



## X-1R Global Ltd

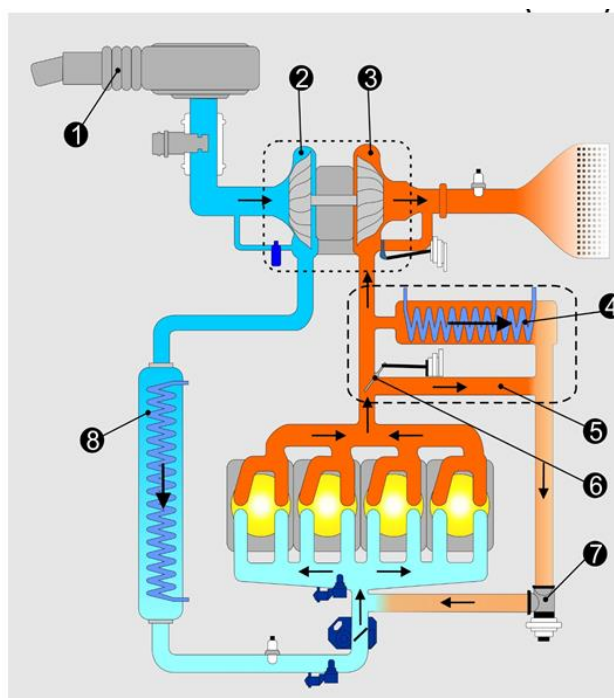
**To:** All X-1R distributors **From:** Nigel (Mac) McKenzie

**Cc:** **Date** 9<sup>th</sup> June 2022

**Subject:** Exhaust Gas Recirculation (EGR) and the benefits of using X1R  
Petrol/Diesel Decarboniser - Five in One

Recent feedback from Service Managers at Ford Dealerships has indicated that with the use of the new Petrol Decarboniser (Five in One Formulation) there has been a massive, in fact near total, drop off in vehicles needing to be repaired due to problems with the Exhaust Gas Recirculation (EGR) system fitted in the EcoBoost engines.

Exhaust Gas Recirculation is an emissions control technology, now pretty much mandatory across the world, that works by recirculating a portion of the exhaust gas back into the engine thus lowering the oxygen concentration resulting in a cleaner more efficient Euro V/VI compliant emissions, please see diagram below;



- |                          |                                    |
|--------------------------|------------------------------------|
| 1 Airfilter              | 5 Bypass channel                   |
| 2 Compressor wheel turbo | 6 Bypass valve (vacuum controlled) |
| 3 Turbine wheel turbo    | 7 EGR valve                        |
| 4 EGR cooler             | 8 Intercooler                      |

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This has come as no surprise to us and can be attributed to three features of our new formulated product.

1. The EGR valve opens when the level of pollutants in the exhaust rises above certain limits, particularly the NOx and Soot. We have specifically formulated our Five in One product to reduce the formation of these emissions and thus along with the detergents, friction modifiers and oxygenated solvents the EGR valve remains cleaner longer. Further the solvents will also remove any pre-existing sticky deposits from the valve allowing proper functioning of the valve.
2. In a number of cases the use of our additives has been associated with lowered combustion chamber temperatures, this in turn reduces the amount of NOx production and thus the EGR valve has less work to do.
3. We know that the blend of friction modifiers and detergents in the formulation of our additives will result in better drivability, and also an improvement in the fuel efficiency but what we do not talk about much is the ability of the combustion catalyst in our product to aid in the passive regeneration of the DPF the knock-on effect of which is to reduce the accumulation of soot on the EGR valve. The better the EGR and DPF function the longer the EGR valve lasts and thus the pesky light on the dashboard no longer comes on.

Ford do actively market the EcoBoost engines but they are only one of so very many companies that utilize this technology. The technology was introduced back in 1970 but became mandatory for all EU Engines in 1997 and for all US Engines in October 2002. Basically, it is an attempt to reduce the woeful record of diesel engines when it comes to pollution and move towards a global Ultra Low Emissions Vehicle (ULEV). A recent test carried out by Scania in Europe proved that with the use of our Five in One Formulation the Euro V and Euro VI emissions standards would be complied with. Increasingly you see the technology being used for Petrol Engines where it is the reduced fuel consumption that manufacturers are chasing.

As with so many of our claims we can say that with the use of our product we address a flaw in the fluids in the engine and thus help to attain an engineering goal.

Nigel McKenzie  
June 2022