

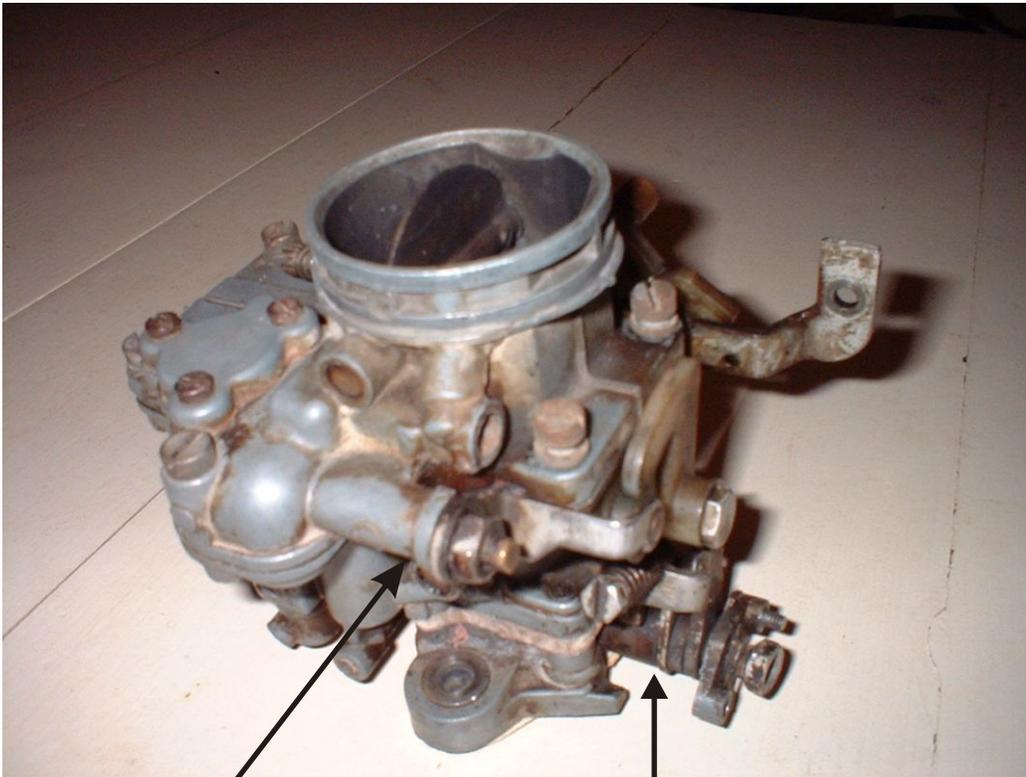
# Zenith Down Draft WIP Carb Cleaning

## Please note:

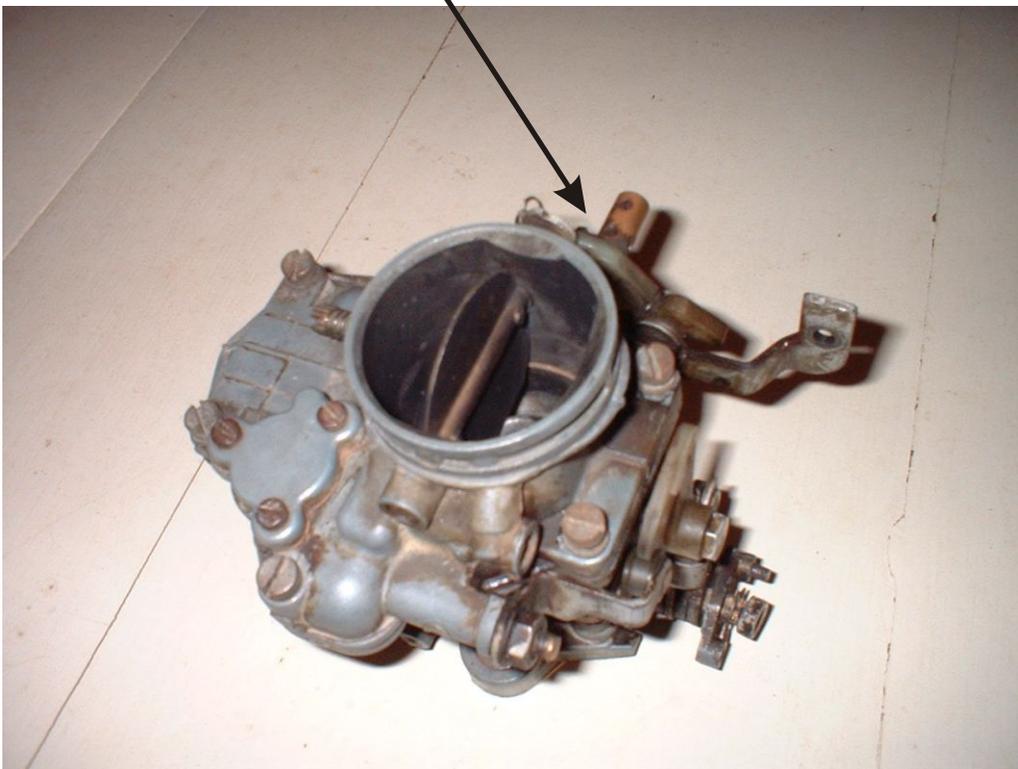
I am not a pro in any way shape or form. I could not find any help with regard to cleaning or making my carbs work on my car. This has been a very trying time as I love to drive my car and not being able to do so is frustrating. I have just jumped in without any direction in hope to make my car useable. There may be better ways of doing things but I do not have the information or help in this regard.

I hope by posting this information, others will provide greater insight with regard to rebuilding and making these old carbs work for guys who are trying to keep their cars looking original.

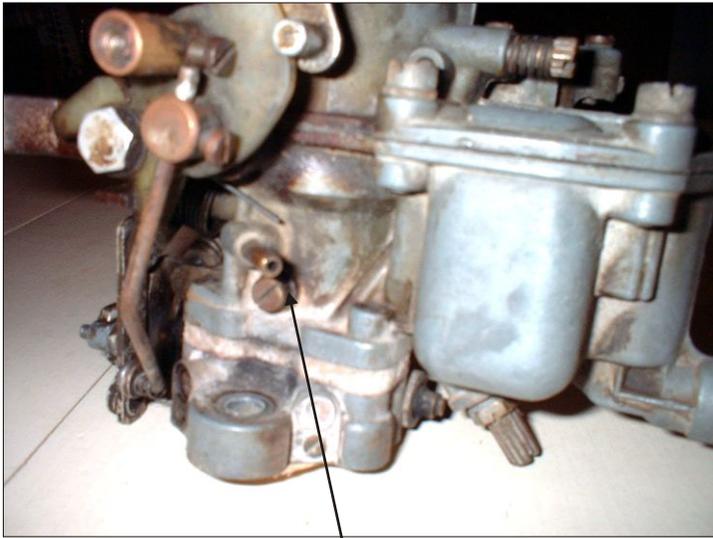
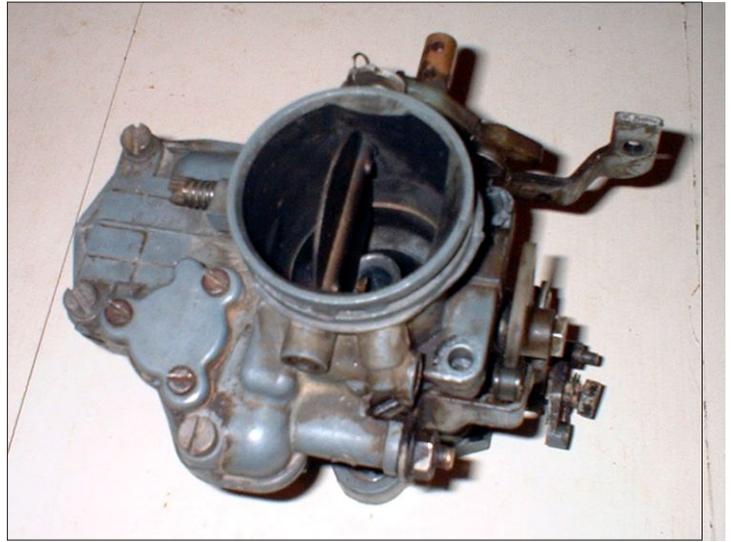
All the best,  
Andrew Masse



