

38DGAS Tuning

WEBER
CARBURETORS

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CARBURETOR SET UP AND LEAN BEST IDLE ADJUSTMENT

Base line Settings

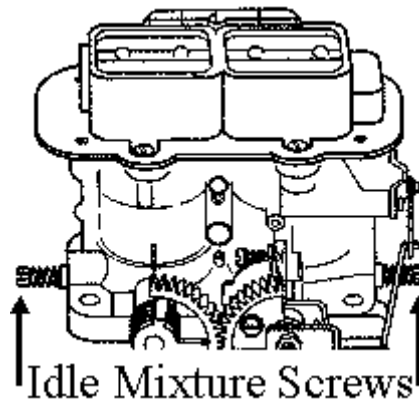
Speed Screw 1/2 turn in

Mixture Screws 1 turn out

Final Settings Engine Running

Mix _____

Speed _____



It is important to verify all linkage and levers are installed without binding and the linkage opens to full throttle and closes to the Idle Speed Screw. The number one and two reasons for tuning errors are improper linkage installations and over tightened linkage nut, causing a binding in linkage assembly.

CALIBRATIONS MAY VARY DUE TO REGIONAL FUELS AND STATE OF ENGINE TUNE AND PERFORMANCE. POOR RUNNING DOES NOT ALWAYS MEAN A BAD OR POORLY ADJUSTED CARBURETOR. AN ADVANTAGE OF THE WEBER CARBURETOR IS ITS EASE OF ADJUSTMENT AND TUNING.

SET UP ADJUSTMENTS

1. Start set up by confirming carb base line settings. Do not depend on the existing settings.
2. All settings are done with choke disengaged or warmed up so that the choke is fully opened and disengaged. This is done on automatic choke carburetors by first opening the choke butterfly by hand and inserting a wood block or wedge of some kind to hold open while the linkage is cycled (linkage operated through its full movement) to clear the choke cam. (You will hear a metallic click as the choke cam is released. You

can check the choke fast Idle screw under the choke assembly to confirm that it is not in contact with the choke fast idle cam.)

3. Set the Idle Speed Screw by backing out the Idle Speed Screw until it is not in contact with the throttle stop lever. Cycle or Snap the linkage again to be sure that the linkage comes to close without any assistance. (Checking for linkage bind) Now bring screw back into contact with the lever and continue to open or screwing in, no more than 1/2 turn in, maximum.
4. Set the mixture screws by turning each screw in until it lightly seats. **DO NOT FORCE OR BIND AS THIS WILL CAUSE DAMAGE TO THE SCREW AND IT'S SEAT IN THE BODY OF CARBURETOR.** Back out the screw 1 full turn.

TUNING:

1. BE SURE TO FOLLOW THE NEXT INSTRUCTIONS IN THE PROPER SEQUENCE, DEVIATION WILL CAUSE THE CARBURETOR TO NOT FUNCTION TO ITS IDEAL SPECIFICATIONS AND MAY NOT PROVIDE THE PERFORMANCE AND FUEL ECONOMY AS DESIGNED.
2. Start the engine, the engine will run very slowly more like a tractor. As long as the engine stays running idle speed is not important at this point.
3. The first thing, do not set "up" the idle speed, set the Idle mixture screw to lean best idle setting. First, turn in the mixture screw until the engine dies or runs worse, then back out the screw (recommend turning ¼ at a time). The engine should pick up speed and begin to smooth out. Back out 1/4 turn more, or until the screw does nothing or runs worse then turn back to the point where it ran its best.
4. Use your ear, not a scope or tuning instruments at this point. You want to tune the engine by sound. Adjust to best, fastest and smoothest running point.
5. Now that the mixture screw is at its best running location, you can adjust the Idle speed the screw. The idle speed screw will be sensitive and should only take ¼ turn to achieve the idle speed you like.
6. Check and set idle to your driving preference. Put the car in gear and apply slight load, (AC on) and set the Idle as you like it. Don't set it too high, as this will cause excessive clutch and brake wear. The Idle only needs to be 650 to 800 RPM with light load or AC on.

7. Recheck timing and vacuum hook ups. Recheck mixture screw to lean best idle again. If all is still best and smoothest idle then confirm and note the final settings.
8. To confirm settings with the engine running. Start by screwing in the mixture screw and count the number of turns it takes to bottom out and note if the engine dies. If Idle Mixture screws are within $\frac{1}{2}$ turn of base line setting then all is well. Also check the speed screw and note how many total turns from initial contact. You may have opened (turned in) the speed screw. Your final setting should be under $\frac{3}{4}$ turn in. Reset the screws (back in) to the best final settings (Per your notes) and go on a test drive. If the settings are other than described then you may want to recalibrate the Idle circuit (low speed circuit) to your engines needs. This is done by following the rule of thumb BELOW.

Simple Rules for low speed calibration

If the mixture screw is more than $1\frac{1}{2}$ turns out turns then the Idle jet is too lean (too small). When the mixture screw is $\frac{1}{2}$ turn or less, then the Idle jet is too rich (too large). These assumptions are based on the fact that the speed screw setting is not opened more than $\frac{1}{2}$ turn in. If the speed screw has to be opened $\frac{1}{2}$ or more turns then this is also an indication of a lean condition usually requiring greater change. At times it may appear to be showing signs of richness or flooding it is really a lean condition. Please understand the need to keep throttle plate as near to closed as possible so as not to prematurely expose the transition holes. This is what causes the visible rich condition, and confirms the need to increase the jet size. JET KITS are available if needed.

EXAMPLE With the idle speed screw set at no more than $\frac{1}{2}$ turn in after contact with the stop lever; and the best idle occurring with the idle mixture screw set at $1\frac{1}{2}$ turns from lightly seating, indicates the need for a larger Idle jet. Achieving the best idle at less than $\frac{1}{2}$ turn indicates the need for a smaller idle jet.