

BMW EFI Mods Tested

by Gary Prickett

WE RECENTLY HEARD about a plug-and-play device that was reported to overcome some of the lean fuel mixture issues that are required of modern emissions-compliant fuel injected bikes, including hard starting, poor idle and a lag in off-idle throttle response.

The first such device was the Booster Plug, which consists of a small box with three insulated leads. Two of the leads enable this device to be installed between the stock Engine Control Unit (ECU) and the Air Intake Temperature (AIT) sensor. The third lead is a temperature sensor that's to be installed in a location exposed to a constant flow of fresh air. The purpose of the device is to fool the EFI system into "thinking" that the ambient air temperature is 68° cooler than it actually is. The fuel system responds by richening the fuel/air mixture.

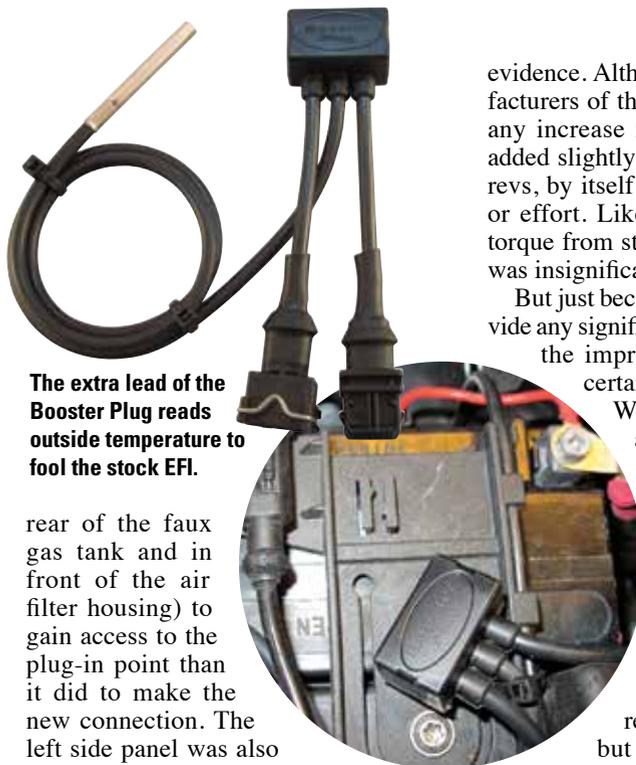
Once installed, the difference in engine performance is immediately noticeable.



The Accelerator Module is noticeably smaller and more compact.

Acceleration from a stop is smoother and more immediate since there is no lean-mixture lag between twisting the throttle and forward movement. Shifting between gears can be accomplished more smoothly, because there is no delay in off-throttle response. Prior to installation, a forceful twist of the throttle at anything above 3000 rpm was met with a momentary flat spot before acceleration was felt. The Booster Plug gives immediate response to the throttle's rotation.

Installation of the Booster Plug was simple and straightforward, as easy as undoing two connectors and inserting the Booster Plug within the two stock connectors with matching connectors on the leads attached to the module. The connectors cannot be installed incorrectly. It took more time to remove the upper tank cover (which on my bike is located between the



The extra lead of the Booster Plug reads outside temperature to fool the stock EFI.

rear of the faux gas tank and in front of the air filter housing) to gain access to the plug-in point than it did to make the new connection. The left side panel was also removed to enable the placement of the Booster Plug's extra temperature sensor along the side of the air intake snorkel.

The Booster Plug's price is \$149.95 including shipping from Denmark. Although we were pleased with the results, we also learned of a product called the Accelerator Module out of Belgium that appeared to provide similar results at a cost of only \$45 plus shipping. The Accelerator Module is about the same size as the Booster Plug, but uses only two connectors and does not contain a third lead containing a temperature sensor. In the interest of science, we bought one for comparison.

Installation of the Accelerator Module was even simpler than the Booster Plug, because there was no third output cable containing a temperature sensor to be located and secured. Functionally, there was no difference in performance. Throttle response of these two very differently priced modifications seemed identical.

However, an "Extended" version of the Accelerator Module, which includes an external temperature sensor, priced at \$60, became available shortly after we had received our "Compact" version. When contacted, the manufacturer claimed both versions "work really fine." The extended version simply allows extra flexibility in placing the temperature sensor where it can get the most cool air.

We conducted dynamometer testing of both units, as well as a baseline run of the stock configuration to provide objective

evidence. Although neither of the manufacturers of these modifications claimed any increase in horsepower, they both added slightly more than one hp at peak revs, by itself hardly worth the expense or effort. Likewise, any change in the torque from stock to modified condition was insignificant.

But just because the dyno failed to provide any significant performance increase, the improved throttle response is certainly reason enough to buy.

We also found the benefit of a slight improvement to fuel economy as well, not what you might expect from richened fuel mixtures.

Although one could presume that because both of these products richen the fuel/air mixture there would be a reduction in fuel economy, but just the opposite occurs.

The design of both products is such that the richer mixture is present only during active acceleration. Once the engine reaches steady state performance, the fuel/air mixture reverts to its stock, lean-running condition. Additionally, according to the manufacturer of the Accelerator Module, the modified engine runs cooler, you will upshift sooner and cruise in a higher gear, allowing the engine to run at a lower average rpm and thus use less fuel.

This was verified during prolonged testing, during which our F650GS test mule was operated first in stock condition, then with the Booster Plug installed, and finally with the Accelerator Module installed. Approximately 1800 miles were covered in each condition. Average gas mileage in stock condition was 48.3 mpg. With the Booster Plug installed, 52.7 mpg was achieved, and the Accelerator Module recorded 53.5 mpg. Both devices delivered an approximate 10% improvement in fuel efficiency compared to stock.

Easy to install, reasonably priced, and with easily noticeable improvements, each of these devices is worth your consideration. 🚀

Booster Plug, available for select BMW, Husqvarna and Triumph models; www.boosterplug.com
MCN Recommended ●●●●●

Accelerator Module by Solid Solutions, available for select BMW, KTM and Yamaha models; www.sol2.be
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