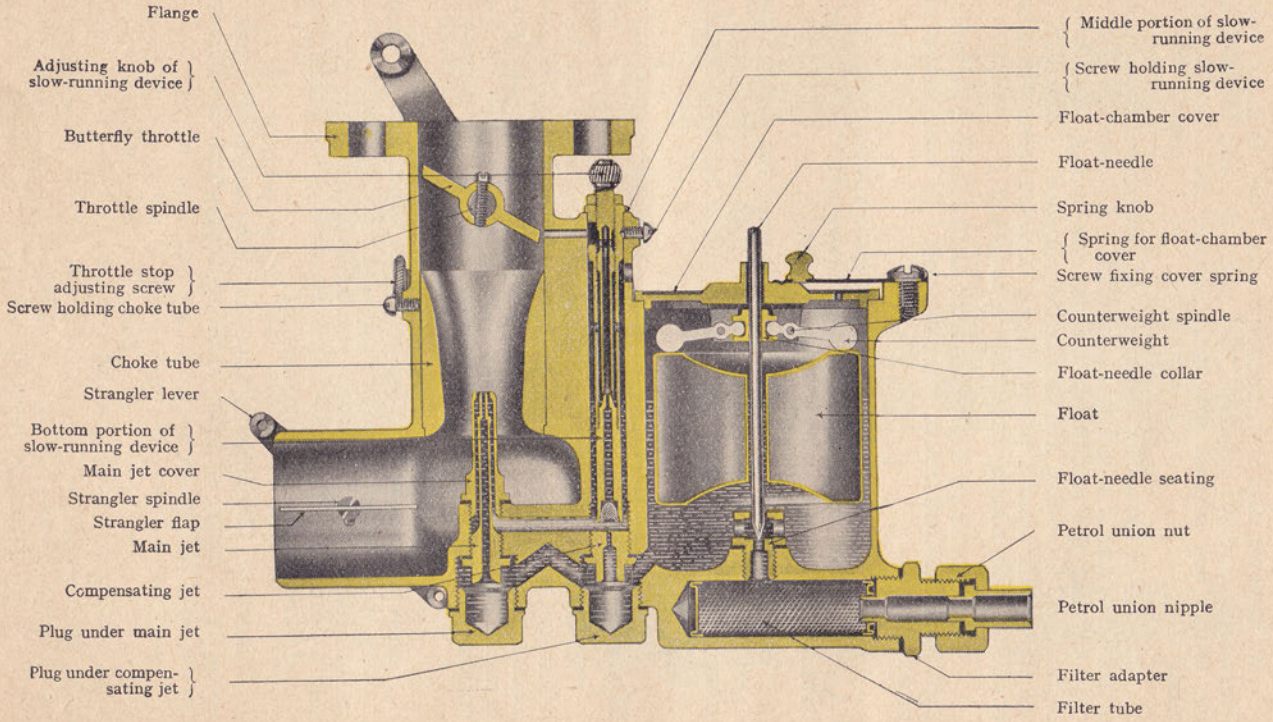
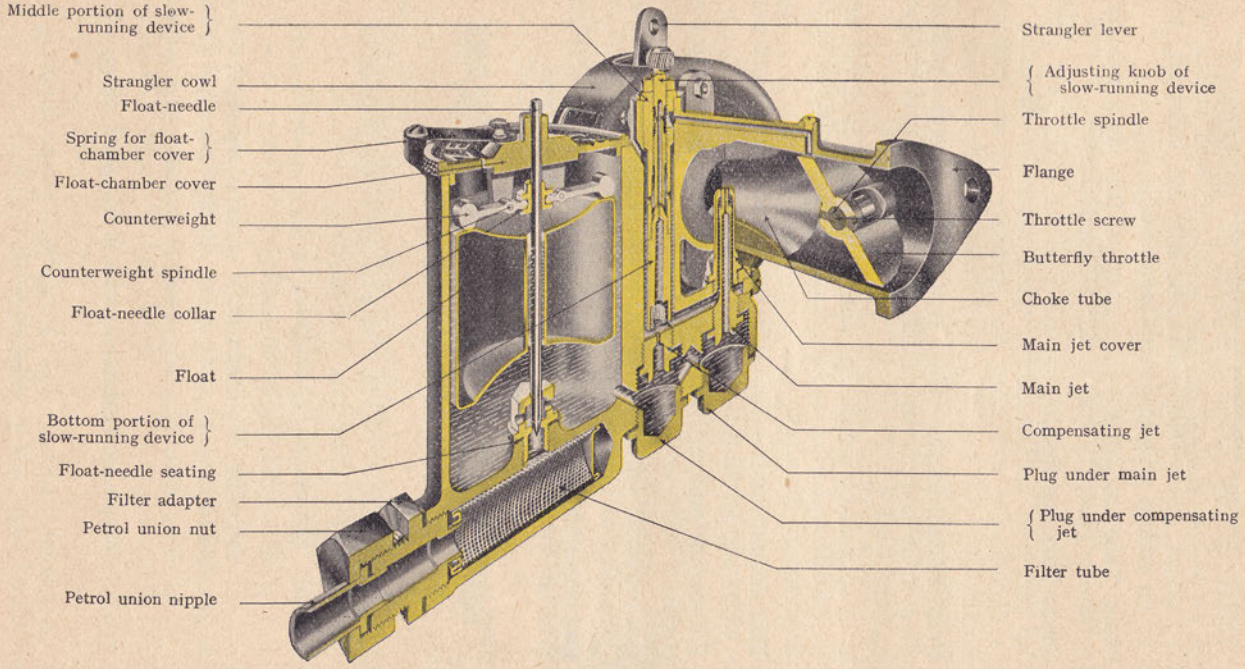
Section of Vertical Carburetter.



