

Installation Instructions for AFC Max Travel Kit

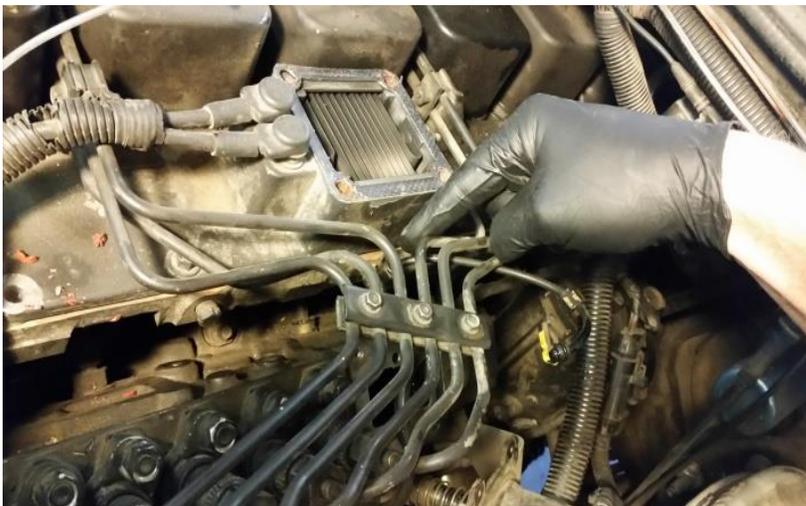
(Aneroid Fuel Control Modification for Dodge Ram Trucks 1994 thru 1998 model year)

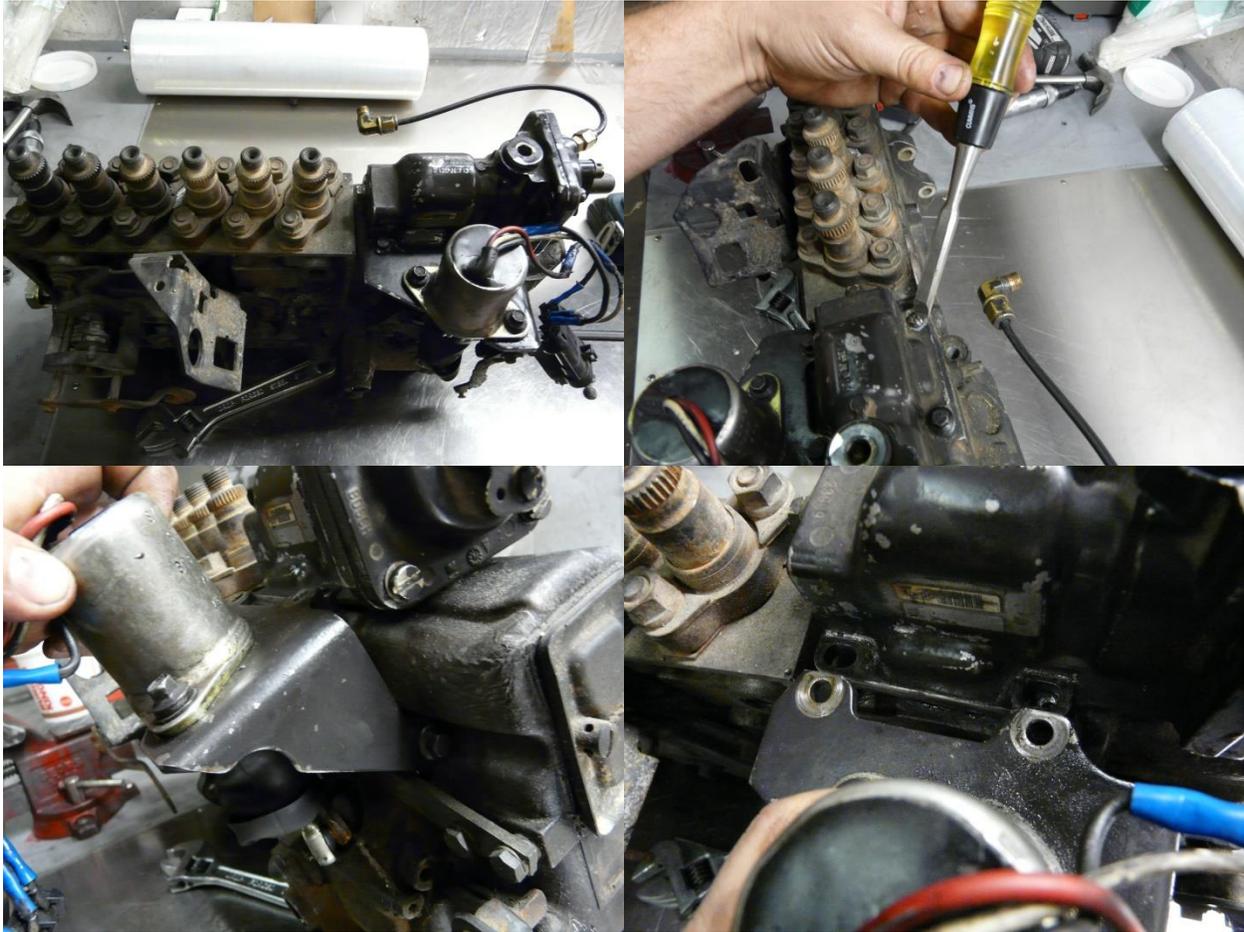
AFC Max Travel Kit (Allow 1.5 to 2 hours for installation)



