

Rebuilding the Zenith Carburetors

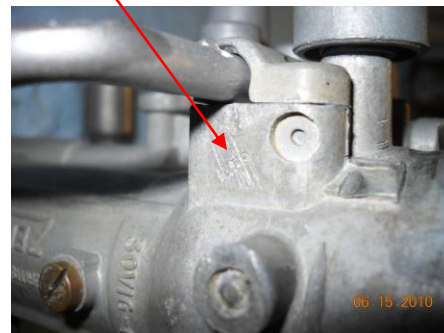
Four different Zenith Carburetors were used through the Metropolitan Production. From the Metropolitan Parts Compendium, they are listed as follows:

Stamped	as Used on:	Jets:	Main	Comp	Low Speed
C-1386	1G engines	25	92	50	
C-1466	2G engines	25	67	50	
C-1528	1H engines	27	72	55	
C-1630	15 A/C/F engines	27	72	55	

All four models are nearly identical, with just jet sizes between all the models. This exercise is rebuilding a Model C-1630 built K59. See photo's of where the Model Number and date is located. I would urge you to find the correct model carb for your engine; you will notice a difference in performance, as they were designed for that style of engine.



Start by complete dissassembly of the carburetor. Remove the bowl, jets, check valves, accelerator pump, all the linkage, etc. Just a few common hand tools are needed, screwdriver, 1/2" wrench, 7/16" wrench, needle pick to remove the jet gaskets, small adjustable wrench, 12mm socket to remove the accelerator pump check valve and needle nose pliers. See photo below, shows a carburetor disassembled with the parts lay out.



Buy a gallon of either acetone or lacquer thinner and some spray aerosol carburetor cleaner. Put all the parts pictured, except the old gaskets and float into a 3-lb coffee can and let it soak overnight, or longer. After soaking for a time, scrub all the parts with a soft bristle brush, tooth brush, and get them clean. Blow compressed air through "ALL" the holes, every single hole. Then take



the carburetor cleaner, with red plastic tube attached, and blow every hole with carburetor cleaner. Make sure each hole has an exit and the cleaner comes out the other end. Take a piece of multi-strand electrical wire, about 6" long, like a 10 Ga wire, and pull a single strand of wire out of it. Then push this very small wire through all the holes to make sure they are clean and not plugged up.

With all the parts clean, you are now ready to assemble the carburetor.

Figure below is a Factory assembly manual pictorial of the Carburetor.