PRI

Section of Horizontal Carburetter.



ZENITH

GENERAL RUNNING.

In the following pages we deal specifically with certain defects in the running, and their remedies, but the following general remarks on tuning will no doubt be useful.

Choke Tube too Large.—The effect of this, as a rule, is that acceleration is generally bad under all conditions.

Choke Tube too Small.—In this case the engine will generally pick up very well, but maximum speed cannot be obtained owing to the choke tube restricting the quantity of air entering the Carburetter.

Main Jet too Large.—This, as a rule, causes the petrol consumption to be heavy, the running to be woolly and irregular at medium and high speeds.

It is sometimes found that the same speed is obtained with two jets of different sizes, and the smallest should always be chosen on the score of economy.

Main Jet too Small.—This will cause a loss of power and popping back when accelerating.

The engine will also run harsh and perhaps a little on the warm side.

Compensating Jet too Large will cause sluggish acceleration and woolly running at low speed.

Compensating Jet too Small will cause missing on acceleration, and possibly knocking when pulling hard at low speed.

HOW TO WRITE FOR PARTICULARS *re* TUNING-UP, &c.

It is absolutely essential to give the following particulars :—

1. H.P., make and year of car.
2. Number of cylinders.
3. Bore and stroke of same.
4. Number of Carburetter used (please mention all letters and figures stamped on the **SIDE** of the float chamber).
5. The present setting (number on main jet, compensator and choke tube).
6. Whether a heating device is installed, if so, of which type.

Also please state any other particulars which are likely to help us when replying, such as existing troubles if any.

COMMON RUNNING TROUBLES AND THEIR REMEDIES.

DIFFICULT STARTING WHEN COLD.

Chiefly caused by the throttle not being set in the correct position. **(See Remark on page 7.)**

An engine is most easily started from cold in the following manner :—

Close the air strangler, shut the throttle right back to the stop screw, *i.e.*, the position in which the engine runs slowly out of gear when warm, and then with the ignition switched off, crank the engine over half-a-dozen times or so either by hand or with the self-starter. Then open the throttle between a $\frac{1}{16}$th to $\frac{1}{8}$th of an inch, and still keeping the strangler shut, switch on the ignition. It will then generally be found that the engine will start quite readily. The object of cranking the engine over with the ignition off is two-fold. In the first place it frees the engine, and in the second place primes it with suitable mixture for starting.