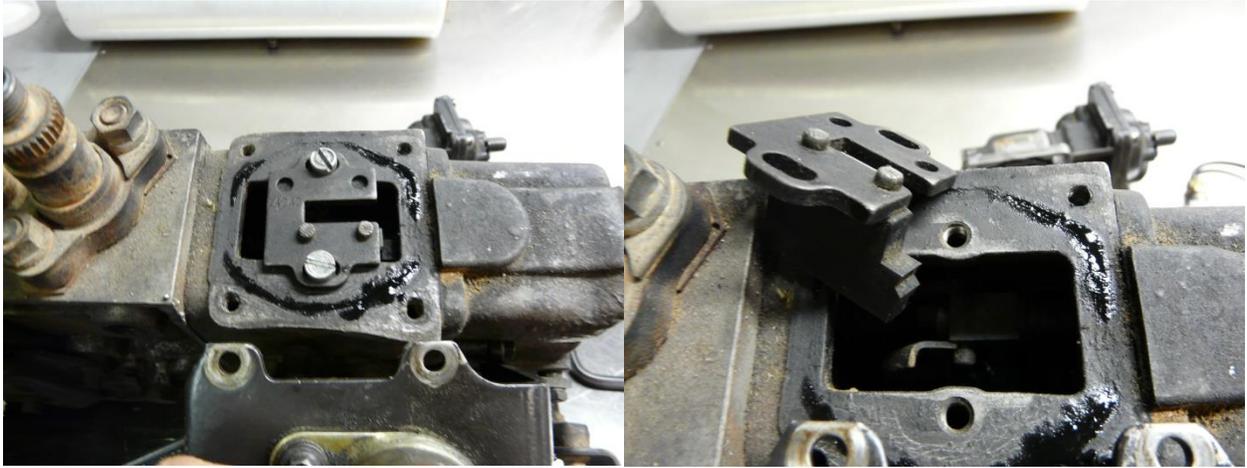
1. Remove air-intake horn by removing (5) 10mm bolts, (1) 10mm dipstick bolt, and loosening (1) 7/16" t-bolt clamp on the air-take hose. Take care when removing the intake horn to not damage the gasket at the mating surface, normally this gasket can be reused, but if it is damaged a replacement is available from Cummins, part number 3913352.

2. Remove the factory original AFC air/boost line using a 13mm wrench and air/boost line fittings using an 11mm wrench.





3. Remove the factory AFC by removing (3) 8mm bolts and (1) tamper-proof screw. A sharp wood chisel can be used to make a slot in the taper-proof and then a screw driver can be used for removal; other methods include grinding a slot with a small dremel tool, using a chisel on the edge to turn the screw, grinding off the head with a small grinder, etc. Fuel injection lines and low pressure feed line removal may be necessary to gain access to remove the tamper screw depending on removal technique and tool size. (Previously modified trucks with an aftermarket fuel plate have already had the tamper screw removed so this step is usually very quick and easy) After removing the bolts, push the shutdown solenoid assembly toward the driver's side front tire so the bracket slides off the AFC. (Sometimes it may be necessary to slightly loosen (1) 8mm bolt on the lower bracket if it's too tight to pivot) Remove the AFC from the truck, being careful to not drop anything into the now open injection pump governor housing.