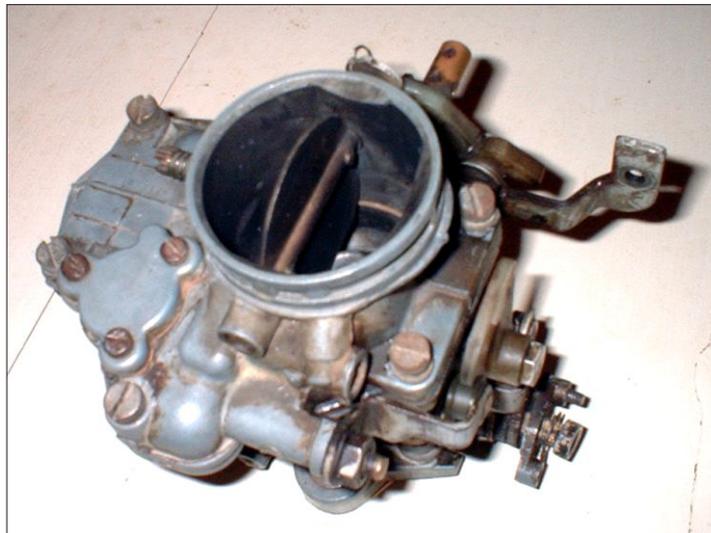
It is important to note that anything passing through the carb body or any of the butterfly can not be over worn, these areas cab should be rebuilt or replaced.



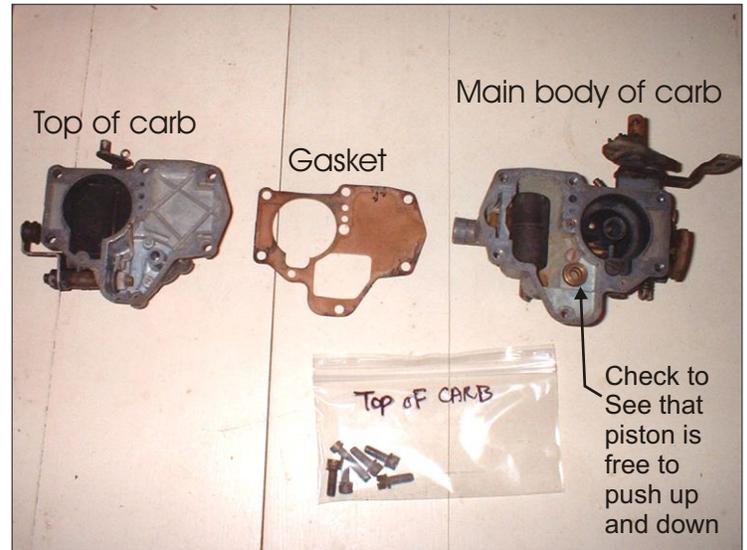
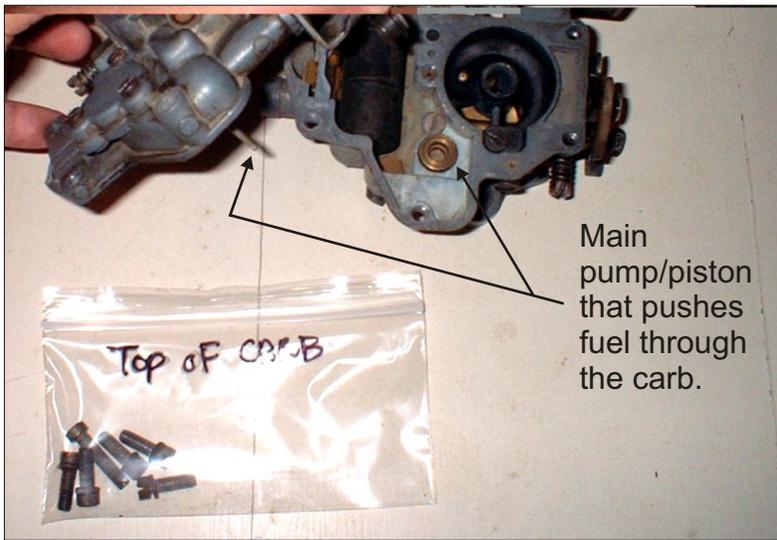
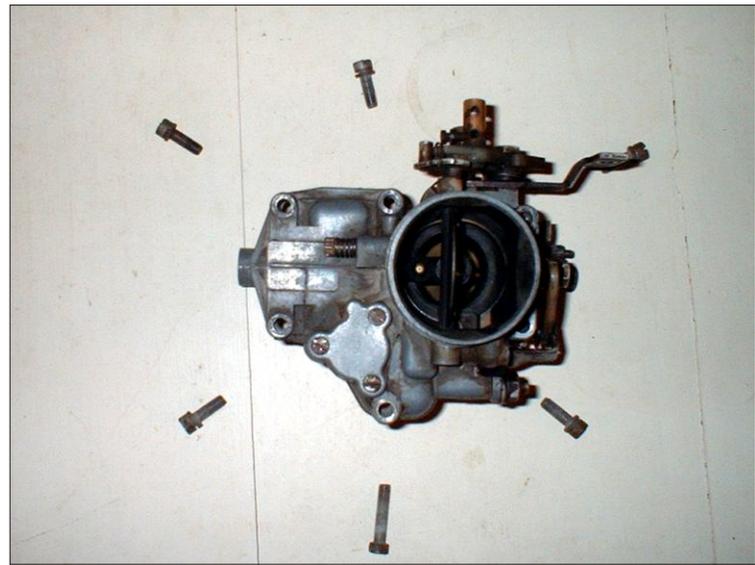
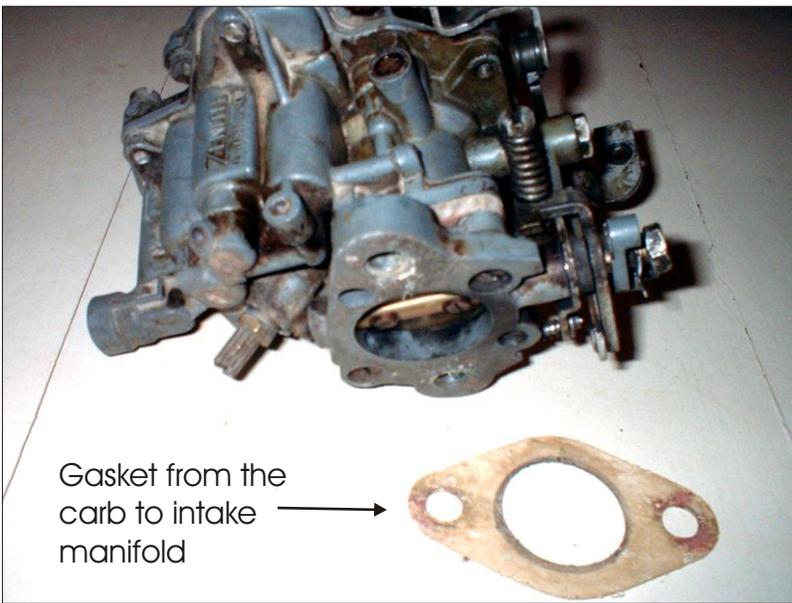
This is the front carb off of my Sunbeam Alpine.  
When you first remove it from the car, take a number of photos. Especially how the linkage is set up, take photos of all 6 sides. Including the top and bottom. A couple close photos of the springs and linkage is also good.



