

Old School BMW Maintenance Schedule

BMW's Free Scheduled Maintenance program means that BMW will perform scheduled maintenance free of charge during the BMW New Vehicle Limited Warranty period.

Prior to the advent of BMW Free Scheduled Maintenance, approximate BMW maintenance recommendations were: automatic transmission fluid (ATF) and filter changes every 15,000 miles, manual gearbox and differential oil changes every 30,000 miles, annual brake fluid changes, and coolant changes every two years. Spark plugs, air filter, and fuel filters were typically replaced every 30,000 miles on most BMWs (this is a tune-up) except M cars up to 1995, which got new spark plugs and a valve adjustment every 15,000. Later advances in computer engine management and spark plug technology legitimately allow 60,000-mile spark plug life if not more.

Prior to Free Scheduled Maintenance, you couldn't change engine oil often enough according to most dealerships. And when the car was in the shop it would often be due for this service or that inspection, all at the owner's expense.

But once BMW began paying for scheduled maintenance, lo and behold the "schedule" was revised. Now the cars hardly need any maintenance at all. The 1,200-mile break-in service was done away with except for M cars. Engine oil suddenly lasts 15,000 miles (dealers are supposed to use BMW synthetic oil). Manual gearbox and differential oil? No worries there – now BMW says they NEVER need to be changed; it's "lifetime fill." Brake fluid and coolant service intervals were doubled with no change in the original BMW brake fluid and anti-freeze dealers are supposed to use.

So, is Free Scheduled Maintenance all about marketing and cost reduction – BMW's costs? Draw your own conclusions. There is no doubt that many buyers correctly view BMWs as "high maintenance" cars. Nothing can address that more effectively than Free Scheduled Maintenance. But the operative word in the name is "scheduled." In my opinion, extended service intervals and "lifetime fill" came very close on the heels of Free Scheduled Maintenance.

This is an alternative to BMW's factory-recommended maintenance schedule. It is not, "Mike Miller's maintenance schedule." It is actually BMW's maintenance schedule, more or less, which was used prior to Free Scheduled Maintenance. It also represents my opinion, based upon my experience and that of my readers, tech advisors, and professional BMW technicians both dealer and independent. I have prepared it because of the large number of readers asking for this information. The fact that my opinions may differ from those of others does not mean anyone is necessarily right or wrong. You will get a different answer from every person you ask about routine vehicle maintenance.

You should also know that in my work I have observed one common reason for BMW drivability problems in contemporary cars with over 100,000 miles is that they need a tune up – spark plugs, air filter, and fuel filter.

Break-in Service for New Cars

Traditionally, BMW performed a break-in service at 1,200 miles on new cars, which included changing the engine oil and filter, manual gearbox oil or automatic transmission fluid, and differential oil. With the advent of Free Scheduled Maintenance, BMW stopped performing break-in services except on M cars.

I have seen that the engine and driveline oils in new modern BMWs are literally full of metal at 1,200 miles – as has always been the case with any new car. For this reason, I recommend a 1,200-mile break-in service.

As for break-in technique, my best advice is to maintain the car pursuant to break-in the engine over an extended road trip comprised of as much mountainous terrain as possible, for as long as possible up to 1,200 miles, and keep the rpms within the limits BMW recommends.

Engine

Oil and Filter Intervals

BMW recommends their Castrol 5W-30 synthetic motor oil in all BMWs except contemporary M cars, for which they recommend their Castrol 10W-60 synthetic motor oil. The factory oil change interval is controlled electronically, but is presently about every 15,000 miles. If you are running BMW's oil, I recommend an oil and filter change interval between 5,000 and 7,500 miles.

I use Red Line synthetic oil (www.redlineoil.com) in 5W-30, 10W-40, 15W-50, or 20W-50, depending on factory recommendation, ambient temperatures, and severity of service (track use, sustained high rpm use), with a drain interval – 7,500 to 15,000 miles depending on engine and severity of service. Under racing or track conditions I'd use a short interval; same for carbureted engines which tend to get some fuel into the oil. I would run the same intervals with very high end “designer synthetics” such as Agip, Amsoil, Lubrication Engineers Monolec Ultra, Lubro Moly Vol-synthese, or Motul.

All other commercially available synthetic oils, 5,000-7,500-mile drain intervals.

BMW's High Performance Synthetic 5W-30 and their Motorsport 10W-60 can go 7,500 miles.

Old fashioned petroleum oil, same viscosities, 3,000-to-5,000 mile drain intervals (I prefer Kendall)

The following information is courtesy of Motorwatch.com:

“Redline is Group V (polyol ester) based (POE or esters).

