

Where does the extra power come from?

Power comes from converting fuel, and burning fuel requires air. Factory tuning does not assume a completely efficient burn, and there is generally surplus air available in a turbo diesel engine for burning extra fuel.

Manufacturers' down-tune diesel engines to make sure they don't have lots of expensive warranty claims. They are also allowing for some wear in a high mileage engine, and for the limitations of the lower grades of fuel found in some parts of the world. Retuning takes up the slack in these basic assumptions.

Also, most modern diesel engines have a turbocharger, and one of the usual functions of these boxes is to raise the boost pressure, which increases the amount of air available for burning fuel. There are other tricks of the trade, but their use depends on the specific application.

What improvement can be achieved?

As little as 15% or as much as 80%! There is generally sufficient margin in a common-rail turbo diesel to make a 30% peak power improvement with no other changes to the engine. Less is achieved with mechanically controlled turbos, and some systems (such as EGR) can limit any absolute power increase.

However, it's not all about headline power figures (honest!). It is possible to make a much more enjoyable driving experience by changing how the power and torque are delivered. Modern cars are tuned for emissions legislation, and after-market tuners don't have to worry about such limitations in the same way.

Although the peak improvement figures may not be massive, there are often more impressive increases at other points in the dyno curve. An engine that gives peak power 500RPM lower in the rev range will feel very different to standard, and a wider, flatter torque curve makes for a much more drivable engine.

Does anything else need to be done to the car?

Not necessarily, unless the kit being supplied by the tuning company requires it. This equipment may be offered as a component of a staged kit, where stage one is just the Versatile Tuning Box, and stages two and above require changes to other parts of the car.

Tuning companies might offer turbo upgrades, larger intercoolers, uprated hoses, and many other possible companion products. The Versatile Tuning Box provides the tuning capability to make the most of these extras. Electronic options can be added to the box, such as power control, an over-boost button, or shift lights. However, simply fitting the box (using the appropriate wiring loom) will be enough to add significant performance to the engine.



Obviously it is important to make sure that all the other systems on the car (fuel system, filters, transmission, suspension, brakes, tyres, &ct) are up to the extra work that might be asked of them. You may also want to make sure that the engine management system does not have any fault code logged.

Why not just have my car chipped?

The choice is yours. However, chipping means that your ECU has to be altered to achieve the enhancement, which is probably going to require a visit to a tuning specialist.

Chipping is essentially a firmware upgrade to the ECU, which might be over-written by a dealer when your car is next serviced. It cannot be taken off your car when you finally sell it.

These external Versatile Tuning Boxes can be switched on and off, and retuned at any time by the supplying tuning company. This makes step-by-step engine upgrades much more cost-effective.

Extra features such as variable enhancement, over-boost buttons, shift lights, auxiliary fans or propane injection can be plugged into or associated with this technology.

What about the cheaper retuning boxes available?

If you look at the connectors on the wiring looms attached to these boxes, you will find that there are only two or three pins in and out, or they just connect to the injector plug. Once you have allowed for ground and/or power, this shows that they are generally only acting on one signal, or one type of signal.

Although these boxes do have some effect, they do not have the same functionality, or as good information about the engine and its requirements. Because of this, they cannot be fine-tuned to any great extent.

Some of the more crude boxes simply divide a signal down by a small percentage, which affects the signal at all times. This may have an adverse affect when the MOT test is due. The sophisticated method applied by Haslemere Tuning Ltd allows full 3D and 4D mapping of many of the retuning functions.

The dyno graphs for this product show how the power and torque curves are reshaped, not simply offset a little.

Will this box wear my engine out more quickly?

It will increase the maximum levels for some functions within the engine, which can increase the stresses and strains. However, if you think that your car is under-powered for the way you choose to drive it, you are probably already stressing it in some way already!

Retail FAQs



Haslemere Tuning Ltd has been developing this type of tuning box for many years, including one range of boxes commissioned by a major car manufacturer. They tested every variant of box thoroughly before allowing it to be sold through their dealer network, and fitting those boxes did not affect the comprehensive warranty on their cars. These specific boxes have not been approved by any vehicle manufacturer, but the principles of functionality remain the same.

How much extra strain these boxes will apply for any application will depend on the nature of the final tune applied by the tuning company distributing the boxes.

How will fuel consumption be affected?

It depends on how the box is tuned, and on how the car is driven. The power and torque characteristics of the engine will be changed, and it is possible to actually improve the fuel economy by using these altered characteristics.

But realistically, most people just use the extra power when it's there! Please note that fuel consumption and fuel range computers are likely to give optimistic readings because they are not away of any extra fuel that the box is adding.

The box can be turned off at the dashboard, if a switch or potentiometer is supplied as part of the kit. When turned off, the box has no effect on the original vehicle performance.

Will this affect my insurance policy?

Applying a Versatile Tuning Box makes a material change to the performance of your vehicle, and the insurance company will expect you to declare it as such.