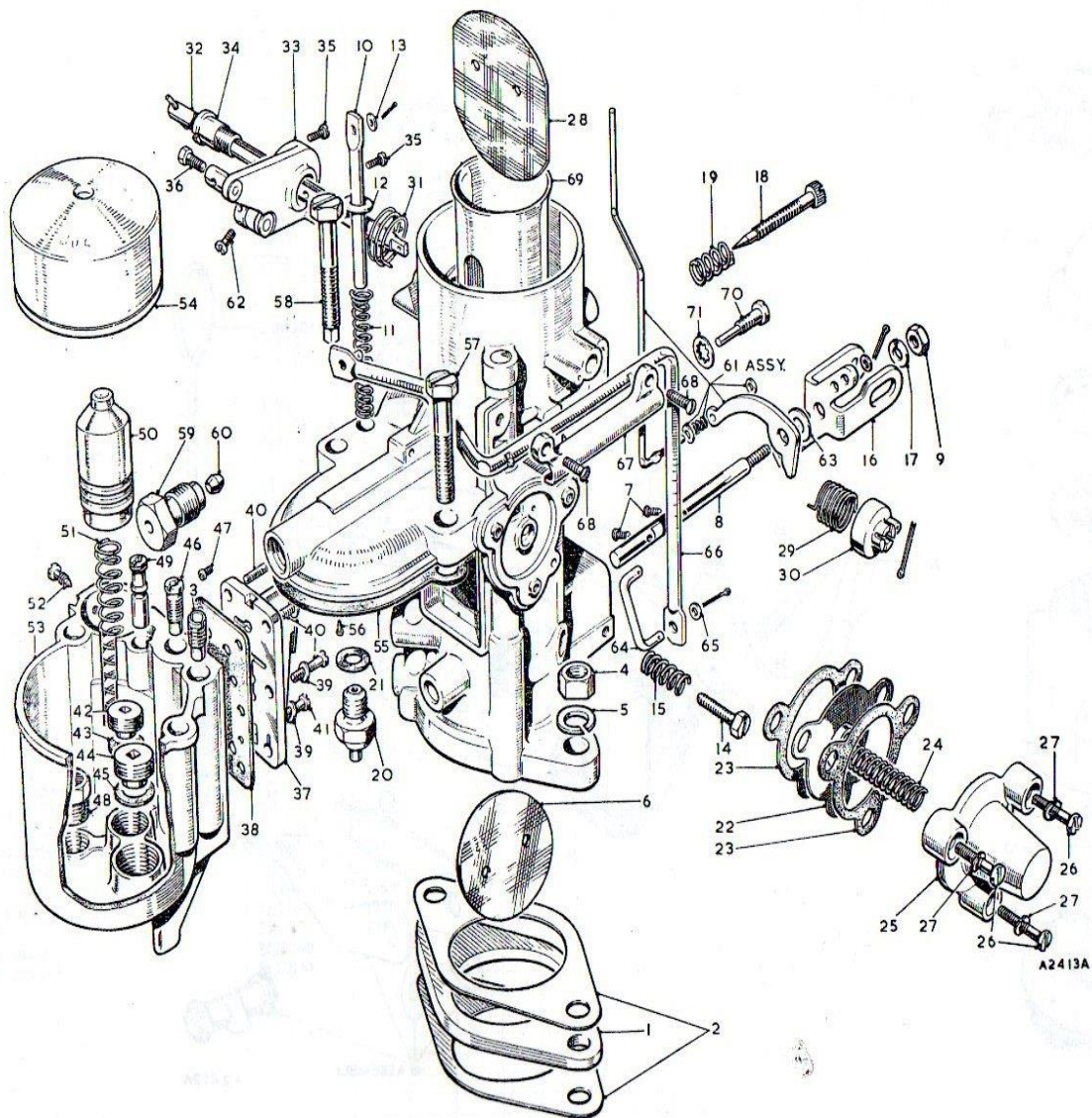
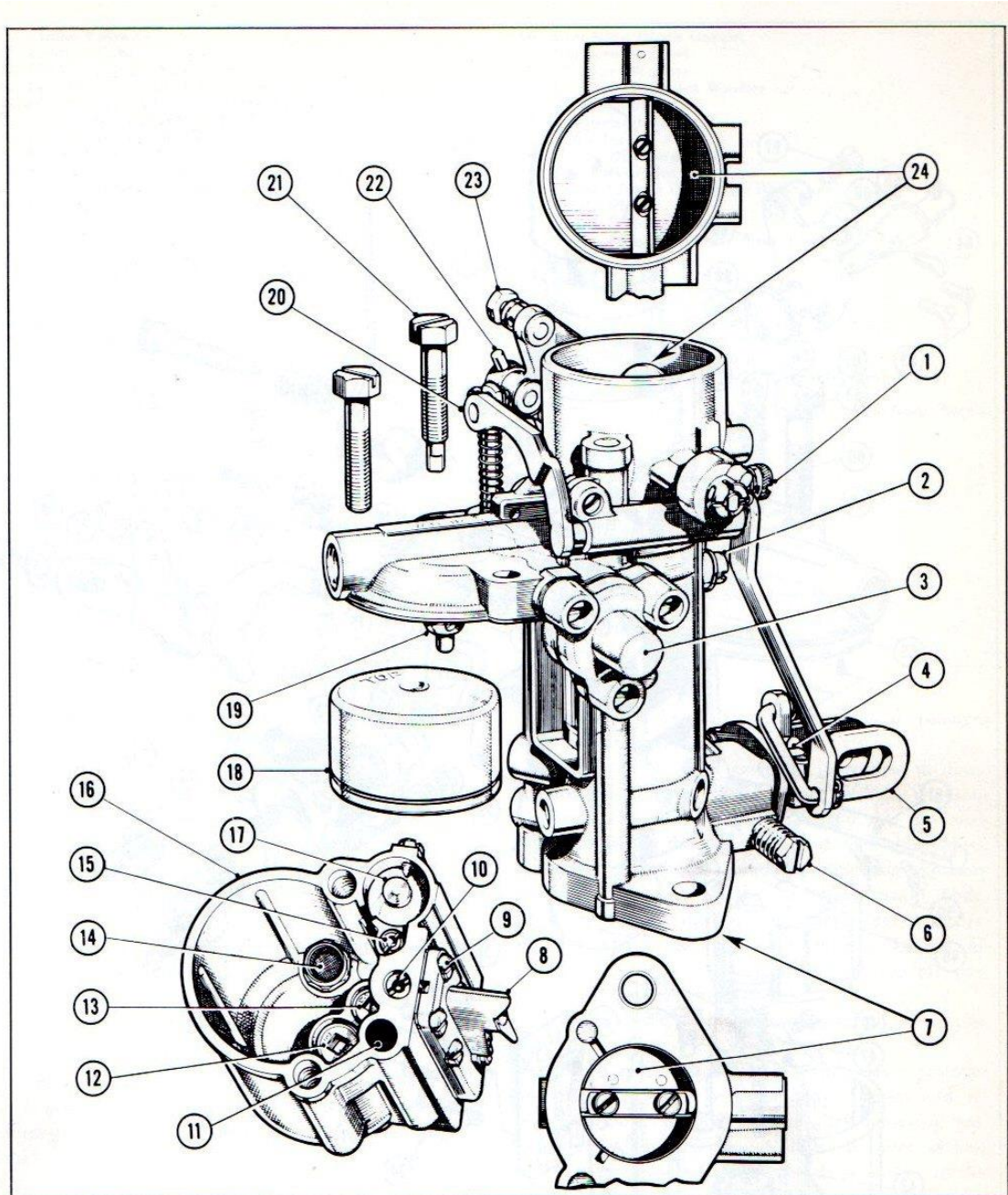


