



More Fuel On the Fly

Attitude Performance P-Pump Adjuster

BY JACOB WHITE

Due mostly to the electronically controlled engines in today's trucks, over the past few years the 1994-1998 12V Cummins has become a bit of a dinosaur in diesel performance. While still the easiest to work on and more than capable of producing huge power numbers, the older P-pump trucks have lost some of their popularity in the daily driver market to more efficient common rail trucks. The 12V can still make incredible power, see more than 20 mpg when tuned correctly, and do just about everything an owner would need, but those owners have been stuck with the power output they set the pump up to make. In short, not being able to adjust power output and fueling on the fly has taken away from the 12V's versatility.



In the summer of 2015, Attitude Performance Products of Sandy, Utah, completely changed the 5.9L 12V market with the introduction of The Adjuster, a fully adjustable fuel plate housing that allows complete in-cab P-Pump fueling control with the turn of a knob. Much like the adjustable chips found in the latest electronically controlled trucks, The Adjuster allows the driver to make on-the-fly adjustments to his fuel plate and rack travel within the mechanical P-pump while driving. The Adjuster kit comes with everything needed for a complete installation, including the fuel armature, AFC fuel arm, cable, in-cab controller, and hardware. The new fuel armature housing will install onto the factory P-pump just as simply as swapping out the fuel plate, with the addition of running the cable into the cab and mounting the controller.

How It Works

The Adjuster was designed to allow the driver to control fuel plate position with the in-cab controller, which in turn adjusts rack travel and fuel flow from the pump to help dial in the truck's performance for each specific driving situation. The controller has 10 individual settings, from setting 1 that can reduce the pump's output to below 150cc of fuel (less than stock), to setting 10 that can allow max flow from the pump. Until now, changing to an aftermarket fuel plate "grind" and "sliding" the plate were about the only way an owner could adjust his pump's output and fuel delivery, but with The Adjuster, you can now make all those changes without ever leaving the driver's seat. The new housing installs between the governor housing and AFC housing of the pump and it usually takes less than an hour to complete. The Adjuster won't require removal of the pump from the engine, as you'll need to get nothing more than the intake horn and fuel lines out of your way to get everything installed on the truck.

It should also be mentioned that beyond having on-the-fly adjustability at your fingertips, using the Adjuster can help increase boost output (3-15 psi), lower EGTs (150-250 degrees), improve fuel mileage (+10-25%), and increase pump life since you don't have to always run it at its max potential.

1. The Adjuster from Attitude Performance offers complete control of your P7100 Bosch injection pump found on the 1994-1998 12V Cummins. With a turn of the in-cab control knob, you have full adjustability to turn your tune up, just like the later model electronically controlled engines do. Whether you need maximum fuel economy or peak power, you'll have 10 adjustable fuel rack positions to choose from.



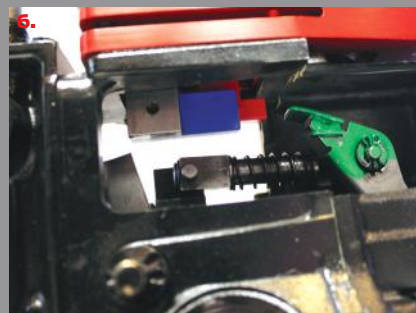
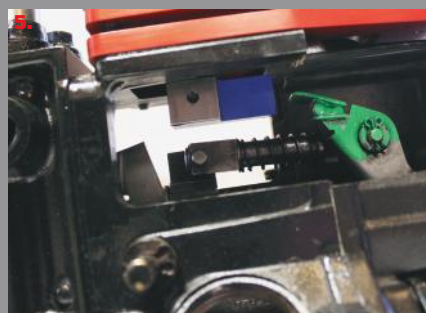
2. The heart of the system is the custom machined block with the adjustable fuel plate that gets installed into your P-pump. Using the supplied cable that will be routed into the cab, you'll get full travel of the fuel plate, allowing more or less travel of the fuel rack to control the pump's total fuel output. No more need to pull over, shut the engine off, and slide your plate forward or backward manually anytime you want to adjust your horsepower.



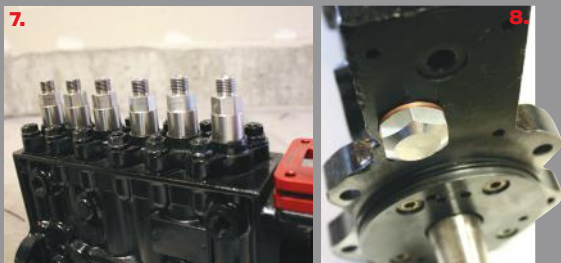
3. The custom billet controller is installed inside the cab somewhere on the dash within easy reach of the driver. With 10 clicks on the knob, you have complete control of the pump's output. Lower settings will mean lower fuel output, so better smoke control and fuel mileage, while higher settings allow for more rack travel and maximum fuel output for the drag strip and dyno.



4. The billet block installed on the pump itself has a flat knob on the back side that you install the cable into, which is in turn controlled by the knob in the cab. As you turn the knob, the cable will turn the mechanism inside the block and allow the fuel plate a full 2mm of travel.



5 & 6. Attitude Performance has this cutaway version of a standard p-pump for their displays to show the adjustability offered from this kit. Notice the difference in fuel plate location from Setting 1 to Setting 10 on the control knob. How much fuel do you need to get the job done?



