

Engine Guide

M52

It's probably a safe bet to say that the M52 is where many of us BMW owners got our first hit of six-pot Bimmer action. But where did the silky smooth straight-six originate? And what steps are there that you can take to improve its performance? In this new section we'll be focusing on one of BMW's many excellent engines each month, providing you with the kind of knowledge that could come in handy for your project.

History

The M52 engine was born from its predecessor, the M50. The M50 was an iron-block straight-six, 24-valve engine which was available as a 2.0-litre or a 2.5-litre and appeared in late E34s, as well as perhaps most notably, the E36 325i. The 325i was superseded in 1994 – in fact, BMW released two new models in place of the one. Thanks to the M52, the 323i and 328i were born and the 320i was given the new powerplant, too.

The new M52 was based closely on the M50, with perhaps the biggest change being that the block and head were now made from aluminium alloy, reducing the engine weight by around 30kg. However, the lightweight alloy wasn't the only new material used – to ensure longevity BMW used an advanced material called Nikasil for the liners. This was to be the M52's biggest downfall – the high sulphur fuels in some markets ate into the material causing huge amounts of premature wear. However, this was recognised by BMW and so engines were replaced at dealerships. Cars built from March 1998 were fitted with steel liners, meaning the problem was eradicated.

The alloy blocks never made it to North America – sulphur in the fuel was a known problem (whereas it was not predicted for Europe), and so blocks were iron, much like the M50, and did not use Nikasil liners at all.

1999 saw the arrival of the M52TU, or 'Technical Update'. With it came dual-VANOS, a new intake manifold, fly-by-wire throttle and also, the crank trigger wheel for the ECU was moved to the back of the block rather than the front. Confusingly, the E36 was never fitted with the TU engine – instead, 1999 cars effectively had a TU bottom end with a non-TU head – so they had single VANOS and a throttle cable like all other E36 six-pots, yet had the crank trigger wheel at the back of the block.

The M52 disappeared altogether between 2000 and 2002 (model dependant) to be replaced by the M54, which was the next evolution of the M50 family of engines.

