



Technical Tip

Date: August 21, 2008

Tip #: 082108 (4 pages)

Models Affected: 4.2/5.0 BCG/A, 5.8/7.0 BCGC/D

Subject: Carburetor air/fuel adjustment

Symptoms: Engine "hunts" at no-load. This is most common when a new carburetor is installed.

Cause: Air/fuel mixture requires adjustment.

Solution: Adjust the air/fuel mixture screw

If the air/fuel mixture is not set properly, the engine may "hunt" at no-load. Please note that very minimal "hunting" even with the air/fuel set properly, is not unusual for these gensets. Under normal conditions, if the engine is "hunting" slightly at no-load it will stop when any load is applied. When a new carburetor is supplied from Westerbeke as a replacement part, the mixture screw is set at about 3-1/2 turns out. Note that various ambient conditions may affect the mixture and an adjustment may be required.

Follow this procedure to properly adjust the air/fuel mixture screw:

- 1) Remove the plastic cap that covers the mixture screw. See photo #1 and photo #2 below. These photos depict a painted unit so the cap is red. On a new carburetor purchased as a replacement part, this cap will be black (unpainted).
- 2) Turn the screw clockwise (in) as far as it will go.
- 3) Then turn the screw counter-clockwise (out) 3-1/2 turns.
- 4) With the gasket running, adjust no more than an additional 1/2 turn in either direction to make a final adjustment and stabilize the engine speed.

ADDITIONAL NOTE #1: When the carburetor is replaced be sure the actuator linkage assembly is installed (oriented) correctly. If it is not installed properly, it may hit the intake manifold on the engine and prevent full movement. Also be sure the linkage is set to the correct (and critical) 2-5/8" dimension shown. See the attached page 3 from the Electronic Governor Troubleshooting Guide for Low Profile Gasoline Gensets that illustrates the carburetor, speed actuator and intake silencer assembly. This (complete) troubleshooting and adjustment guide can be viewed on our website under Technical/Troubleshooting Guides.

ADDITIONAL NOTE #2: When the carburetor is replaced be sure the choke spring is installed (oriented) correctly. See photo #3 below for the correct location.