The best position is generally with the throttle open a shade more than the best slow-running position when warm. A few trials will generally show the best position of the throttle for easy starting, and a mark should be made on the hand control so that the throttle can always be put in this position.

In very cold weather starting is sometimes facilitated by slightly flooding the Carburetter.

No Air Strangler fitted or existing one not closing properly.—We can supply a loose strangler for fitting to earlier types of Carburetters. See that the strangler control permits the complete closing of this.

Slow-Running Tube choked up.—Thoroughly clean out the Jet "A," as shown on page 8.

Slow-Running Tube adjusted too weakly.—Turn the adjustment knob in a clockwise direction to give a richer mixture.

Air Leakage between Carburetter and Cylinders.—Go carefully over all inlet pipe joints, valve caps, sparking plugs, &c.

The inlet valve guides may be worn and allowing air leakage between the stems and the guides.

Magneto Retarded too much, or Inefficient at low r.p.m.—This must be carefully checked.

Sparking Plug Points too far apart.—Very often putting these slightly closer together greatly improves starting.

DIFFICULT STARTING WHEN HOT.

Slow-running tube adjusted too richly.—Adjust the knob in an anti-clockwise direction.

Carburetter has been flooded or air strangler closed.—An excess of petrol will cause difficult starting when the engine is hot.

Throttle not open sufficiently.—Adjust the stop screw to open the throttle a shade more.

BAD SLOW RUNNING.

It is presumed that the slow-running tube and stop screw have been carefully adjusted in accordance with the remarks on page 7, but slow running is still bad.

Air leakage between Carburetters and the cylinders.—Go over the points mentioned above.

If vacuum-tank, servo brake or windscreen wiper are fitted, go carefully over the air connections.

The magneto is inefficient at low speeds or advanced too much.—Have this properly examined.

Plug Points too far apart.—Try these with a slightly smaller gap.

Inlet Valve Tappets badly or unevenly adjusted.—Very carefully set these.

Uneven Compression in Cylinders.—Have the valves ground in, etc.

Inlet Pipe or Passages not sufficiently heated.—When the engine is running slowly, the petrol vapour will condense on the inside of the unheated passages, causing irregular slow running.

Improve the heating by fitting a hot air pipe or cleaning out the jacket if one exists.

Throttle Spindle or Throttle Worn.—After a number of years of use, the throttle spindle and throttle wear, which may upset the slow running. In this case it is always best to send back the Carburetter to be thoroughly overhauled and made as new, for which we have a prompt and efficient repair department.

Engine stops of its own accord after running slowly for a certain time.—Where a vacuum tank is employed it is sometimes found that each time the vacuum tank functions, the engine stops. This is due to a charge of rich gas being drawn from the autovac tank through the suction pipe, thereby upsetting the mixture supplied by the Carburetter. Also, where a Servo brake mechanism is employed it will often be found that the engine will be liable to stop when the brake functions. Obviously there is no cure for either of these two things by Carburetter adjustment.

ENGINE STOPS ON DECELERATION.

Slow-Running Tube choked up.—Take out and clean.

Slow-Running Tube adjusted too weakly.—Set this to give a richer mixture.

Inlet Valve Tappets unevenly adjusted.—These must be very carefully set.

Throttle Loose on its Spindle.—Take the Carburetter down and tighten the locking screw which holds the throttle to the spindle.

Stop Screw on Throttle Lever improperly adjusted.—Set this screw so that the throttle always returns to the best slow-running position.

ACCELERATION IS BAD OR THERE IS HESITATION IN PICKING UP SPEED.

Inlet pipe or passages insufficiently heated, so that when the engine is running slowly petrol vapour condenses on the inside, and when the throttle is opened for acceleration this liquid petrol is sucked into the cylinders, causing the mixture to be too rich, and hesitation occurs.

Arrange to more efficiently heat the inlet pipe or passages.

Compensating Jet too large or too small.—Try different sizes of compensating jets.

