

*Smooth and powerful...*

**5 Series on 4 cylinders**

by Joe Sage



There is one great big piece of news in this new BMW 5 Series, and that is its small engine: a 2.0-liter twin-scroll turbo inline-4 that was even big news when installed in the little Z4 roadster (see our March/April 2012 issue).

The new 2.0-liter TwinPower Turbo four-banger was engineered specifically to replace a number of six-cylinder implementations in an increasingly fuel-frugal world. The powerful little powerplant includes high-pressure direct injection and BMW's Valvetronic intake control with a forced induction system comprising a single twin-scroll turbocharger.

Direct injection and Valvetronic equal "TwinPower," but also allows BMW to expand use of that term to some earlier engines without twin-scroll turbo (such as the non-twin-scroll 3.0-liter inline-6 turbo). Our 528i, however, does feature the brand new twin-scroll turbo.

The new 4-cylinder economizes many ways. It's smaller than the old six, and its all-aluminum crankcase saves weight. At 240 hp and 260 lb-ft, the new turbo offers more power and torque than did the normally-aspirated 3.0-liter inline-6 in the prior 2011 BMW 528i. Max horsepower comes at 5000 rpm, which is a full 1500 rpm lower than its predecessor, and peak torque arrives at just 1250 rpm. It's a potent formula you can actually feel.

Twin-scroll turbo works like this: two exhaust streams coming from two pairs of cylinders stay completely separate through the exhaust manifold and into the turbocharger, where they take a spiral path to the turbine wheel. This is engineered to produce very low exhaust back pressure at low engine rpm, for powerful rotation of the turbine blades, without delayed throttle response.

Valvetronic eliminates a conventional throttle valve system, adding variable intake valve lift control, so the combustion air mass is controlled inside the engine, for much faster response and higher efficiency. Power is run through BMW's newest 8-speed automatic transmission.

Bottom line? More power on less fuel. The 2012 528i runs 0-to-60 in 6.2 seconds (0.4 seconds quicker than the old six), while delivering 15 percent better fuel mileage: 23 MPG city, 34 highway, 27 combined.

Put all that together, and what's missing? Well, nothing. A number of vehicles are topping 40 MPG by now, but just a year ago, 30 MPG was big news. But those are vehicles with economy writ large throughout. Here, you're getting 34 MPG in a big, plush German luxury sedan. Anybody who thinks fuel mileage requirements are a recipe for compromise has not paused to see some of what is being delivered.

*five series, four cylinders, our seven days*

All this comes in a package with a very reasonable base price of \$46,700. The base vehicle is well equipped, with ABS, stability control, traction control, several start-off and brake tech features, auto-leveling xenon headlamps, rain-sensing wipers, two-way moonroof, full-featured audio and telecom, plus a full complement of airbags and other safety features.

Our test model was highly equipped, but still didn't break the bank. Included were a premium package (power tailgate, park distance control and universal garage door opener) for \$2250—a package we could take or leave; a sport package combining style and function (Dynamic Damper Control and 18-inch alloy wheels,

This is BMW country; here all in one place are a black 530i, 535i and 550i. Door grabs are an odd mismatch as in the 6 Series. SSR run-flat tires are there for a reason, but not without repercussions.

supplemented by upgraded seats, steering wheel and some interior and exterior trim) for \$3600; a tech package of nav and rear camera for \$1850; sport transmission for \$500 extra; and keyless entry for an overpriced \$1000 (it's included by now in many cars at half the price or less). Total with delivery was \$57,275.

We picked this car up at the airport, after a long transcontinental day, thinking of little more for our first miles than getting home. We remembered that we had not been particularly overwhelmed by power from this same new little engine in the Z4 roadster, not long before. Would it be able to cart around a big sedan? From the first mile, our logbook noted that power was just fine. Was it a matter of expectations, high for the Z4 and now lower for the 5 Series? Or was it a matter of having come to the Z4 from a V8 6 Series, but to this 5 Series from a small-bore rental car and an uncomfortable airline seat? No matter. Within a few more miles, we had noted a very comfortable and easy freeway drive, noting, in fact, that it felt like a big 7 Series. This same line of thought repeated in our notes throughout the week. The new 528i was all smooth sailing.

The new 5 Series comes with Auto Start Stop function, the same thing that has been saving gas in a Chevy Malibu for almost five years. Come to a stop light, and the engine shuts down. Hit the pedal, and it fires back up. Is it seamless? Not quite. You can shut it off, but we mastered the art of just barely letting pressure off the brake pedal, as though we were about to go for the gas, and the engine would restart in time to not have lag when the real time came, nanoseconds later.

We did note sub-ideal handling in some cases, such as a bit of wandering in a freeway lane. The car almost had a light feel of front-drive torque with a dash of electric steering, although it is of course a rear-driver. We attribute this to something BMW is doing now, that has generated a bit of a reaction from many: the tires are all run-flats, avoiding the weight of a spare tire. Why carry a spare? After all, how often does anyone get a flat anymore? Conversely, though, why therefore compromise ride feel and handling at all times, on the off chance you could have a flat? Continental is a great brand, so we can't pick on their SSR (self-supporting run-flat) tire implementation, per se. But we would still prefer to undo that decision, one way or another.

We were enchanted by many details—well-executed cornering lamps, for example—bemused by others—asymmetrical door grab designs, for example, as on the 6 Series, but not the same as the 6 Series—and annoyed by the usual few details, such as the finer points of the shift lever and parking brake controls. We don't like waiting for the power trunk and would therefore not pay \$2250 to have it.

Ultimately, the enchanting details (and big picture) surely win the day. The ability of the new 4-cylinder twin-scroll turbo to unflappably handle the mission of a 5 Series is remarkable. This medium-large BMW takes a big step into the future by introducing a landmark change that you ultimately barely notice. ■

