

Tuning and Overhaul — Solex Type F34BICMA 113

SOLEX CARBURETTOR F 34 BICMA 113**2 Litre Engine****TUNING AND OVERHAUL****To Remove**

Disconnect the battery.

Remove the rear engine cover.

Raise the bonnet and remove the header tank cap.

Remove the engine insulation tray and drain the cooling system sufficiently to disconnect the two water hoses to the carburettor. Plug the hoses to prevent the possibility of water entering the inlet manifold.

Remove the air cleaner sub-section B 210.

Disconnect the lucar connection to the stop control solenoid.

Disconnect the choke inner and outer cables, throttle control, fuel supply pipe, vacuum pipes to deceleration valve and vacuum advance.

Release the two nuts and washers securing the carburettor flange and withdraw the carburettor from the inlet manifold. Discard the gasket. Protect the manifold aperture from the entry of dirt and foreign material.

To Refit

Check that the carburettor flange and manifold flange are clean and not distorted. Fit the carburettor with a new gasket and tighten the nuts and washers evenly.

Connect the throttle and choke controls. Ensure that the choke valve returns to the fully open position when the facia control is fully in.

Connect the water hoses, refill the cooling system and check for water leaks.

Refit the engine insulation tray.

Connect the fuel supply pipe and vacuum pipes.

Refit the air cleaner sub-section B 210.

Refit the lucar connection to the stop control solenoid.

Reconnect the battery.

Start the engine. Check the cooling system level in the header tank, adjust the engine idling if necessary.

Refit the rear engine cover.

Engine Tuning

Many performance complaints are wrongly attributed to the carburettor, which cannot compensate for any of the following:

Vacuum leaks at manifold or hoses.

Blockages in induction or crankcase ventilation systems.

Low or high fuel pressure.

Low or unbalanced cylinder compression.

Faulty ignition or ignition timing.

In all cases of suspected carburettor malfunction carry out the following checks, rectifying any faults, before condemning, removing and dismantling the carburettor.

Check the air cleaner filter element. Clean or renew it as necessary.

Check the operation of the Automatic air control system (Sub section B 701).

Check the crankcase ventilation system. Clean the crankcase filter.

Check the tightness of the inlet and exhaust manifold and carburettor securing nuts.

Remove and clean the spark plugs, reset the gaps.

Check the cylinder compressions, Check and if necessary adjust the valve clearances.

Check and if necessary reset the ignition timing at idling speed with vacuum advance pipe disconnected.

Check the centrifugal advance. Check that the vacuum advance capsule is working and the connecting pipe is not leaking.

Check the ignition secondary voltage. Check the H.T. cables and coil for satisfactory insulation.

Test the fuel pump pressures. Check the filter in the fuel pump.

Check that the exhaust system is not blocked or restricted by damage.

Adjust the carburettor idling speed.

Road test the vehicle to confirm a fault and if the carburettor is suspect, identify which of the carburettor circuits is at fault.

Tamper Proof Devices

The plastic tamper proof sleeve and cap assembly fitted over the mixture screw is shielded by a steel sleeve. Pushing the cap to the first position on the screw allows rotation of the mixture screw for adjustment (Fig. 1). Pushing the cap to its final position (Fig. 2) prevents operation of the mixture screw, as the cap "free-wheels" in this position.