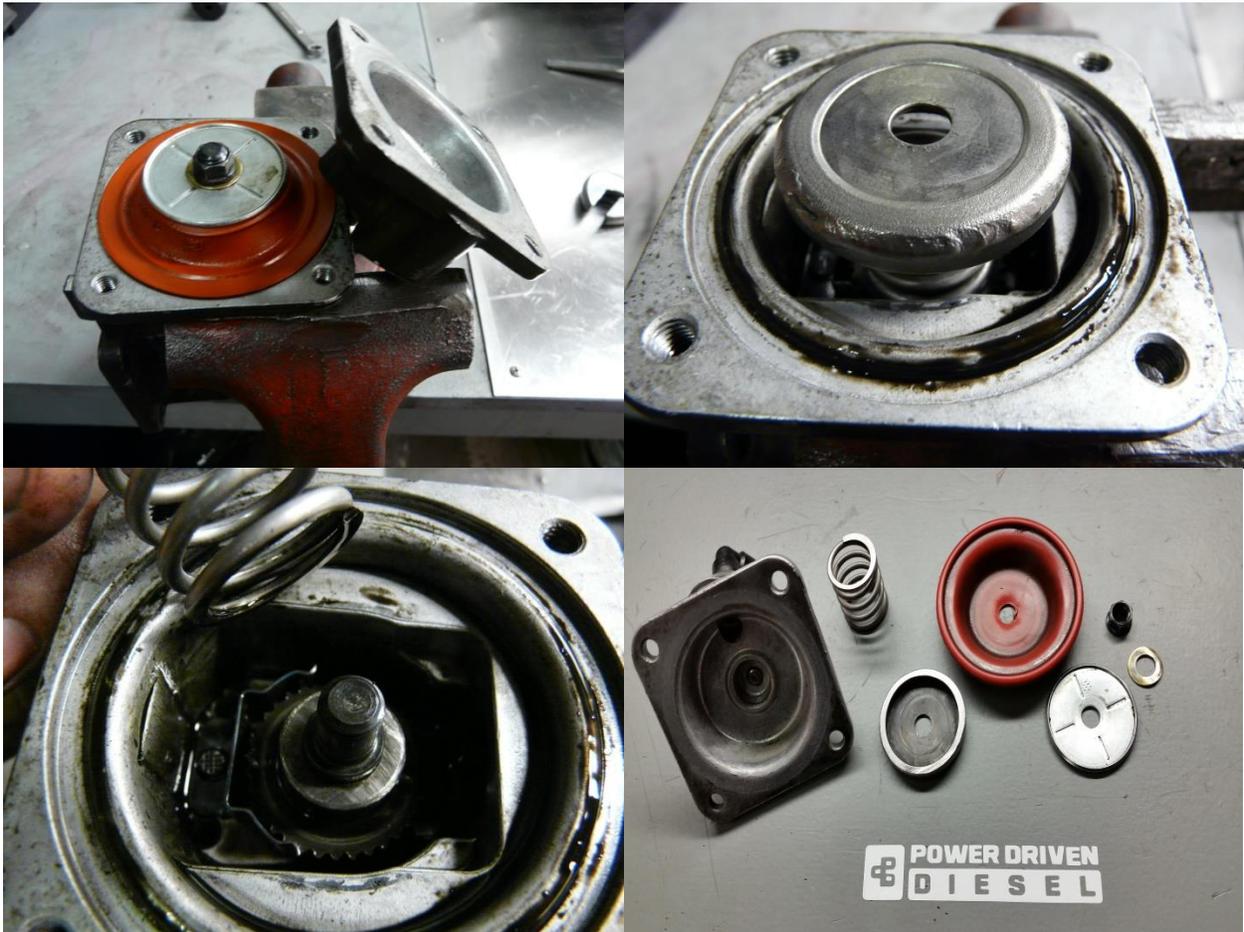
4. Remove the fuel plate being careful to not drop screws or washers into the open governor housing. If the fuel plate is left installed, it will limit injection pump fueling long before the AFC reaches full travel. This AFC Max Travel Kit is designed to provide full AFC foot travel, therefore fuel plate removal is recommended. **It's advisable to use a magnet when removing the screws.**