“Amsoil and Mobil-1 are Group IV (poly-alpha olefin) based (PAO or synthesized hydrocarbons SHC).

“Castrol Syntec and all the others calling themselves synthetic are Group III (hydrocracked slack wax).

“The petroleum motor oils are all mineral oil based and make up Group II.

”We really should group Red Line by itself, and put the others in separate categories (according to the groups) because their performance is so different.

“See motorwatch>AutoMotiveBible>Oil Change Intervals>oil classifications
<http://www.motorwatch.com/images/oilclassifications.jpg>

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Original BMW filters are recommended for price and quality, or MANN, Mahle, Bosch, or Knecht filters

Spark Plugs

There is no reason to deviate from the factory-recommended Bosch or NGK spark plug specification, changed at 30,000-to-60,000-mile intervals, depending upon the car and severity of service. Basically, any BMW produced after 1993 can easily run 60,000 miles on a set of spark plugs.

The factory also has part numbers and applications for “100,000-mile spark plugs.” These are good too, and are capable of 100,000 miles of service assuming no other problems, which might cause them to foul during that time. However, in engines with spark plugs recessed into the middle of the cylinder head, oil can leak into the spark plug recesses past the valve cover gaskets. This is a hidden leak if the plugs are left in service for an extended period of time, because no one looks in there until they’re changing the plugs or chasing a problem. An oil leak in the spark plug recesses, left to fester, can cause ignition coil failure and even ECU failure. So, even if you want to leave the plugs in service, you should at least check the spark plug recesses for signs of oil leakage at least every 60,000 miles. And at the point you’re in there, you might as well replace the plugs. This is the issue with 100,000-mile plugs.

Moreover, while you may not have any problems running spark plugs for 100,000 miles in some BMWs, this does not mean the plugs will not be worn, or that that wear is not affecting engine performance. In other words, for optimum engine performance, most BMWs want spark plugs about every 60,000 miles.

Note that older M cars except the US specification S50/S52 powered E36 variants want plugs about every 15,000 miles.

Stay away from platinum plugs in BMWs. These don't last as long as the regular Bosch copper or silver plugs and NGK plus, and have been known to fail in other ways. The regular old Bosch Platinum single electrode plug is, however, a very good choice for cars *OTHER THAN* BMWs.

Air Filter

Stock paper element, check every 15,000 miles, tap out dirt, replace if necessary, standard interval 30,000 miles, use Original BMW filters or aftermarket filters such as Knecht, MANN, Mahle, or Bosch

K&N oiled cotton gauze filters, clean every 15,000 to 30,000 miles depending on condition, use only K&N approved cleaner and oil, and follow K&N cleaning procedures

Interior Air Filter

On cars so equipped, the interior air filter service life really depends on where you drive and how often you operate the climate control system, especially if you do not use the recirculate mode. If the system is on all the time, figure on replacing the interior air filter every 15,000 miles. Otherwise, every 30,000 miles will probably be sufficient.

Fuel Filter

Replace every 30,000 miles on models produced up to 1992 (small fuel filter) and every 60,000 miles on models produced from 1992-on, (large fuel filter), also replace if fuel pump is replaced, use original BMW filters or Bosch, Knecht, MANN, or Mahle. Note that newer Bimmers have an integral fuel pressure regulator on the fuel filter, raising the price to \$60-\$80.

Note the service life of a fuel filter (and yes, BMW now calls them "lifetime fuel filters") depends entirely on the fuel it filters. It's possible for a fuel filter to last "a lifetime" – whatever that means. It's also possible for a fuel filter to last a block and a half if you fill up with dirty gasoline.

Valve Adjustment

Perform every 15,000 to 30,000 miles where applicable

Timing Belt, Tensioner Pulley, and Front Cam Seal

Replace every 5 years or 50,000 miles on vehicles so equipped, water pump replacement also recommended as preventative attendant service, but not required, 40,000 miles or four years on the E30 325iX (1988-1991)

Engine Drive Belts

Replace O.E. or O.E.M. BMW poly-ribbed serpentine belts every 60,000 miles

Replace O.E.M. Continental or Pirelli or original BMW V-belts every 30,000 miles

Replace “auto store” quality V-belts every 15,000 miles

Engine Coolant Service

I recommend changing engine coolant at two-year intervals, using only factory BMW anti-freeze mixed 50-50 with distilled water (reason – BMW anti-freeze is phosphate free, phosphates cause aluminum oxidation, which blocks cylinder head coolant passages and causes head gasket failure, others may claim to be “aluminum safe” or “phosphate free” – make your choice, but I’ve used BMW anti-freeze exclusively in many cars and have *never* had an aluminum oxidation or head gasket problem)

The factory coolant change interval used to be every two years. It is now every four years.

