

WEBER CARBURETORS TYPE 26 IMB 1 AND 26 IMB 3

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The Weber 26 IMB1 carburetor is a downdraft, single body carburetor with 1.0236" (26 mm) diameter throat at the height of throttle shaft.

The fuel mixture rating system consists of a throttle valve controlled by accelerator pedal through a cable which operates a lever secured to throttle valve shaft. This carburetor is fitted with a progressive-action starting device which enables the driver to suit the mixture richness to the most varied conditions of starting, until the engine has reached the rated operation temperature.

The dampened needle valve ensures a smooth engine running since, thanks to its dampening device, it is not affected by vibrations and, therefore, keeps steadily constant the level in carburetor bowl.

Secondary Venturi diameter is .8268" (21 mm) and is in a single casting with carburetor body. A fuel strainer is incorporated in carburetor cover.

Operation.

Referring to the diagram (fig. 116) the air from above, flows through Venturi (24) where it mixes with the fuel issuing from nozzle (25) and is then conveyed to cylinders through primary Venturi (21) and throat, where throttle (19) is adjusting the flow.

From fuel line, joined to carburetor by connection (8), the fuel flows across filter gauze (7),

through needle valve (10) into bowl (16) where float (12) hinged to pivot (11) controls the opening of needle (10) and maintains a constant fuel level.

From bowl (16) - via metered main jet (15) - fuel reaches emulsion well (23) whence, after having been mixed with the air coming from metered air corrector screw (1), through emulsion orifices (22) and spray nozzle (25), it finally reaches the Venturis where it blends with the air stream promoted by engine suction and is then drawn into cylinders.

The purpose of secondary Venturi (24) is to increase the vacuum around nozzle (25) and to carry the air/fuel mixture to the center of primary Venturi (21).

While idling, through an appropriate passage fuel is carried from well (23) to idle speed jet (13) where it is mixed with the air coming from air inlet (5). Through duct (3) and idle speed orifice (18) - adjustable by taper-point screw (17) - the fuel reaches carburetor throat past throttle (19) where it is further mixed with the air stream drawn in by engine vacuum through the gap around the throttle in idling speed position.

From duct (3) the mixture can also reach the carburetor throttle chamber through transition hole (20), located in exact relation to the throttle; the purpose of this progression hole is to permit a smooth acceleration of engine from idling speed, proportionately to the increase in throttle opening.

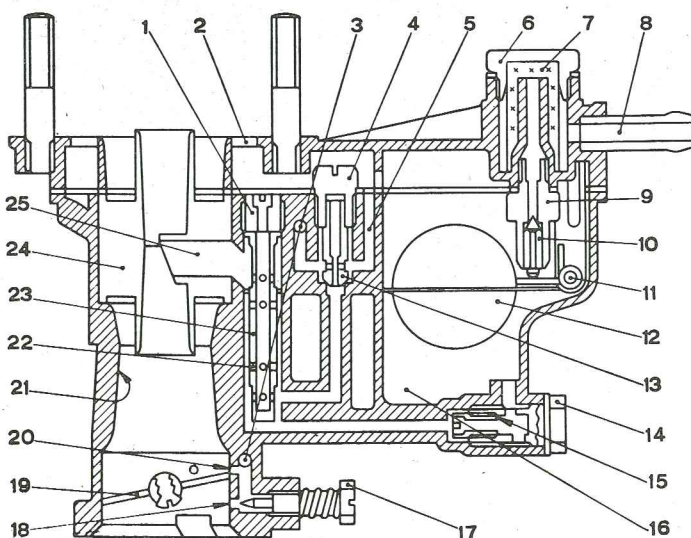


Fig. 116.

Diagrammatic section of Weber 26 IMB1 carburetor.

1. Air corrector jet. - 2. Air inlet. - 3. Idle speed mixture duct. - 4. Idle speed jet holder. - 5. Idle speed air orifice. - 6. Filter cover. - 7. Filter. - 8. Fuel inlet connection. - 9. Needle valve seat. - 10. Needle. - 11. Float pivot. - 12. Float. - 13. Idle speed jet. - 14. Main jet holder. - 15. Main jet. - 16. Bowl. - 17. Idle speed mixture adjustment screw. - 18. Idle speed mixture orifice. - 19. Throttle. - 20. Transition hole. - 21. Primary Venturi (not interchangeable). - 22. Emulsion orifices. - 23. Emulsion well. - 24. Secondary Venturi (not interchangeable). - 25. Main nozzle.