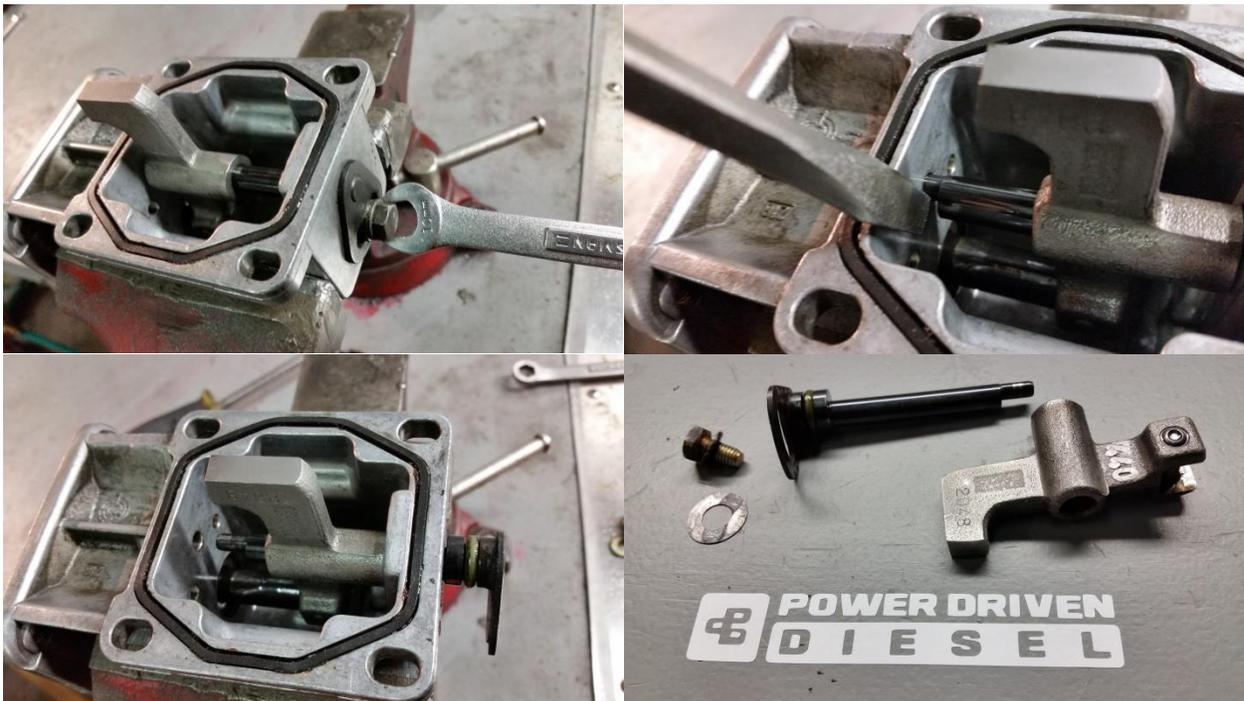
5. Take the AFC to a suitable working location (work bench). Remove AFC cover by removing (3)



flat-standard screws and grinding a slot in (1) tamper-proof screw and then removing screw. Also grind a slot in the tamper-proof screw on the small pre-boost fuel cover and remove the cover. A sharp chisel can also be used to make a slot. Pliers or vice grips are another method for tamper screw removal.



6. Under the AFC back cover is a red rubber-like diaphragm. Remove the 10mm nut, small washer, large washer, diaphragm, inner cupped washer, and stock AFC spring.