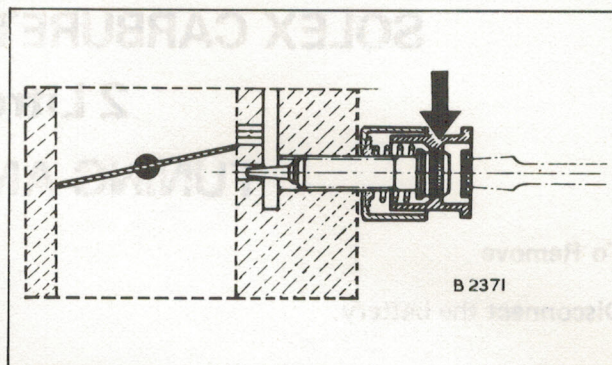


Fig. 1 Cap engaged with mixture screw

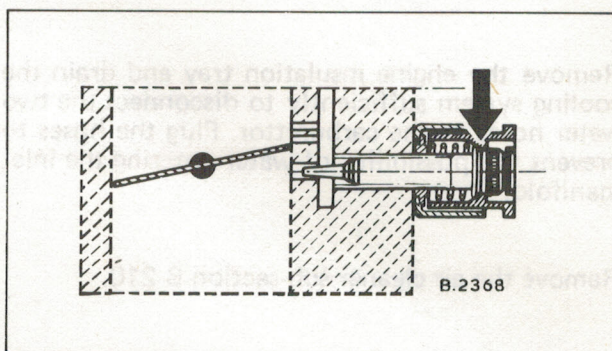


Fig. 2 Cap in "free-wheel" position

Subsequent screw adjustment is only possible after breaking the plastic cap from its sleeve.

The throttle top screw is factory set and should never be altered, mixture adjustment being confined to the "constant C0" volume screw, and mixture screw if necessary. Movement of the throttle stop screw is possible only after breaking the plastic blanking cap.

Throttle Stop Cap — To Renew

To Remove

Break off the cap with a pair of pliers, leaving the tab in the carburettor body. The tab will be pushed out when a new cap is fitted.

To Refit

Hold the new cap carefully with a pair of flat-nosed pliers, engage the cap legs with the bracket on the carburettor and push the cap firmly into position.

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ADJUSTMENTS

Idling Speed Adjustment

Remove the rear engine cover.

Connect a tachometer and run the engine until normal working temperature is achieved.

Set the idling speed to the recommended figure (Sub-section B 401) by moving the constant CO volume screw (Fig. 3) in or out as necessary.

Disconnect the tachometer..

Refit the rear engine cover.

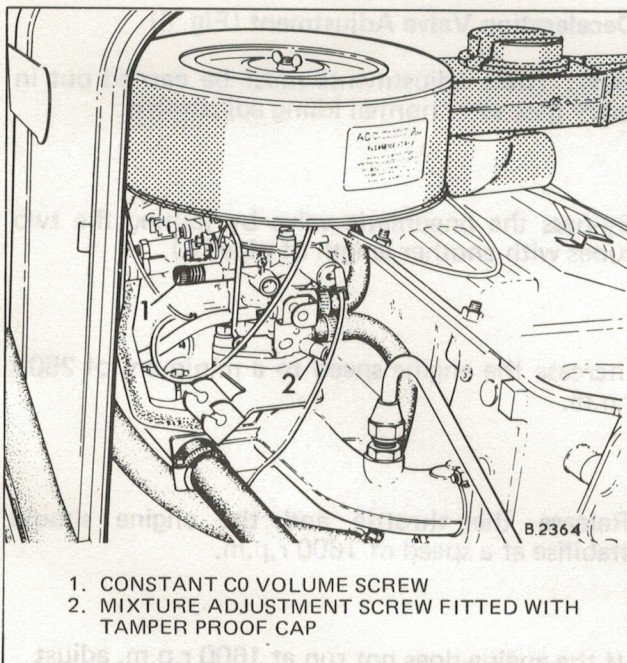


Fig. 3 Idling speed adjustment screw and mixture screw

MIXTURE SCREW ADJUSTMENT

Remove the rear engine cover.

Prise off the end of the cap (Fig. 4).

