

News Triumph Tiger turbo diesel

Diesel Triumph does 100mph

PART ONE

- First ride on uber-frugal Triumph special
- Powered by three-cylinder diesel turbo from Smart car
- You can buy one for £9450

By Peter Henshaw

The ability to do 100mph and 100mpg sounds like the perfect bike as fuel approaches £6 a gallon, especially with a potential range of 500 miles. This bike does all of that, but there's just one thing – it's a diesel.

Built by Belfast software engineer Neil Laughlin, it's a mixture of Triumph Tiger chassis and Smart car diesel engine, plus a Harley clutch and gearbox. It took Laughlin 4000 man hours to complete over three years of single-minded effort. But that's not all. Having built the bike, Neil, along with wife Helen on her F650GS, rode it to Nepal to prove the whole concept. The Tiger turbo diesel has covered 19,000 miles, works well and you can buy one just like it.

Riding the Tiger

A first ride on the turbo diesel Triumph starts with a shock. Nothing prepares you for the diesel rattle at idle, from a bike that at a glance, looks completely standard. The good news is that as the revs rise, the diesel rattle fades away and the three-cylinder genes take over – in fact, from mid-range upwards it begins to remind me of a Hinckley triple.

An all-up weight of nearly 250kg with 45bhp doesn't sound like a recipe for neck-snapping acceleration, and it isn't. But the Tiger diesel's secret weapon is 70ftlb of torque – about the same as the old R1150GS – produced from low revs and available on a nice flat curve right through the range. Wind open the twistgrip at 40mph in the high fifth gear, and not much seems to happen, though look down at the speedo and you find



Tiger uses a three-cylinder Smart car diesel engine

In town it's a pussycat – the diesel motor is flexible enough to pull from 25mph in fifth gear

PETER HENSHAW

that the Tiger is gathering speed quicker than you might think.

Change down to third or fourth and acceleration is rapid, certainly quick enough to cope with plenty of overtaking two-up with luggage. If you insist, the Smart engine will rev up to about

5000rpm, when a soft action rev limiter cuts in, but really there's no need.

There isn't a lot of motorway in Northern Ireland where MCN tested the bike, but we found enough to prove the Tiger will sit at an indicated 80-90mph, relaxed and well within its limits. If anything jars the m-way cruise, it's vibration. The Smart diesel puts out more vibes than Hinckley's petrol engine – the mirrors blur (though you can still see what's going on behind you) and tingles come through the tank, seat and pegs above 80mph.

Customer bikes will have Harley's six-speed overdrive box, which will improve things and the vibes aren't really a problem at lower speeds in any case.

Through town, it's a pussycat, as the motor is flexible enough to pull from less than 20mph in third gear, and 25mph in



fifth. The Harley change on this five-speed box is long-travel and clunky, though the six-speed should be better. And as with any bike that weighs close to a quarter of a tonne and has a high seat, it's not easy to manage at parking speeds, especially for those with short legs.

Otherwise, it's all standard Triumph Tiger stuff, which means a very comfy,

loping ride from the long travel suspension. It handled well on a twisty A-road, just like the original, and I would have been hard pushed to tell the difference.

The standard Smart engine sump limits ground clearance on the right, but customer bikes will have a shallower sump that gets around the problem. As for

THE OTHER DIESEL MOTORCYCLE

The Tiger turbodiesel isn't the only Smart-powered motorcycle available. The Dutch-built Track T-800 CDI uses the same engine, but mated to a CVT transmission and shaft-drive.

Aimed squarely at riders who would otherwise be looking at a top-spec BMW GS, it is made from all-new parts, with its own frame and bodywork.

To suit the overlander market, accessories include big aluminium panniers, knobby tyres and a bashplate, but it should be equally well suited to Tarmac touring.

Performance/economy claims are quite similar to the Tiger, at about 100mph, plus 77-127mpg.

Production started earlier this year, and you can't yet buy it officially in the UK, though one or two have come in as personal imports. Standard price in Holland is €18,750 – about £16,300.

Contact: www.motorfiets.nl



The Track uses same engine as diesel Tiger but has CVT and shaft drive



Pulling up at the diesel pump at filling stations can cause comment

BUILT FOR TRIP TO OZ

The diesel Tiger was built by Neil Laughlin, 32, a software engineer, from Carrickfergus, Northern Ireland. "My friends thought I was mad, trying to do this," he said. "But I've ridden bikes for a long time, always had an interest in diesel cars, and was thinking about riding overland to Australia, so it seemed like a good idea."