Starting Device (fig. 117).

This device has the function of ensuring proper engine cold starting. It is controlled by means of the lever placed behind the gearbox lever and must be progressively set back to rest position as engine is reaching the rated operation temperature. The starting device is made up of valve (33, fig. 117) actuated by the lug of rocker (36) connected, through a suitable shaft, to control lever (38). By pulling the device control to stroke end, through lever (38) and rocker (36), valve (33) is lifted from its seat and brought in the «fully open» position (diagram «A», figure 117). Under these conditions valve (33) closes air hole (27) and mixture hole (29) and uncovers mixture orifices (30) (32) [which communicate with starting jet (46) through duct (26)] and air holes (35). With valve (33) partially opened, hole (29) may communicate with carburetor throat, through the valve central slot, duct (28) and hole (31) drilled in Venturi (21) in correspondence with the restriction.

With throttle in idling speed position, the vacuum of engine cranked by the starter causes the fuel contained in the recess of jet (46), in the jet and in reserve well (45) to be emulsified with the air coming from holes (43) and (44). Through duct (26) and holes (30) and (32) the mixture arrives - simultaneously with air from holes (35) - past the throttle through duct (34), thus permitting prompt starting of the engine.

After engine firing the device delivers a mixture whose fuel/air ratio is such as to permit regular running of engine while still cold. But, as the engine warms up, this mixture would be excessive and too rich; therefore, it becomes necessary to exclude gradually the device as the engine is reaching the rated operation temperature. During this maneuver, valve (33) slowly uncovers hole (27) which permits a greater amount of air to enter through spring guide hole (42) (to weaken the mixture) while, by closing progressively holes (30) and (32) and air holes (35) also the amount of mixture is reduced (see diagram «B», fig. 117).

Hole (29), duct (28), and hole (31), drilled in Venturi (21), have the task of permitting a regular progression of acceleration also with cold engine. By opening throttle (19) to speed up the engine, the vacuum acting on duct (34) is reduced. This would cause a reduction in the amount of fuel delivered through said duct (34), with consequent irregular running of the engine, but, through hole (31), duct (28) and hole (29) (from which air is drawn when throttle is closed), some mixture is sucked in by the vacuum formed in the restriction of the Venturi consequent to the opening of the throttle, and this compensates for the reduction in delivery through duct (34).

When the starting device is excluded, valve (33) covers also hole (29) and prevents the entrance of mixture (diagram «C», fig. 117).

