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Carb Farts - XLForum Threads Summarized

Carb Farts Discussion

https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-intake-and-exhaust/sportster-motorcycle-air-intake-carburetor-efi-fuel-and-exhaust/20117-carb-farts-forever?t=33327

All posts by Chris Hajer unless otherwise noted.

Post#6
Blipping the throttle will generally cause carb farts.

Post#8
When blipping the throttle, two things happen, and I'm not sure which one causes the carb fart:

1. You are shooting some fuel in with the accelerator pump.

2. When you blip the throttle, you are actually opening the throttle plate, and that larger opening causes a very minor drop in velocity through the carb and reduces the signal (vacuum, pull) across the fuel jets, so you flow less fuel for an instant. The accelerator pump is supposed to compensate for that somewhat. The problem is, with a very short stroke of the accelerator pump rod, like a blip does, not much if any fuel is actually shot, so there is very little extra fuel shot in in some cases, so the pump is not doing its job.

So, I don't know if it's the extra shot of fuel that causes the back fire (I don't think so) or if it's the lean condition that results from the temporary drop in vacuum signal when you open the throttle plate (I think so.)

I can make almost any CV carb do it by blipping the throttle enough at idle. You can minimize it by richening the idle circuit, which is the pilot jet and the fuel mixture screw. Shimming the needle up attempts to fix other problems, none of them from blipping the throttle at idle.

Post#13
the lean condition exists with a free flowing air cleaner (weaker vacuum signal across the jets, draws less fuel, makes mixture leaner.

Post#17
Plugs - Whitish to tan is good. Shimming the needle will help in the midrange, steady throttle, cruising stuff. Not anything right off idle really.

Post#19
Accelerator Pump Stroke - The CV is not REALLY adjustable. They actually had a problem before with longer pump rods, causing fuel to spill into the carb just from the vibration and contact between the pump diaphragm and the rod.

Andrews used to sell a higher volume accelerator pump housing, not sure what ever came of that.

Both the S&S Super E and the Mikuni HSR42 are adjustable in this regard. It would be nice if the CV were too. I don't know anyone who has done it, but it would be worth it to make up some longer pump rods and try them out so long and they didn't result in fuel bleeding all the time.

Post#21
The rod and the position of the diaphragm in the accelerator pump housing is certainly different on every bike. Worth looking into. Maybe make up an adjustable one, or offer different lengths. All you would need to do is determine how far into the carb body the rod needs to stick for optimum pump, measure yours, then go +.010“ or -.010” and order that.

Post#24 - 650Brad
I decided to go out and see where my [accelerator] pump shot happens in relation to throttle position. I pulled my air cleaner cover and put some tape on my throttle housing and on my grip and marked the tape to use as a guage. I took the slack out of the cable and rolled the throttle back and watched the squirter. I found that my accelerator pump didn't start squirting until almost 1/8 throttle. For comparison, I checked out my 780 Holley on my Coronet. As soon as you touch the throttle it shoots. So, I decided to check out the rod that goes into the carb body and pushes the diaphragm. I pulled the backing plate off so I could access the linkage and took the E clip off the shaft that the linkage pivots on. The linkage slides just far enough on the shaft to get the rod out. One thing I noticed right away is that I could depress the rod until I felt it contact the diaphragm and it was significantly lower than the hole in the linkage. So, I measured it.

[The long end measured 1.669“ long from inside the short end.]

Next, I had to figure out what I could use to make a new one. Just so happens that some large finishing nails I had kicking around were the same diameter (3mm) as the rod so, I made a new one .030” longer. [Makes the long end 1.699“ long.]