Water and Fuel Hoses

Replace water and fuel hoses every 150,000 miles, highly recommended use of O.E. or O.E.M. hoses only, along with the original hose clamps or Wurth/Zebra replacements. The original BMW hose clamps are far superior to anything you’ll find in a U.S. auto store.

Power Steering Fluid

Replace every 30,000 miles. This is a very neglected operating fluid. Almost all BMWs use automatic transmission fluid in the power steering system, except for some E32 7 Series cars, which use Pentosin hydraulic oil. Nothing will balls up the works faster than using one when you should be using the other. Check the sticker on the reservoir, check the owner’s manual, and if you are still confused, take the car to a pro or e-mail me.

It is not necessary to evacuate the entire power steering system. I just open a line down by the pump.

I have had great experience using Red Line Synthetic Power Steering Fluid – 184,000 miles and counting on the original rack and pinion unit and pump on the vehicle I used to test this product. But I would not use it in place of Pentosin hydraulic oil where that product is specified.

Manual Gearbox Oil

Only synthetic oil should be used in BMW manual gearboxes, drain interval 30,000 miles

BMW-specified factory synthetic gearbox oil changes often, but it is all good. I just wouldn't leave it in service forever, or for a "lifetime" – whatever that means.

Red Line products are also highly recommended (www.redlineoil.com). Questions or problems, e-mail me or dave@redlineoil.com.

All the BMW gearbox rebuilders I know use Red Line MTL exclusively, regardless of model year or gearbox. The general consensus is, MTL is the better lubricant. However, the D4ATF product will require less shifter babying during cold operation. I use Red Line MTL in manual gearboxes except where I can't trust the driver to shift properly when the gearbox is cold, in which case I use Red Line D4 ATF.

Red Line MT-90 as slightly higher viscosity than their MTL product, which can be useful in reducing gearbox rattle, which can occur in neutral with the clutch pedal out in vehicles that do not have dual mass flywheels. The rattle does not affect gearbox function.

Automatic Transmission Fluid (ATF) and Filter

For older automatics using Red Line or other synthetic ATF, drain interval 30,000 miles. Old fashioned petroleum ATF, drain interval 15,000 miles

At various production dates in the mid-1990s, which vary according to model, BMW switched to their so-called "lifetime fill" ATF in automatic transmissions, as well as manual gearbox lubricant and differential oil. The reason for this, as far as anyone can tell, is marketing and not engineering – the idea being to foster the notion of the low-maintenance BMW.

There was no explanation of what "lifetime" meant, i.e., lifetime of the car, the component, or for that matter the driver. If it was the component, then obviously anything could be "lifetime fill". The factory's initial position is that these lubricants never need to be changed. Then, some time later, it came out that "lifetime" means 100,000 miles. Many dealerships are now recommending manual gearbox and differential oil changes be done at customer expense every 60,000 miles. Every independent BMW technician I know recommends a 30,000-mile interval, and many recommend Red Line synthetic oils (www.redlineoil.com), but not for automatics with "lifetime fill."

Older automatic transmission models, which do not have "lifetime fill" should have ATF and filter services every 15,000 miles if using petroleum ATF; every 30,000 miles with synthetic.

However, the modern automatic transmissions are different. No one knows exactly what BMW's proprietary ATF is, so no one knows if there are viable alternatives. We do know that BMW dealerships charge about \$500 for an ATF and filter service, due to the price

of the ATF. And that's assuming you can get them to do the job, which is not often the case.

Bavarian Autosport (www.bavauto.com) is now importing the proprietary "lifetime fill" ATF at reasonable prices, which they sell along with filter kits, for independent BMW shops and do-it-yourselfers.

It is risky to drain a previously un-maintained automatic transmission with high mileage, even though if it were my car I would probably chance it. Still, I have seen it happen too many times, where a well-meaning owner or technician performs an ATF and filter service on a neglected but well-shifting automatic, and then all of the sudden it starts slipping. I can't explain it, but my feeling is the fresh ATF flushes a bit of sludge from a place where it was doing no harm to a place where it does do harm. Overfilling, underfilling, and cleanliness are also issues in ATF and filter servicing, but these should not be problematic for a professional BMW technician, dealer or independent.

BMW has backed off their lifetime fill mantra for automatic transmissions, currently recommending an ATF and filter change every 100,000 miles.