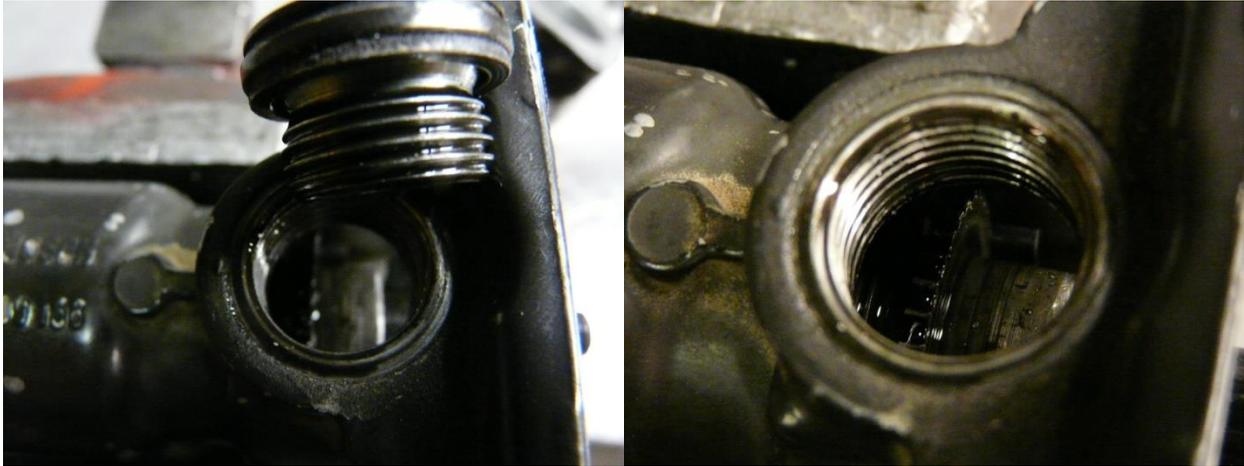
7. Next, remove the AFC foot by removing (1) 10mm bolt and using a screw driver to pry the guide rod assembly free from the AFC housing.



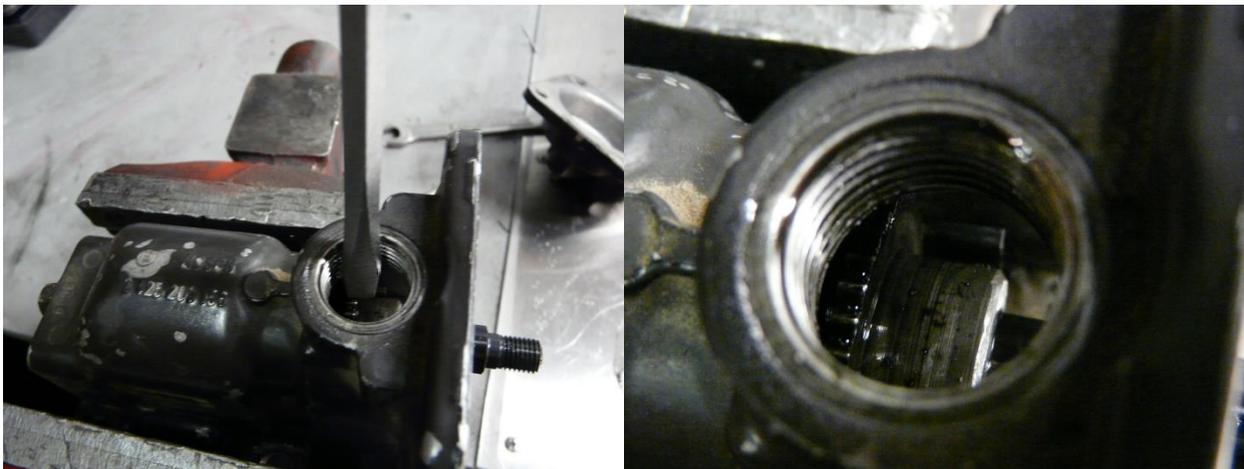
- Using a grinder or cut-off wheel, remove $1/8$ " (0.125 ") from the guide barrel of the AFC foot, for maximum AFC foot travel a minimum 0.100 " must be removed. Optional: lightly grind the face of the AFC foot to remove the reverse/negative rake on the upper portion of the foot. The dark portion of the foot face in the picture is left stock, only the upper half is lightly ground flat to remove the upper reverse rake.



