

Carb cleaning basics

Functions of the various jets on the carb

Choke jet: enriches the fuel mixture for starting a cold engine. Does nothing else for the running of the carb. A larger jet can be put in if the bike is hard to start, but normally, the stock choke jet size is just fine.

Pilot jet: meters fuel from idle to about $\frac{1}{4}$ throttle. Check and record the jet size the first time you clean the carb, so you know the size in case you ever consider re-jetting.

Jet needle (the "needle"): mounted to the carb slide by means of the needle clip. It meters fuel from about $\frac{1}{4}$ to $\frac{3}{4}$ throttle. Start with the needle clip in the center groove (of 5). Raising the needle clip LEANS the carb and lowering the clip RICHENS the carb. Needles have sizes as well; you can record this when you clean your carb. The needle sits in the jet needle valve (or just called the needle jet), which is lightly press-fitted in the body of the carb... make sure when you are blowing compressed air through the carb that you keep your finger on this valve, because the compressed air can blow it out. If it does get blown out... reinstall it with the slightly convex end UP... the needle sits in the convex end.

Main jet: meters fuel from about $\frac{3}{4}$ throttle to wide open. Note jet size when cleaning the carb.

Float valve/gas needle valve: rubber tipped, drops into the gas needle jet (fixed in the carb); as the float bowl drains of fuel and the floats drop, this opens the valve, allowing fuel to refill the float bowl. As the bowl fills, the floats rise and close this valve. We will talk about float height later. The rubber tip on this valve should be inspected for signs of wear when cleaning the carb.

Floats can be together as one piece (Keihin PKW 28), or two separate in the float bowl (Dellorto). On the Dellorto, pin on the float needs to be oriented at the bottom of the float bowl (pin on the down side of the float); it's easy to reassemble it with the pin oriented toward the top of the float bowl... bad. Your bike won't get any gas because the floats will be holding the gas needle valve closed.

We will be blowing compressed air through all of your carb jets, and all passages of the carb.

Floats...when cleaning:

- Check float height: we will talk about that.
- Check for damage: white floats.... You can see fuel inside. Black floats have to be weighed (the float will have the proper weight embossed on it... if your float exceeds this weight, it's holding fuel and you must replace the floats). If floats are bad, the bike will weep fuel through carb exit ports and carb will sound like crap (runs too rich)

- Idle screw: turn in to raise (speed up idle), turn out to lower (slow down idle speed).

Air/fuel mixture:

- Dellorto: this is a FUEL screw. Turning it IN cuts off fuel (leans the mixture). Typical: 3 to 3 and 1/2 turns out from in-most position.
- Keihin and Mikuni: this is an AIR screw. Turning it OUT increases air (leans the mixture)/ Typical: 1-2 turns out from in-most position.

To adjust: turn the screw all the way in, and then count your turns out. Adjust idle screw and air/fuel screw when your bike is warmed up.

Re-assembly:

Before your re-attach the carb to the carb boots, air box, etc., pull the throttle cable and make sure you can hear the carb slide going up and down.

Trouble-shooting:

- bike does not want to return nicely to idle after you release the throttle: possible air leak. Check things like intake boot (carb boot that goes to engine), O-rings on idle screw are bad, etc.
- Consider installing an in-line fuel filter. The Dellorto has one on the side of the carb, and most bikes with Keihins have one in the petcock assembly, but it does not hurt to double-up on fuel filtering!
- Consider just about everything else before you decide that you need to re-jet your carb (well, except for some shercos)... bad gas, bad air-fuel screw adjustment, bad floats...re-jetting can mask other carb problems and then really mess up the running of your bike later.
- If your bike is running poorly, think about where in the throttle range. Does it idle well but then have problems when you rev it? Now that you know what jet is associated with what part of your throttle range, you can start to isolate where the problem is.
- When should you clean your carb? When your carb is running well, you will know it. Don't worry about cleaning, unless you just really enjoy it (which is not a bad thing!). Otherwise, when it is not, you will KNOW it. Time to clean it before you do anything more drastic.
- Bike stalls on downhills or pees fuel when stopped? Check float heights.