

Fault Finding: VariReg – Harley-Davidson EFI models

Workshop: Additional information for diagnosing fuel filter and fuel pump problems after installing a VariReg.

Tools required: You will need a accurate pressure guage.

Note: If your fuel filter canister has not been replaced within the last 15,000 kms (10,000 miles), you should replace it at this point. A partially blocked or blocked filter will restrict fuel flow, resulting in tuning difficulties or unsatisfactory results of tuning.

If you experience tuning difficulties, pressure test the fuel system for a constant fuel pressure (without low points). The VariReg is precision made, and each regulator is set and checked at exactly 360 kPa (52 psi) prior to leaving the factory. Provided you have not adjusted the VariReg, and your gauge is accurate, you should obtain exactly 360 kPa (52 psi) when performing a fuel system pressure test. If you need to reset the VariReg to the factory setting, screw the adjustment screw all the way in, then unscrew it the following amounts:

For Type 1 = two turns

For Type 2 or Type 3 = one and a half turns

Note: See your VariReg instructions to see if you have a Type 1, Type 2 or Type 3 VariReg.

If you perform a stationary fuel system pressure test, you should have a steady 360 kPa (52 psi) reading on your pressure gauge at all RPM, and only a "blip" in the reading if you crack the throttle under load. You should also see a steady increase in fuel pressure if you turn the adjustment screw on the VariReg inwards.

If your results are different to the above, then either the fuel filter canister is blocked/partially blocked or the fuel pump itself is faulty and requires replacement.

Blocked fuel filter:

General symptoms are "pinging" and a decrease in performance, over time, at high engine loads.

If the fuel filter is blocked, installing a VariReg will not correct "pinging" or indeed increase performance due to the lack of fuel pressure actually *at* the regulator, and thus at the injectors. If you have a partly blocked or blocked fuel filter during pressure testing, you will usually only see a reduction in fuel pressure at high engine loads.

Faulty fuel pump:

General symptoms is a minor decline in performance over a period of time even though the engine may seem to run okay. Often, the bike will start normally, then as the engine temperature increases, it may not run under 2000 RPM and may spit back through the induction manifold.

Once a VariReg is installed, a faulty fuel pump will show up a very quickly because the pump is required to run at a higher pressure. The fuel pressure will generally remain at the "stock" pressure of around 300 kPa (44 psi), or can even drop to lower pressures and be erratic as RPM is increased from idle.

For further advice, contact Kenma Australia.