LÉDITION ARTISTIQUE 34 Avenue de St-Ouen, Paris

SOLEX

CARBURETTOR TYPE M

FITTING

AND

INSTRUCTION BOOKLET

SOLEX Ltd.,

(LICENCEES)
GORDON RICHARDS, DIRECTOR,

115 Southwark Street LONDON S. E. I.

Telephones: City. . 5222 Central 5172 Hop. . 2734 Telegrams "SOLEXCARE, BOROH-LONDON"

'SOLEX" CARBURETTORS "M" TYPE

Hot air Muffs.		No 1 Diameter of Exhaust Pipe 22 to 28 %	No. 2 Diameter of Exhaust Pipe 26 to 40 %	No 3 Distinctor of Exhaust Pipe 38 to 48 %	of liv	No 4 inmeter haust Pipe to 58 %				
Price .	1.	6 / -	8/-	10/-	- 3	12/-				
PRICE OF P	A DT	TE STANDA	DD ON U	I CARRUN	an men	One				
PRICE OF PARTS STANDARD ON ALL CARBURETTORS.										
The state of the s					2/-					
But I										
Main Jet Stand	Main Jet Stand									
Horizontal or Vertical.	Main Jet Stand Cap "MH "or "MV" 2/6 7/3									
	Jet Carriet Water									
	shatment St Marine									
	plate with / Nut fur above									
Parts for Butterfly	Series Nut for above -/9									
Spindle.										
The same of the sa										
Washer for Above										
24 100	Sw				10000					
Swivelling Petrol	Swivelling Union Nut									
Union.	Washer for Union Nut									
	112245		Filter Union		/6					
	Union for Filter 4/-									
Direct Filter.	Total Control	uze for Filter.			/3	8/3				
	Large Washes for Filter									
	Small Washer for Filter									
TOWN THE THE STATE OF	Nut and Bolt for Filter Union									
	Union for Filter									
Indirect Filter,	Gauze for Filter									
	Large washer for Filter									
LITERATURE.		all washer for I			/3					
	No	edle and Seatin	g with washer		1-					
	W	sher for Needl	e seating		/3					
			Air Bell		/6	10.753				
	Ch	oke Tube fixing	screw .	4 4 4 4 4 4	/6					
	Tic	kler complete.		14/4-14-1-1	/6					
	Ser	ew for collar.			/9	HENN				
	Rol	ller with flat for	Strangler attac	hment collar	/10					
	Ser	ewed roller for	Strangler attach	ment collar	/10	37 39				
	Um	ion for suction	pipe of Autova	2	1-	9/25				
			e control		/6	100				
					6					
			for needle valv		6					
			control		/3					
			tion and		7-	186 3				
		AND THE RESERVE OF THE PARTY OF	horizontal or v		/3	HER				
	Spr	ing for Strangle	r	1	/-	- Ch				
Special Carburettor for Forth £ 5.0.0										
		- 400	40							

INSTRUCTIONS FOR FITTING & ADJUSTING

THE

SOLEX

CARBURETTOR

TYPE "M"

PART I

GENERAL CONSIDERATIONS AS TO

THE CHOICE & INSTALLATION OF THE CARBURETTOR

The M type Solex is made in two models: The type MV with a vertical take off.

The type MH with a horizontal take off.

TYPE MV (fig. 1). This is generally employed in the case of engines having an external induction pipe.

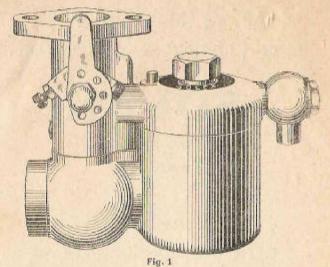
TYPE MH (fig. 2) is for monobloc engines with an internally cast induction system and one inlet port. It can then be helted directly to the block, provided the head of petrol is sufficient to supply the Carburettor regardless of the inclination of the car,

It has the advantage of being free from external hot air pine, etc.

control. — This is generally accomplished by the ordinary accelerator pedal acting through the intermediary of the usual control rods and bell cranks. In cases, however, where several joints are involved it is well to guard against play which will eventually set in, and, in the aggre-

Please state in all communications the number of the Solex, which will be found stamped on the float chamber.