Why .030” ? It looked to me that there was at least that much difference between the original rod and the linkage. As long as the pump didn't dribble as it idled I figured it would be close enough. And, after re-assembling everything but the filter and cover, I tried it again. Now, the pump starts squirting almost as soon as the throttle moves. I started the bike to see if fuel dribbled out the squirter as it idled and it didn't. Next was a test drive. I must have blipped the throttle 25 times, going up and down through the gears and at stop lights and not one fart. Now, does that mean it won't fart again later? Only more riding will tell. It's very warm and humid here tonight and my bike never really did fart at will anyhow. There was really no rhyme or reason to when it did fart but, it was usually like everyone else, blipping on downshifts and at stop lights. This was super easy to do, didn't take much time and even if it doesn't cure all my carb farts, it can't hurt. If more people try this then maybe we can get a consensus as to how well it works.

Post#25 - Chris
I'm sure there's a reason there's SOME gap there, but maybe it is excessive on some bikes and carbs? I

can't wait to hear the long-term results.

One thing to beware of is fuel dribbling out when engine vacuum is different (more vacuum means easier to suck fuel out of there.) The other thing I thought of was that maybe HD doesn't make them so close because some of the carbs are used on rubbermounts, and more bouncing around (or less) would affect it differently? Maybe Keihin makes them all the same so that they work on all bikes? Maybe they also leave a large gap in there for the same reason that they don't adjust the squish in every combustion chamber. If that's the case (“they're a manufacturer not a tuner”) then they can certainly be improved (like the squish can.)

I wish yours was worse before so we'd have a [better] before and after.

Thanks for posting that. Very cool. The finishing nail looks OEM to me.

Post#31 - Chris
The taper of the needle has nothing at all the do with idle or off idle. That's the wrong end of the needle. The straight section at the top determines jetting right off idle and at low throttle openings.

Post#32 - Don Burton
A thinner straight portion will enrichen the off idle and lower throttle settings a bit while the taper affects more toward the upper throttle settings.

Post#34 - Don Burton
Of course if one has put in too rich of a pilot jet (sometimes the case) he might want to put in a smaller one when he puts in a richer needle. It's just another way to try to correct some problems.

Post#36 - 650Brad
An update... Ok, I've ridden my bike for a week with the longer accel. pump rod. For the most part, it's an improvement but, the bike still farts on occasion, when hot. I've ridden the bike every day since and it's farted 3 times but, they don't seem as severe.

Before the mod, it would fart, on average, once or twice a day. Some days it wouldn't fart at all and the next day it could do it 3 or more times. Totally random. And unless the bike was cold, it was something that I couldn't get the bike to do at will. I can still get the bike to fart when cold, as I turn off the enrichener as soon as possible so, that's to be expected. But, when hot and blipping the throttle trying to get a fart, it won't. The few farts I did get since the mod were when I wasn't really trying to make it happen, when I was riding normally.

One thing I did notice when I was watching the pump work was if I rolled the throttle back slowly, it wouldn't pump at all or very little. The quicker I roll the throttle open, the stronger the shot. And on one occasion that it did fart, I knew that I rolled the throttle open kinda slow. So, blipping the throttle hard, trying to get a fart, isn't going to do it as the strength of the shot is related to the speed you open the throttle.

So, now I'm wondering, where is the fuel going when I roll the throttle back slowly? Obviously, the check valve that allows fuel into the diaphram isn't holding without a certain amount of pressure against it, allowing fuel to leak back into the float bowl instead of through the shooter. It's something else to look at in the winter when I can't ride.

Regardless, I think it's an improvement over how it was before, it's a step in the right direction but, it still could be better. I'm going to try a slightly longer rod than the one I made and see what that does. And, if I get access to a lathe, I might try making some pump nozzles with different size orifices to see what that does. I definitely think that there's more to be improved upon than just the pump rod length.

Post#37 - Gold951
What got me to thinking was your statement about the speed of the pump movement affecting the strength of the fuel shot. As I see it there could be two things affecting this. First there is the strength of the spring in the check valve, and second there is the pump itself. If the spring is too strong, a slow pump will not have enough pressure to force the check valve open, and I suspect that fuel will actually flow between the pump and the pump bore. By the same token, if either the pump, or the pump bore are worn, the same thing will happen, a slow pump will not force the check valve open.