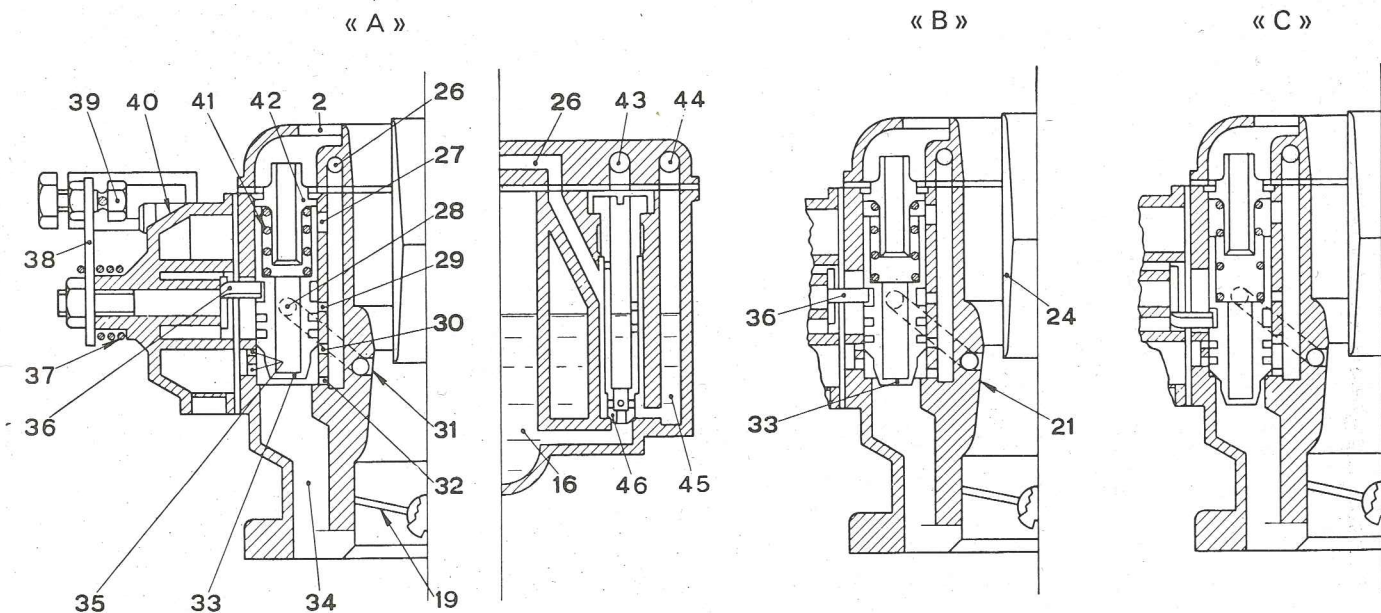


Fig. 117 - Starting device (choke) diagrammatic section.

«A»: Device fully inserted. - «B»: Device partially inserted. - «C»: Device disinserted.

2. Air inlet. - 16. Bowl. - 19. Throttle. - 21. Primary Venturi. - 24. Secondary Venturi. - 26. Mixture duct. - 27. Mixture leaning air orifice. - 28. Transition duct. - 29. Transition mixture orifice. - 30. Starting mixture orifice. - 31. Transition orifice. - 32. Starting mixture orifice. - 33. Starting valve. - 34. Mixture duct. - 35. Starting device air orifices. - 36. Rocker. - 37. Lever return spring. - 38. Starting device control lever. - 39. Control wire screw. - 40. Cover with support for starting device control bowden. - 41. Starting valve spring. - 42. Spring casing. - 43. Starting jet emulsion air orifice. - 44. Air emulsion reserve well orifice. - 45. Starting reserve well. - 46. Starting jet.

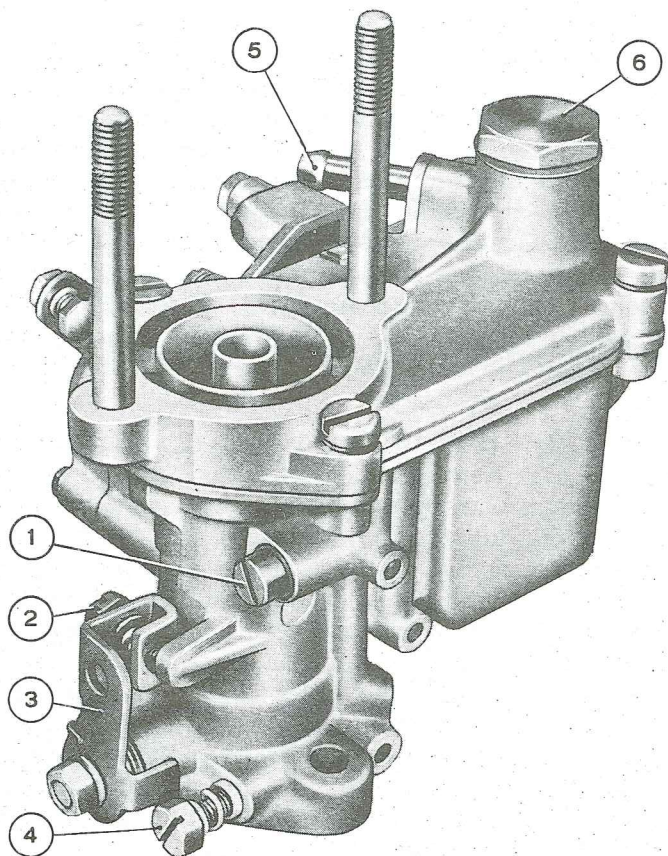


Fig. 118 - Weber 26 IMB 1 carburetor.

