

## EGR Gas Cooler that Kills Engine like Flies

### Fallacy of the EGR Emission system.

Everyone pays attention when the fuel pump or injector problem arises which can be very important for the welfare of the engine.

But nobody seems to care about EGR gas cooler being a **ticking time bomb**.

The EGR system stands for Exhaust Gas Recirculation to control the city smog gas that is Nitrous Oxide gas (NOx) which generated by full temperature diesel combustion.

The earth's atmosphere contains a large amount of natural Nitrogen gas (78%) and Oxygen (21%) as the dominant contents of air which we breath.

So the proper full temperature diesel combustion naturally produces NOx gas, but it causes light yellowish exhaust gas which we called city smog. But I don't think it is really that harmful to human health compare to what comes out of half burnt fuel with EGR. The lowered combustion in diesel engine produces so many harmful carcinogenic substances (cancer causing gases) the city smog gas is not so harmful considering what the EGR system produces.

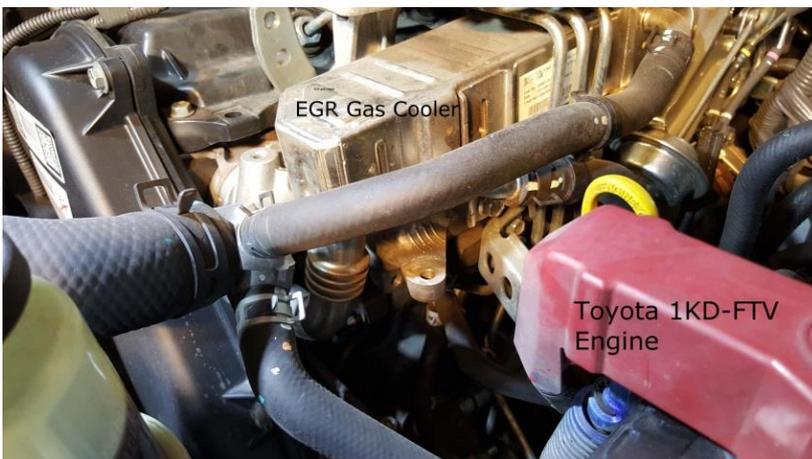
To lower the smog (NOx), EGR system has been invented since 1970s on petrol engine and I might say it was very successful.

The idea behind is, to reduce the NOx emission they choose to lower the combustion temperature by recirculating part of the exhaust gas back into the inlet to interfere full combustion so the Nitrogen gas will not have a full chemical reaction to cause NOx gas.

In petrol engine they only need minute amount of exhaust gas to recirculate to achieve the level of NOx gas therefore they didn't need to cool down the hot exhaust gas.

However, in diesel engine due to high compression, they needed a large amount of exhaust gas to recirculate (up to 20%) to achieve the same level of NOx gas emission.

You can't just recirculate such large amount of hot fiery exhaust gas straight into the inlet without causing many other issues and they needed to be cool the gas down to acceptable lower temperature.



The EGR gas cooler is a device which cools very hot fiery exhaust gas before they feed into the inlet manifold. The engine coolant is used to cool down the hot exhaust gas and this gas cooler will be corroded (burnt) as it encounters the fire daily.

It starts to leak engine coolant very slowly into the inlet at the fire front side section and the driver would not

know what is happening because the whole symptom is so insidiously slow and gives no indication unless you check the coolant level every day.

Then one day it will suddenly go into full blown coolant leak and by the time you realised that there is something is going wrong, it is usually too late.

A typical outcome is blown cylinder head gasket which is the indication of warped or cracked cylinder head block.

The EGR system generates un-burnt particulate (soot) and it clogs up inlet manifold and builds up plaque on the valve seat and wears out pistons and its walls down quickly.

The EGR gas cooler leakage is NOT limited just for a certain brand of car engines, it is a problem all over the world in every brand of the diesel engines.

“They die like flies! It is a ticking time bomb.” This is not an exaggerated statement at all.

They should incorporated using the hydrogen gas injection system instead of EGR system.

I believe VW developed Hydrogen gas injection system in the late 1970s, which is far superior than EGR system.

But traditional car people decided to use the conventional petrol EGR system on diesel despite knowing the huge problems. I don't think they care much because you are going to buy a new car every 4 years. If you buy a new diesel car, then you drive say over 30,000km then re-check the NOx gas emission again. You will find none of the new cars over 30,000km will pass the emission test. You will need a new engine. That is what is happening in Japan they encourage people to buy a new car if your cars are over 30,000km.

So if you are ever going to block EGR system, then make sure you also block or bypass the EGR gas cooler coolant hoses. Although EGR gas cooler might not leak once you have done EGR block because your EGR gas cooler no longer sees fire anymore. You may also get extra improvement of power and economy since you don't get interfering burnt gas to stop your engine fully breathing. Your engine will also run much smoother. The most important of all, NO Turbo lag! Acceleration is instant!

The EGR valve is open 95% of the time while the engine is running, the EGR valve closes when you are in full acceleration, but any hint of acceleration is achieved then it will quickly re-opening the EGR valve to let exhaust gas in even while you are still accelerating.

There was a myth amongst diesel enthusiasts that EGR valve is used for the turbo waste gate is completely un-founded idea. I personally spent 2 weeks to test that idea to discover it wasn't. Remember, your exhaust gas pressure is a lot higher than the inlet pressure!

The high pressure exhaust gas will be flooded into inlet manifold the moment the EGR valve is open. You can confirm by hissing noise every time you take your foot off the pedal. The hissing noise was NOT the turbo pressure is going out to exhaust side to vent off. It was the noise of exhaust gas is flooding into the inlet. The EGR gas pick up point is between the engine and before turbo charger, the highest exhaust gas pressure point.

Please note: Above article is my personal opinion only. I am not in any way encouraging people to disable EGR system to become illegal. You can do that in off-road, but not in the public road.

I will leave up to you to decide.

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