Figure below is another Factory pictorial, with each part identified.

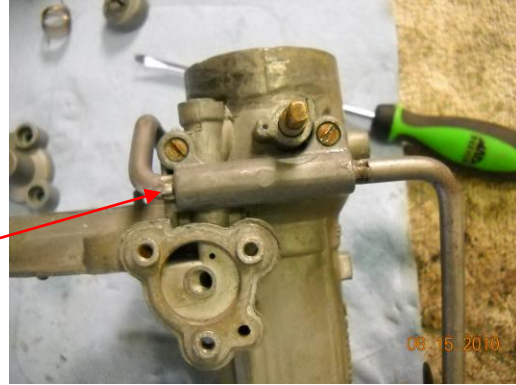
As we assemble the carburetor, we will use these terms and descriptions.



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| 1. Idle Mixture Adjustment Screw | 13. Main Jet |
| 2. Carburetor Venturi Tube Set Screw | 14. Pump Circuit Inlet Check Valve |
| 3. Economizer Valve Housing | 15. Pump Circuit Discharge Ball Check Valve Assembly |
| 4. Throttle Shaft Arm Attaching Nut | 16. Carburetor Bowl Assembly (Less Float) |
| 5. Throttle Shaft Arm | 17. Pump Piston |
| 6. Idle Speed Stop Screw | 18. Float |
| 7. Throttle Valve | 19. Float Needle Valve and Seat Assembly |
| 8. Main Nozzle and Emulsion Block | 20. Pump Control Lever |
| 9. Emulsion Block Attaching Screws | 21. Jet-Key Type Main Body to Bowl Attaching Screw |
| 10. Idle Circuit Jet | 22. Choke to Throttle Shaft Connecting Link |
| 11. Capacity Well Air Inlet Orifice Plug | 23. Choke Control Wire Swivel Set Screw |
| 12. Compensating Jet | 24. Choke Valve |

FIGURE 7—Carburetor Main Components

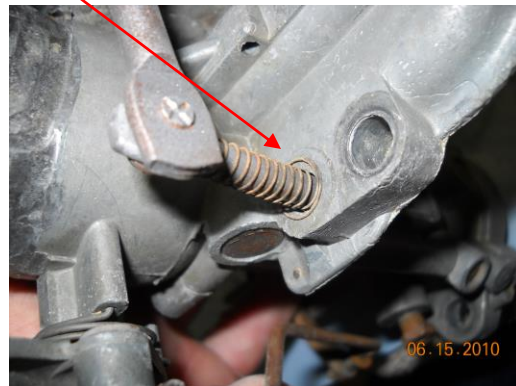
The first item to bolt together is the accelerator pump linkage to the carburetor body. The screws that hold the lever-mounting bracket to the body are the small flat head, slotted screws. Make sure the shaft fits snug inside the half round, make sure both ends of the linkage “dimples” are in good shape and does not allow the linkage to move for and aft.



If after final assembly of the carburetor, you experience a stumble or flat spot in acceleration, move the accelerator pump linkage rod to the top hole. It makes the accelerator pump travel farther, squirting more fuel, which helps stumble.



Ensure the flared out end of the accelerator pump spring sits against the carburetor body. Many Carburetors will also have a small flat washer here, but I have lots of the without. Now is also a good time to take some light oil and lubricate all the moving joints of the accelerator pump linkage, the throttle shaft and choke shaft.



Assemble the choke return spring, cotter pin next. See the Figures below. Ensure the sort end of the coil spring goes into the carburetor body, the long end into the housing. Slide the assembly onto the choke shaft and rotate the body ½ turn counterclockwise, align the hole in the choke shaft and insert the cotter pin and fold it over. Ensure the choke opens and closes freely.



