Table of Contents

EVO: Carburetor, Intak	Manifold & Exhaust - Sub-02C	. 3
Why Not Dynoiet Kits?		. 3

techtalk:evo:carb02c	https://sportstarna	dia com/doku nhn	/tachtalk.ava.carh02c

Last update: 2024/01/02 22:07

https://sportsterpedia.com/ Printed on 2025/10/11 03:06

Go To Technical Menu

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 Dynolet 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

Last update: 2024/01/02 22:07

to a much better performing carb in the entire rest of the range (WOT you're just dumping Air/Fuel to keep it exploding). So my advice, no matter what parts you have, is get that Idle/Transfer right because you'll be using that function most of the time, especially when cruising.

I'm not saying the DJ or Yost or other kits can't be somewhat functional for some part of the operating range - some riders are happy with those mods and live with the altered limitations they bring. The user reports over the years indicate that almost all those mods DO create other unintended consequences in the overall carb operation. If revving & racing is all you want to do - Go for it!

But most riders want something running good in all-around operation. My advice is targetted toward that goal.

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To check for DynoJet parts, look at these 4 things:

- ... Check the Needle: Stock is Nail-shaped DJ has grooves & a clip
- ... Check the Diaphragm/Slide Spring: Stock is 6.0" DJ is 5.75"
- ... Check the Slide Vacuum Port Hole (not the center hole): Stock is .097" DJ is .136" (Is the hole smaller or larger than 7/64" drill bit?)
- ... Check the Main Emulsion Tube : Stock has 2x2Hi+4x3Lo Emulsion Holes DJ uses only 2Lo Holes
- ... The stock Keihin Emulsion Tube uses 6mm Main Jets The DJ one takes only 5mm jets, which are incompatible with the Keihin tube and only available from DJ.
- ... The Keihin needle DOES NOT have grooves... And if you got a DJ needle, it's likely you also have a DJ emulsion tube & main jet.

*_*_*_*_*_*_*_*

Comments from ASWRacing in Post#16 on this XLForum Thread: Is it worth fitting dynojet kit?

Bottom line is that a kit is totally unnecessary to make a good running CV. You can do it with less than ten bucks worth of jets from your dealer, or an outfit like CV Performance. In some cases you'll get it to run a little better with a couple bucks more for a new needle, too, depends on the needle you already have. Do that, and the carb will work as well as it's ever going to work.

Drilling the slide, putting in a weaker spring, changing the emulsion tube, none of that stuff does squat for power or throttle response either one, in my experience. In fact it may do more harm than good. What these carb kits really do best is separate you from your money. There's tons of junk on the market for these bikes that do the same. Skepticism is warranted with this kind of stuff, there's lots of opportunity to waste money.

I once had a customer send me a tricked-out CV40 for testing. The company that prepped it had done all kinds of polishing and slide mods and a trick emulsion tube and all that crap. I dyno tested it against a stock CV40 that had only been jetted properly for the combination, no other mods. The stock carb actually beat the tricked out carb on the dyno, by a small but repeatable margin.

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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/spor

Last update: 2024/01/02 22:07

tster-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

Go To Technical Menu >> Or Return to the Previous Page <<

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