

tunit diesel performance

SEAT LEON TDI FR 170

by Tunit

They may not have the largest share of the UK market (Ford outsells them by around two to one) but no other manufacturer covers a broader spectrum than the Volkswagen Audi Group.

Not only are the Group's marques aimed at specific target audiences, the Group also has at least one model in each market segment. Good old Skoda markets on 'value-for-money', Audi looks upmarket to compete with Mercedes and BMW, while Volkswagen covers almost all the bases – competing with just about everyone! And, providing the 'sporting saloon' interest, we have SEAT.

The sporty image was given a further polish in 2006, with the introduction of three new FR (Formula Racing) models: Ibiza FR; Altea FR; and Leon FR.

The Leon TDI FR, which hitherto had accounted for some 40 per cent of Leon sales, is the newest of the trio – launched last July in petrol and diesel guises – and at 170PS with 258 lb ft of torque, it's also the most powerful Leon diesel available. (The 240PS Leon Cupra is petrol-only.)

The basic independent suspension set-up (McPherson struts at the front, with bottom

wishbone and a multi-link rear axle) is the same as other Leon models, but the front springs have been made some 12 per cent firmer. The dampers have also been tuned, and the anti-roll bars are thicker.

The brakes, too, have been upgraded, with 312mm ventilated discs on the front, and 286mm solid discs on the rear (compared with 280mm and 255mm); they feature the latest-generation ABS. The FR also comes equipped with ESP – Electronic Stability Programme – including Emergency Brake Assist, Traction Control, and several other driver-aid functions. Externally, the FR can most easily be distinguished from its siblings by its distinctive bumpers. At the front, the larger bumper contains three imposing air intakes with a honeycomb grill. The rear bumper has a black finish at its base, reminiscent of the air diffusers fitted on the Leon Supercopa. Further clues are the twin polished stainless steel exhaust tailpipes, silver-painted door mirrors, and brand new, distinctive, 17-inch alloys;

18-inch alloys are a £350 option. And just to make sure, there's a discreet FR on the boot lid. Inside, modifications include a new-look dashboard with white instrumentation, a smart new steering wheel and gearlever, and FR logos on the sports seats.

The instruments are clear and easy to read, and another driver-friendly feature is the slightly-angled centre console.

Dual zone climate control is standard, as are an MP3 compatible CD player with 'AUX' input and eight speakers, cruise control, tyre pressure monitoring system, remote central locking with deadlocks, height and lumbar adjustment on both front seats, a height/reach adjustable steering wheel, and ISOFIX rear child seat mountings. And more.

Boot capacity with the asymmetric split/folding back seats up is a decent 341 litres. With seats folded flat, this expands to a sizeable 1,166 litres. Incidentally, in case you ever wondered, the luggage capacity of all vehicles is calculated using the internationally-accepted VDA method for measuring the volume of useable loadspace. It is a German standard defined by the Verbund die Automobil Industrie. The VDA figure is determined by filling the luggage space with blocks of volume of one litre, each measuring 200 x 100 x 50mm. The blocks are then counted to determine the cubic capacity of the



Tunit is among the foremost of Britain's diesel electronic tuning specialists. Full details of the Tunit range are at www.tunit.co.uk, or you can call and speak to one of Tunit's specialist technical advisers on **01257 274100**. This conversion, like most others, costs **£400 plus VAT** and is available direct from Tunit for DIY fitting, or can be fitted for you at one of Tunit's experienced nationwide network of distributors.



The FR 170 offers a high level spec as standard and boasts sporty looks...

“...after 12 months of development work, there’s a Tunit specifically for that engine...”

luggage space volume in litres, so 1,166 blocks equals 1,166 litres.

It’s a matter of how many standard sized blocks can be accommodated – they don’t stick in a pond-liner and fill it full of water!

The 2-litre TDI engine powering the Leon utilises a combination of Pumpe Düse injection and Piezo-electric injectors called Piezo Pump Nozzle diesel injection. This sophisticated unit will take the Leon FR to 62mph in 8.2 seconds and on to 135mph, yet returns a Combined figure of 47.1mpg.

Compared with the 140PS TDI on which it’s based, this new engine is the world’s first passenger car diesel to combine piezo injectors with unit injectors, and thus improve both power and efficiency. Using one of the piezo actuators to control the high-pressure valve of the unit injectors permits very high

injection pressure and, therefore, low emissions and optimum specific power. It also allows highly precise, low-volume pre-injection at low pressure levels, variable control to pre and post injection intervals, plus low injection noise.

Further technical features are two balancer shafts, which reduce secondary vibrations by up to 80 per cent, an exceptional maximum injection pressure of 2,200 bar – courtesy of the new Siemens system – and a maintenance-free diesel particle filter.

Realising that no other company was offering a Tunit-type performance enhancing product, Tunit MD Mike Bromley decided to look at the 170PS unit. Now, after some 12 months of development work, there’s a Tunit specifically for that engine – and it’s the only one currently on the market.

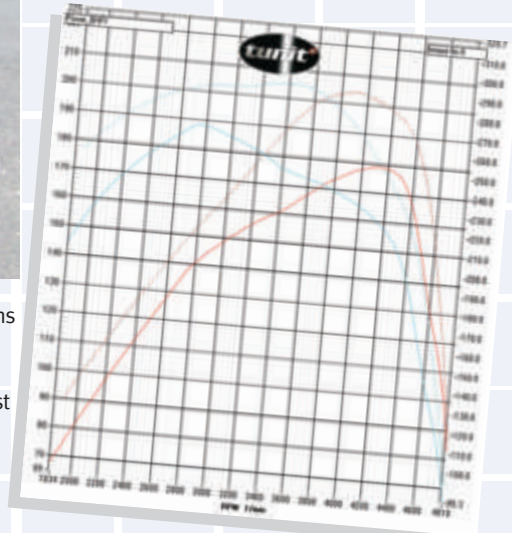
During development, the first thing Tunit noticed when a Leon FR on was put on a dynamometer was that torque peaked very sharply. A recording was made of 267 lb ft around 2,700rpm, as against the manufacturer’s quoted 258 at 1,800, but thereafter it fell away rapidly.

So, rather than simply aiming specifically for

greater torque, the Tunit team members set about producing a much broader power band. By using their laptop tune, they managed to boost the torque on that one particular engine to 291lb ft at 3,489rpm which, by Tunit standards, is a relatively modest increase. But they achieved their objective. Some 285 lb ft was available all the way from 2,600rpm to 3,600rpm.

The maximum torque obtained with the Tunit without the optional laptop tune, was 280lb ft, with bhp peaking at 195.

Breaking with normal routine, we drove the Leon first with the Tunit fitted, and were



THE SEAT LEON FR TDI 170 TUNIT CONVERSION, AND SIMILAR ONES FOR A WIDE RANGE OF DIESELS, COSTS £526, INC VAT AND POSTAGE. FULL DETAILS OF THE TUNIT RANGE AND UK NETWORK OF TUNIT DISTRIBUTORS ARE AVAILABLE BY CALLING 0845 8381405 OR VISITING WWW.TUNIT.COM.

impressed with its mid-range pulling power – and sharp handling, incidentally – on the usual cross-country test route. Only when the Tunit was removed did we appreciate the difference it had made. Acceleration from rest felt little different – a stopwatch would have been needed to split ‘before’ from ‘after’ – but it soon became clear that with the Tunit installed, there was no longer any need for constant gear changing when it came time to overtake. And with Tunit, there’s no need to worry either!



Driver-friendly touches include an adjustable steering wheel and seats.



Tunit boosts mid-range pulling power of the TDI engine.