VERTICAL CARBURETTOR

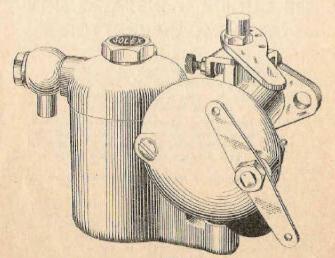


Fig. 2 HORIZONTAL CARBURETTOR

"SOLEX" CARBURETTORS "M" TYPE

PF	RICES OF CARBUF	RETTO	RS &	SPAR	THE HAMPING	RTS.
Carburettor complete Horizontal or Vertical with Filter.		26	80	85	40	46
		£5.10.0	£6.10.0	£7.10.0	€8.15.0	£ 11,15.0
		100			dia	1
Type.	Butterfly	5/6	6/-		7)- 7/-	8/- 7/6
100	Screws for Butterfly, per pair - Butterfly complete atta spirate 4 score	12/	13/-	13/6	15/-	16/6
Parts LEX 'M	Parts fixed on Butterfly Spindle (Standard or all Solex * M* Type)	8/6	8/6		8/6	B/6
Spare P	Butterfly with Spindle complete with all parts	20 €			23/6	
Spa	Throttle Chamber sitt tori carater by Body of Carburetter complete.		£2 17 6	The same of the same of the same of the	£3/16/0 £4/19/6	£4/16/0 £6/ 1/0
for	Fluit Chamber with central stem less Jet Stand		21/16/0			£3/ 2/0
Type I	Butterfly	5 6			7/-	8/- 7/6
M.T.	Screws for Butterfly, per pair.	1/-	1/-	1/-	1/-	1/-
Sarks	Batterfly complete with Spirits and Server Parts fixed on Butterfly Spindle	The second second			15/-	12000
Spare Parts outsl SOLEX "	(Standard on all Soles "M" Type) Butterfly with Spindle complete	100 mm		-	-	8/6
	Throttle Chamber with first chanter by	THE PERSON NAMED IN COLUMN	£1/1/6 £2/18/6	Printed and interest and in the last	Annual Control of the Park of	Participation of the Control of the
Bari	Body of Carburettor complete. Float Chamber with central stem		£4/ 0/0			
ž.	lam Jet Stand	10/6		17/6	£1/0/0	£1/15/0
	Choke Tube "K"	8/-			9/- 6/-	
	Air Strengler complete (Hon- zontal or Ventical)	18/6	19/6	£1/ 0/0	£1/17/6	£2/5/0
	Fixing Collar for Body of Air Strangler complete with screw & bolt	3 (10.73		5/6
netion	Counterlange with weather and 2 belts Flange Washer.	1/-	1/-			
ipe.	Flange Bolt	7/6	8 6	12/6	15/-	-/9
Parts for Induction Pipe.	Copper Tube 12 Length	7/6	7/6	12/6		
1000	Copper Tube 20" Length Air Strangler with register and	13/6		£1/ 0/0		description of
Jeatin	fixing collar for Flexible tube	9/-		12/-	13/-	16/6
ts for Heati	Register for cold air	2/5	3/-	3/6	4/-	4/6
Parts for Heating arrangements.	Flexible Tubing for Hot Air, per feet Fixing Collar for flexible tube with helt and out				1000	3/6 5/6
	Flange Governor with 2 states & 2 bells	£1/12/0	£1/15/0	£1/17/6	\$2/ 2/6	
	Washer for above	-/s	9 1/-	1/-	1/6	
Part of	Name Plate	17.64	To bus	6/-	6/-	6/-
	NOTE 26 P/m MH Carbon	elders are so	opelical with	Alexander a	Standard.	Till to the little

INSUFFICIENT MAGNETO ADVANCE. — This is frequently the cause of bad consumption and a magneto should always be sufficiently advanced to make it possible to cause knecking on a hill by allowing the speed to fall on top gear with a fully open throttle. An engine which will not knock in those circumstances can generally be prosumed to have a retarded magneto and it will be well to verify the timing in such a case.

BAD CONDITION OF THE ENGINE. — The condition of the engine itself has frequently a much greater effect upon the economic performance than most people imagine. While there are certain obvious faults such as defective compression, etc., which everyone recognises as probable factors in the deficiency, there are also quite a variety of less obvious respects in which engine condition can contribute to power efficiency.