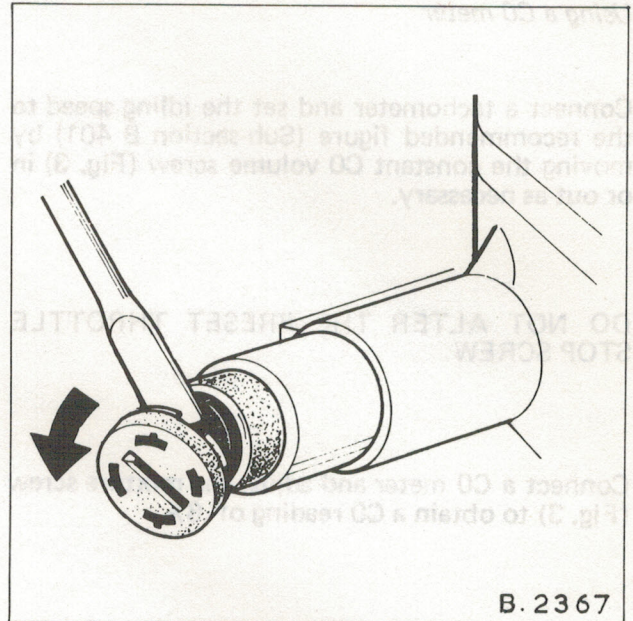


Fig. 4 Breaking the cap from the sleeve

Remove the mixture screw and steel sleeve assembly, counting the number of turns of the screw.

Separate the screw and spring from the sleeve, discard the remainder of the plastic tamper proof seal.

Re-assemble the screw, spring, sleeve retainer and sleeve (Fig. 5).

Refit the assembly to the carburettor, ensuring the stop on the sleeve retainer is correctly positioned in the end of the sleeve, and set the mixture screw to its original position.

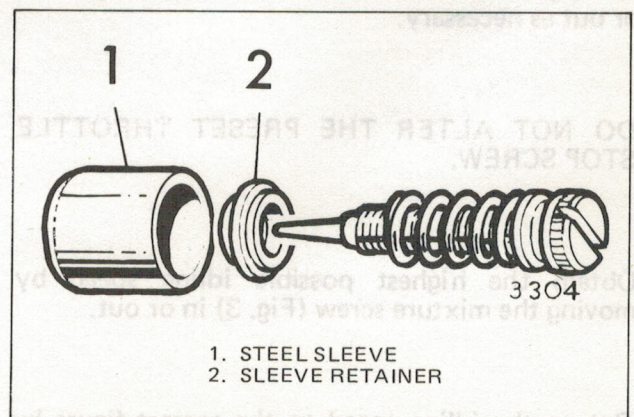


Fig. 5 Mixture screw and steel sleeve assembly

Using a CO meter

Connect a tachometer and set the idling speed to the recommended figure (Sub-section B 401) by moving the constant CO volume screw (Fig. 3) in or out as necessary.

DO NOT ALTER THE PRESET THROTTLE STOP SCREW.

Connect a CO meter and adjust the mixture screw (Fig. 3) to obtain a CO reading of .6%.

If necessary, reset the idling speed by further adjustment to the volume screw.

Fit a new tamper proof cap to the mixture screw by pressing it firmly into position.

Disconnect and remove the tachometer.

If a CO meter is not available

Connect a tachometer and set the idling speed to the recommended figure (Sub-section B 401) by moving the constant CO volume screw (Fig. 3) in or out as necessary.

DO NOT ALTER THE PRESET THROTTLE STOP SCREW.

Obtain the highest possible idling speed by moving the mixture screw (Fig. 3) in or out.

Return the idling speed to the correct figure by re-adjusting the constant CO volume screw.

Reduce the idling speed by 40 r.p.m. by moving the mixture screw INWARDS, but without taking it to the point where the engine runs unevenly.

Reset the idling speed to the correct figure by final adjustment to the constant CO volume screw.

Fit a new tamper proof cap to the mixture screw by pressing it firmly on to the mixture screw.

EARLY VEHICLES**Deceleration Valve Adjustment (Fig. 6)**

Note: These adjustments must be carried out in every case after normal idling adjustment.

By-pass the pneumatic valve by joining the two tubes with another length of pipe (A).

Increase the engine speed to a minimum of 2500 r.p.m.

Release the throttle and the engine should stabilise at a speed of 1600 r.p.m.