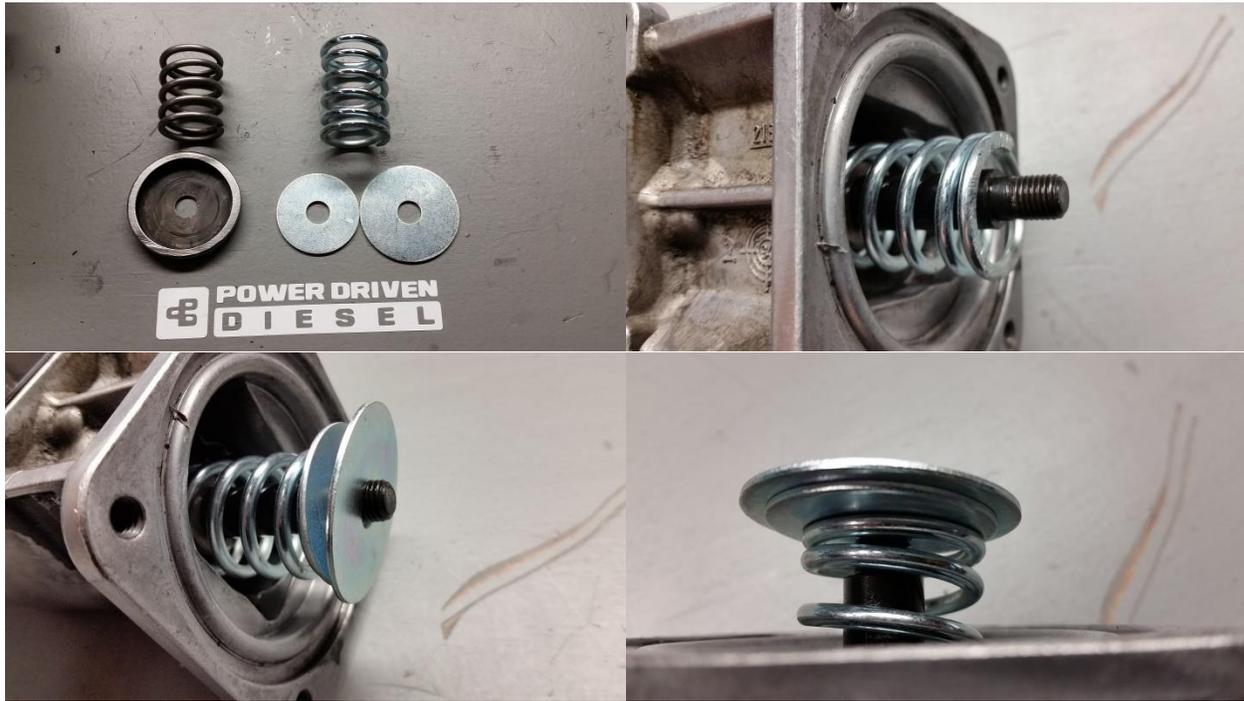
- Clean and re-install the AFC foot by installing the guide rod into the housing and through the AFC foot/barrel. Install the AFC foot facing rearward towards the AFC diaphragm like the stock orientation pictured in step 6 above. Note the orientation of the guide rod tab vs. bolt so the AFC foot height can be reset to the stock setting, it's typically not fussy but if the old orientation wasn't noted, start with the slotted tab centered over the bolt hole as pictured.



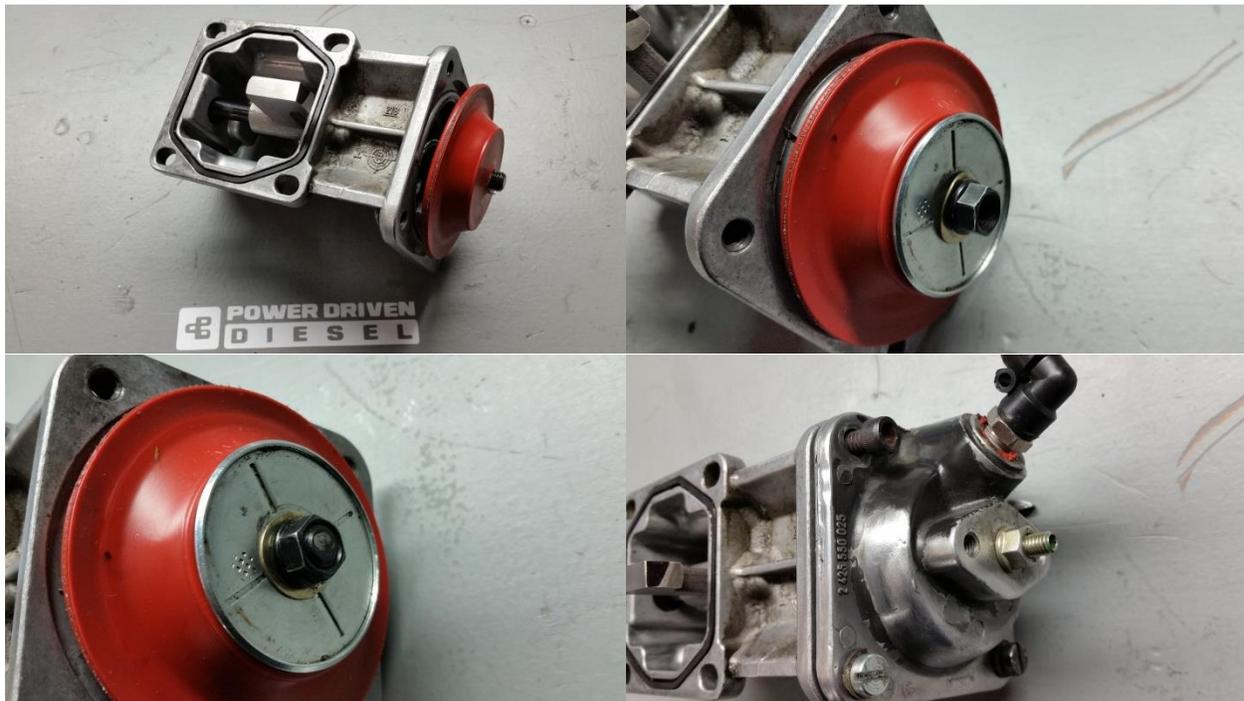
10. Remove the 5/16" or 8mm allen socket plug on the top of the AFC to gain access to the star wheel. If this plug has never been removed, it will be pretty tight and may require a vise to hold the AFC when breaking it loose. (It's regular standard thread: righty-tighty, lefty-loosey)