1. Idle speed jet holder. - 2. Slow running adjustment screw. -
3. Throttle control lever. - 4. Idle speed mixture adjustment screw. -
5. Fuel inlet connection. - 6. Strainer plug.

CHOKE USE DIRECTIONS

To avail of all the advantages the progressive-action starting device may offer, use it as follows:

Engine Starting.

Cold starts - fully throw in the device (position A, fig. 119); after engine fires push the control part way in.

Warm starts - throw in the device only partially (position B, fig. 119).

Engine Warm-up.

During engine warming-up period, even with car running, push home gradually the starting device lever through successive stages so as to supply the engine with a supplementary amount of mixture as strictly necessary for a regular and smooth engine operation (position B, fig. 119).

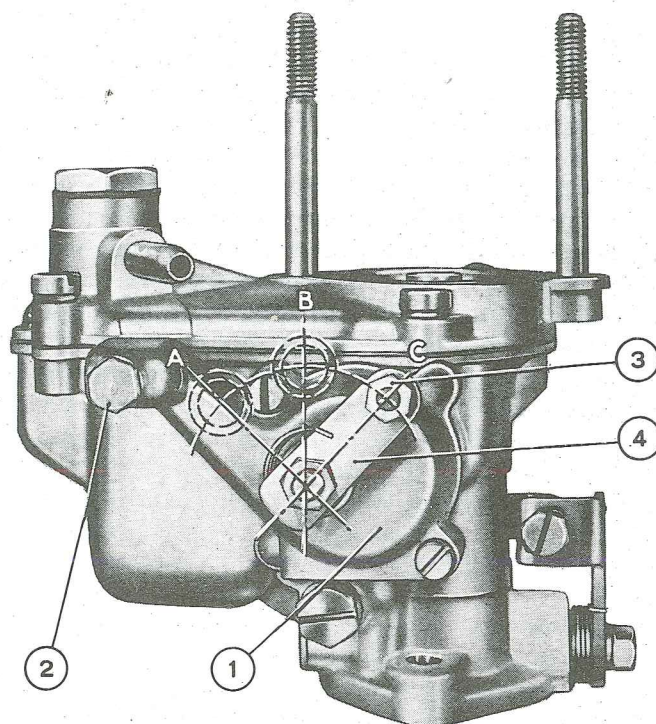


Fig. 119 - Weber 26 IMB 1 carburetor, starting device (choke) end.

