

# Zama Newsletter

Volume 3, Issue 1

August 2023

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### 1) Carburetor Troubleshooting Techniques

In this issue I will be discussing common problems you may encounter with a 2-cycle carburetor and how to troubleshoot these problems. This issue will focus only on the carburetor, however, please keep in mind that other issues with the engine can play a role in these problems.

#### Won't Start:

- a. Check diaphragms and gaskets. If diaphragms, feel stiff replace them. In my opinion this is one of the most overlooked parts in the operation of the carburetor. Every spring I get numerous emails and phone calls from customers who believe the diaphragms are good and spend hours trying to diagnose a problem that does not exist due to the diaphragms not being replaced.
- b. Check the pulse hole. The pulse hole is located on the back of the carburetor and should line up with the pulse hole on the engine. If the gasket between the engine and carburetor has slipped, or frayed and is partially blocking the pulse hole, this can cause the carburetor not to start. A blocked pulse hole will not allow the pulse signal from the engine to reach the carburetor.
- c. Metering lever set incorrectly. If you recently installed a rebuild kit and replaced the inlet needle, you will need to check your metering lever height before placing the metering cover onto the carburetor. Not checking your metering lever height can cause the carburetor to be too rich and possibly leak fuel, or not checking can have the exact opposite being set too low not allowing enough fuel into the carburetor.
- d. Incorrectly set adjustment needles. When cleaning the carburetor if you remove the adjustment needles be sure to count the turns open prior to removing them. If you have removed the needles and you did not count the turns open a good starting point for each needle is 2 turns open.
- e. Poor fitting choke. Check to confirm the choke is completely closed.

#### Won't Idle:

- a. Try turning the throttle adjust screw (TAS) in a couple of turns clockwise to see if you can get the carburetor to idle and warm up. Once warmed up you may begin to turn the throttle adjust screw counterclockwise to an acceptable idle.
- b. Adjustment needles may need to be reset particularly the L or idle needle.
- c. Check metering lever height. I am often surprised at the number of people who remove or replace the inlet needle and never check the metering lever height once the needle is reinstalled.
- d. First progression (Idle) hole is plugged. The rarely occurs but I do want to mention it as a possible cause. The progression holes are two to three small drillings in the carburetor venturi directly below the welch plug. There is usually no need to remove the welch plug to check these holes. Usually, you can hold the throttle valve open and find the drillings with a small light. If you do not see any dirt or debris in the holes, then more than likely the progression hole is not plugged.

- e. Pulse hole is blocked or partially blocked. If the gasket between the carburetor and engine has slid over the pulse hole or partially blocking the pulse hole this can definitely affect the idle or even the starting of the unit.

### **Poor Acceleration:**

- a. Check your metering lever height. If set too high the carburetor will be too rich and gas may leak from the carburetor when not running. If set too low the carburetor will not receive enough fuel to accelerate.
- b. Check adjustment needle setting this time paying particular attention to the H needle or wide-open throttle needle. This needle usually will have the letter H cast into the carburetor body right above the needle.
- c. Check Throttle cable or linkage to be sure it is not being restricted from opening to full throttle.
- d. Vapor in metering chamber. This can occur when the outside temperature and the unit's temperature become extremely hot. The only solution is to let the unit cool down before trying to restart.

### **Poor Rollout:** (Poor Roll out is when the unit is turned on its side and experiences a lack of power)

- a. Confirm the throttle valve is not loose and is fitting correctly.
- b. Idle needle set incorrectly or needs adjustment. A slight adjustment increasing fuel flow for the idle needle will sometimes help roll out issues.
- c. Using an incorrect gasket between the carburetor and engine. We refer to this gasket as the manifold gasket.
- d. Once again be sure your metering lever height is correct.

### **High Speed Instability:**

- a. Manifold gasket not sealing correctly. If the unit is at wide open throttle (WOT) and the units begins to rev up and down while holding the trigger in. This is a sign the manifold gasket is not sealing and is allowing air to leak. Replace the manifold gasket.
- b. Possible hole in the fuel line.
- c. Partially blocked pulse hole. Sometimes the manifold gasket may start to fray or slip and partially block the pulse hole.
- d. Vapor in metering chamber.

### **Adjustment Needle Settings beyond acceptable limits**

- a. Possibly the inlet needle is not seated and is leaking. Check using pressure gauge.
- b. Check to see if the welch plug is leaking or loose.
- c. Check metering lever height. A metering lever set too low will not provide the carburetor with enough fuel. I have seen customers who have not checked their metering lever height try to compensate for the lack of fuel by turning the adjustment needles too far out.
- d. Pulse possibly plugged or blocked by the gasket.