The most usual ones, apart from the above obvious causes are defective valve and ignition timing. It often happens that for some cause or another the timing gear may have been dismounted and an error of one tooth in either direction on re-assemblage will frequently transform a good engine into a bad one, unfortunately, without there being any very apparent external cause for the loss of efficiency which is promptly blamed upon the carbarettor. If therefore, in spite of ordinary efforts the consumption and performance generally still remains bad, it is well to have the valve and ignition timing carefully checked per maker's diagram.

Another excellent plan is to drive the car in top gear up a hill, at one side of which there is a wall, which will reflect back the sound of the exhaust. By this means it is frequently possible to detect weak cylinders, which otherwise might escape notice.

TROUBLES WITH AUTOVAC SYSTEMS

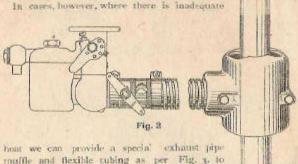
EXCESS OF PRESSURE FEED OR FUEL HEAD.—With an auto-vac, or in the case of a normal head of petrol 25 m/m carburettors are supplied with a needle valve of which the diameter is 2 m/m, and the 30, 35 and 40 m/m carburettors with a needle valve having a 2.5 m/m orifice.

When the petrol head, however, is very high (6 or 8 ft) or when it is pressure fed the buoyancy of the float may be insufficient to maintain the needle on its seating. This is remedied, therefore in the larger types of carburettors, by replacing the needle valve with a smaller one having a 2 m/m orifice, and this can be supplied on demand.



gate, may result in a sufficient degree of looseness to interfere with a good slow running position. In this case it is advisable to attach a light pull-off spring to the throttle lever, which will keep the various joints in constant thrust.

HEATING.— In modern engines it is not as a rule necessary to apply hot air to the Carburctor, for induction manifolds are almost invariably provided either with a hot spot or some form of incketing.

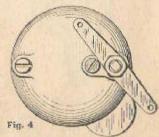


deal with the question of heating. It is necessary when applying this, or an equivalent device, to be very careful to have absolute freedom of hot air ingress, for any stricture at this point will rob the engine of power.

EASY STARTING DEVICE. — Certain engines when cold are apt, occasionally, to give trouble in starting, espe-

cially when benzole or heavy spirit is used, in which case either a richer mixture or very much more rapid turning movement, is necessary to start.

To avoid this trouble we can supply a special strangler device as illustrated in Figs. 4, 5 & 6. These take the form either of a modified bell containing an air shutter or sleeve with



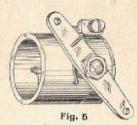
butterfly that can be attached directly to the Carburettor.

Please state in all communications the number of the Solex, which will be found stamped on the float chamber,

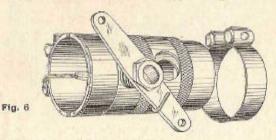


The type shown in Fig. 4 for the MH Carburettor is the ordinary bell with the shutter mounted inside.

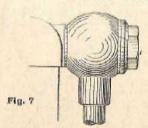
The one made for the MV type however, is in two models, the short variety (fig. 5) in which there is no provision made for hot air intake, and the long variety (fig. 6) which also incorporates an air register. These two types are both fixed directly on to the Carburettor by an ordinary clip joint.



It will be noted that the MV type stranglers can, if neces-



sary, he mounted on the MH type Carburettors in cases where it is desirable to heat the latter.



The method of operating these stranglers is quite simple. The operating wire is pulled, the throttle slightly opened, and the engine rotated. Immediately is starts the strangler wire is released and the butterfly assumes its normal fully open position.

FILTER. — We can supply, on request, a specially enlarged petrol union incorporating a filter (see fig. 7).

It will easily replace the existing union and is perfectly accessible and readily dismountable for cleaning purposes.

Please state in all communications the number of the Solex, which will be found stamped on the float chamber.

Where this is suspected of being the cause of power loss it is well to make a short test with the exhaust-pipe uncoupled from the silencer.

OVERHEATING

The Carburettor is rarely to blame in such a case, the cause being almost invariably due to defective water cooling arrangements.

