

# Tuning Questions

Answers to various tuning related questions

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# Are your ECU Tunes safe?

With over 5 years tuning OEM ECUs for a wide range of vehicles but specifically focussing on the German marques that utilise Bosch and Continental control units. The EDC17 variants found in the VAG range have always been one of our favourites to work on with amazing results achieved.

Our tunes are all developed in house with a focus on data logging and understanding the ECU logic in order to achieve results that make competitive numbers and exceed OEM levels of drivability.

The idea that because this tune has not been perfectly tailored to your exact car and therefore is not good is essentially a marketing misconception which harks back to the days when cars were running on carbs. No, we do not tune cars to the absolute ragged edge with the off the category tunes, we are focussed on retaining the typical safety functions and set out by the manufacturer. Yes, we can push cars to the very edge of safe performance with our custom tune options based on logs provided and we can also cater for any level of build including hybrid turbo swaps and fuel pump swaps. But just as the cars all leave the factory running a set power level, we can apply our solutions to achieve an increase on that power.

The final output of the car is affected by several external factors in particular the DPF soot mass does have a direct effect on the torque output of the engine as does the EGT. Fuel temperatures, intake air temperatures and coolant temperatures all these things govern how much torque and therefore power the engine can make. This is why gains are always estimated within a range as the numbers achieved on a dyno at one time can vary (not to mention the variation between actual dynos)

**Our tunes do not descale or tamper with the EGT (exhaust gas temperature) scaling. The Stage 1 tunes do not affect or disable any of the emissions systems. The changes applied are calculated based on logic these are not any cheap quickly made files bought in each software version is carefully analysed with the changes applied to ensure consistency across versions.**

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Ready to purchase your tune? [Visit our online store!](#)

Curious about our emissions solutions? [See our guide here!](#)

# I have a question not covered here

We are happy to answer any questions you may have with regards to tuning, just drop us an email on [support@tdiflasher.com](mailto:support@tdiflasher.com) with the subject line "Tune Question".

# Emissions Tuning

## Are your emissions solutions legal?

The legality of emissions solutions will depend on your jurisdiction. We only offer these capabilities to be used in cars which are outside of the public road network and not required to undergo any emission testing. If a user is prosecuted for using the emissions solutions outside of our intended use TDI Flasher and all associated parties take no liability.

## Will my car pass an MOT/Inspection with the emission solutions applied?

The emissions solutions are designed for cars used in off road and race applications.

## Can I apply your emissions solutions over my existing tune?

If your ECU is already tuned using TDI Flasher will overwrite the existing tune. While this is completely safe to do it will leave you with only what you have selected in our app.

## I would like to add a tune and an emission fix?

To be able to write a tuned file and an emissions solution you need to have a “Stage 2” license. Once you select the stage 2 option you can then select the emissions solution(s) you wish to use.

## I want to use the DPF emission solution?

The DPF emission solution requires mechanical modifications to the exhaust system. **Failure to do so could result in catastrophic failure.**

If the appropriate mechanical work has been completed, you can simply flash the DPF solution or the Stage 2 tune with the DPF solution selected. This will disable the DPF functions in the ECU

stopping regenerations and removing any of the associated faults.

Please be aware of the road regulations of the country/region you are in.

# There is no tune available for my software version?

In the long run we will have files available for every software version offered on each ECU variant we support. But there are literally thousands of versions, so it is a very time consuming task to create them all. Whenever a version is identified that is not already covered, we are alerted and will have the tuned files ready for you within 24 hours.

If you need the file sooner, please feel free to contact us and we will make our best efforts for you.

# What is a DPF?

DPF stands for diesel particulate filter. It was introduced as part of the emissions regulations to improve the quality of our air and reduce pollution. As the name suggests it is a filter which sits within the exhaust system catching harmful diesel particles.

The car will periodically go through regeneration cycles where it in simple terms increases the exhaust gas temperature to burn off the particles trapped in the filter. The original logic being that this regeneration cycle would occur when the car is at higher speeds outside of the city. The reality is that this didn't reflect the true use of cars and so they have introduced passive regeneration in more modern DPF equipped vehicles that allow it to regenerate even at low loads.

The problem being that the DPF systems rely on lots of sensors and criteria in order to trigger a regeneration, if one of these sensors fail then the car will no longer burn out the contents of the filter and it will increase until the filter starts to become completely blocked affecting the performance of the car. To make a metaphor of it I would compare a clogged DPF to putting your finger over the end of a straw and trying to blow down it. This causes a build up of pressure which could cause the turbo to fail if not worse.

Fortunately, the manufacturers could see the potential failure points and integrated the safety and limp modes to prevent it getting to the worst point. In most cases a blocked DPF is likely caused by another failure in modern systems.

The DPF solutions will remove any faults associated with the system and will program the ECU to disable the system stopping any regeneration cycles. The DPF must be gutted or replaced with a straight through section, failure to do so may lead to catastrophic engine failure.

# What is an EGR?

EGR stands for exhaust gas recirculation, yes, the car takes “dirty” burnt air from the exhaust and recycles it in the combustion process. You can probably guess but the systems were introduced with the aim of improving the efficiency of the engine, in particular the EGR system reduces NOx.

Now traditionally I know that a lot of people believe that the EGR is negative for performance but that isn't entirely true it does have the positive affect of lowering combustion temperatures. In modern diesel cars it does also feature as part of the DPF regeneration logic, by reducing the amount of NOx the DPF must regenerate less often. An engine with the EGR disabled will have to regenerate more frequently which in turn has a negative impact on economy.

The downside is that because it is flowing dirty exhaust gasses the valves can suffer carbon buildup often leading to them jamming or reduced flow. This will result in the ECU detecting a fault with the EGR leaving you with restricted performance.

The EGR solutions will remove any faults associated with the system and will command the ECU to not expect to see any airflow from the system. We would always recommend that the EGR is blanked as if it has jammed open it will have a negative effect on drivability.



# What is AdBlue?

AdBlue was introduced in the newest diesel engines in order to comply with the latest emissions regulations. SCR is selective catalyst reduction which uses the injection of ammonia to neutralise NOx, it literally turns the particles to water, so it is pretty cool technology. It has been used in larger commercial vehicles for a lot longer than in normal production cars.

As we touched on with the EGR the AdBlue reduces the NOx even further helping to reduce the number of regenerations a car needs to keep the soot levels within the DPF at an acceptable level.

Unfortunately, when something new is introduced, it is often plagued by issues and the AdBlue systems certainly have their troubles. From the liquid crystalising to injector failures, faulty wiring and sometimes just a countdown with no diagnosable fault the issues can be complex and expensive to rectify. The issues are also not helped by a shortage of replacement parts leaving cars off the road unable to start.

And there we touched on it, once a fault is triggered within the AdBlue system a countdown will begin until you reach a no start condition. Much like the range on your car this number can decrease a lot faster than the distance it indicates. When you reach a no start condition there isn't anything wrong with your car (other than the system blocking the start).

Our AdBlue solutions allow you to get your car back on the road, save you having to top up the system again letting you drive the car without the worry of a countdown timer. This is achieved through disabling the SCR functions within the ECU and all associated fault codes.