CV Carb Tuning

Follow steps in order....First, dial in:

1. Top end (full throttle / 7.5k to redline - Best Main Jet be selected before starting step 2!

Select HYPERLINK "http://www.factorypro.com./products/jets.html" Best Main Jet

To get the best, most even top end power (full throttle/after 7500 rpm), select the main jet that produces the highest top speed / pulls hardest at high rpm.

If the bike pulls harder at high rpm when cold and less hard when fully warmed up, the main jet is too large. Install a smaller main jet and retest until you find the main jet that pulls the hardest at high rpm when fully warmed up. This must be done first - before moving on to the other tuning ranges.

If the bike doesn't pull well at high rpm when cold and gets only slightly better when fully warmed up, the main jet is too small.

In order to properly tune the midrange and low rpm carburetion, THE MAIN JET MUST FIRST BE PROPERLY SELECTED after 10 to 15 minutes of hard use!

Do not pay too much attention to the lowend richness when you are changing main jets - you still need to be using the main jets that produce the best power at high rpm. You will deal with the lowend / cruise later - after step 2.

2. Midrange (full throttle /5k-7k)

Select best needle clip position

To get the best power at full throttle / 5k-7k rpm, after you have already selected the best main jet,

If the engine pulls better on a full throttle roll-on starting at <3k, when cool but soft when at full operating temperature, it is too rich in the midrange and the needle should be lowered.

If the engine pulls better when fully warmed up but still not great between 5k-7k, try raising the needle to richen 5k-7k.

If the engine pulls equally well between 5k-7k when cooler as compared to fully warmed up, the needle height is probably properly set.

Do not pay too much attention to the lowend richness when you are changing needle clip positions - you still need to be using the clip position that produces the best full throttle / 5k-7k power in conjunction with the main jets that produce the best power at high rpm. You will deal with the lowend / cruise next.

3. Low end (full throttle / 2k-3k)

Float height (AKA fuel level & HYPERLINK "http://www.factorypro.com./tools/floathi.html" how to..)

To get best lowend power, set **float height** so that the engine will accept **full throttle** in 2nd gear from 2.5k to 3k rpm at minimum.

Float heights, unless otherwise specified in the installation guide, are measured from the "gasket surface" of the carb body to the highest part of the top of the float - with the float tang **touching but not compressing** the float valve spring.

If the engine has a "wet" rhythmic, soggy area at full throttle / 3k-4k rpm, that gets worse as the engine heats up, lower the fuel level by resetting the float height 1mm greater (if the original was 13mm - go to 14mm). This will lower the fuel level, making full throttle / 2k-3k rpm leaner.

If the engine is "dry" and flat between 2k to 3k rpm, raise the fuel level.

Example: change float height from 15mm to 14mm to richen up that area.

REMEMBER, since the main jet WILL affect low speed operation, the MAIN JET has to be within 1 or 2 sizes of correct before final float setting.

Warning: If the engine is left with the fuel level too high,, the engine may foul plugs on the street and will be "soft" and boggy at part throttle operation. Adjust Floats to raise/ lower the Fuel Level.

Base settings are usually given if a particular application has a history of fuel level criticalness. The Fuel level height in the float bowl affects full throttle/low rpm and, also,

richness or leanness at cruise/low rpm.

Reference: a bike that runs cleanly at small throttle openings when cold, but starts to show signs of richness as it heats up to full operating temperature, will usually be leaned out enough to be correct if the fuel level is LOWERED 1mm. Check out and RESET all: Suzuki (all), Yamaha (all) and Kawasaki (if low speed problems occur). Needless to say, FUEL LEVEL IS EXTREMELY IMPORTANT!!!

If there are lowend richness problems, even after lowering the fuel level much more than 1.5mm from our initial settings, also check for needle wear and needle jet (part of the emulsion tube). See HYPERLINK "http://www.factorypro.com./tech/needle1.html" Worn Needle and HYPERLINK "" \l "Needle Jet Tech" Worn Needle Jet diagram. It is VERY common for the **brass** needle jets (in the top of the "emulsion tube") in 36mm, 38mm and 40mm Mikuni CV carbs to wear out in as little as 5,000 miles. Check them for "oblong" wear - the needle jet orifice starts out round! Factory Pro produces stock replacement needle jets / emulsion tubes for 36mm and 38mm Mikuni carbs.

4. Idle and low rpm cruise

Fuel Screw setting (AKA mixture screws)

There is usually a machined brass or aluminum cap over the fuel screws on all but newer Honda. It's about the diameter of a pencil. HYPERLINK "http://www.factorypro.com./tech/fuelscrewloc,s77.html" Cap removal details. Newer Honda carbs use a special "D" shaped driver, usually supplied in the carb recal kit.

Set for smoothest idle and 2nd gear, 4k rpm, steady state cruise operation. Set mixture screws at recommended settings, as a starting point. For smoothest idle, 2nd gear 4000 rpm steady state cruise , and 1/8 throttle high rpm operation.

Pilot fuel mixture screw settings, float level AND pilot jet size are the primary sources of mixture delivery during 4000 rpm steady state cruise operation.

If **lean** surging is encountered, richen mixture screws (turn out) in 1/2 turn increments. Alternative pilot jets are supplied when normally required.

Pilot fuel mixture screw settings, float level and pilot jet size also affect high-rpm, 0 to 1/8 throttle maneuvers. Too lean, will cause surging problems when the engine is operated at high rpm at small throttle openings! Opening the mixture screws and/or increasing pilot jet size will usually cure the problem.

NOTE: A **rich** problem gets worse as the engine heats up.

If the throttle is lightly "blipped" at idle, and the rpm drops below the set idle speed, then rises up to the set idle speed, the low speed mixture screws are probably set too rich: try 1/2 turn in, to lean the idle mixture.

NOTE: A **lean** problem gets better as the engine heats up.

If the throttle is lightly "blipped" at idle, and the rpm "hangs up" before dropping to the set idle speed, and there are no intake leaks and the idle speed is set at less than 1000 rpm, the mixture screws are probably too lean: try 1/2 turn out, to richen mixture. Be sure there are no intake leaks and the idle speed is set at less than 1000 rpm!

Carb tuning is a combination of science, art, intuition and a lot of wizardry. These tuning kits have been thoroughly tested to ensure easy, trouble-free, optimized performance.

Please note: If you have installed the kit and gone through the optional screw settings, clip positions and main jets, and still have a persistent flat spot/problem, we ask you to call us. Unique engine/exhaust/filter/altitude/temperature combinations may require individualized setups. We are here to help. The information gained to your solution will be installed in our computerized reference database. PLEASE CALL!

We ask that upon completion of installation and tuning, that you call us with specifications of your installation, (pipe brand, filters, advancer, altitude, humidity, temperature and final carb settings) to be entered in our TUNING DATABASE. The database allows us to include the "most used" jet sizes and setup specifications in every kit. Use (415) 721-4964, (800) 869-0497 or fax (415) 454-8803. Thanks! Marc W. Salvisberg