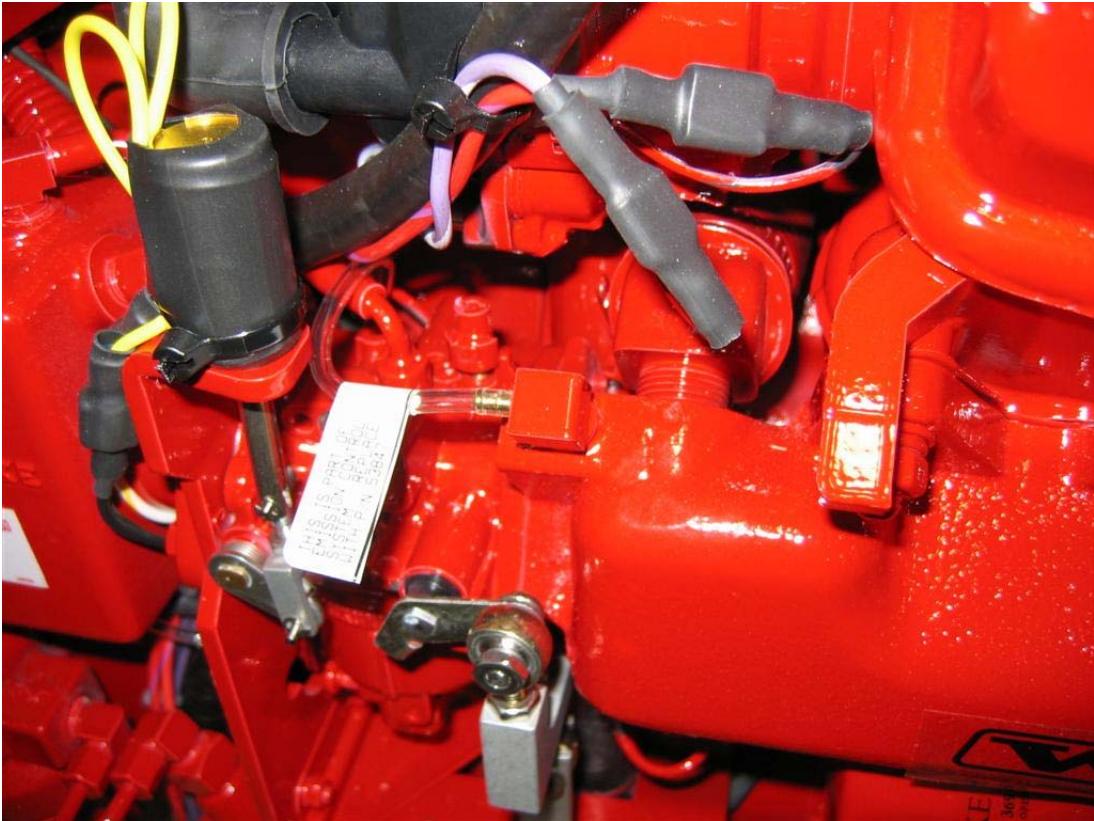


PHOTO #1 Above

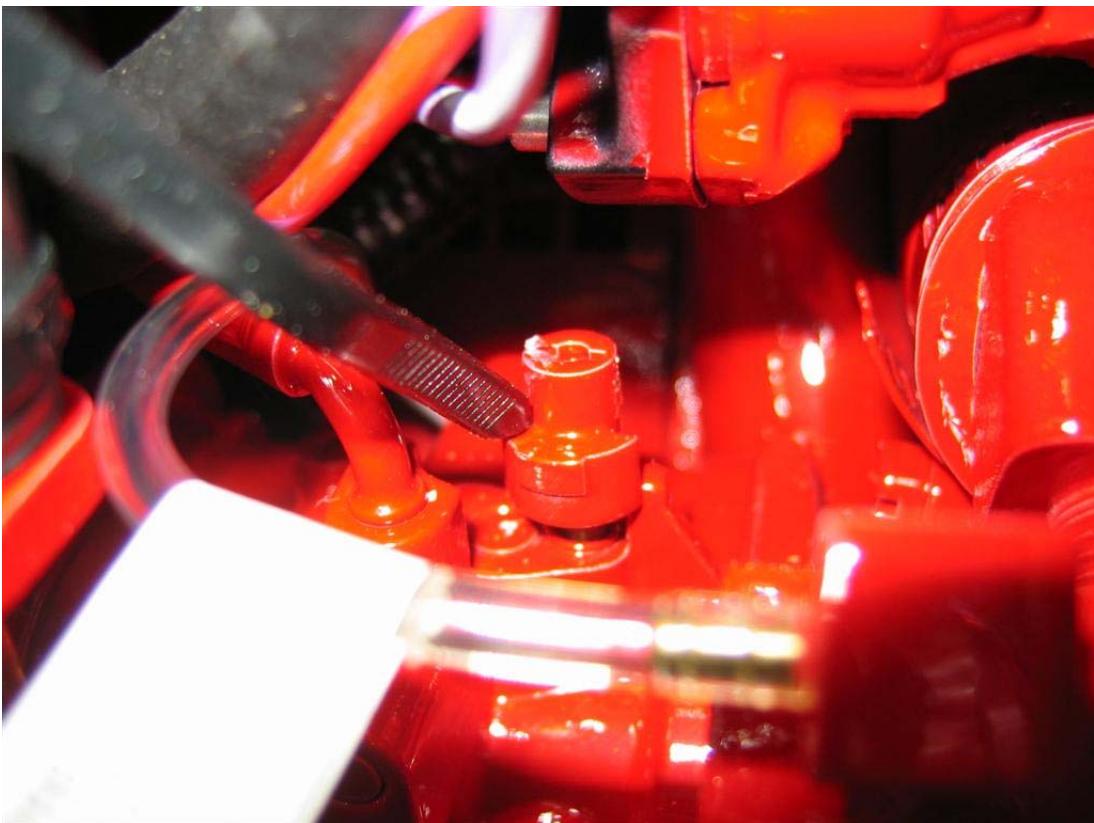


PHOTO #2 Above

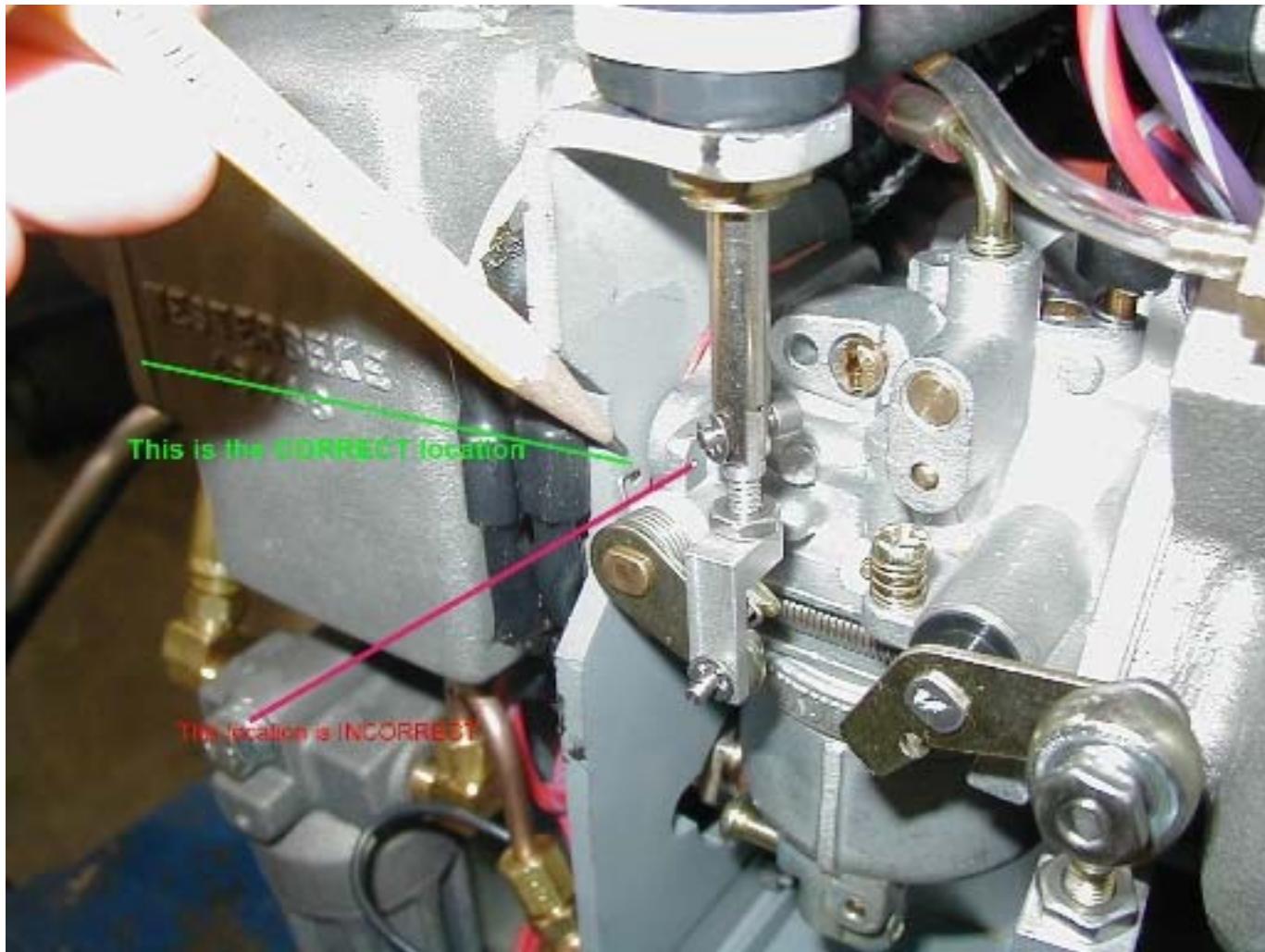


PHOTO #3 Above

CARBURETOR - LOW PROFILE

CARBURETOR

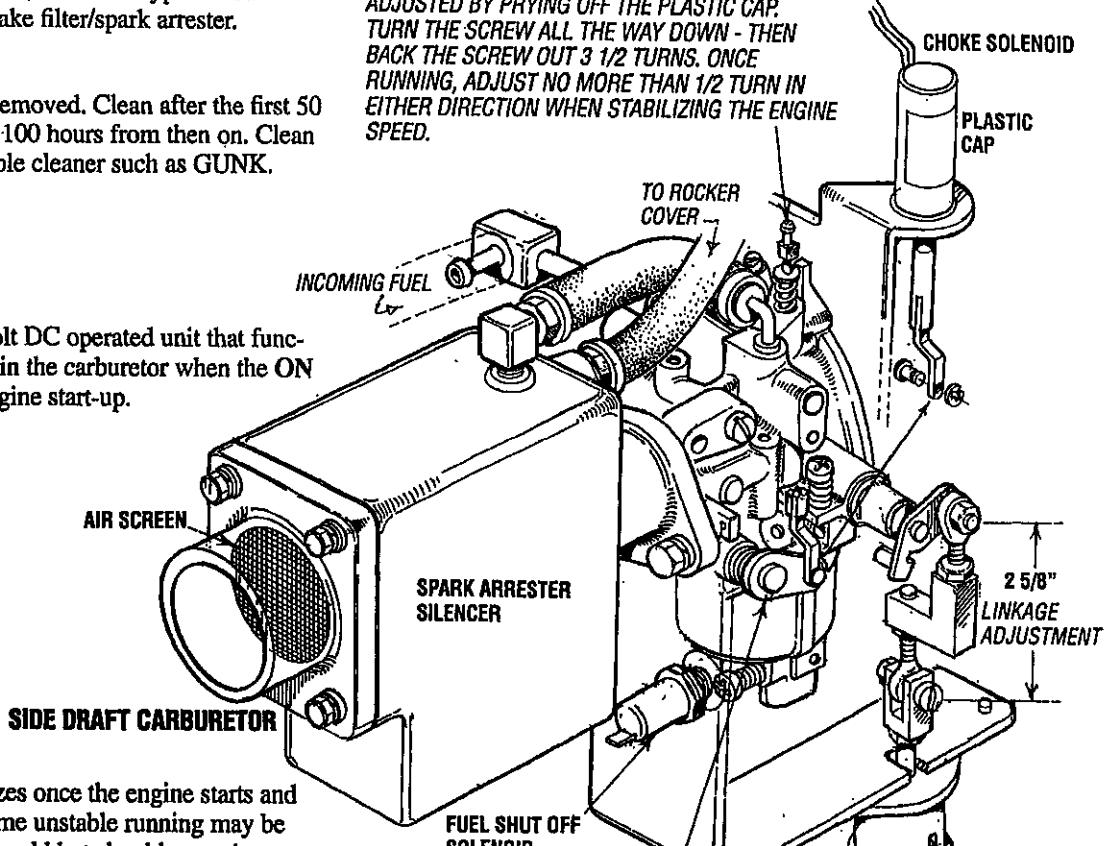
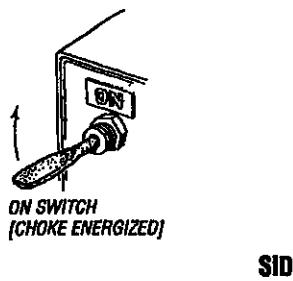
The carburetor is a single barrel, side-draft type with a cleanable metal screen air intake filter/spark arrester.

Air Screen

The air screen can easily be removed. Clean after the first 50 hours of operation and every 100 hours from then on. Clean the air screen in a water soluble cleaner such as GUNK.

CHOKE SOLENOID

The choke solenoid is a 12 volt DC operated unit that functions to close the choke plate in the carburetor when the ON switch is depressed during engine start-up.



