

SHOP TALK

Got Fuel Injection? If Not, You Will

By Steve Taylor

"It is estimated that in ten years time, carbureted motorcycles as we know it, will be deemed obsolete". That was the statement made by a representative of Zippers Performance at the V-Twin Expo in Cincinnati Ohio this past January.

Although Fuel injection has been in production on Harley's since about 1996, it is still in it's beginning stages. It will take about ten years for fuel injection to actually come up to speed. Like the carburetor, fuel injection will "evolve". Before we jump into what we can do to make fuel injected Harley's run better, lets go over the basics. The unit that sits directly behind the air breather is called the Throttle Body, connected to the heads via a "Y" type intake manifold, with fuel "injectors" that delivers the fuel to the heads. The fuel is metered by an E.C.M. (Electronic Control Module), which is programmed. Although fuel injection (to me) is the latest/greatest product in recent years, it still has some serious negatives. The fuel injection currently used is the DELPHI system, which have a 44mm throat size. Earlier fuel injection was delivered by a MAGNETI-MARELLI system, which have a dual runner, 38mm size. Units are not interchangeable. Both units are still considered an "open loop" system, meaning that fuel is injected into the intake no matter HOW the motor is running. There is no sensor on the other end (exhaust), to tell the E.C.M. An oxygen sensor would be nice, (like the ones used on autos), to tell the unit how much gas is required, and to help with efficiency. After all, efficiency is key to performance. An oxygen sensor would make it a "closed loop", system. Ok, now that we have a (very) basic understanding on what fuel injection is, lets improve it. First, you cannot make ANY changes to a fuel injected bike without first changing the programming of the E.C.M. That means air cleaner, exhaust, or increased cubes. Nothing can be altered. I have watched the aftermarket trend for years, and it usually takes about a year before companies come out with ways to improve the H-D. One of the things that came out for the fuel injection was the Power Commander, made by the Dyno-jet Corporation. This

unit is a necessity when an exhaust or any other changes are made. I call it a fuel injection override unit. It is a plug in module that you program. This unit works great on stock bikes, as well as a Big Twins to about 95 inches. If your motor is larger than 95 inches, the throttle body becomes a bottle neck, because of it being only 44mm (Delphi), or 38 mm (Magneti-Marelli). Larger throttle bodies are available for the bigger motors. ZIPPERS PERFORMANCE makes a nice 48mm, and a 54mm (Delphi), for really BIG motors. But you still should have a program to run it, (Zippers supplies it). S&S also makes a nice unit called the V.F.I. (variable fuel injection), that utilizes a dual intake runner. Each cylinder is fueled independently of each other, (the way it should be?). Larger throttle bodies are also available for the older Magneti units, one source being "Dakota Kid Carbs". Look for more and more after-market performance companies to jump into the fray of fuel injection; after all, it's not going away. One neat thing I saw at the V-Twin Expo was a product that is a retrofit fuel injection unit. B.D.L. (Belt Drives Limited) had a proto-type on display. Bolts right on to your stock intake too. Yes, this will enable you to have fuel injection on your Shovel or Pan. WHOA. Fuel injection is DEFINITELY the way to go, with the right programming, or (MAP), you can expect a major horsepower improvement, with no more choke knob to pull, and no fuel petcock to deal with (a fuel pump is built into the gas tank), and receive good gas mileage too!

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