1. Choke device cover. - 2. Bowden mounting screw. - 3. Nut and screw, choke bowden wire. - 4. Choke control lever.

A. Position of lever 4 for « fully inserted » choke. - B. « Partially inserted » choke. - C. « Disinserted » choke.

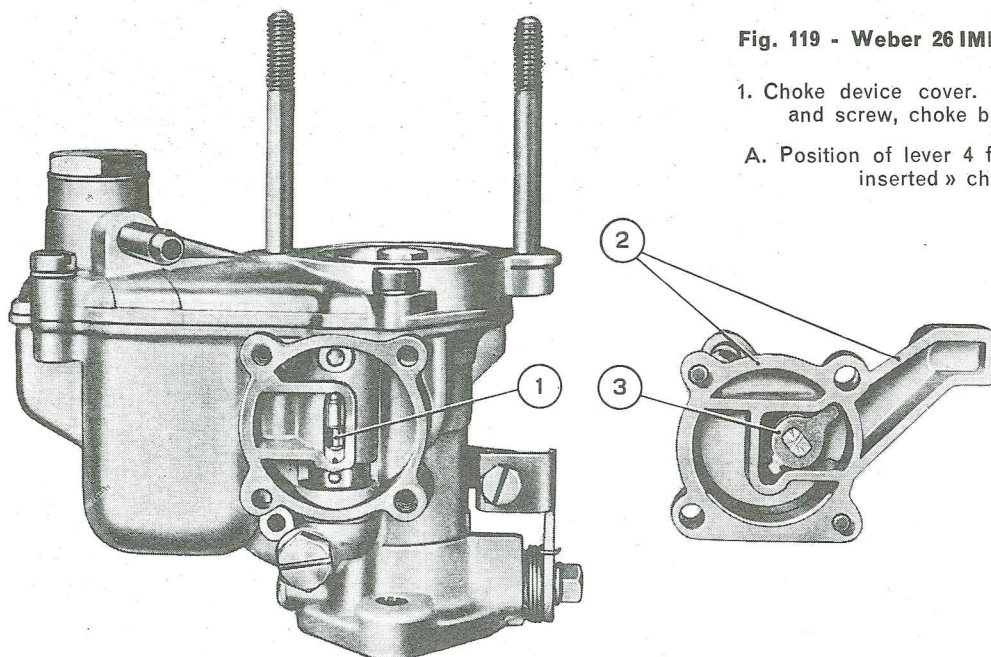


Fig. 120.

Weber 26 IMB 1 carburetor, with choke device cover removed.

1. Choke valve. - 2. Choke device cover. - 3. Choke valve shaft.

Normal Car Driving.

As soon as the engine has reached the rated operation temperature, exclude completely the starting device by bringing the control lever to position C (fig. 119).

Idle Speed Adjustment (fig. 121).

Idling speed is adjusted by throttle setscrew (fig. 121) and mixture setscrew. Throttle screw allows of adjusting the throttle opening; conical mixture setscrew has the purpose of metering the amount of mixture coming from idling speed passage, which will then blend with the air flowing past the throttle that, in idle speed setting, leaves a gap between its edges and the throat walls.

This makes possible a rating of mixture best suited to engine requirements and smooth operation.

Always adjust idling speed with engine running and warm by first setting throttle to minimum opening by throttle setscrew so as to ensure steady operation.

Next, by turning mixture setscrew in or out, set mixture richness to the most suitable ratio for said throttle opening, thus accomplishing a fast and steady idling; reduce minimum throttle opening some more, by throttle setscrew, until best idling speed is obtained.

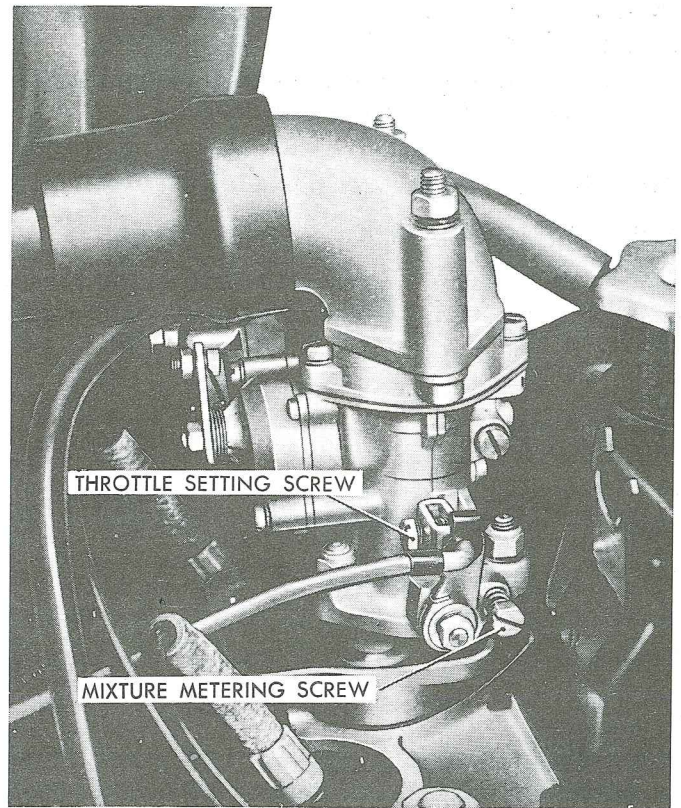


Fig. 121 - Weber 26 IMB 1 carburetor in place on engine.

Idle speed is adjusted by working respectively on throttle setting screw and mixture metering screw.

Carburetor Trouble Shooting Instructions.

Carburetor should be serviced only if carburetion is definitely at fault.

Some possible causes may be:

Flooded carburetor: improperly seated needle valve.