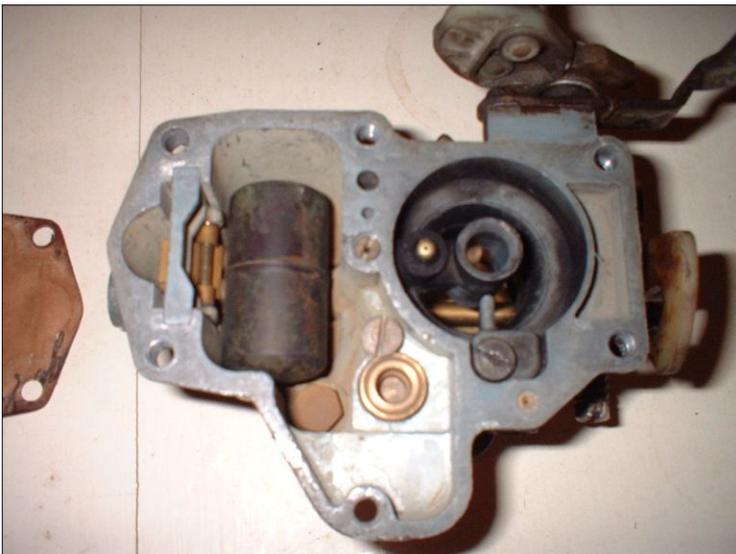
Note: the front carb as the vac. Advance.



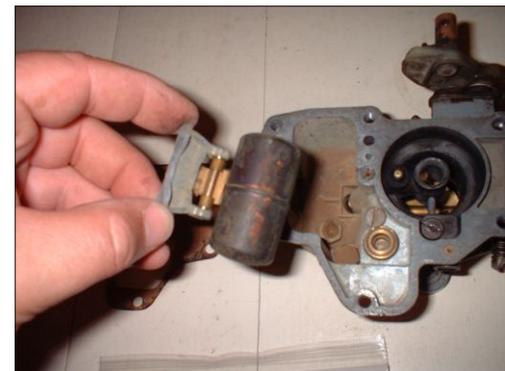
Remove the top of the carb.



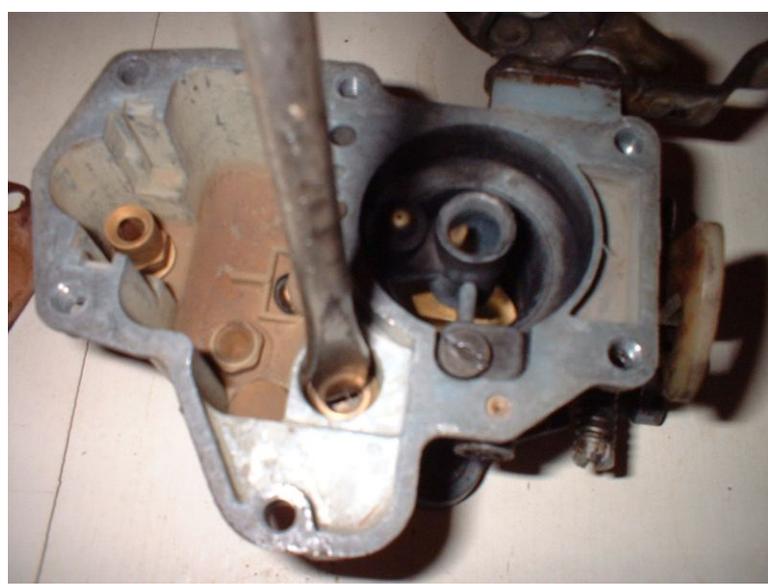
Remove the top of the carb.



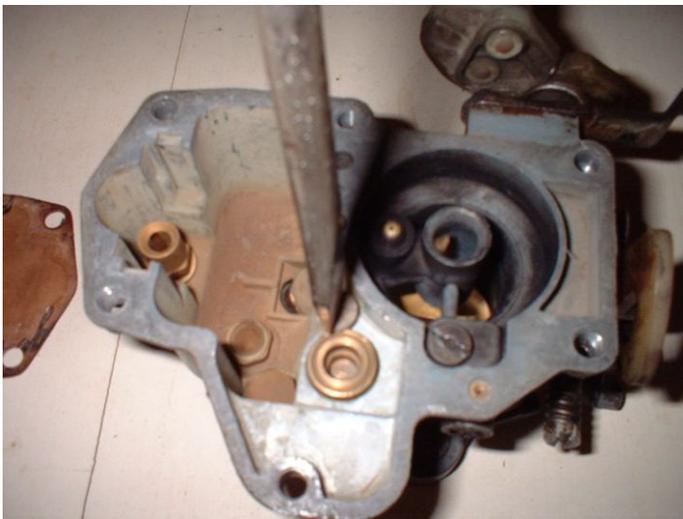
Don't go crazy here, just pry up on the fixture with a screw driver using the carb body for leverage.



I would remove the float, if you end up putting a hole in this you will be very upset. Take it out and put it in a safe place. It may also be a good time to make sure that it will not take on fluid. Put it in a container of water and see if bubble come from it. If so you will need to fix it or find a new one.



The piston works well in the car and moves freely. I would still remove and clean this.