Choke Tube too large.—Try one size smaller choke tube without altering the jets.

Slow-Running Tube not correctly adjusted.—Very carefully set this as described on pages 7 and 8 to give the best mixture for even slow running.

It is sometimes preferable to set the engine to run a shade faster than is absolutely necessary out of gear as this will sometimes give a cleaner pick-up.

Uneven Distribution of the Mixture.—Due to the shape of the inlet pipe or passages being incorrect or too large.

If this is suspected, the best thing is to send us a sketch of the induction system for our criticism and advice.

Magneto retarded too much, or inefficient at low speed.—Have this carefully seen to.

Plug Points too far apart.—Adjust these more closely.

Uneven Compression.—Have the valves ground in.

LACK OF SPEED.

Main jet too small.—Try a size larger.

Choke Tube too small.—Try a size larger, with also a size larger main jet.

Ignition Retarded too much.—This is of very common occurrence. Have this carefully timed.

Insufficient Supply of Petrol to the Float Chamber.—Due to dirt in the petrol pipe, or to one of the filters being choked up.

Thoroughly clean out the petrol system, see that there is a good flow through the pipe when the union is disconnected at the Carburetter end.

Vacuum Tank not working properly at high speed, causing a shortage of petrol. Have this carefully tested.

Insufficient lift of the Needle Valve in the Carburetter, causing a shortage of petrol at high speed. Unsolder the collar on the float needle and move it a shade nearer to the point, but not sufficient to cause constant flooding.

Loss of Compression in the Cylinders.—Have the valves carefully examined.

Pre-ignition caused by faulty Plugs or Dirty Engine.—If the engine knocks after a certain speed this is probably the case.

Air Strangler on Carburetter sticks in a partially closed position.—This would restrict the amount of mixture entering the cylinders, and cause loss of speed.

POPPING OCCURS IN THE CARBURETTER AT SPEED OR WHEN CLIMBING HILLS.

Shortage of petrol due to the reasons mentioned in the previous paragraph.—Go carefully over these.

Jets too small.—Fit one size larger main jet to stop the popping at high speeds, or one size larger compensator if it occurs when climbing hills.

Sparking Plugs faulty, causing pre-ignition.—Try a different type of sparking plug, preferably with a shorter reach or a heavier electrode.

Valves not closing properly.—Make sure that the tappets are properly set with sufficient clearance, and that the valves do not stick or bind in their guides when the engine is hot.

The Float Chamber Cover on the Carburetter is loose.—This may cause the float needle to stick when the vibration is great and prevents a proper supply of petrol to the float chamber.

See that the spring holding the float chamber cover is in position.

EXCESSIVE PETROL CONSUMPTION.

The mixture is too rich, and in this case try a smaller main jet and then a smaller compensator. If carburation is at fault, then when smaller jets are fitted in the Carburetter not only will the consumption be reduced, but the running improved. If it is found that it is not possible to fit either one size smaller main jet or one size smaller compensator without immediately losing power, it shows that the mixture is about as weak as it is possible to get it, and consequently the excessive consumption cannot be due to carburation.

Consequently the following items should be examined :—

Loss of efficiency in the Engine.—Check the compression and make sure the ignition is properly advanced, as retarded ignition is a very common cause of excessive petrol consumption.

Brakes Binding.—See that it is possible to push the car easily with the brakes off.

The Engine is new and stiff.—Never expect any car to give a reasonable consumption until it has run about 1,000 to 1,500 miles to get properly run in, and all the bearings are quite free.

Petrol Leaking.—Make sure the Carburetter is not flooding. If so, correct this as per the remarks in the following paragraph.

Make sure petrol is not leaking anywhere between the Carburetter and the tank.

Make sure the consumption is really excessive. Do not guess the mileage per gallon of your car, but carefully check this on a run over give-and-take roads of at least 50 miles.

CARBURETTER CONTINUALLY FLOODS OR LEAKS

Petrol runs from the air intake of the Carburetter until Petrol Tap is turned off.—**The level in the float chamber is too high.** Unsolder the collar on the float needle and move it a shade further from the point.