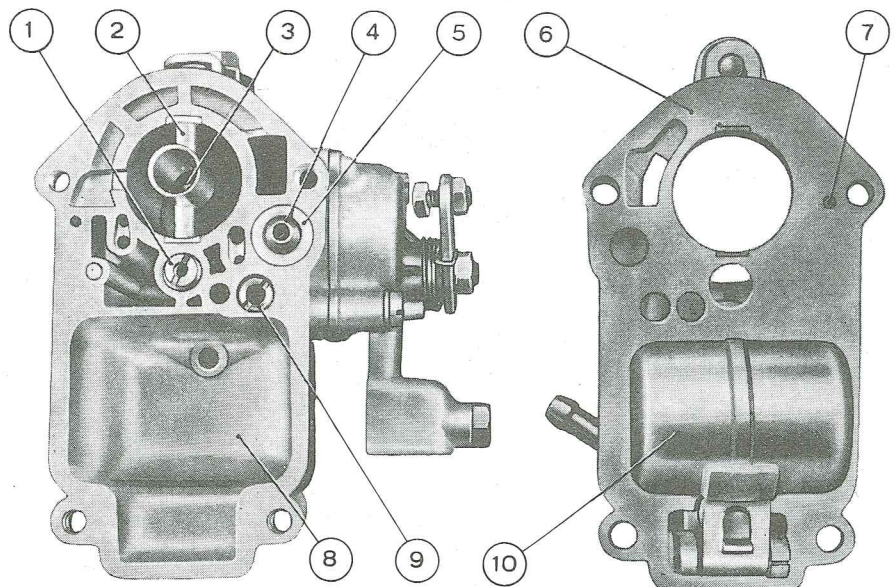
Engine does not start when cold: starting device operation is irregular because starting jet is obstructed or starting device control travel has shortened.

Engine does not start when warm: clogged jets or passages, misadjusted idle speed circuit.

Engine does not idle: clogged jets or passages, misadjusted idle speed circuit.

Fig. 122.

Weber 26 IMB 1 carburetor, open.



- 1. Emulsion well with air bleed jet. - 2. Secondary Venturi. - 3. Nozzle tube. - 4. Spring retainer and guide. - 5. Choke valve spring lock ring. - 6. Gasket and carburetor cover. - 7. Cover locating dowel. - 8. Fuel bowl. - 9. Choke jet. - 10. Float.

Engine pick up is poor: obstructed main jet or emulsion orifices.

Excessive gasoline consumption: foreign matter in emulsion well calibrated orifices.

Carburetor Servicing Instructions.

FUEL LEVEL IN BOWL

The needle valve seat and float are easily accessible for inspection by removing the carburetor cover.

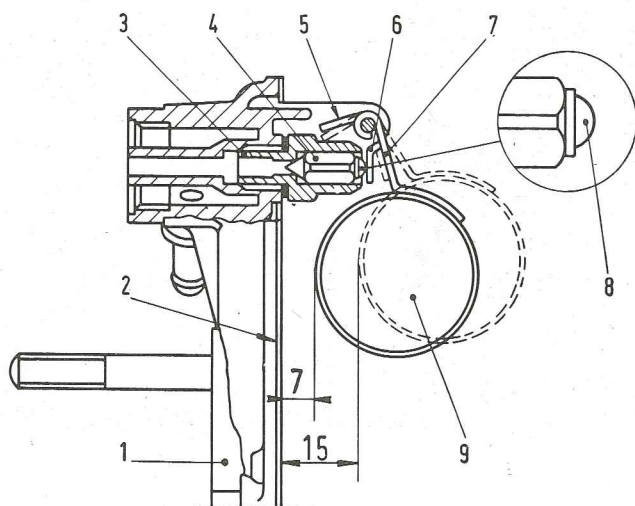


Fig. 123 - Float adjustment data.

1. Carburetor cover. - 2. Cover gasket. - 3. Needle valve seat. -
4. Needle. - 5. Lug. - 6-7. Arms. - 8. Needle ball. - 9. Float.
7 = .2756" - 15 = .5906"

Before checking level in bowl, see that:

- needle valve seat is well screwed in and gasket is in place;
- calibrated orifice in valve seat is unobstructed and not worn;
- the needle slides freely in its guide.