If the engine does not run at 1600 r.p.m. adjust screw (B) to obtain the correct speed.

Connect a CO meter. Adjust screw (C) to obtain 2% of CO in the exhaust gas at a speed of 1600 r.p.m.

Reconnect the two tubes to the pneumatic valve.

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Pneumatic Valve Adjustment (Fig. 6)

Raise the engine speed to 4000 r.p.m. Having stabilised this speed, release the throttle and measure the time taken for the engine to slow down to 1000 r.p.m.

If the time taken is outside this figure, remove the pneumatic valve cover, hold the spindle (1) in position and slacken the locknut (2); then to increase the time taken, tighten screw (3) or to reduce the time taken slacken the screw. Refit valve cover.

This time must be 4.5 seconds.

Note: Because the spindle (1) is fixed to the membrane, care must be taken during the adjustment to hold it still in relation to the body of the valve so that it does not twist the membrane.

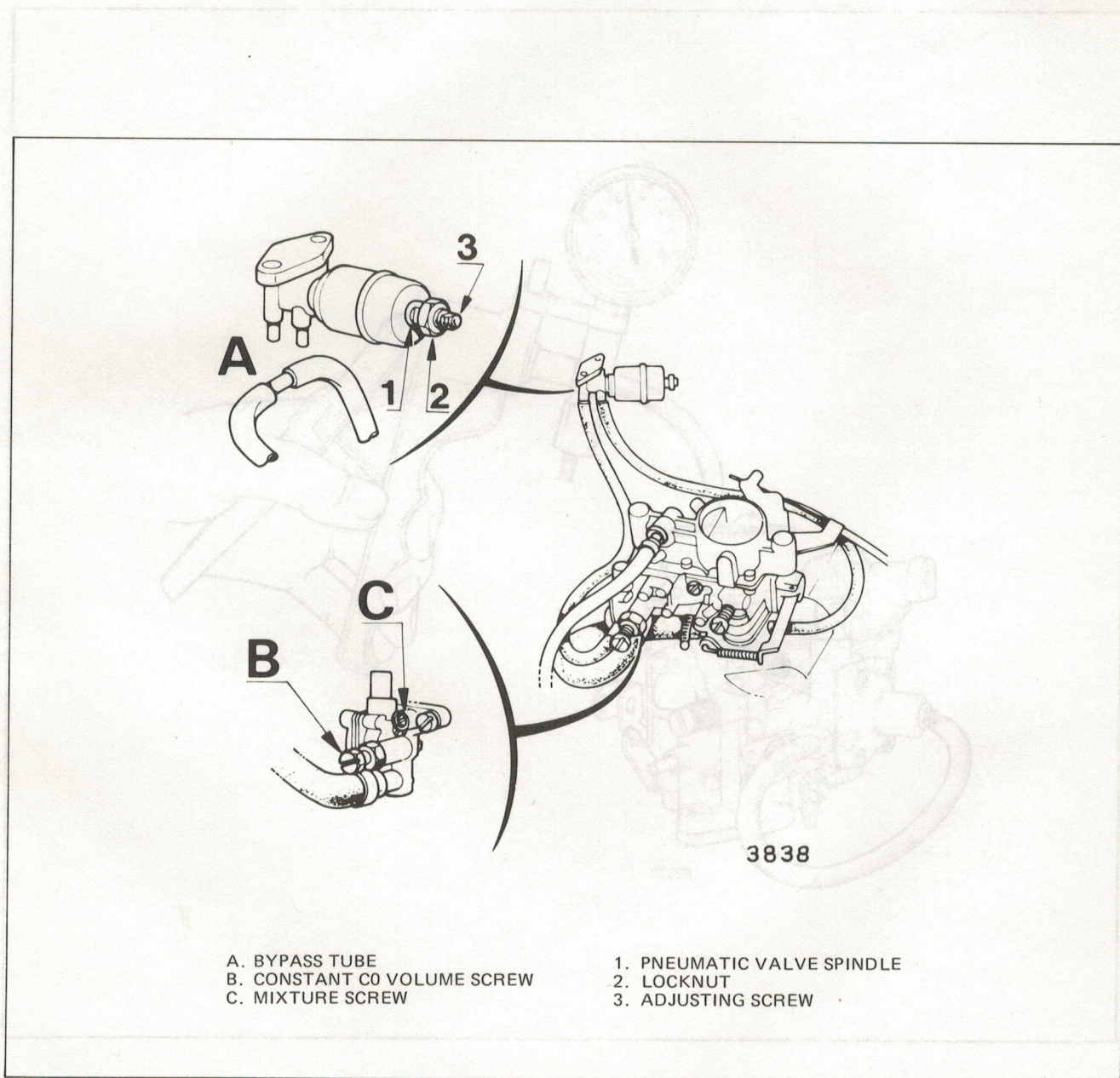


Fig. 6 Details of the deceleration valve and pneumatic valve—Early vehicles

LATER VEHICLES

Deceleration Valve Adjustment

Note: These adjustments must be carried out in every case after normal idling adjustment.

Disconnect the vacuum connection to the deceleration valve and connect a Mityvac or external vacuum supply with a gauge to the valve (Fig. 7). Blank off disconnected pipe.

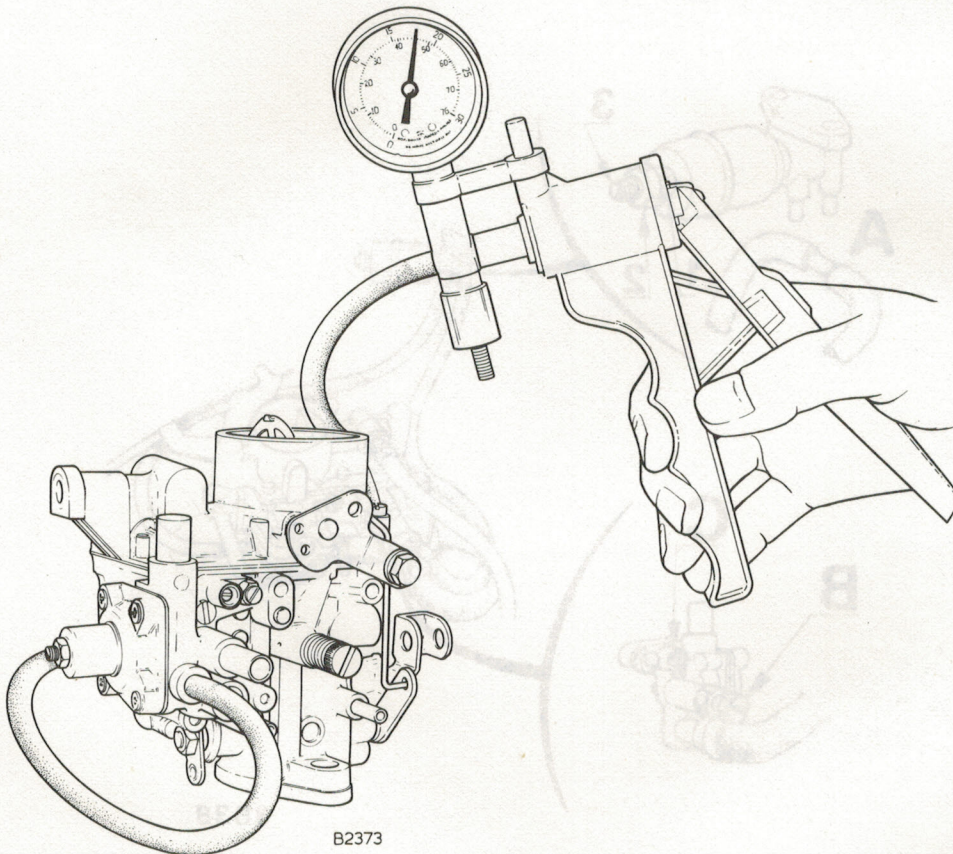


Fig. 7 Vacuum supply to carburettor (later vehicles)

DESCRIPTION AND MODIFICATIONS

This may seem a little out of place but I have heard about problems with people stealing work and selling it - for example on eBay.

