

tunit<sup>®</sup> diesel performance

# ALFA ROMEO BRERA 2.4

by Tunit



Has there ever been a more beautiful diesel? Stand wherever you like around it: the Giugiaro-designed, Pininfarina-built Alfa Romeo Brera looks absolutely stunning from every angle. Remarkably true, in fact, to the multi-award-winning coupe concept shown to universal acclaim at the 2002 Geneva Motor Show. It looks as if it's been carved rather than built.

Sharing an all-new platform with the Alfa 159, albeit with a 175mm shorter wheelbase, the chassis of the new Brera features high double wishbone front suspension with a new, sophisticated, multilink rear configuration. Alfa Romeo was first to market a common rail injection diesel engine with the launch of the 156 in 1997. Continuing the company's pre-eminence in diesel technology is the 2.4-litre, 5-cylinder, 20-valve powerplant. Maybe a word or two on Alfa Multijet technology is in order at this juncture – for those of you with a technical bent. With a Unijet engine, a 'pilot' injection raises the temperature and pressure inside the cylinder to improve combustion for the main stroke. However, by dividing the main injection into a number of smaller injections, a Multijet engine affords a fuller, more gradual combustion without

altering the amount of fuel used. So, the engine is smoother and quieter, performance is increased, and emissions reduced.

Multijet differs from Unijet in two fundamental areas: the injectors; and the electronic control unit. To facilitate multi-injection, the injectors on the Alfa engine achieve two things. They reduce the time lag between injections from 1500 to just 150 microseconds, and they reduce the minimum quantity of fuel injected from two to less than one cubic mm. At the same time, the control unit modulates injection 'strategy' continually to adjust changes within three parameters: engine rpm; torque required at any given time by the driver; and the ambient coolant temperatures.

Thus, when coolant temperature is less than 60 degrees and torque requirement low, two small and one large injection are delivered. As torque demand increases, the number of injections drops, and one small and one large are delivered. When the revs and demand for torque are high, only one injection is required, but with coolant temperature at over 60 degrees, emissions are minimised with one small, one

large, then another small injection in sequence. On the emissions control front, this unit incorporates a 'for life', maintenance-free particulate trap, in anticipation of Euro V emissions regulations.

Boost is provided by a KKK 2080 turbocharger with a variable geometry turbine that improves power delivery and also generates very high torque at low engine speeds.

For non-techies, this translates into 200bhp and 295lb ft at 2,000rpm, according to Alfa's published figures.

These proved to be pretty much spot on (not always the case with manufacturers' figures, as regular readers will know), though torque was found to peak at 3150rpm. That said, the curve is very steep, so there's still plenty of grunt lower down: 90 per cent of the 295lb ft of torque is available from just over 1,750rpm.

Helping the power on its way to the 17-inch alloys and low-profile rubber is an F40 6-speed manual gearbox, and the Brera 2.4 JTDM will hit 62mph in 8.1 seconds, yet still return a combined figure of 41.5mpg.

But Andy Edwards of Sedgley in the West



Sponsors of Diesel Car of the Year Awards 2006



Tunit technicians were able to tweak the Alfa above Ferrari F430 figures!

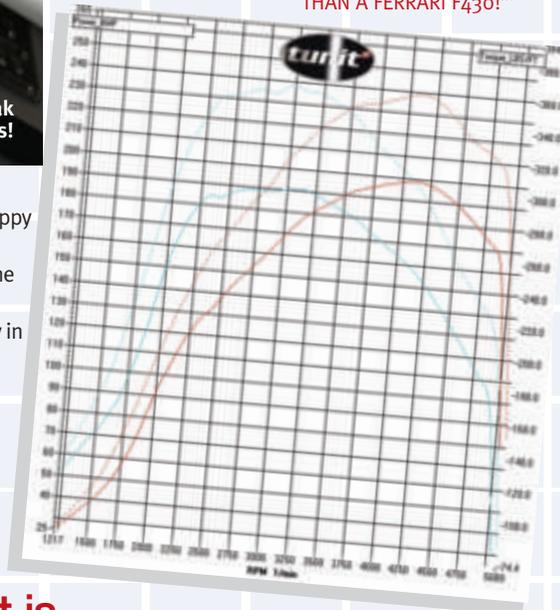
Midlands wasn't entirely happy with this. He bought his Brera last September. Satisfied with the performance, he reckoned he should be getting more than the low 40s mpg. (He'd always exceeded the published figures in his previous car, an Alfa 147 JTD, and was expecting the same of the Brera.) So he took his Brera to Tunit. Tunit make no claims in respect of economy – they're in the business of boosting performance, and any improvement in mpg is a bonus, a by-product of a more efficient engine. Still, his average rose to 44-45mpg. On the strength of that, he took the car to Tunit headquarters in Chorley for the full treatment: a laptop tune, and analysis on the dynamometer. For comparison purposes, the first job was to disconnect the Tunit and look at the 'factory' figures. These proved to be accurate: 198.8bhp and 295.6lb ft of torque at 3,150rpm. With Tunit re-connected, readings of 213.3bhp and 325.6lb ft at 2,600rpm were recorded. Then came the laptop tune. The bhp climbed again, to 240.1, and torque to a remarkable 351lb ft at 3,250rpm. After a little more tweaking, the Tunit technicians settled on 358lb ft at 2,900rpm which, incidentally, is more than a Ferrari F430. When we took the Brera out on our usual test route, Mr Edwards' reactions were immediately

highly favourable. He'd already said how happy he was with the original Tunit-enhanced performance, and he could hardly believe the additional gains. A couple of days later, a clearly delighted Mr Edwards had this to say in an email, (quoted verbatim):

**“I could accelerate up hills through all gears and feel pushed back into my seat – the extra power is fantastic. It is a total different car. Now it goes as well as it looks. I can't wait to get the K&N filter. The unit is one of the best investments I have ever made, the rolling road and laptop tune should really be part of the package, so people can see that they are getting the best from the Tunit. It was a great experience at the headquarters and the guys were really friendly and knowledgeable. In a word, BRILLIANT.”**

The Brera Tunit conversion, like similar upgrades for a wide range of diesels, costs £400 plus VAT. Full details of the Tunit range and Tunit's nationwide network of distributors are available from them on 0845 8381405 or at [www.tunit.com](http://www.tunit.com)

**“THE TUNIT TECHNICIANS SETTLED ON 358LB FT AT 2,900RPM WHICH, INCIDENTALLY, IS MORE THAN A FERRARI F430!”**



There's an awful lot in there!



Owner Andy Edwards does the 'hands on'

Tunit is among the foremost of Britain's diesel electronic tuning specialists. Full details of the Tunit range are at [www.tunit.co.uk](http://www.tunit.co.uk), or you can call and speak to one of their 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.

dieselperformance **tunit**