It is true that extreme excess of petrol will cause slight over-heating, but its effect upon the fuel consumption will generally serve to expose this cause long before one has time to complain re-over-heating.

Another very frequent factor in this trouble is unduly retarded gnition which will always over-heat the engine.

KNOCKING. — There are also a very great number of different causes for knocking, and it is almost invariably the result of factors quite apart from Carburettor adjustment, such as, defective combustion head design, excessive carbonization, excessive ignition advance, defective cooling, inferior fuel, and looseness in the pistons or big ends.

If the knocking is actually due to carburation it always arises from a weak mixture, and is curable by a slightly larger jet or a slightly smaller choke tube. Should neither of these alterations effect any improvement, the cause must be sought for elsewhere.

EXCESSIVE CONSUMPTION

Note first of all that there is no leakage at any point of the petrol system. Also be sure that the estimate of the consumption has been accurately made, for it is very easy to deceive oneself by a careless reading.

If there is any doubt on this point, it is always advisable to make a definite test by means either of a test tank, or by doing a fairly long run, say 50 miles or so, on a definite quantity of petrol and noting how much remains in the tank at the end of that time, or, alternatively, running out on a complete gallon or other convenient quantity.

DEFECTIVE ADJUSTMENT. — If the heating is sufficient and one is assured that the jets in use are the smallest that the engine will take, the cause of consumption excess must then be sort for elsewhere in the Carburettor.

If there is a total absence of pick-up and the engine stopdirectly upon depressing the accelerator, the stoppage of the main jet is indicated.

INSUFFICIENT SPEED ON THE LEVEL

BAD ADJUSTMENT. - Dismount the Carburettor and verify the choice and jet sizes as per the instructions already given.

BUTTERFLY NOT OPENING SUFFICIENTLY. -

Verify that when the accelerator pedal is fully depressed the butterfly is completely open. This can easily be confirmed by noting that the limit screw on the abutment plate is in contact with its stop when the pedal is down.

INSUFFICIENTLY ADVANCED IGNITION. — Check firing point of magneto when fully advanced, and should this be found insufficient as per the Instruction Book issued by the manufacturers, it would be well to seek professional advice on the point.

short distance fairly hard, there is a sudden sensation of power loss coupled with firing in the Carburettor, this will generally indicate that the petrol supply is insufficient, especially if there are several reports heard from the silencer on the car over-running the engine.

It is easy to verify the supply by removing the float chamber and temporarily turning on the petrol tank. Should one have any doubts as to the sufficiency of petrol head it might be well to make a test with a specially small tank mounted about 2' above the Carburettor. This will serve to confirm, or otherwise, the adequacy of the ordinary petrol head.

Incandescent plug points will give almost identical symptoms. If, therefore, a shortage of petrol cannot be located, in such a case, examine carefully the plugs. Should the central electrode have a dry and rusty appearance, incandescence is almost certain and the plugs should be substituted for a new set of recognized heat resisting qualities.

CHOKED SILENCER. — After a considerable period it occasionally happens with certain designs of silencers that a partial blockage by soot can occur. It is generally easy to distinguish the onset of this trouble by noting the sound of the exhaust at the back. As choking progresses the explosions become less and less marked and merge into a steady rush of hot gas instead of clearly marked impulses.

PART II

DISMOUNTING THE CARBURETTOR

In order to dismount the Carburettor it is only necessary to unscrew the large nut centrally placed on the top of the float chamber, when the latter can immediately be withdrawn, giving free access to the float and both the jets.

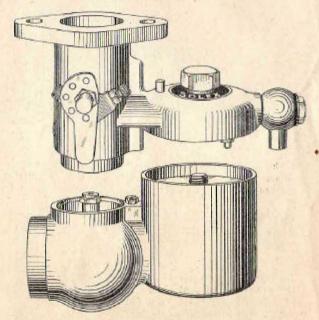


Fig. 8. - Vertical Carburettor dismounted.

When remounting it is only necessary to note that the partregister with one another when the nut can be retightened.

Access to the jets is perfectly simple. The main can be withdrawn by unscrewing the cap over same, when it can be lifted out, and the auxiliary may be similarly unscrewed with a small spanner or screw driver.