The needle is bent and therefore sticks in its guide before seating properly.

In this case, the best thing would be to fit a new needle.

The Float punctured and containing petrol.—The quickest thing is to get a new float from us, but a temporary repair can be effected by immersing the float in hot water, which will vapourise the petrol and drive it out through the puncture. This should be marked and filled with a spot of solder as soon as all the petrol is entirely evaporated.

Dirt has settled on the needle seating.—Thoroughly clean the seating and the float chamber of all dirt and grit. Lightly grind the needle on to its seating with a little metal polish but nothing coarser.

Under no circumstances whatever must the needle valve be ground in with emery or any other coarse paste. Neither should the needle be forced on to its seating with a screwdriver, but slightly ground by turning round with the fingers.

The Float Needle or Seating worn.—If there is a ridge on the needle face or the seating shows a bevel on the edge of same, then these parts should be replaced.

The collar on the new float needle must be very carefully set and this can only be done on the Carburetter.

The correct level for the petrol in the float chamber corresponds to 3 m/m below the top of the main jet cover.

On the horizontal Carburetter this can be seen on the engine by unscrewing the air dome at the back, taking out the main jet and replacing the plug.

The petrol can then be seen in the main jet cover.

On the vertical type it is necessary to dismount the Carburetter from the engine and rig it up on a bench with a spare tank.

The main jet is then taken out and plug replaced underneath, when the level in the main jet cover can be seen by peering down the top of the Carburetter.

In the case of both the vertical and horizontal Carburetter the correct adjustment for the level is obtained by moving the collar on the float needle.

If this is put nearer to the point the level becomes higher and *vice versa.*

The collar is a driving fit on the needle, and is soldered in its final position.

A soldered collar can easily be removed by heating the needle and collar in a gas flame, when the collar can be tapped up or down.

Petrol continues to leak from the Carburetter although the level is correct.—This is probably due to one of the plugs or screws not being tight. Go carefully over the plugs under the jets, the main jet cover and the various screws outside the Carburetter, and tighten these all up properly and make sure they have sound washers.

Petrol drips from the Carburetter for a short time after stopping the engine and then dries up of its own accord.—This petrol is simply that vapour which has condensed on the inside of the inlet pipe and passages when the engine has been running. As soon as the engine is stopped, the suction is released, and this liquid petrol runs back through the Carburetter, giving one the impression of leakage or flooding.

It is generally caused by the inlet passages being insufficiently heated, or to the mixture for slow running being rather too rich. As a rule, no notice need be taken of it.

General Remarks on Flooding and Leaking.—Whenever a Carburetter is leaking and can be spared for three days, it is quicker and better to send it back to us for rectification. We have a very prompt and efficient Repair Department.

Once more, never grind in a needle with emery or other paste—it will ruin both the needle and seating, and you will never be able to get a tight joint.

ENGINE OVERHEATS AFTER A SHORT TIME AND WATER BOILS.

This is very seldom due to carburation, but sometimes if the mixture is too weak it will cause the engine to get rather hot.

Try larger main jet, and if this gives no improvement and there is a good supply of petrol to the float chamber one can be certain that the overheating is not due to carburation. They should therefore look to the cooling system, the fan belt and more especially the timing of the magneto and valves, as wrong adjustment of these is the most common cause of overheating.

KNOCKING.

The engine commences to pink or knock as soon as it is called upon to do any hard work.

Engine Dirty.—Have this decarbonised.

Ignition too far advanced.—Retard this slightly.

Pre-ignition.—Due to faulty plugs. Try a new set of plugs, preferably with heavier electrodes or a shorter reach.

Mixture too weak.—Fit larger main jet and make sure that the petrol supply to the float chamber is in order.

POPPING OCCURS IN CARBURETTER ON SUDDEN DECELERATION.

Slow-running tube partially choked up.—Clean this out thoroughly.

Slow-running tube adjusted too weakly.—Adjust this to give a slightly richer mixture.

Air leakage at the joint between Silencer and Exhaust Pipe.—Rectify this.