When you think about it, a fast pump stroke will always force the check valve open because the fuel doesn't have enough time to “get out of the way” by flowing between the pump and the pump bore.

Post#38 - XLXR
I am trying to get the engine to run nice, not get every last bit of hp. Now the only time it farts is when letting the rpm drop and blip the throttle at 1200 rpm. I also looked at accelerator pump timing last night, and also thought it seemed too delayed. I will try to lengthen the pump rod and report back in a few weeks.

After extensive reading on this problem in XL Forum, I have come to the conclusion that there are several possible causes and cures to the problem. There seems to be quite a lot of inconsistency from year to year and bike to bike. Which means each individual bike owner will have to find what works best for his bike.

I also think inexperienced mechanics who are just learning how to interpret what the engine is doing and then knowing what appropriate adjustments to make are having a more difficult time. But that is how we all learned. I cannot tell you how many times I have taken apart the same carb to get it right. This takes practice and patience.

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https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-intake-and-exhaust/sportster-motorcycle-air-intake-carburetor-efi-fuel-and-exhaust/18344-cv-carb-mod-to-reduce-carb-farts?t=30561

Post#31 - Comments from Stevo
A carb fart is basicly caused by a lean condition… often from not having enough fuel when cold or from lack of vacuum from blipping or opening the throttle too quickly…. A mikuni will do it if you open it too quickly… Too much air is entering the intake plenum for the amount of fuel for those particular engine requirements at that point in time.. ie : it's too lean..

A fart thru the exhaust or flat sound is usually from a rich condition…

The leaner [the condition].. the crisper [the fart]… until ya get too lean and then it pops thru the intake.
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I also don't like havin the acc pump come in just off idle .. I normally set the rod length to come in just past normal cruise position… otherwise you're using the acc pump with each small movement of the throttle…

It's easier to set on Mikunis but on CV's if I've got one I need to change I make a new rod up..

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Post#1 - Comments from Chris Hajer
The CV carb has an annoying habit of spitting back through the air cleaner. This is sometimes called a carb fart, lean misfire, spit, cough, hiccup, backfire, etc. It is a characteristic of the carb. When you twist the throttle, you are opening a butterfly valve in the carb, and velocity of the air flowing through it drops. The slide responds by dropping down to make the venturi smaller in an attempt to keep the velocity “constant” (hence 'CV', constant velocity, carb.) It doesn't always work. Sometimes there is a lag between the time the butterfly opens and the slide drops. In this instant, the mixture goes lean and there is a lean misfire. The accelerator pump tries to compensate, but it's not always successful. Sometimes the throttle movement is not enough to trigger a shot of fuel from the accelerator pump.

In their quest to eliminate the carb farts completely, some people over-jet the idle circuit. If your bike needs NO enrichener to start when it's cold, and it NEVER has a lean misfire through the carb, it is probably too rich.

Rather than over-jetting the idle circuit to eliminate the carb farts completely, I have used the following mod with a mixture screw adjustment and no pilot jet change with good results on the half-dozen or so problem bikes I ran across.

Here's the mod (not for the squeamish):
https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-intake-and-exhaust/sportster-motorcycle-air-intake-carburetor-efi-fuel-and-exhaust/18344-cv-carb-mod-to-reduce-carb-farts?t=30561

NOTE: The modification listed in the above referenced thread is a PERMANENT MODIFICATION!
It is only suggested as a possible solution in RARE CASES! —— YOU'VE BEEN WARNED!

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Also of interest:

Idle Drop Method
https://www.xlforum.net/forum/sportster-motorcycle-forum/sportster-motorcycle-intake-and-exhaust/sportster-motorcycle-air-intake-carburetor-efi-fuel-and-exhaust/18838-the-idle-drop-method-of-adjusting-the-cv-carb-idle-mixture?t=31262

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