The choke solenoid de-energizes once the engine starts and the ON switch is released. Some unstable running may be present when the engine starts cold but should smooth out as the engine reaches operating temperature.

Confirm Proper Operation

Start the engine and allow the engine to warm up. Once warm, engage the ON switch. If the engine chokes and stops, the choke linkage needs to be lengthened to hold the choke open slightly more. *If the engine slows but continues to run, the adjustment is ok.*

Linkage Adjustment

Adjust the linkage so that when the choke solenoid is energized, the choke butterfly/lever is open approximately $1/16"$. Adjust the linkage so the pin hole in the linkage is approximately $1/16"$ beyond the fully closed choke lever.. then connect the choke lever to the linkage. Refer to the *IDLE MEASURE ADJUSTMENT* at the top of this page.

Speed Actuator Adjustment

The speed actuator adjustment should be the only device in control of the throttle's position. The throttle linkage's eye bolts must be $2\frac{5}{8}"$ apart (see illustration). The throttle should be in full fuel position when the unit is shutdown.

ADJUSTMENT: THE IDLE MIXTURE CAN BE ADJUSTED BY PRYING OFF THE PLASTIC CAP. TURN THE SCREW ALL THE WAY DOWN - THEN BACK THE SCREW OUT 3 1/2 TURNS. ONCE RUNNING, ADJUST NO MORE THAN 1/2 TURN IN EITHER DIRECTION WHEN STABILIZING THE ENGINE SPEED.

NOTE: THE CHOKE MECHANISM SHOULD FLUTTER WHEN THE ENGINE IS CRANKING. THE RETURN SPRING MUST REST AGAINST THE ACTUATORS MOUNTING BRACKET - NOT IN THE HOLE IN THE CASTING BOSS.

SPEED ACTUATOR:
THE SPEED ACTUATOR SHOULD MOVE FREELY.
KEEP THE SOLENOID DRY AND LUBRICATE THE
LINKAGE WITH TEFLON OR GRAPHITE LUBRICANT ONLY.