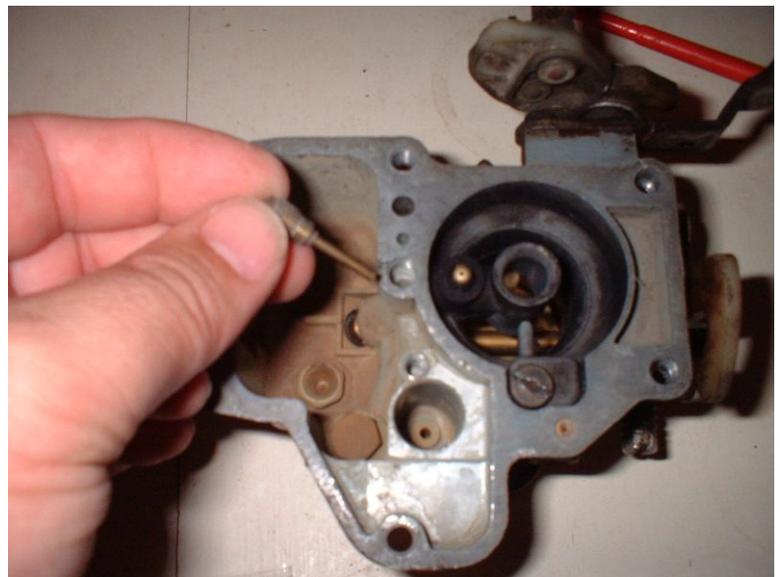
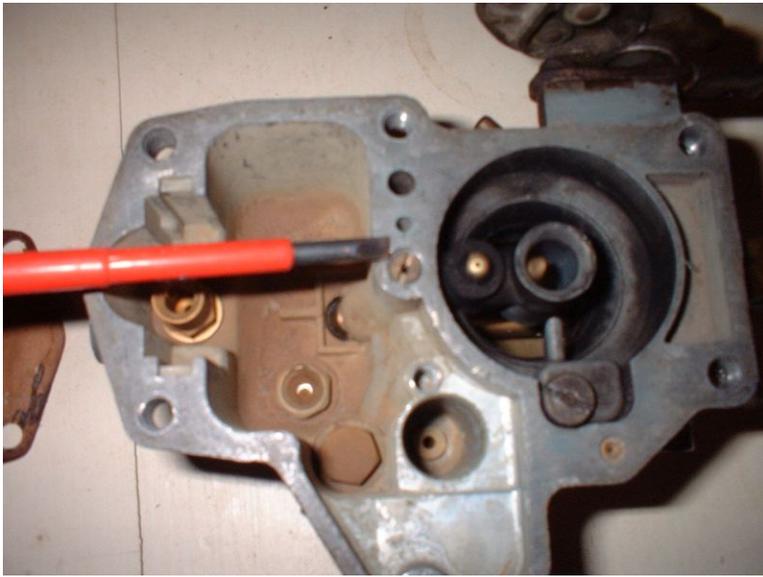


Take a screw drive and unscrew the fitting next to the piston. This should allow the piston to be removed along with the spring. I have seen these pistons stuck down into the cylinder due to fuels / varnish or dirt deposit. In the past I have had to force the piston to turn with a screwdriver. It may help if you let carb body sit in carb cleaner over night. It is best to have things as clean as possible before you start removing the piston or nay jets, there is then less of a chance getting this dirt causing problems with the carb operation.

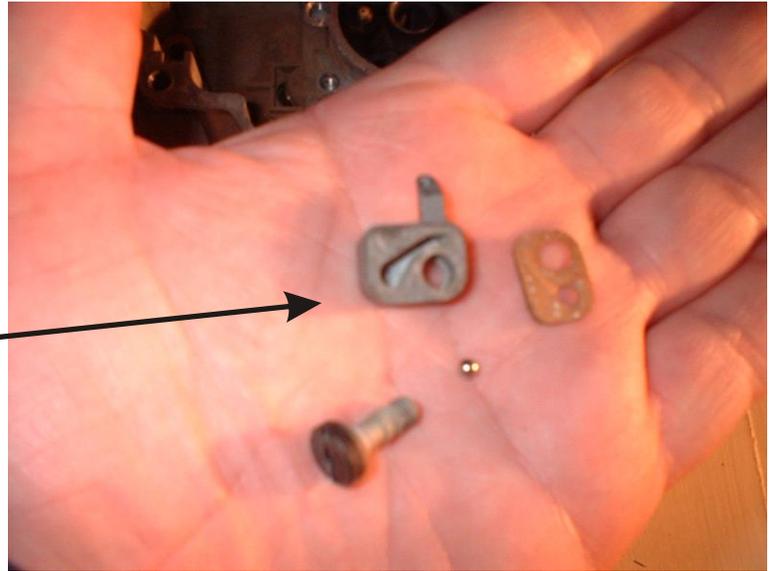
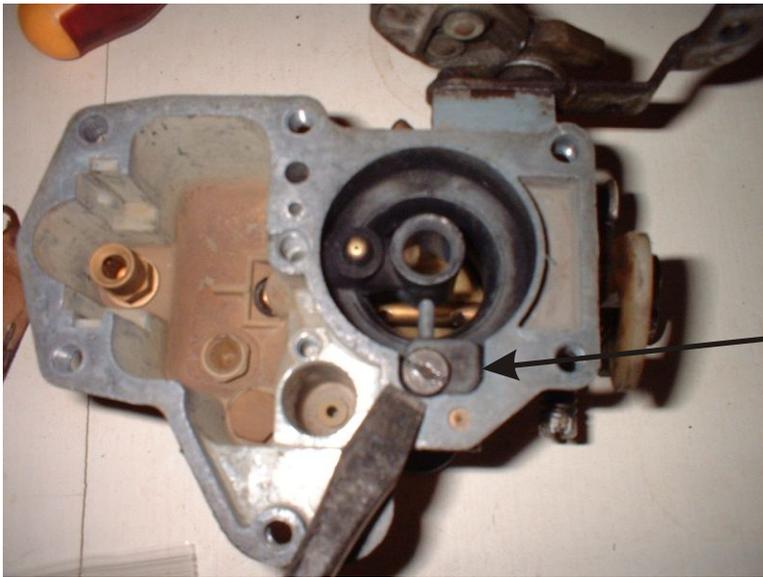


Try and label everything and bag it, and even take photos as you go.

Keep everything clean and neat, you will be happy you did especially if you get called away from the project.



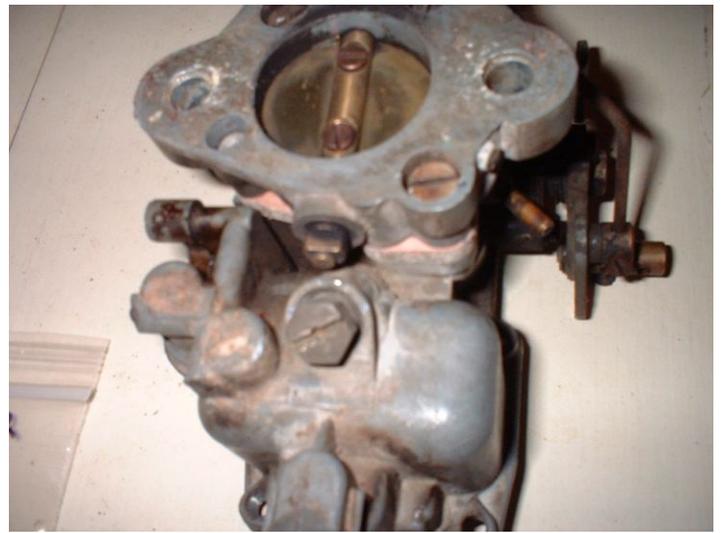
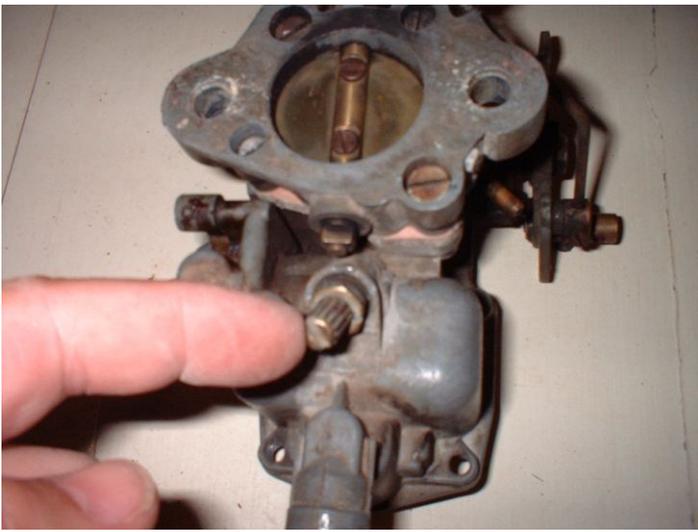
This is the location of your slow idle jet, if you plan to remove this just be careful and keep it safe and clean.



