



# Focus on fire...

Take an adequate Ford to Buckingham, says **Bob Cooke**, and you'll go home with a superb one

Even in a compact estate car, an output of 116bhp isn't going to set the road alight. But when it's being delivered by the 1.8-litre Endura DI turbodiesel under the bonnet of a Ford Focus, it's a figure worth talking about because it turns a good car into one that's extremely enjoyable to drive.

It took the Superchips team a mite longer than usual to reprogram the management chip running the Focus' ECU, Ford's computers being unique in design – notably the only other Ford in its current upgrade register is the 110bhp TDi Galaxy.

In the Focus the computer board sits in a strong alloy frame, and is hidden high up

in the driver's footwell rather than being tucked away under the bonnet. But it's the circuitry rather than the location that causes the problem. The electronics experts in the development laboratory are equipped to deal with all eventualities, however, so after a bout of probing the unfamiliar circuitry they were able to decipher the electronic brain's operating system and proceed with the reprogramming.

### Rolling forward

With their alterations to the fuelling map backed up by a proving session on the rolling road, a suitable replacement programme was developed giving a significant improvement in torque across the engine's entire rev range.

The improvement is particularly strong, to the tune of an extra 20 lb ft – that's nearly 14 per cent more – between 1,800rpm and 3,600rpm – resulting in vastly better mid-range flexibility.

### Clean getaway

At the top end power still falls off very quickly at around 4,700rpm, but the engine pulls strongly to that speed, and is still delivering an extra 10bhp at that point, with no sign of smoking clouding the exhaust. The graphic readout from the rolling road shows the improvement in power taking effect virtually from tickover, but it's a gentle change at first and doesn't become really noticeable until around

### 'The Superchips enhancement lifts the turbodiesel above the performance of its 1.8-litre petrol stablemate'



Above: Endura 1.8 DI turbodiesel has good tuning potential



Above: Alloy-cased ECU is not straightforward to read

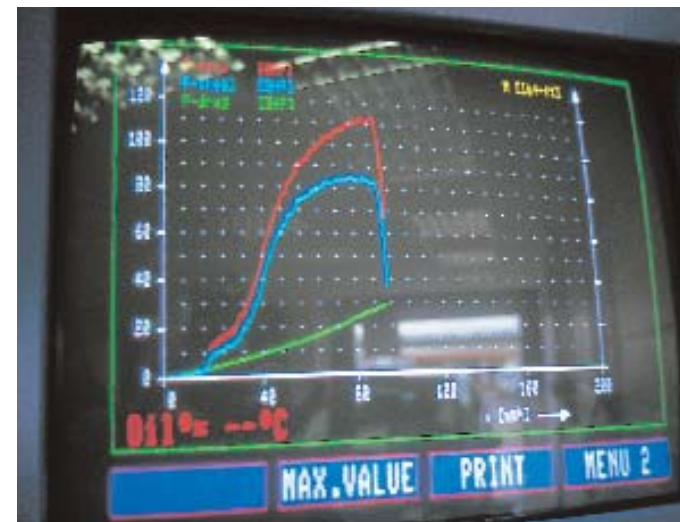


Above: But unfamiliar circuitry is eventually cracked

1,500rpm. This means that although there's much better pick-up thereafter than in the 90bhp standard engine, there's no earth-shattering feel to the Superchipped car's outright getaway acceleration. Even so, the 10.9 seconds we recorded for the 0-60mph dash is a noticeable improvement over the standard 13.1 seconds. Much more significant, however, are the in-gear acceleration times. With Superchips enhancement the Focus gets from 30mph to 50mph in a mere 6.5 seconds, compared with the relatively laborious 12.9 seconds it would normally take. Getting from 50mph to 70mph in fifth takes only 9.5 seconds, a gratifying improvement over the 13.7-second norm.

### Uplifting performance

The effect in general driving, however, is to take a lot of the drudgery out of living with the diesel version of this popular family car. The Ford diesel is a reasonably refined machine, but its moderate performance does call for patience when seeking an overtaking opportunity, and a fair amount of gearshifting to maintain speed on a hilly or winding road. The Superchips enhancement does more than overcome these problems – it lifts the turbodiesel above the performance level of its 1.8-litre petrol stablemate, which it will easily out-accelerate away from the lights and outpace in busy traffic.



Above: All aspects of the engine are closely monitored when the car is put through its paces on the rolling road

Perhaps the most desirable improvement is the ability to relax in high gear when cruising quietly through town or along a tortuous track. This was made particularly evident as we crept along a country lane searching for an appealing photographic location – tootling along in fifth at 30mph with no lumping or snatching, yet accelerating easily – even uphill – without requiring a downshift. The improvement in performance is not such as to take the Focus TDi into the boy racer class, so there's no need to worry about upgrading the brakes or suspension to cope with the extra power. It does, however, at least mean that you needn't

feel bashful about upgrading to a nice sporty set of wheels. A Superchips upgrade of this nature doesn't place the engine under any great additional strain, it merely takes up some of the slack the manufacturer tunes in to allow for poor maintenance or questionable fuel quality. The revised programme promises easier performance with no particular fuel consumption disadvantage. On the contrary, a sensible remapping that broadens low-speed torque encourages greater use of higher gearing, with the very real prospect of an overall improvement in economy. This is certainly true of the Focus application, the whole driving experience



becoming much more relaxed. With a Superchips upgrade costing around £500 fitted, it could make sense to enhance even a new Focus with this plug-in performance boost. It might take a couple of years to recoup the cost in fuel saved, but it will certainly give an immediate return in sheer driving pleasure.



Data in brief	
Model tested	Ford Focus TDi
Upgrade cost	£500 approx
Max power	123bhp
Max torque	212 lb ft
0-60mph	10.9secs
30-50mph (4th)	6.5secs
50-70mph (5th)	9.5secs
Fuel consumption	Not tested