11. Turn the star wheel clockwise (as viewed from the open diaphragm side of the housing) to thread it deeper into the AFC housing, stop when the star wheel bottoms out in the housing when using a custom Power Driven AFC spring. Tech Tip: The farther the star wheel is threaded into the housing, the lower the pre-load tension on the AFC spring which allows for more AFC travel for the same amount of boost. If the star wheel is turned in all the way loose when using the stock AFC spring, the spring will be too short to control the first few millimeters of AFC foot travel and will result in excessive smoke/fueling. Power Driven AFC springs are longer than stock and provide control of the AFC foot with the star wheel turned-in all the way till bottomed out in the housing.



12. Discard the cupped washer and stock AFC spring. Install the new Power Driven AFC spring, then the smaller washer followed by the larger washer provided in the kit.



13. Reassemble the AFC by placing the red diaphragm over the top of the new washers, then sandwich the diaphragm with the original washer, small washer, and tighten the 10mm nut until the red diaphragm is secured between the washers. Locate the AFC diaphragm cover and loosen the 10mm locknut on the pre-boost (smoke screw), and back out the 3mm allen screw until it is flush with the inside face of the AFC diaphragm cover. Then install the AFC diaphragm cover using the (3) stock screws and (1) new M6x1.0 allen screw provided in the kit.

14. **If using a Power Driven AFC spring, skip this step.** If using a stock AFC spring: use hand pressure to push on the AFC foot to see if it has some spring tension, if the foot is able to free travel, tighten the star wheel adjuster until the spring is tight enough to control foot travel.
15. Using a 3mm allen wrench, adjust the pre-boost screw (smoke screw) by threading it in till it barely contacts the AFC's internal assembly and the AFC foot begins to move. For stock trucks (stock injectors & stock delivery valves) start with 1.5 full turns past initial contact. For heavily modified trucks with larger injectors, start with ¼ turn past initial contact, then tighten the pre-boost screw using a 10mm wrench on the retaining nut. For easy future adjustment, **it's advisable to not re-install the small pre-boost fueling (smoke screw) metal cover.**
16. Re-install the AFC on the injection pump by pushing the shutdown solenoid assembly up onto the AFC and then using the (3) 8mm headed bolts and (1) ground or slotted tamper-screw tighten the AFC assembly to the injection pump. Note the slotted bolt holes in the AFC that allow it to be slid forward toward the front of the motor or rearward toward the passenger compartment about 1/8" of total adjustability. Installing the AFC Full forward will typically make the most power **but can cause excessive pre-boost smoke** if the pre-boost screw is set too aggressively. For most trucks, it's advisable to start with the AFC at the 25% forward from the firewall/rearward position. If hard starting is encountered, either slide the AFC forward a touch more, or add ½ turn in on the pre-boost set screw.
17. Re-install any injection lines or low pressure feed lines if they were previously removed. Tech Tip: Leaving the first (2) injection lines loose at the injectors will help bleed air upon initial startup. Once fuel appears at the loosened lines, stop cranking the motor, tighten the two lines, and then the truck should fire up quickly.

Thanks,

Will & Todd – Power Driven Diesel