I plan to replace all my gasket only but be careful because there is a small ball bearing in this location. If you loose this your car will not function. Your shop manual will warn you about dropping this down into your intake as it would not be good for the engine. (Note that some carbs may or may not have this ball bearing, the shop manual will show this)



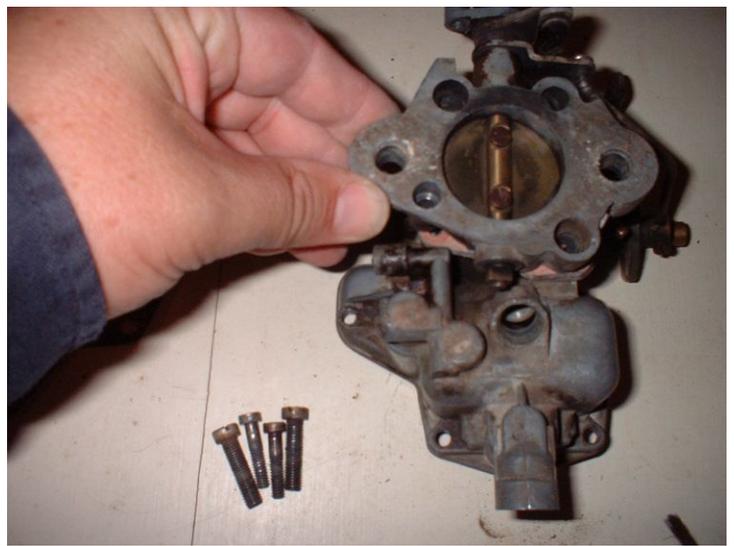
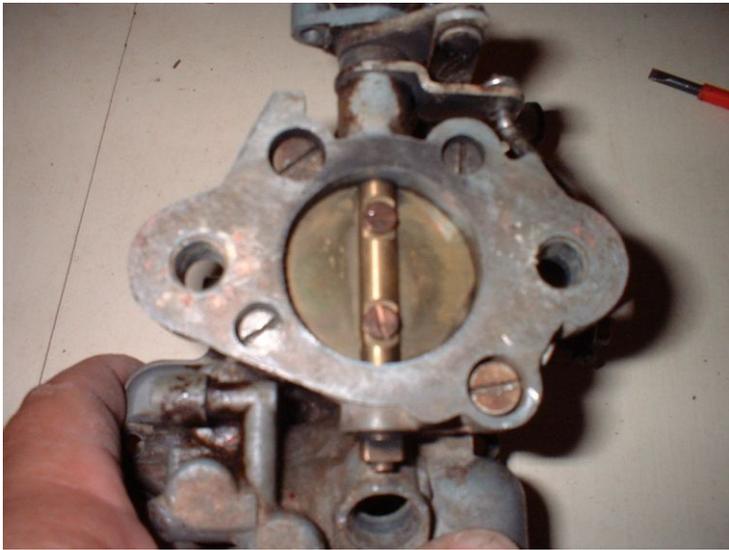
The small ball bearing or accelerator ball valve is located under the fixing screw



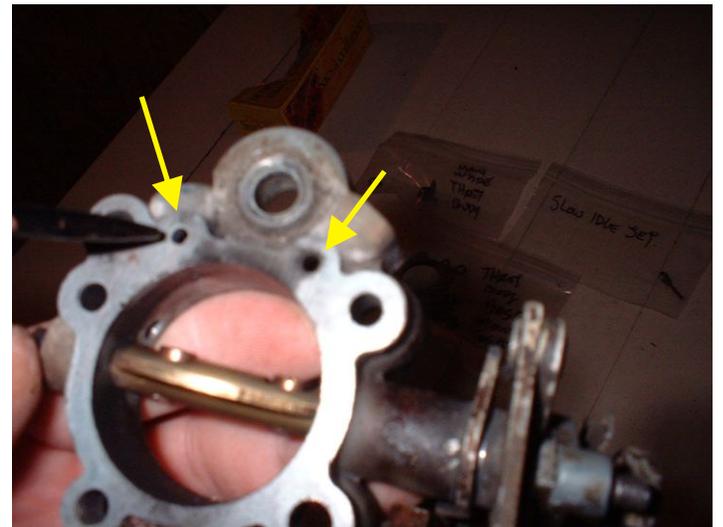
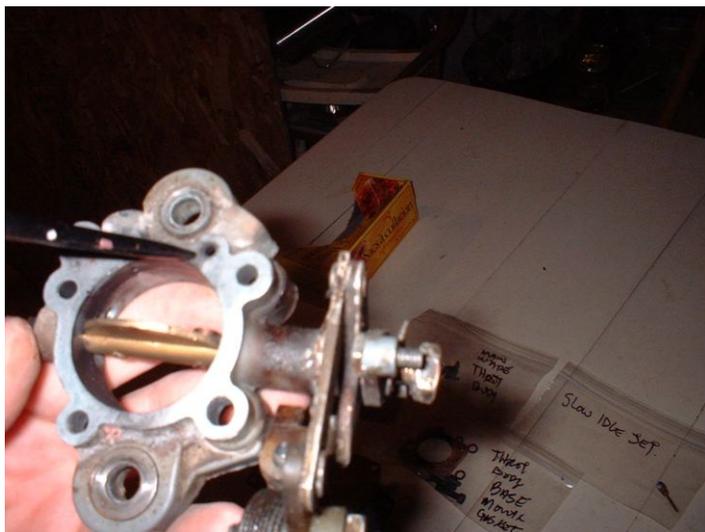
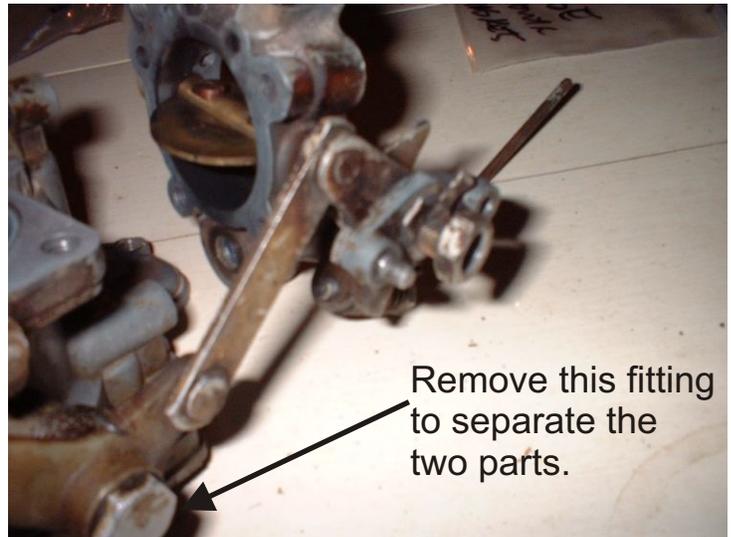
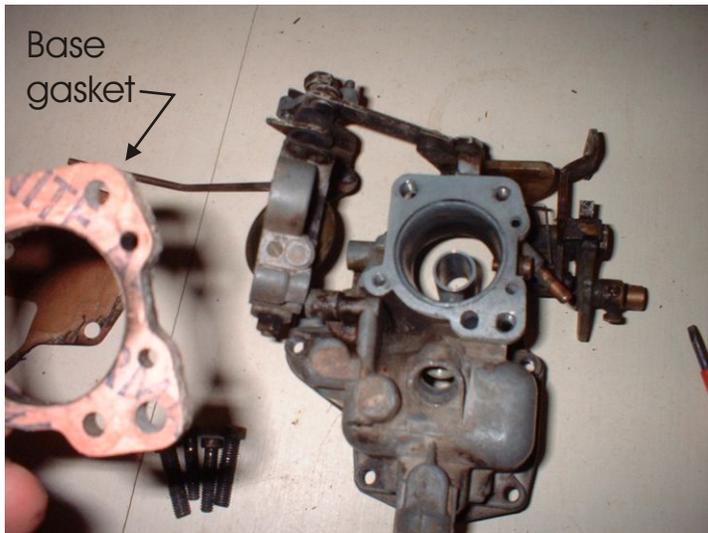
I have seen to different type of fittings in this location, both seal the base of the float chamber. It is a good idea to clean and put a new seal in on this fixture. This is also the location to access the main jet.



