



Tech Sheet

‘Exposing the Myths on Fuel Pump Compensators (Aneroid) added to After Market Turbo Systems And Myths of Dyno Tuning’

The addition of Fuel Pump Compensators to enhance power with After Market Turbo Systems:

There is quite a debate at the moment raging about Diesel Fuel Pump Modifications as people strive for more power than is standard from their After Market Turbo Charged 4WD! One of the main reasons driving this topic though is misinformation from pump shops promising a large increase in power in addition to the turbo! I have put our views below in point form.

- An Aneroid is a \$1000 to \$1800 addition to the existing injection pump. It is solely classified by the component manufacturer as a ‘Pollution Control Device’ fitted to factory turbo diesels.
- Contrary to this it is promoted by Diesel Injection shops as a performance device for after market turbo installations! What people don’t understand is that the same heavy fuel loadings obtainable with an Aneroid installed to a Diesel Injection Pump can also be obtained easily at no cost without it!!
- A correctly set up diesel injection system with an After Market Turbo Installation will perform nearly as well as the equivalent Factory Turbo vehicle. This is the way the After Market Turbo System has been developed and it should stay that way. As we say at **Berrima Diesel**- “The Turbo System should perform ‘Stand Alone’ with no additions like large exhausts and fuel pump modifications!!”
- An Aneroid fitted to the injection pump of an After Market Turbo diesel makes it magically outperform a factory turbo equivalent safely. The reason for this is obvious- ‘Over fuelling above the recommended levels UNSAFELY!’
- We at **Berrima Diesel** say that over fuelling outside the Aftermarket Turbo System Manufacturers Specs means more power and this is unsafe for the engine.
- The addition of an Aneroid to a fuel pump is not accepted by most aftermarket turbo manufacturers as it promotes over fuelling which in turn can create a huge reliability cloud over their product!
- A SERIOUS FACT! All After Market Turbo System Warranties become Void if a pump is modified outside the said After Market Manufactures specs! Just remember this if you have New Vehicle Warranty being covered by the After Market Turbo Manufacturer like DTS does you will loose your coverage!

- The usual argument by the pump shop trying to sell an Aneroid as an addition to a turbo installation is that the engine will run smoother and produce better efficiency. As we say it has no relation to smoothness and the efficiency phrase is a catch!
- Our biggest concern is what specification is the Aneroid set too! Again the usual story given to a potential customer by the diesel pump shop is that it is set to factory fuel specs. For starters there is NO factory fuel specs for After Market Turbo installations supplied by either the Original Vehicle manufacturer or the After Market Turbo manufacturer. Secondly the fuel spec that the diesel pump shop usually is talking about is the Genuine Factory turbo specs for fuel loadings. This is a real worry as the Factory turbo is usually a completely different combustion system with much more durable pistons for heavy fuel loadings. To set up an After Market Turbo to match these fuel loadings would lead to an obvious eventual outcome! A damaged engine. Unfortunately this damage is not short term. It happens over time and usually rears its ugly head gradually.
- The only Specifications supplied by Turbo System manufacturers are Boost Pressure, Air/Fuel ratios and Exhaust Temperatures. These were obviously not developed with a Fuel Pump Aneroid and so could not accurately be used with one!
- At the end of the day it is a fact that if the fuel loadings are kept within the After Market Turbo Manufacturers specifications via Boost and Exhaust readings you will not only keep your warranty (which will most likely become Void if an Aneroid is fitted) you will have your diesel engine for the long term!!

This leads to the next common area of misinformation:

Dyno Tuning.

- A Dyno is a device used for measuring power output at the wheels.
- They are being pushed as a real ‘must have’ in the automotive scene of late as workshops compete for a selling edge. ‘If you don’t have one you mustn’t know what you are doing.’ says the catch phrase.
- The truth is that they are not a ‘must have’. The real fact is that they are required more by suburban workshops due to the fact that they have no real road test areas! And again the ‘Bells and Whistles’ must be good??
- We at ***Berrima Diesel*** have found that ‘seat of the pants’ driving experience with test gear (air/fuel ratio meter - boost gauge) attached to the 4WD is the only way to obtain a true indication of “real time” operating conditions. An example of this is looking at factory development of vehicles and race vehicle testing. At the end of the day it is km after km of road testing that seals the job!
- A concern that we have is the ‘Smudging’ of dyno figures. Dyno figures can be smudged to give a false impression of gains. This is noted by us in the number of 4WD diesels we have seen through our workshop with impressive dyno figures but in the true world, ‘lack lustre’ performance!
- Again... **No** 4WD manufacturer or After Market Turbo manufacturer supplies rear wheel dyno figures to set things to. So question the workshop if they say they are setting the power output to a given figure!! It might be well intentioned to set up a 4WD based on rear wheel output but identical 4WD diesel engines are slightly different from one to the next and even atmospheric conditions play a varying factor!

In summary it pays to be educated in making decisions in life. We at ***Berrima Diesel*** are here to educate and have been for many years. We are not here to ‘knock’ products or services but to educate on the true facts so as you can make an informed decision! With the amount of misinformation out there on diesel and turbo charging diesels we feel obliged to inform you on the facts!

So just remember that if you are *Thinking Diesel* and want the facts *Think Berrima Diesel!*