How Two, Minimise costs from emmisions failure.

Posted by slipsliderg - 2010/05/26 10:29

This is primarily related to N/A cars with cat convertors however the logic is typical for turbo's as well.

Going to your NCT
For a least a tank full of fuel prior to your test run Dipetane at 1:200 concentration in your fuel to clear the fuel injection process. If your car is a Jap import it needs high grade fuel to operate at its peak, emissions and performance wise. So load it up with the 97 octane and add octane booster to it as well to get you around the 100 RON rating of Jap fuel also add in the Dipetane (1:200) this will help complete the burn process properly. Drive your car to the test centre ensuring the cat if any is up to temp and get there as close to the time as possible to ensure some of the heat stays in the cat before they test it.

Doing the above will give your car the best chance of passing the test.

So to surmise on an N/A, this is the route to take if you have high emissions failure, I had high lambda and high carbon. This thread is to help other with similar issues.
To explain a bit more for you on Lambda sensors and how they can affect your emissions test / fuel consumption, in a layman's brief.

The lambda sensor is continually checking the exhaust quality for oxygen presence. If oxygen is present it normally means the combustion process is running lean (references to AFR is a measure of this value). Lean conditions in an engine are bad news for longevity, an engine that is running lean runs hot, and will damage pistons, valve seals and suffer pinking, etc. So if the engine is running ok, how does oxygen get into the exhaust, it's sucked in thru any hole in the exhaust. Once this happen upstream or downstream of the Lambda sensor it will be picked up as a lean condition and thus the ECU will richen the mix to compensate for the lean condition. This in turn raises the emissions to unacceptable levels and thus you fail the NCT.

So what does this mean for you, if you fail the test due to emissions loads of people will direct you to change the Lambda sensor, however this may not be the problem and you could save yourself a lot of cash if you go and check the items below in sequence. These checks are in a rising scale of cost and the best advice I can give with what I have learned on my little NCT journey.

1. Check complete exhaust for leaks, even a pin hole will cause a failure.

2. Check all plug conditions. Black = Rich / white = lean / light brown = good.

3. Check Air filter is clean.

4. Check Lambda sensor operation, per below.

-Have car at running temperature.
-Using a multimeter set to 12 V,
-Bring the car up to operating temperature,
-Bridge the Neg (-) TE1 and Pos (+) VF1 with the multimeter,
-Run car at 2500 rpm.
-Check voltage, should be changing between 0.3v to 0.6v at least 8 times a minute,
-If a single voltage value is only received the sensor is most probably gone, or if it performs outside the above parameters.

5. Next thing to check is the fuel pressure, as a kinked return line may increase the fuel pressure and thus richen the mixture. With the fuel pump running it should be between 2.5 and 3.2 Bar, by disconnecting one of the vacuum hoses (check with me which one it is) you can cause the pump to go to full pressure which should see a pressure of around 3.7 Bar.

6. Then check the resistance across the different terminals on the TPS (Throttle Position Sensor), guide is in the BGB, I don't have the reference material to hand here.

7. Check for faulty injectors. (highly unlikely)

8. Check for faulty ECU. (even more unlikely)

To all who have added to this thread, thanks for the advice all is welcome. Information is always good; application of information is a craft, which I am learning everyday.

If you are not experienced and don't know what your looking at or what I am talking about then don't go doing these tests yourself, get a mechanic to do them and point them in the directions shown above.

If you do, do them and blow up you ECU or damage anything due to YOUR abilities, no point coming to me crying and placing blame my way. I am not a mechanic, I am an enthusiast
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Re: How Two, Minimise costs from emmisions failure.

Posted by Quandry - 2010/05/26 11:07

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Nice one Ray, KC+1 and Stickied

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