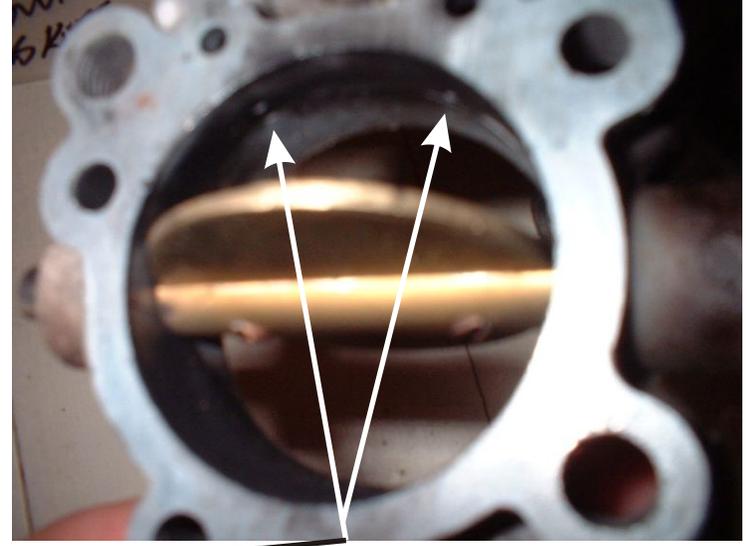
The two different typ of fittings. I have install a new "O" ring seal in the longer fitting.



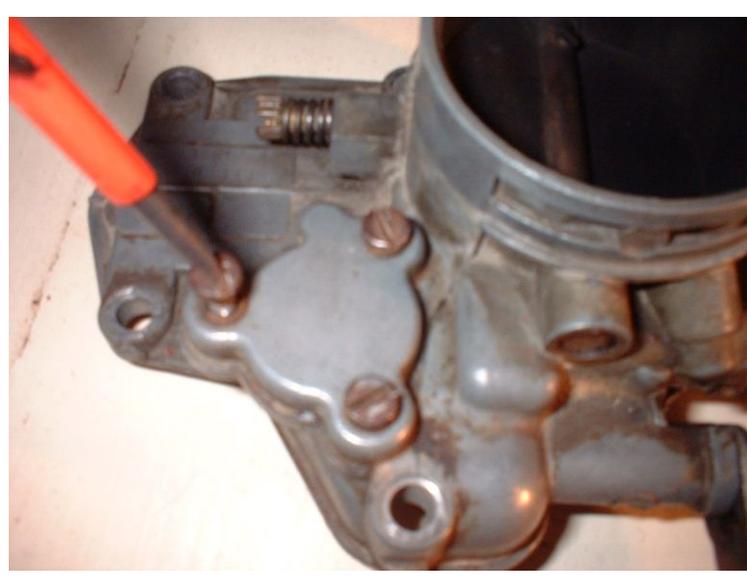
When removing the 4 base fittings, well you better have taken a number of photos as this is where you may have some fun sorting out the linkage, springs and how things should be put back together. Remember you have been warned.



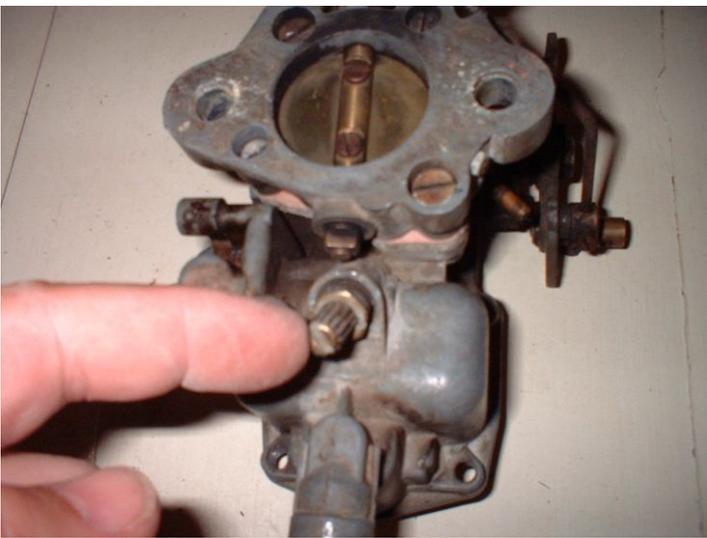
When removed make sure these areas are clean. These are the passages the feed fuel via the low idle jet to small ports above and below the lower/ throttle butterfly.