But Neil's biggest bike job had been stripping and repainting a little DR350. "I had to learn how to weld and use a lathe, and all about engine electronics. It's been a pretty steep learning curve!" he said.

But with the help of friend Jonny McMillan, he did it all, and last September set off for Nepal on the diesel. Read about their trip in next week's MCN.

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stylish naked R1200R
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and 100mpg



The turbo diesel Tiger
handles well – much
like the original

HOW TO BUY ONE

Anyone can buy a Tiger turbo diesel, and the first customer bike is under construction now. For £9450, buyers will have a ready-to-ride bike, based on a secondhand Tiger and Smart engine, plus new Harley six-speed gearbox and primary drive. It sounds like a lot of money for a mostly secondhand bike, but you will get a unique balance of performance and economy offered by no other bike at the price.

brakes, this is a 1990s bike, so those need a good squeeze, but they're still powerful enough to cope with the weight.

As for those stratospheric mpg claims, I didn't get a chance to test them. But they're probably not fantasy figures – the current Smart diesel car does 85.6mpg and it weighs four times as much as the Tiger.



Neil Laughlin built the bike for an overland trip to Australia

THE FACTS

TRIUMPH TIGER TURBO DIESEL

Price	£9450*
Engine type	Three-cylinder, common-rail, direct-injection, turbo diesel
Bore x stroke	65.5 x 79mm
Capacity	799cc
Compression ratio	18:1
Power	45bhp
Torque	73ftlb
Gearbox	Harley-Davidson six-speed
Primary drive	Harley-Davidson belt
Final drive	Chain
Top speed (claimed)	100mph
Fuel consumption (claimed)	100-120mpg
Range	500 miles
Weight (claimed)	245kg
Contact:	www.suckindiesel.com
*£11,450 with new Smart diesel engine	

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At a glance, would you
guess this was a
non-standard Triumph?



Smart engine, Harley gears... DIY diesel Tiger

The first problem was which engine to use. The bike's builder Neil Laughlin wanted a top speed of 100mph, which meant using a car engine, rather than the industrial motor used by most diesel bike conversions. The VW Polo TDI and Daihatsu Charade diesels were considered, but rejected as too heavy and bulky.

The only real candidate was the Smart car diesel, an 800cc turbocharged triple, which puts out a mild-mannered 45bhp but over 70ftlb of torque. Just as important, at 65kg it's a relative lightweight by diesel standards – the Triumph Tiger engine and gearbox tip the scales at 80kg. Add a beefy Harley gearbox and primary drive, and the Tiger turbo diesel weighs 245kg, or about 30kg more than a petrol one.

Other components virtually chose themselves. The Smart semi-automatic gearbox would have been too big, and Neil didn't want to use a scooter-style CVT (as used by the Track T-800 CDI – see box).

“I wanted to retain as much of the original Tiger as possible so it would be reliable and easy to service

NEIL LAUGHLIN

That meant a separate gearbox, and Harley's was the obvious choice – a bit heavy, but easily strong enough to take the Smart's torque – complemented by an H-D belt primary drive. The Tiger's chain final drive stayed where it was. "I wanted to keep as much as possible as standard," said Neil, "so it would be reliable and easy to service."

Original plans to make a one-off frame were ditched when he discovered a German guy named Heiko Fleck, who had fitted a Lombardini

three-cylinder diesel engine into a late 1990s Triumph Tiger. Germans, it turns out, are keen on diesel bikes, fitting the Smart engine to all sorts of home-made specials – someone's even built a turbo diesel Speed Triple. Heiko's Triumph proved that a compact three-cylinder diesel would fit the Tiger well.

A non-running 1996 Tiger with broken camchain was bought on the internet, and Neil recruited friend Jonny McMillan to help put the bike together. A year later, it was out on the road, and Neil began piling on the miles before his planned overland trip. "I rode it everywhere, as much as I could – trips into the country, commuting to Belfast," said Neil. "I did about 5000 miles in five months."

The only problem was when the gearbox sprocket came loose and allowed the gearbox to seize.

The cause has been cured, but at £1000 for a new box, it was an expensive part of the development process.



A mini-turbo gives the
diesel triple its grunt



Boost gauge is a giveaway that
this is no ordinary Triumph Tiger



The Harley belt primary drive is
hidden by this large cover