PART III

ADJUSTMENT OF THE CARBURETTOR

The adjustment of the Solex has been determined in advance on most of the leading makes of cars, and it is therefore generally possible to supply them with a standard combi-





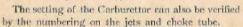
9

Fig. 9

nation that will give immediate results on specific engines without any further adjustments.

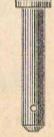
One recognises the type of Carburettor by

the two Nos. that will be found stamped on the outside of the float chamber, the first indicates the size of the Carburettor (26, 30, etc.), the second is the works No. of the Instrument, which enables us to trace the identical Carburettor in cases where queries are put to us re same.





The auxiliary jet g is stamped on the top (see fig. a) while the main jet can be withdrawn after removing its cap and the No. of same will be found stamped on the top of the flange.



IGNITION FAULTS. — It is always advisable to assure oneself as to the adequacy of the spark and the general condition of the plugs. Also it is well to remember that many magnetos will not give a sufficiently intense spark for easy starting purposes unless fully advanced, and that unless the magneto is in very good condition it will not, as a rule, handle comfortably, a plug gap of more than . 6 m/m for starting purposes.

SLOW RUNNING

If, in spite of the use of different auxiliary jets one is still unable to obtain good slow running, a considerable air leakage can be presumed upon almost with certainty, assuming that the ignition arrangements have been verified as correct.

One can generally confirm this by noting the effect of depressing the tickler. Should this slightly speed up the engine it is thereby indicated that air leakage is present to the point where balancing by jet adjustment is impossible, and the only cure for this trouble is to correct the leakage as its source.

BAD ACCELERATION

One must understand to commence with that it is impossible to expect brisk acceleration immediately after starting the engine, unless one uses an excessively heavy mixture that will be very extravagant and also cause sluggishness directly the engine becomes warm. A certain amount of patience therefore is necessarily called for, especially in the winter.

DEFECTIVE ADJUSTMENT. — Try one size larger main jet. Verify from the tables that the choke is of a reasonably correct size for the engine in question. If the larger jet has not the desired effect replace then the original one and try one size smaller choke tube.

DEFECTIVE IGNITION. — A feeble spark is a most frequent cause of bad pick-up and misfire would, in such a case, always be noticed on suddenly accelerating. It is very necessary, therefore, to assure oneself both as to the efficiency of the spark and the condition of the plug points, otherwise on suddenly opening the throttle, the electrical pressure will often fail to bridge the gap under the resistance of the higher compression resulting from the suddenly opened throttle and low magneto speeds.



pipe. This is sometimes a little difficult to cure and it is frequently necessary to remove and prime the pipe before the air can be dislodged.

It is also possible to get a species of temporary air lock through the petrol pipe being too pear to the exhaust manifold, in which case a vapour pocket is formed that behaves identically the same as an ordinary air lock.

LEVEL TOO LOW. - If extra heavy petrol is used in a Carburettor adjusted for light spirit, the level will be greatly reduced and may cause difficult starting. In such a case it will be necessary either to use a heavier float or revert to lighter spirit.

AUXILIARY JET TOO SMALL. - Try an auxiliary jet one or two sizes larger, being careful not to select one that will cause "hunting" when the engine is idling.

Before, however, altering this jet at all it is well to be assured that it is free from any obstruction.

BUTTERFLY TOO WIDELY OR INSUFFICIENTLY WIDELY OPENED. - In order to obtain a strong suction on the auxiliary jet it is necessary that the butterfly shall be in a position, such as it would accupy when idling fairly rapidly. If when in this position the Carburettor has been excessively flooded, the probable effect will be a few explosions, after which the engine will stop. This indicates that a slightly greater opening is desirable.

After a few attempts it will be easy to find the position most suitable for easy starting and a very desirable method is to notch the hand control at this point so as to avoid future trouble, for every engine has its characteristic point of throttle by which storting is easiest.

During the cold weather it is generally necessary to give rather more throttle for starting purposes.

AIR LEAKAGE. - When air leakage into the induction system is present, either owing to defective joints or to illfitting inlet valve stems, the depression on the auxiliary jet in relation to the volume of air entry via illegitimate channels, is disturbed, and difficult starting invariably sets in.

If the leakage is not great, a slightly larger auxiliary, or flooding the Carburettor, should be sufficient to overcome the trouble. It is advisable, however, always to locate and cure, if possible, the original cause, for the use of an unduly large auxiliary to overcome starting difficulties due to leakage is, in the long run a rather wasteful procedure.