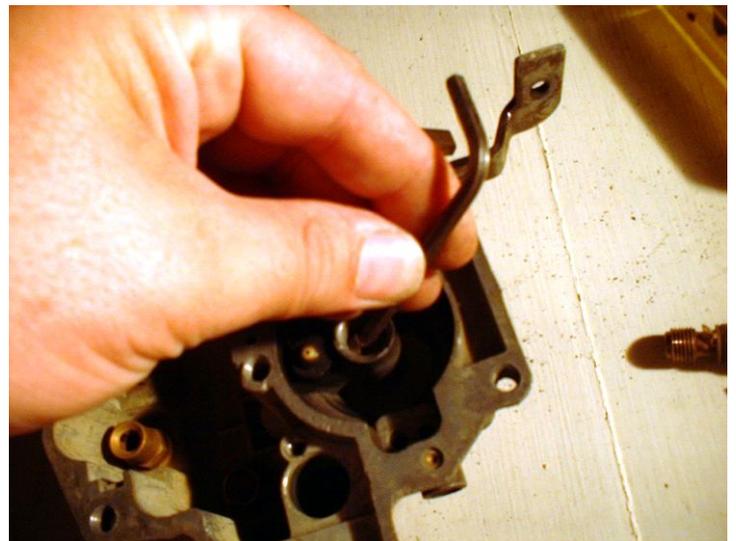
These are small ports that are in the carb body that deliver fuel from the low/throttle or idle jet. It is important that these are free, clean and clear of all dirt.



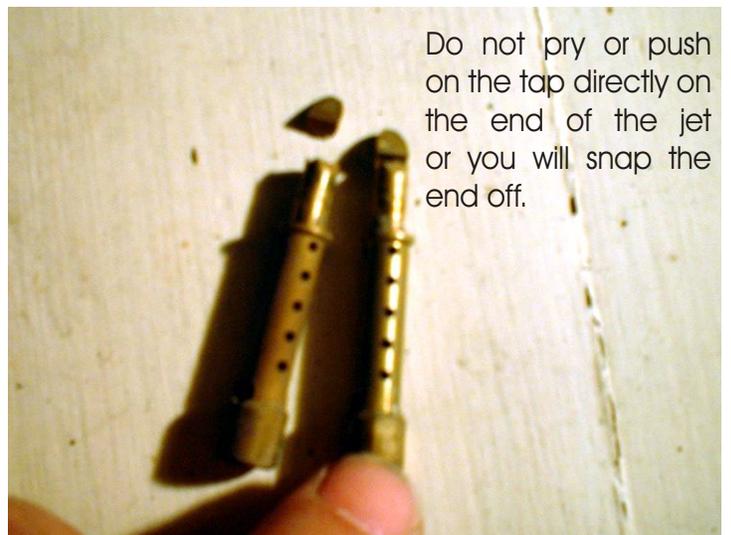
One more area where a gasket can be replaced and parts cleaned is on the top of the carb as shown above.



Before you remove your main discharge jet, you must have the Metering jet fitting removed as shown above. We removed this early on in the instructions.



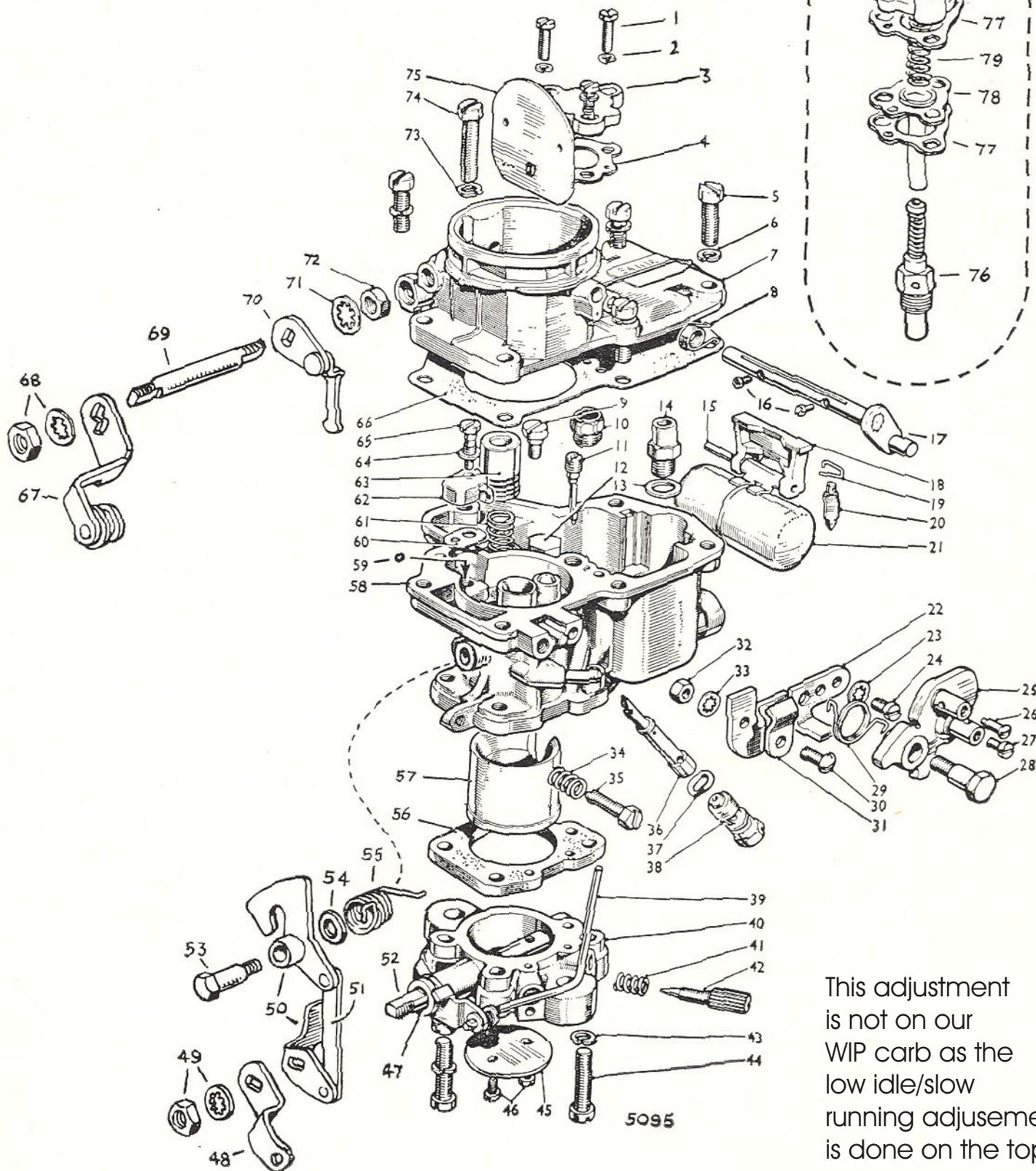
To removed the main jet you may have to tap a little on the end of the jet. Now there may be a better way as it is easy to break the tip of the end of the jet. Be careful. You will see that the main jet has a small slot in the end, I think it is best to use a small slot screwdriver in this slot and just tap lightly to push the jet down the opening.



Now, clean everything as best as possible and reassemble with new gasket, seals etc.