If you're reading this and you bought this manual anywhere then you have been ripped off.

Please contact me via my email mikejamson@hotmail.com Otherwise I can be found on the dodge50 facebook page, if not then get in contact with Greg and he can pass the message on to me.

I have not done this pdf manual for my own personal gain and wish to see the community of 50 series owners benefit from the information here, and I do not want to see the community get taken advantage of and somebody else gain from it unfairly.

The information in pdf format will hopefully allow more of these wonderful trucks to stay on the road by providing information to everybody.

This has been quite a long and involved process to scan the manual and to convert it into a pdf format. I do apologise as I have used several different scanners and several different computers to do it, so there are no doubt some errors hidden throughout, as well as some editing errors.

I have aimed to balance quality and file size and hope that this balance meets to everybody's approval.

If you see an error please let me know and I will fix it as soon as I can.

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With the engine at operating temperature and running at idle speed, apply a vacuum of 500 mm Hg (19.7 in Hg) the valve should remain closed.

Increasing the vacuum to 520 mm Hg (20.5 in Hg) the valve should be fully open with engine speed increasing to 1450 r.p.m.

If the prescribed vacuum figures cannot be achieved slacken the locknut (Fig. 8); then to delay the vacuum operation tighten the screw or to reduce the vacuum operation slacken the screw. Tighten the locknut after adjustment.

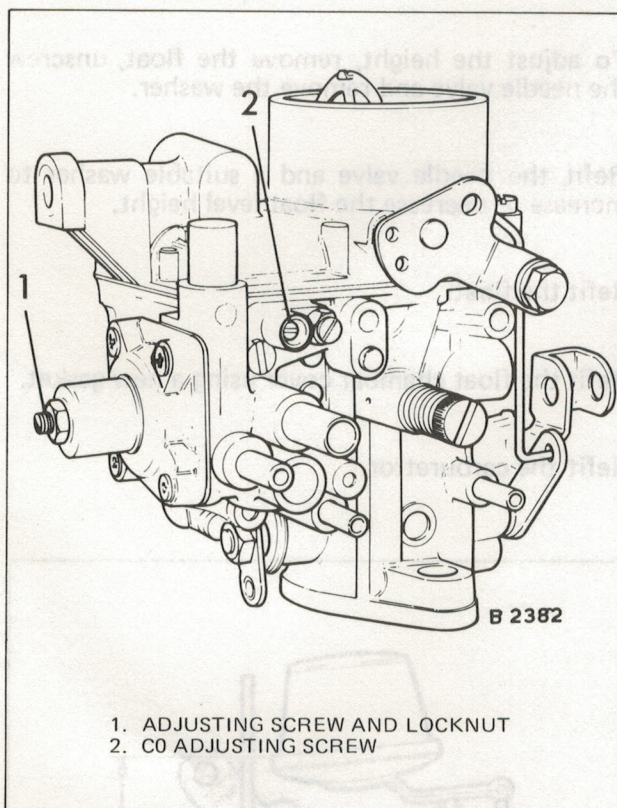


Fig. 8 Deceleration valve adjustment (later vehicles)

Now apply a vacuum of 520 mm Hg (20.5 in Hg) or above to ensure the deceleration valve is open.

Connect a CO meter. Adjust the screw (Fig. 8) to obtain .4% of CO in the exhaust gas at a speed of approximately 1450 r.p.m.;

Remove the external vacuum supply and reconnect the vacuum pipe to the deceleration valve. Refit the rear engine cover.

Accelerator Pump Stroke (Fig, 9)

Remove the carburettor from the engine.

Invert the carburettor and pull the pump lever as far as it will go.

A 4 mm (.16 in) diameter rod should just slide between the edge of the throttle butterfly and throttle body.