The carburetor Compensating Jet (12), the Main Jet (13) and Pump Circuit Inlet Check Valve (14) can be assembled into the float bowl. Make ABSOLUTELY sure the red gaskets under the Compensating Jet and the Main Jet are in place. One of the bolts that hold the float bowl to the carburetor body has a square tang on it, use this bolt to tighten the jets snugly. Make sure the holes in these jets are open and burr free.



Assemble the Accelerator pump piston, spring, with the pointed end upwards, into the accelerator pump cavity. Push it down and install the pointed screw in from the side to hold it in place. Move the accelerator pump down, it should move up and down freely with no sticking. If it sticks, either the brass body is out of round or a sharp burr is present. Sand with very fine emery paper to remove burrs and try again. Do Not continue until this moves up and down freely.



Install the pump Circuit Discharge Ball Check Valve Assembly (15), Idle Circuit Jet (10), Capacity Well Air Inlet Orifice Plug (11) into the float bowl. Use the correct width screw driver to snug them up. Each fits into its own hole, they cannot be mixed up. Before assembly of (10) and (11) ensure the holes are open and burr free.



Carburetor gasket kits can be purchased directly from Royze. Do a Google search, they are located in California and you will save money that way.

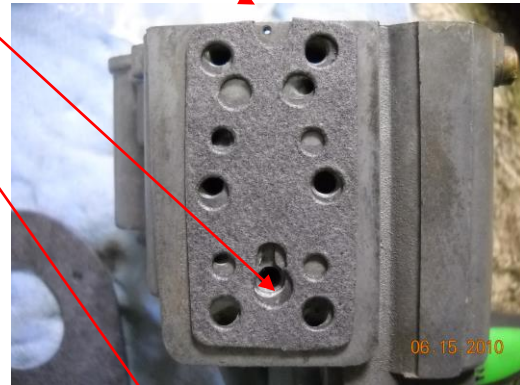
Make sure the Main Nozzle and Emulsion Block gasket, the small notch faces up. This allows atmospheric pressure inside the float bowl.

Five screws hold the Main Nozzle and Emulsion Block to the float bowl. The one long screw goes in the bottom hole. The other four are the same size.

The three bottom screws MUST have small aluminum flat washers on them. Sometimes they get stuck onto the Main Nozzle and Emulsion Block, and are hard to see. They Must Be In Place. These washers keep the fuel from draining out of the float bowl overnight, causing hard, long starts in the morning. The upper two screws do not need flat washers, as the gas level does not get this high.

Snug all five screws up, using the appropriate sized screwdriver. Just snug, otherwise they twist off very easy.

Assemble the needle and seat to the carburetor body using just the red gasket.



Assemble the Economizer valve (3) to the carburetor body. The diaphragm has a gasket on both sides as pictured. The spring goes in the housing as shown, then the gaskets. It is held into place with 3- small slotted machine screws.



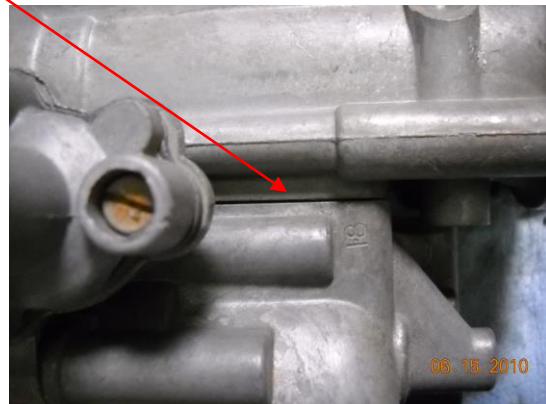
Hold the float bowl up to the mounting surface and check the gap between the carburetor body and the float bowl. It should be a small even, parallel gap. If it is wider at the bottom, the float bowl mounting surface has warped upwards, causing a wider gap on the bottom.



Make a block of wood as shown, by boring a $\frac{3}{4}$ " hole into a piece of oak. Cut it in-half and you now have a precision adjusting tool. Tap down onto the front of the air horn as shown, with a pretty good hit from the hammer. Test fit again. Usually, it takes several hits and test fitting before it fits close and parallel. DO NOT hit the mounting surface without a wood block as shown, or you will bend the threads on the fuel inlet.



Assemble the float into the float bowl and assemble the float bowl to the carburetor body using the new gasket and the two hex head bolts. You should have a small, parallel gap as shown when done.



The Carburetor Venturing Tube Set Screw (2) and Idle Mixture Screw (1) can be installed. Tighten the Idle Mixture screw until it seats, then back it off about $\frac{3}{4}$ of a turn.

When bolting the carb back onto the engine, make sure you use the two thin gaskets and the thick insulating gasket between the intake and the carb. Snug the bolts up tight.

If you have any questions, please give one of the MOCNA Tech Team members a call, they are always happy to help.

MOCNA Tech Team