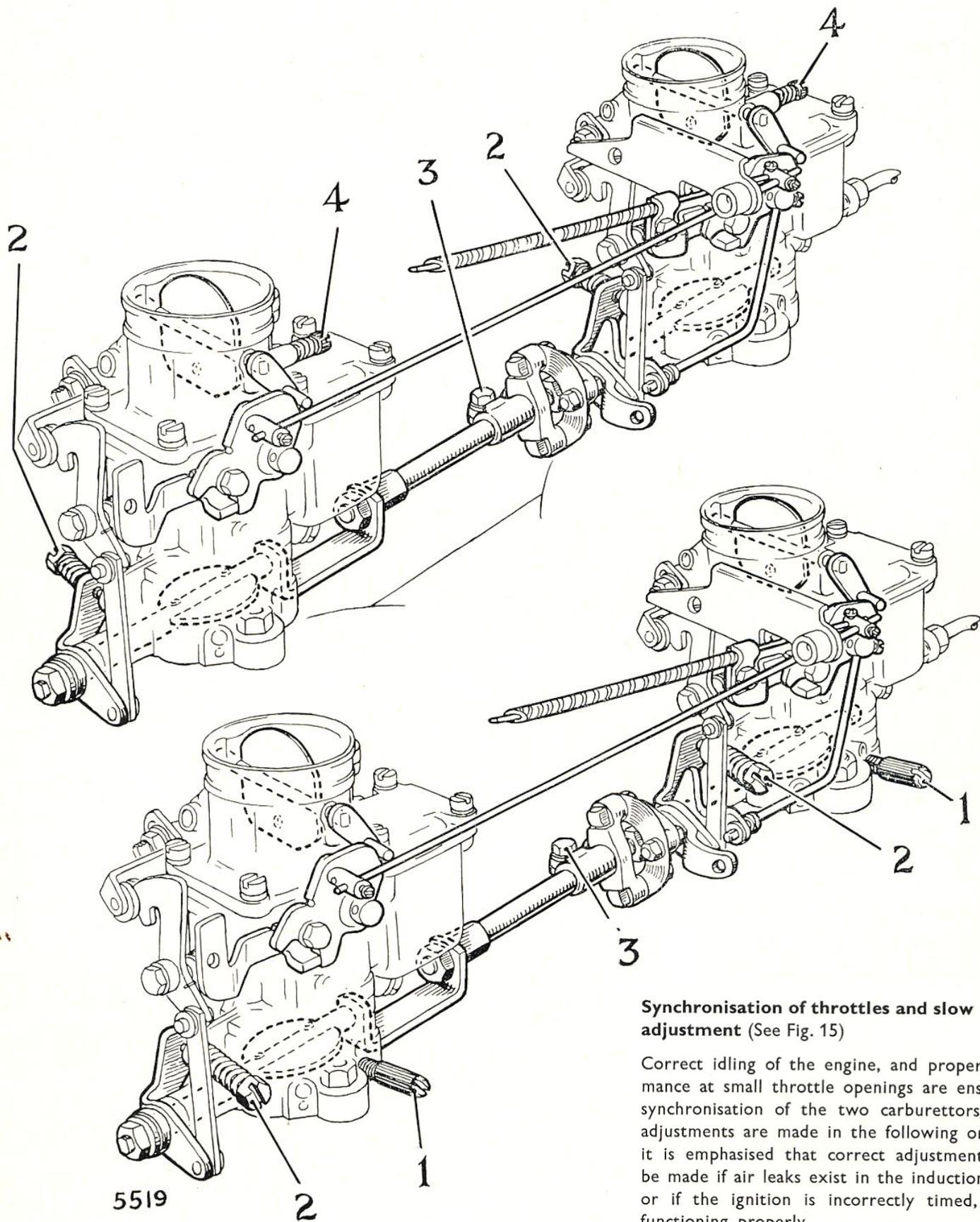
Here is the break down of both WIP and WIA carbs.  
The one we are showing in the rebuild is the WIP

WIA carb only



This adjustment is not on our WIP carb as the low idle/slow running adjustment is done on the top of the carb.

Fig. 18. Exploded view of carburettor.  
Items 76 to 80, shown in inset, are only used on the WIA carburettor



5519

1. Volume control screw. *(not fitted if item 4 is used)*
2. Slow running speed adjustment screw.
3. Coupling yoke clamp bolt.
4. Slow running air adjustment screw. *(not fitted if item 1 is used)*

**Synchronisation of throttles and slow running adjustment** (See Fig. 15)

Correct idling of the engine, and proper performance at small throttle openings are ensured by synchronisation of the two carburettors. These adjustments are made in the following order but it is emphasised that correct adjustment cannot be made if air leaks exist in the induction system or if the ignition is incorrectly timed, or not functioning properly.

1. Loosen the clamp bolt (3) to allow independent movement of each throttle.
2. Unscrew throttle stop screws (2) until both throttles are in the fully closed condition, and the screw ends clear of their abutments.
3. Holding the throttles in the shut position tighten the coupling clamp bolt (3).

**Fig. 15.** Synchronisation of throttles and slow running adjustment

4. Screw in front carburettor throttle stop screw (2) until it just touches its abutment as the throttles are held closed; then screw in a further  $1\frac{1}{2}$  turns in a clockwise direction.
5. Screw in the volume control screw (1) or the slow running air control screws (4) by hand. A screwdriver must not be used as it would damage the screw seatings. Screw back screw (1) three-quarters of a turn or screw (4) one and a quarter turns in an anti-clockwise direction.
6. With the engine warmed up to its normal operating temperature adjust the control screws (1) or (4) on the front carburettor to give the smoothest possible idling. Then adjust the rear carburettor in a similar manner. Re-adjust front carburettor if necessary. Rotation of screw (1) in a clockwise direction weakens, and anti-clockwise rotation enriches the slow running mixture. Rotation for the screw (4) is exactly opposite.
7. If idling speed is now incorrect, increase or decrease speed as required by adjustment of the front throttle stop screw (2). This correction of idling speed may require slight re-adjustment of the screws (1) or (4).

Idling speed must always be adjusted by the throttle stop screw (2) and idling mixture by the screws (1) or (4).

8. The correct slow running speed for a HOT engine is 750 to 850 r.p.m. with the slow running mixture set just off of the rich ("hunting") condition.

When the slow running is correct, adjust the rear carburettor slow running throttle stop screw (2) until it just touches its abutment. This must be very carefully carried out. The screw must actually touch the abutment but not so hard as to increase the slow running speed.

A final check of the slow running should be made after replacing the air cleaners.

9. After the slow running is correct a check must be made to ensure that under full throttle conditions the rear carburettor does not reach its full throttle stop, before the front carburettor. If this occurs undue strain will be placed on the throttle coupling which can upset throttle synchronisation. The full throttle stops on the rear carburettor can be filed if necessary.
10. If "hesitancy" occurs when accelerating under traffic driving conditions, it is an indication that the carburettors are not properly synchronised. Synchronisation can be checked by holding a suitable length of cardboard tubing over each carburettor intake, after removing the air cleaners and listening for the "progression hiss" as the engine speed is increased from idling to about 1,000 r.p.m. Both carburettors should make the same sound which is quite distinct to hear.

If necessary the clamping bolt (3) can be loosened off and the throttles adjusted to obtain this condition.

After retightening the clamping bolt (3) it is important to ensure that both throttle screws (2) come against their abutment when the engine is idling.

11. A very useful and inexpensive gauge known as the "Synchro-Test" can be used to balance the carburettors. This gauge saves a lot of time and may be obtained under reference number B.91 from:—

Crypton Equipment Limited,  
Bridgwater, Somerset, England.

Full operating instructions are supplied with each gauge.