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GTI
SPECIAL
ISSUE



**MILLTEK/
MTM MK5 GTI** **268 BHP**
MTM-TUNED
2.0T FSI



TEST: GTI 6-speed manual version tested

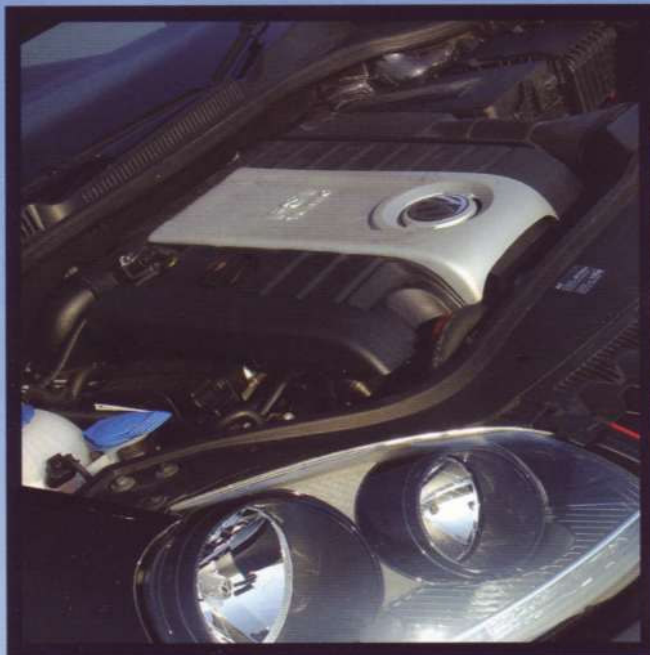


MK 1 GTI RESTO Classic GTI restoration



PROJECT GTI On road and track with our 1.8T

Modified cars: Milltek/MTM Mk 5 GTI



Milltek's Mk 5 GTI not only showcases its latest exhaust system, but also benefits from MTM's expert engine mods

Sound system





IT HASN'T taken long for the specialist Volkswagen and Audi tuners to turn their attentions to the new GTI. Despite its sheer competence – the performance, handling and ride quality all considered exceptional for a standard road car – there is always some way in which any car can be further improved.

In the early stages of modification, it's a fairly well-trodden path: custom wheels and tyres, tuned exhaust system and a software upgrade for the engine. And that's exactly the line of attack taken by Milltek Sport for its Mk 5 GTI demonstrator, one of the first in the country, purchased from Nottingham Volkswagen.

The exhaust system was no problem, because that's Milltek's speciality, as one of the country's premier stainless-steel sports exhaust manufacturers. In fact, this GTI was the prototype for development of a new system to add to Milltek's extensive range. With over half of the UK allocation of the GTI for the whole year already sold, and the certainty of a ready market just around the corner, Milltek made it a high priority to develop a system at the earliest opportunity.

One of the official sponsors of the Volkswagen Racing Cup, with many of the competitors using its systems, Milltek Sport benefits from over 20 years of experience in the field of exhaust

'IT'S NOT OFTEN THAT A ROAD-GOING MODEL CAN PERFORM SO COMPETENTLY OUT ON THE CIRCUIT...'

development, under the umbrella of Falcon Engineering, and is now known the world over as a market-leading brand name.

But there is a lot more to it than carefully targeted marketing. Milltek's systems are manufactured to a very high standard from type 304 aircraft-grade stainless steel, a high-quality material which is not as likely to discolour as some other stainless steel systems. Carefully formed by mandrel bending, rather than being sectioned and welded together, the systems also have a larger bore size, improving gas flow at high speeds and enhancing mid-range torque.

Although there is invariably some improvement in outright performance, Milltek doesn't labour the point. It prefers instead to promote the product in terms of enhanced throttle response, driveability and a moderate, rather than rorty, exhaust note. It is, if you like, the thinking man's sports exhaust system, especially suited to the more mature market of owners with modern high-quality machinery. Milltek certainly doesn't

associate itself with the mega-decibel drainpipe exhaust image more popular among low-budget buyers.

Watching a Milltek system being designed and built is quite fascinating. With the standard system removed, a 'model' is made up in situ by welding lengths of pipe together and routing them carefully around the underbody. With the basic shape established, the welded pattern piece is traced off on a 3D computerised jig. This measures the exact angles and lengths and transfers the dimensions to automatic pipe-bending machinery. The resulting piece is almost invariably a perfect fit.

For the new GTI, Milltek has developed three different installations. First, there is a simple replacement for the rear silencer, made from 70 mm pipework and supplied with an adapter to mate it up with the original centre section. The more extensive cat-back system, which uses a 70 mm diameter intermediate pipe, attaches to the original downpipe and catalytic converter using a sleeved adapter.