Adjust by slight bending of the actuating lever in the desired direction.

Note: No attempt should be made to adjust on the lever nut as the thread is crimped in the nut.

Refit the carburettor.

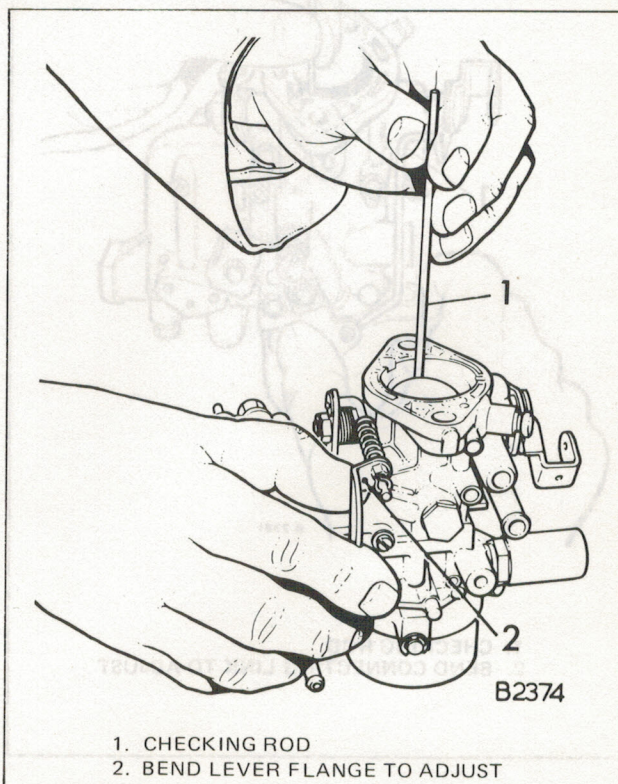


Fig. 9 Checking accelerator pump stroke travel

Fast Idle Setting (Fig. 10)

Remove the carburettor from the engine.

Close the throttle butterfly.

Close the choke flap.

A 1.6 mm (.06 in) diameter rod should just slide between the edge of the throttle butterfly and throttle body.

Adjust the bend in the connecting link to provide the required gap.

Refit the carburettor.

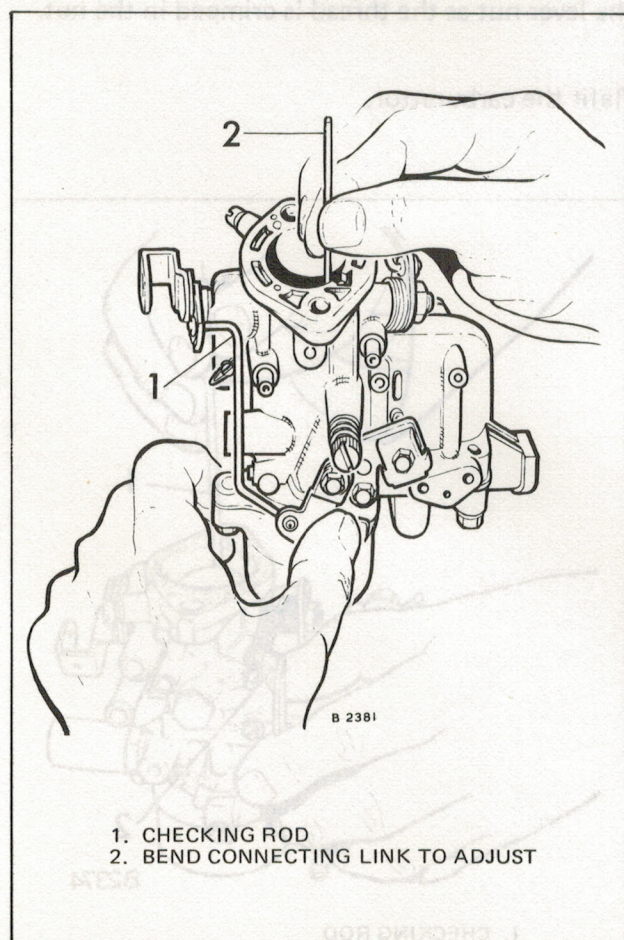


Fig. 10 Checking fast idle setting

Checking the float level (Fig. 11)

Remove the float chamber cover.