In case sealing is imperfect, replace the valve assembly:

— the float is not distorted or broken and moves on its pivot without drag or excessive play; replace if these conditions are not met.

Next, check the level and proceed as directed hereafter (fig. 123):

a) Check that needle valve (3) is screwed tight in its seat.

b) Keep carburetor cover (1) upright or else the weight of float (9) would lower ball (8) fitted on needle (4).

c) Check that with cover held vertical and float arm (6) in slight contact with ball (8) of needle (4), the float is .2756" (7 mm) away from cover with gasket (2) flat against cover face.

d) Check that float travel is .3150" (8 mm); if necessary, bend lug (5) as required.

e) If float (9) is not correctly positioned, bend float arms (7) until the correct adjustment is obtained. See that arm (6) is perpendicular to needle axis and does not show rough spots or indents which might impair free sliding of the needle.

f) Check that float (9) rotates freely around its pivot pin.

As a rule, the above adjustment operations must be performed every time a new float is installed.

CAUTION - Should replacement of the needle valve be required, make sure first that the new valve seat is screwed tight in its lodging with a new seal interposed. This will mean that the level check must be repeated.

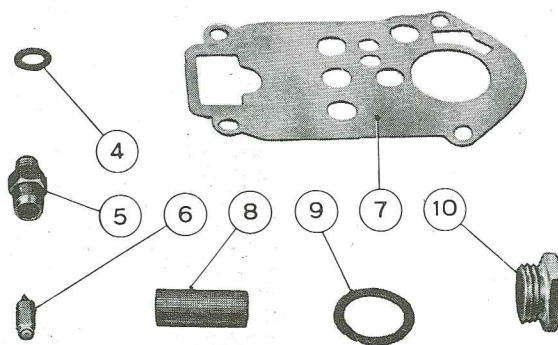
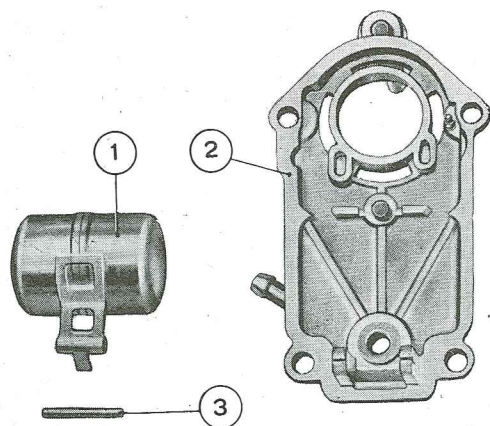


Fig. 124 - Weber 26 IMB 1 carburetor cover components.

1. Float. - 2. Carburetor cover. - 3. Float pivot. - 4. Needle valve for gasket. - 5-6. Needle valve seat and needle valve. - 7. Cover gasket. - 8. Filter strainer. - 9. Gasket. - 10. Filter inspection plug.

THROTTLE VALVE COMPONENTS

Throttle valve shaft should rotate freely in its guides even when engine is very warm. Excessive clearances caused by wear and throttle valve distortions must not be tolerated, as they are liable to cause irregular engine operation especially at idling speed.

Should above conditions be experienced, replace throttle valve and shaft assembly and seal rings.

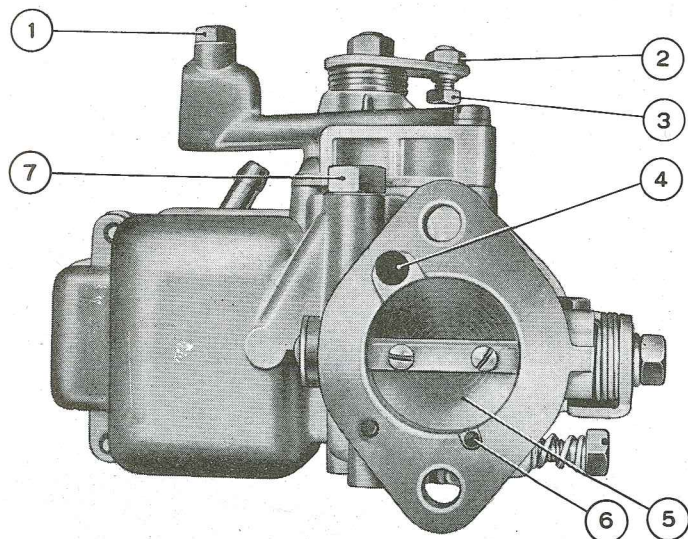


Fig. 125 - Weber 26 IMB 1 carburetor.