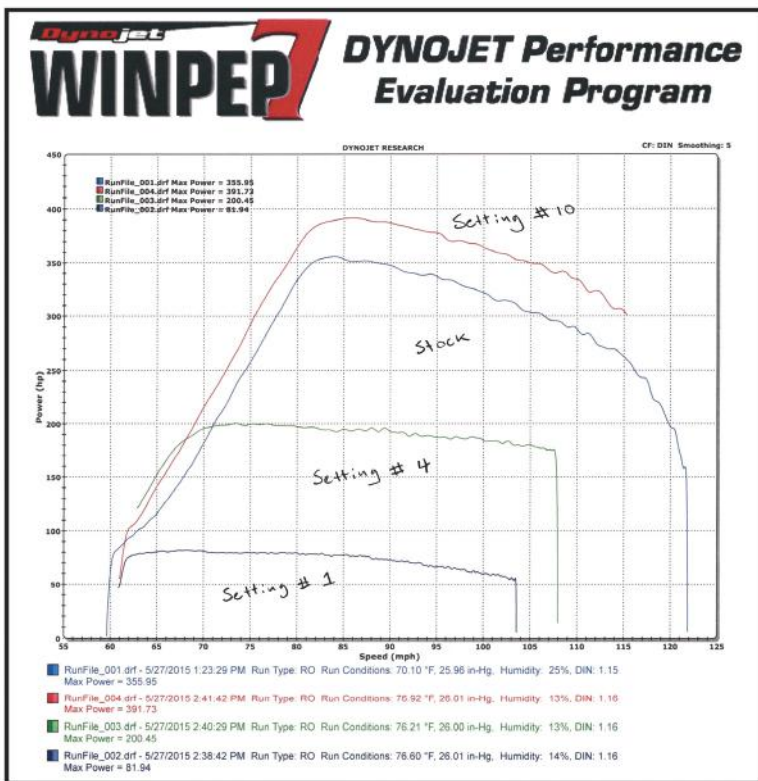
7. To go along with The Adjuster, Attitude Performance also offers a full line of custom fueling pieces to help that 12V run more efficiently and make more power. Their Billet Delivery Valve Holders will advance pump timing and create more fuel flow from the Bosch P7100 pump and offer a nice custom look.

8. For even more pump flow, their Billet Rack Cap has been drilled out to 12mm, which allows an additional 4mm of full rack travel. Again, this means more fuel flow for more horsepower. Best of all, it's a super easy install.

9. In the cab, the knob installs easily on the dash and offers easy adjustment at the touch of your fingers. The Adjuster is patent pending and is helping bring the 12V Cummins out of the diesel Stone Age, making the old girls more enjoyable to daily drive and tow with during the week while still putting it down on the sled pull and drag strips on the weekends—all without having to turn a wrench of screwdriver under the hood.

DYNO TEST with The Adjuster

Test Conducted By Industrial Injection



DYNO Test. In-Cab Controller Setting

The Adjuster™ (pat pending) Setting #1	Lowest Fuel	DELIVERS 85 HP
The Adjuster™ (pat pending) Setting #4	Great For Towing	DELIVERS 200 HP
The Adjuster™ (pat pending) Setting #10	Maximum Power	DELIVERS 392 HP
STOCK	Fixed Fuel Plate	DELIVERS 356 HP

*Note: The Adjuster™ on setting #10 delivers 10.3% more power than the stock fuel plate



Results

Third party testing of The Adjuster netted some pretty impressive gains in a basically stock truck, both on the street and on a chassis dyno. With the stock pump and a fuel plate installed and set at the highest fuel flow position, the truck made a smoky and hot 356 horsepower. That was good power, but this setup saw pretty heavy smoke output at low RPM and would have been virtually impossible to tow with due to the extreme EGTs under hard load.

After letting the engine cool down, the Attitude Adjuster was installed and the truck was brought back up to operating temperature for a few more dyno pulls. In setting 1 on the control knob the truck made just 85 hp, lower than what a bone-stock truck would make. While not ideal for driving, this power level could help fuel consumption under normal cruising due to

the reduction in flow from the pump. Bumped up to setting 4, the truck made a crisp and clean 200 hp that would be more manageable for a towing situation and daily driving with smoke-free commuting. Jumping clear to setting 10 on the controller, power increased to 392 hp, which again was rather smoky since the stock turbocharger couldn't burn all the fuel. But with an increase of nearly 40 hp from the stock "slid" fuel plate, the fuel flow adjustability is nice to have on tap when needed. The truck can now be used for a multitude of uses without limitation.

Installed on a modified application running a larger aftermarket 13mm injection pump, modified injectors, and a compound turbo system, The Adjuster made 189 hp on setting 1, 389 hp on level 5, and 507hp on level 10. That's a difference of 318 hp from the same truck, on three different dyno pulls, without ever popping the hood.

Complete, on-the-fly adjustable performance for the 12V Cummins is finally here.

The Adjuster will work on any application using the Bosch P7100 injection pump, including the 1994-1998 Dodge and the 4-cylinder 4BT engines being used in a lot of conversion builds. The Adjuster will also work on any vehicle, regardless of modifications and power potential. Just looking to improve your stock truck's usability? It'll do that. Looking to make your 1,000hp drag truck a little easier to drive on the street? It'll do that too. Attitude Performance Products and The Adjuster has helped bring the 12V Cummins back from the diesel Stone Age and improve its overall efficiency, drivability, and power potential. That's something any truck owner should be able to get on board with. **DW**

SOURCES

ATTITUDE PERFORMANCE PRODUCTS
855.781.6100
AttitudePerformanceProducts.com