Remove the gasket.

Invert the cover and measure the distance between the upper edge of the flange on the float and the cover gasket face. This dimension 19.5 mm (.17 in) is to be measured at the farthest point away from the pivot pin.

If the figure is not correct, check that the float pivot pin is parallel with the cover face.

To adjust the height, remove the float, unscrew the needle valve and remove the washer.

Refit the needle valve and a suitable washer to increase or decrease the float level height.

Refit the float.

Refit the float chamber cover using a new gasket.

Refit the carburettor.

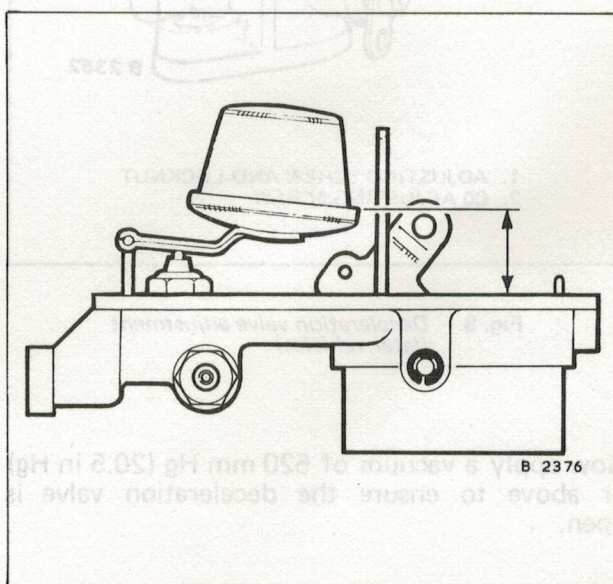
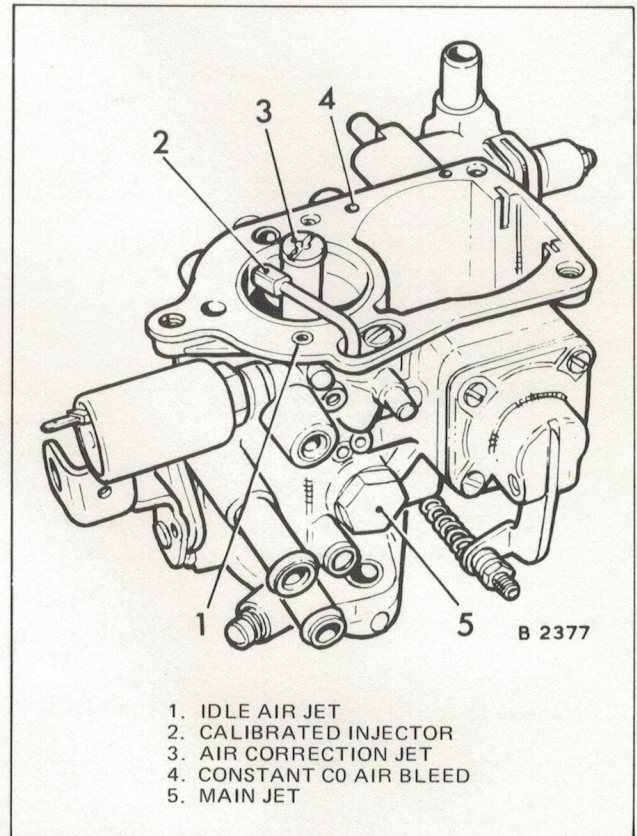


Fig. 11 Float level height

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Jet Renewal (Fig. 12)

The main jet is accessible after removing the jet holder from the side of the carburettor. The remaining jets are accessible after removing the float chamber cover.

**Fig. 12** *Jet location*