- 1: Bowden mounting screw. - 2-3. Nut and screw, choke bowden wire. - 4. Starting mixture duct. - 5. Throttle. - 6. Idle speed passage. - 7. Main jet holder.

Carburetor Cleaning Instructions.

For thorough cleaning of carburetor, proceed as follows:

Passages. - All fuel passages have a diameter that is the most appropriate to insure best operating conditions: it is therefore essential to remove any dirt or scale deposited by fuel, which would alter undesirably the conditions of operation. Clean with gasoline and blow dry with compressed air all passages in castings. Do not pass drills or other

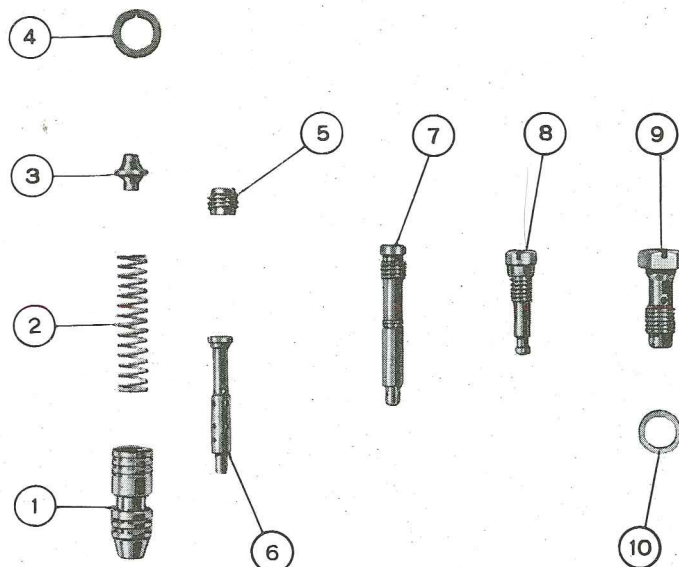


Fig. 126 - Jets, jet holders and choke valve.

- 1. Choke valve. - 2. Spring. - 3. Spring retainer and guide. - 4. Lock ring. - 5. Air bleed jet. - 6. Emulsion well. - 7. Choke jet. - 8. Idling jet holder and jet. - 9. Main jet holder and jet. - 10. Main jet holder gasket.

metal points through jets and passages because these would be altered in their calibrated diameters.

Calibrated parts. - Idling and main jet holders, and relevant bayonet-coupled jets, are easily removed by using a wrench or a screwdriver.

To clean the different calibrated parts, wash in gasoline and blow with a compressed air blast. We strongly advise against the use of metallic points or other unsuitable tools which may irreparably upset the pre-established calibration of orifices.

Should it be necessary to disassemble carburetor adjustment components for inspection of some parts, make sure that after re-assembly parts are again well tight in their seats to avoid possible operating troubles.

Strainer. - To clean the strainer, unscrew and take off its plug, with gasket, on carburetor cover and then pull out the strainer.

Clean strainer seat carefully. Wash strainer in gasoline and blow clean with an air blast.

SETTING DATA OF WEBER 26 IMB 1 (SEDAN) AND 26 IMB 3 (SPORTS CAR) CARBURETORS

	500		Sports Car	
	in	mm	in	mm
Throat diameter	1.0236	26	1.0236	26
Primary Venturi diameter . . . . .	.8268	21	.8661	22
Main jet diameter . . . . .	.0441	1,12	.0433	1,25
Idling jet diameter . . . . .	.0177	0,45	.0177	0,45
Choke jet diameter . . . . .	.0354 F 5	0,90 F 5	.0354 F 5	0,90 F 5
Main air jet diameter . . . . .	.0925	2,35	.0925	2,35
Needle seat (dampened) diameter . . . . .	.0492	1,25	.0492	1,25