My inclination is to tell people to change "lifetime" ATF and filter every 30,000 miles. However the fact is, I've seen BMW automatic transmissions that were maintained break anyway. In that event, say it happens at 90,000 miles, you would like to have that \$1,500 you spent on ATF and filter changes to put toward your new automatic transmission. And if I told you to spend it on maintenance you're probably not going to be very happy with me. On the other hand, I have seen maintained automatics last 200,000 miles. I have also seen unmaintained automatics last 200,000 miles, although both are very rare. There's just no predicting with these transmissions. When you choose to buy an automatic transmission, you also buy into the vagaries of the darn things, which is one reason technicians hate them.

Whether to maintain a modern BMW automatic is up to you. I am washing my hands of automatic transmissions – I don't like them, I don't buy them, and I don't mess around with them under the car. At the end of the day, for long-term durability, order the car with a manual gearbox.

At automatic transmission replacement time, we are confronted with the reality that the local transmission shop cannot rebuild BMW automatic transmissions, even those built by GM (BMW's GM transmissions bear no resemblance to GM transmission in domestic cars). There are some domestic specialists who concentrate in BMW automatic transmission rebuilding, and you'll see their ads in *Roundel* and *Bimmer*. However, I have no experience with any of the current domestic rebuilders. My experience in the past is...well, the owner wound up buying a BMW factory rebuilt automatic transmission every time, and this is the course I recommend to readers – "back to the dealer."

Some of you, having seen the light, may be interested in converting to a manual gearbox. This is always possible, but for most of us it won't be less expensive than a replacement

automatic transmission. This is because of all the other parts and additional labor required. And the newer the car the harder the job will be. It is certainly a doable swap, but there's no cost savings even if you do the work yourself. The exception would be if you have access to a manual gearbox donor car for little or no expense.

Differential Oil

Once again, BMW's specified synthetic differential oil changes often but it is all good... just not forever. Note BMW has different products for open and limited slip differentials.

I use and also recommend Red Line 75W-90 synthetic gear oil, drain interval 30,000 miles in any BMW differential except as noted below. It is okay to use Red Line 75W-90 in place of BMW "lifetime fill" gear oil.

The E46 M3, E39 M5, E60 M5, and E61 M6 should use Red Line 75W-140, as that is the viscosity of the factory fill Castrol SAF-XJ – or use Castrol SAF-XJ, BMW part number 82 22 2 282 583.

The difference between Red Line 75W-90 Synthetic Gear Oil and Red Line 75W-90NS Synthetic Gear Oil is that the former has friction additives for limited slip differentials whereas the latter does not. However, both are the same price, and there is no problem using the 75W-90 Synthetic Gear Oil with friction additives in an open, non-limited-slip, differential.

For my purposes out in my home shop, this means I only have to stock one differential gear oil rather than two (three if you count the 75W-140).

For my purposes in answering BMW tech questions, this means I recommend 75W-90, because if I discuss the differences between 75W-90 and 75W-90NS once, I'll have to do it every day, and there remains the fact that limited slip differential owners will then have a 50-50 chance of getting it wrong.

So, if your BMW has an open, non-limited-slip, differential, there is no problem using the 75W-90NS if you want. If you don't know what a limited slip differential is, then you probably haven't read this far, but use 75W-90.

Brake Fluid

Recommend one-year brake fluid changes, or prior to each driving school or track event. BMW now recommends two-year brake fluid changes, but used to recommend a one-year interval.

Recommend ATE SL brake fluid for normal street use, ATE Type 200 or Pentosin Racing Brake Fluid for track work or very high performance use. Note that ATE Super Blue is the exact same product as ATE Type 200, except with blue dye. Personally, I can't stand the blue dye because it turns everything blue – the reservoir, my Vacula brake

bleeder, my hands, etc. Blue brake fluid helps race teams identify the source of leaks in race cars, and that is its only benefit as far as I'm concerned.

Pentosin LV is recommended for BMWs that call for low-viscosity brake fluid, such as the xDrive models.

Note

It has to be recognized that the benefits of good drivetrain lubricant maintenance do not accrue until the car matures. The difference between the car that ran 15,000-mile oil change intervals and never had its gearbox or differential oil changed (as per BMW instructions) and the one that ran high-end synthetic lubricants and had its driveline maintained in contravention of BMW's instructions, is the strong likelihood that the second car will be running strong at 200,000 miles whereas the first car will likely have a worn out drivetrain. BMWs, and most modern cars, will run 100,000 miles just fine with zero maintenance.

So, if you're maintaining the car religiously only to sell it at 75,000 miles then you're a good guy for helping out subsequent owners. That's nice, but to realize the fruits of your diligence, you need to keep the car for the long haul.

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