USEFUL ACCESSORIES.

ZENITH JET PLUG SPANNER.—A very useful little spanner for removing the plugs covering the jets. The price is **2s.**, postage 3d.

ZENITH JET KEY.—This should be in every tool kit, as it is not possible to remove the jets in the carburetter without this. The price is **1s. 6d.**, postage 2d.

ZENITH SERVICE BOX, containing a complete set of spare jets, washers, tools, etc., suitable for garage use. The price is **48s. 0d.**, postage 9d.

FILTERS FOR EARLY MODELS OF ZENITH CARBURETTERS.—These are made in two types to screw immediately under the float chamber.

The horizontal type is employed where the pipe enters the carburetter horizontally, and the vertical one is used where the pipe enters vertically. The price of the horizontal type is **9s.**, postage 4d. ; and the vertical type **6s. 9d.**, postage 3d.

ZENITH PLATE TYPE FILTER.—This filter is the most efficient yet placed on the market, contains neither gauze, nor leather or anything that can corrode, and employs an entirely new system of Filtration, guaranteeing no restriction, perfect filtration and is practically self-cleaning. Suitable for all carburetters and all cars. Junior Model, **15s.** Standard Model, **24s.**

AIR FILTER OR PURIFIER.—This device is for attaching to the air intake of the carburetter and which removes all dust and impurities from the air entering the carburetter. Consequently this greatly reduces carbonisation and wear of the engine, and moreover eliminates the suction noise of the carburetter.

Size No. 1.	For carburetters up to 30 mm. bore	**50s.**
Size No. 2.	For carburetters up to 36 mm. and 42 mm. bore	**60s.**
Size No. 3.	For carburetters up to 48 mm. and 55 mm. bore	**70s.**

Postage 9d., 9d., and 1s. 0d.

Further details of both the petrol and the air filter will be gladly sent on application.

AIR STRANGLERS FOR EARLY MODELS ZENITH CARBURETTERS.—The vertical type is suitable for all vertical carburetters with a single air intake port, whilst the horizontal model is suitable for all horizontal carburetters.

The air strangler facilitates starting on cold mornings.

		Vertical.	Horizontal.
Prices :	Suitable for Carburetter size 22 ...	—	**7s.**
	,, ,, ,, ,, 26 ...	**10s.**	**8s.**
	,, ,, ,, ,, 30 ...	**12s.**	**9s.**
	,, ,, ,, ,, 36 ...	**14s.**	**10s.**
	,, ,, ,, ,, 42 ...	**16s.**	**11s.**

either vertical or horizontal type. Postage 6d. extra, in the case of the horizontal type and 4d. extra in the case of the vertical type.

BOWDEN CONTROL WITH DASHBOARD FITTING for controlling the strangler, **10s.**, plus 5d. postage.

SPARE MAIN JETS.—All sizes for carburetters 22 to 42, **3s. 0d.** each. Postage 2d.

SPARE MAIN JETS.—For carburetters 48 and 55, **4s. 0d.** each. Postage 2d.

SPARE COMPENSATING JETS.—All sizes for all carburetters, **2s. 0d.** Postage 2d.

SPARE FLOAT NEEDLES AND COLLARS for sizes 22 to 30, **2s. 6d.** Larger sizes **2s. 11d.** Postage 2d.

SPARE COUNTERWEIGHTS.—All sizes **1s. 0d.** Postage 2d.

SPARE COUNTERWEIGHT SPINDLES.—All sizes **3d.** Postage 2d.

SPARE FLOATS.—All sizes **4s. 0d.** Postage 3d.

SPARE FILTER TUBES.—Sizes 22, 26 and 30, **1s. 3d.** Plus 2d. postage.
Sizes 36 to 42, **1s. 6d.** Plus 2d. postage.
Sizes 48 to 55. **1s. 9d.** Plus 2d. postage.

Always take care when ordering parts to mention the full numbers and letters that are found stamped on the side of the float chamber of the carburetter for which they are intended.

This facilitates despatch and avoids mistakes.

VACHER —67508