The choke tube K surrounds the main jet and will be simiorly numbered inside.

The adjustments of carburettors in general have generally been arrived at on ordinary No. 1. spirit, but if one wishes to employ either beavy petrol or benzole it is usually necessary to fit a heavier float and decrease slightly the size of the jets.

Slight alterations are also necessary in the case of engines that are to be used in hotter climates than that in which they were originally adjusted, and similarly old and worn engines frequently require a modified combination.

For general guidance as to size of jets to use, refer to part 4 of this booklet which deals with the diagnosis and remedy of troubles.



PART IV

DIAGNOSIS OF TROUBLES

There is never any question as to the suitability and it may always be taken that any troubles which are experienced are due either to errors of adjustment or mounting.

It is advisable, therefore, to undertake diagnosis of faults systematically, never doing two things at the same time, for the reason that it is, in such a case, impossible to locatexactly the cause of the trouble.

FLOODING

JOINTS INSUFFICIENTLY TIGHTENED. — The Solex Carburetter has only four joints:

The main jet carrier joint:

The needle valve seating joint;

The petrol union joints of which there are two, the latter being situated outside the Carburettor and readily discloseany leakage, but the needle valve washer, if insufficiently rightened, will have the effect of raising the level unduly with a consequent drip from the main jet, and in such a case one is apt to be deceived as to the origin of the original leakage.

Before doing anything further, verify all these joints,

GRIT IN THE NEEDLE VALVE. — This frequently happens in the case of a newly fitted Carburettor, and is often caused by particles of oxide and soldering materials inside the copper pipe, which become dislodded and foul the needle seating. It is easy to remove the valve as a whole, however, and examine it for obstructions of this kind.

PUNCTURED FLOAT. — Where this occurs the leakage of petrol into the float partially destroys its buoyancy, and thus by unduly raising the level, causes flooding at the main jet.

It is generally best to fit a new floar, but if the leakage can be located, it is frequently easy to solder it. In the latter case, however, the float should first be placed in boiling water to expel any petrol that may be therein. LEVEL TOO HIGH. — The simplicity of the constant level arrangements of the Solex is such as to render this an extremely rare case. It sometimes happens, however, that a Carburettor which has had its level set to a heavy grade of petrol, may subsequently be run with very light spirit, and in that way flooding will occur. The weights of the Solex Floats for 730 petrol are as follows:

- 33 grammes for the 26 m/m Carburettors.
- 42 grammes for the 30 m/m Carburcttors.
- 64 grammes for the 45, 40 and 46 m/m Carburettors.

We are additionally able to supply special Benzol floats of which the following are the weights:

- 47 grammes for the 30 m/m Carburettors.
- 70 grammes for the 35, 40 and 46 m/m Carburetters.

TESTING THE LEVEL. — Testing the level is very easy. One merely unscrews the main jet cap and removes jet G, after which the float chamber is remounted in such a way that the jet carrier instead of being in the choke tube, is exposed at the side. When the petrol is now turned on the level should rise to within 3 m/m of the top of the carrier assuming 730 spirit.

EXCESS OF PRESSURE. — For dealing with ordinary petrol heads the 26 m/m Carburettors are generally provided with a needle seating of 2 m/m diameter, while the 30, 35 and 40, have a seating of 2.5 m/m.

When the head of petrol, however, is very high, or in the case of pressure feed, the pressure happens to be excessive, it is sometimes necessary to use a slightly smaller needle seating than the above. The standard needle valves, however, as recommended, will usually take up to 2 lbs. pressure or 5 foot head. When these figues are exceeded it is generally desirable to obtain a smaller valve.

DIFFICULT STARTING

PETROL STARVATION. — It is easy to determine whether there is petrol in the float chamber by depressing the tickler, when the top of the float should distinctly be felt. If this is resting on the bottom of the Carburettor, one must then proceed to locate the cause of fuel failure. Note therefore, first, that the petrol tap is turned on, that there is petrol in the tank, and finally, by unscrewing the petrol union, confirm that the pipe work is clear.

It occasionally happens immediately after the installation of the Carburettor that an air lock takes place in the supply

