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EVO: Carburetor, Intake Manifold & Exhaust - Sub-02C

Why Not Dynojet Kits?

In answer to this question, posed by O.R. John on the XLForum: "IXL2Relax, you said that you prefer to eliminate the parts like the ones I have. In all seriousness - why? I am wondering because I have not been happy with how my bike sometimes runs. Before I tell you what I don't like, I want to see if the reasons you don't like Dynojet parts are the same things I don't like about how my bike runs."

IXL2Relax replied as follows in Post#20 of this XLForum Thread:

<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-general-discussion-and-problems/166789-just-bought-a-used-sportster-checklists-for-making-it-right?t=1792262>

Well - my recommendation is based on user reports - Back when sportster.org was operating, there was a lot of interest in mods and people found certain ways to 'Enhance Performance'. The definition was mostly subjective and like many things in life, we want our money to buy what we intended, so our perspective is somewhat altered once we buy something (or buy into something). We usually find a way to validate or justify what we spent our money or time on.

Over the years many of the previous recommendations (some settled wisdom) has proven that the mods 'enhance' some portion of the operation at the expense of other portions - So, you might get great throttle response when you wack it open at 3000 RPMs, but trying to cruise at 45 mph thru the countryside is now met with surging/sluggishness - or even wacking the throttle at 2500 RPMs is now a bog. The mods did 'enhance performance' for one portion of the operation.

The wisdom that has been gained with longer-term experience is that most riders want 90% good performance all the time, rather than 100% sometimes & 70% the other times. Which leads us back to the stock parts which were DESIGNED to provide good performance over the entire operating range of the carb (with only a few slight mods & adjustments needed).

We know HD 'tunes' the carb (picks parts & makes adjustments) to satisfy the EPA regs - not for the best response or acceleration or compatibility with open air filters or exhausts - So that limitation needs to be addressed (on a 1200, usually a 45 Slow Jet, a change to the IMS & installation of an N65C needle for the 1200 engines will get you close enough to begin final tweaking). Beyond that, unless you're going to spend dyno time tuning for some peak function in a specific portion of the operating range, you probably only need to make sure you're not too lean at WOT (usually a 175 or 180/185 Main will put you in the right ballpark for a 1200). Tweaking the tune based on the burn of the plugs will help you get even closer.

Most riders (and even many tuners) don't understand how getting the idle/transfer circuits right will lead

As already mentioned in the main CV40 carb tuning page, the Dynojet Kits (and many equivalent ones) can be an issue. Typically, they replace the factory needle, emulsion tube, main jet & diaphragm/slide spring. They also recommend that you drill the slide vacuum hole out for quicker throttle response. The Dynojet emulsion tube and main jets are not compatible with the Keihin emulsion tube/jets - they use different threads, which means you can only buy jets from them.

You have a guessing game if you begin to mix parts together from different carb kits. Every change you make, creates a different relationship to the other parts - and mixing different kit parts often makes a relatively huge change in relationships. I'm not convinced that using a lighter spring or drilling the slide is right (as recommended by Dynojet). Even though the CVP Tuner's Kit has a 7/64" drill bit included, they have recommended not using it unless the OEM hole has burrs in it. ¹⁾ The Stock vacuum hole is .097". I don't recommend changing it at all. If there are burrs, smooth them out with a very small round file and don't alter the overall diameter.

Stock Keihin needles & jets are often critical to a well operating carb. Note these comments by Joe Minton in reference to HD & aftermarket carb tuning kits: "The needle and needle jet in these kits are made of brass; the stock Keihin needle is polished hard-anodized aluminum, and the needle jet is hard brass. The brass-on-brass of the kit wears quickly and further richens an already too-rich mixture. The stock parts hardly wear at all. I have examined stock needles and jets with 45,000 to 70,000 miles of use and could not detect measurable wear."

Let me point out another thing about mixing parts - The Needle Jet & the Needle are a set - That is, they are sized to work together correctly - That's why changing needles (with only .001 difference in diameter) has an effect - The ID of the Needle Jet and the OD of the Needle provide the orifice for an air/fuel mix to come into the venturi. It is very sensitive to changes.

Using a modified emulsion tube can change the AFR of the mixture being metered through the Jet/Needle orifice.

Using a modified Slide (holes drilled) and/or modified Slide Spring will change the speed with which the slide responds to throttle plate changes. thus changing the amount of fuel being fed into the venturi. sometimes the slide will oscillate up and down trying to find equilibrium, depending on what mods were made.

The CV carb as designed, when simply tuned properly, works well over the full range of throttle operation, smoothly and efficiently. When you modify the parts, you may be enhancing how the carb reacts to a particular situation, WHILE AT THE SAME TIME detrimentally altering how it responds to a different set of circumstances. This is why careful consideration (and some past knowledge of the efforts of others) is extremely helpful in knowing what is advantageous and what creates more problems.

Some XLForum Threads:

Rubbermount_EVO CV carb tuning with AFR meter, still got questions

<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-intake-and-exhaust/sportster-motorcycle-air-intake-carburetor-efi-fuel-and-exhaust/185318-cv-carb-tuning-with-afr-meter-still-got-questions?t=1985227>

Drilling The Vacuum Slide (Don't Do It!)

<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-intake-and-exhaust/sportster-motorcycle-air-intake-carburetor-efi-fuel-and-exhaust/185318-cv-carb-tuning-with-afr-meter-still-got-questions?t=1985227>

[tster-motorcycle-air-intake-carburetor-efi-fuel-and-exhaust/180214-drilling-the-vacuum-slide?t=1937640](https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-intake-and-exhaust/sportster-motorcycle-air-intake-carburetor-efi-fuel-and-exhaust/180214-drilling-the-vacuum-slide?t=1937640)

Tuning the CV40 with Innovate AFR (copycat thread)

<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-intake-and-exhaust/sportster-motorcycle-air-intake-carburetor-efi-fuel-and-exhaust/152062-tuning-the-cv40-with-innovate-afr-copycat-thread?t=1639969>

CV-Performance VS Dynojet

<http://xlforum.net/forums/showthread.php?t=932162>

SECRETS OF THE DYNOJET KIT REVEALED

<https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-intake-and-exhaust/sportster-motorcycle-air-intake-carburetor-efi-fuel-and-exhaust/7295-secrets-of-the-dynojet-kit-revealed?t=11088>

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