But, for optimum performance, Milltek manufactures a full turbo-back system, also using 70 mm tubing but bolting directly to the turbo and incorporating a free-flowing HJS 200-cell metallic catalyst. Where the original catalytic converter typically has a matrix with 400 or 600 cells per square inch (cpsi), with an open area of around 55-65 per cent, the Milltek sports cat has only 200 cpsi and an open area of around 75-85 per cent. This reduces back pressure and

improves exhaust flow. The sports cat retains the original lambda probe, while legal emission levels are maintained by careful selection of the volume of the metallic substrate. To prevent booming, the turbo-back system has a silencer fitted in the rear intermediate pipe.

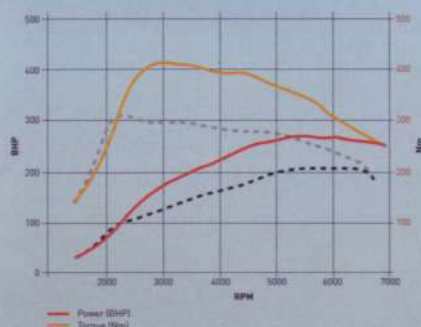
For all the improvement in the exhaust system, Milltek's Phil Millington knew that the power output could benefit much more from a software upgrade. He also knew that re-mapping the engine control

unit of the new GTI is territory which has successfully been explored by only a few.

One of Milltek's regular contacts in the UK is QST, the specialist Audi tuning company based in West Sussex and fronted by Kim Collins. Kim established his reputation many years ago tuning and modifying Ur-quattros and has now extended his repertoire to include everything Audi, from TT and S3 to RS4 and RS6, as well as the occasional VW. In addition to providing a wide range of high-quality parts and services, QST is also the sole British outlet for the famed German tuning house Motoren-Technik-Mayer (MTM).

Founded in 1990 by ex-Audi engineer Roland Mayer, one of the design team which worked on the Ur-quattro, MTM has developed a wide range of software upgrades for Volkswagens and Audis. With the benefit of its sophisticated dynamometer installation, MTM has earned a reputation for re-maps which produce very healthy power increases while retaining maximum reliability and tractability.

Measured on QST's Maha rolling road, the MTM re-chip in conjunction with the Milltek turbo-back exhaust and sports cat has increased the power output to 268 bhp at 5530 rpm. Maximum torque is now 412 Nm (304 lb.ft) at 2940 rpm, with its broad curve even more refined than that of the original engine. The standard GTI is already noteworthy for



'THE MTM RE-CHIP IN CONJUNCTION WITH THE MILLTEK TURBO-BACK EXHAUST AND SPORTS CAT HAS INCREASED THE POWER OUTPUT TO 268 BHP AT 5530 RPM'





'THE MILLTEK GTI PERFORMS MUCH MORE POWERFULLY, WITH AN EVEN GREATER SENSE OF URGENCY'

its linear power curve and wide torque band, and the MTM re-map does nothing but smooth these curves even more and lift them to even greater heights. Excellent value, too, considering that the cost includes fitting and a dyno test.

The result is that the Milltek GTI performs much more powerfully, reacting to the throttle with an even greater sense of urgency, but without any hint of temperament or peakiness. If anything, it is even more refined and tractable, although it now comes with a noticeable whistle on full throttle to show that the turbo is boosting much higher and force-feeding the FSI engine with a greater charge.

We only enjoyed a brief excursion behind the wheel, but the Milltek GTI instantly impressed with its sheer eagerness, revving even more powerfully and willingly towards the redline. But it had lost none of its refinement, still remaining smooth and tractable, rather than becoming abrupt and peaky like some ECU conversions we've tested in the past.

Although no brake or suspension modifications have been carried out, the MTM-modified GTI also performed well at the recent track day at Croft, where Milltek's Dave Marshall and professional track day instructor Phil Smith treated customers to a thrilling ride. It's not often that a road-going model can perform so competently, holding its own

against the lightweight track cars also out on the circuit that day. Especially considering that the only other non-standard parts on the Milltek car are the 8J x 19-inch BBS alloys, shod with 225/35 -19 Pirelli P Zero Nero road tyres.

QST offers various other upgrades, including 20 mm wheel spacers, an Eibach suspension kit comprising 30 mm lowering springs, and a Porsche/Mov'it 4-pot brake kit with 322mm x 32mm front discs. Undoubtedly, the range of tuning conversions for the Mk 5 GTI will improve as time goes on, with increasing power outputs and a wider range of suspension and brake upgrades. It's highly likely, though, that the majority of modified Mk 5 GTIs will feature Milltek Sport exhaust systems. 🇩🇪



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