

fast times

the newsletter of **Bavarian Autosport**

fall 2004

“It was a dark and stormy night...”

This famous opening line to a pulp fiction novel may be a humorous cliché, but there's nothing funny about driving your BMW in the conditions that sentence describes. We'll all be facing those conditions in just a few short weeks, when the time change comes and it gets dark before 5pm. Then it won't be much longer until the flakes start arriving. (And we don't mean your in-laws coming for Thanksgiving – we're talking wet, winter weather.)

One of the most important things you can do to enhance your driving safety in winter is to improve your visibility. Visibility, of course, is a two-way street: you need to see hazardous situations in front of you before it's too late, and you want to be seen by oncoming drivers sooner rather than later. Here are two simple, inexpensive upgrades you can perform to make winter driving safer.

#1: Upgrade your headlight bulbs.

It's no secret that for greater safety at high speeds, you'll see further ahead

with brighter and whiter bulbs. BMW has recognized this and now offers Xenon lighting on new models. While extremely effective,

Xenon is expensive and isn't available for older BMWs.

If you can't add Xenon lighting

to your Bimmer, we recommend PIAA XtremeWhite bulbs:

- You get more lighting from fewer amps, (For example, the light from PIAA's 51-watt XtremeWhite 9006 bulb is equivalent to a 115-watt halogen bulb).
- Oncoming drivers see you sooner but aren't blinded as they seem to be by some HID (High Intensity Discharge) lights.



1995 M3 with standard halogen bulb on the left, and PIAA's brighter, whiter XtremeWhite bulb on the right.



1157 bulb.


Wedge bulb.

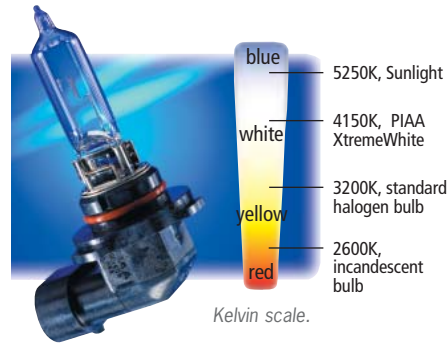
H4 bulb

- Only the highest-grade materials are selected for use in PIAA bulbs:

- High quality, heat-resistant glass tubes that don't explode like those cheaper bulbs.
- A metal bond that holds the glass tube securely, preventing cracks and leaks.
- A welded focus ring that allows proper support and positioning.

And here's another reason to use PIAA XtremeWhite bulbs – they're DOT approved and street legal in all 50 states and Canada!

XtremeWhite bulbs are available in 9005, 9006, H3, H4, H7, 1156, 1157, 7740, 7443, wedge bulb and other applications. Prices range from \$14.95–84.95 a pair. For model-specific information, ask your phone rep or visit www.bavauto.com. 



A Kelvin (K) is a unit of measure for the color of light, not the heat generated by the source. The higher the Kelvin temperature, the closer to actual sunlight.

#2: Upgrade your windshield wipers.

We highly recommend PIAA Super Silicone wipers. Since their introduction last year, these wipers have outperformed every other blade on the market. As they wipe, they leave behind a microscopic layer of activated silicone (the same ingredient used in those windshield rain treatments). Water beads up and wipes away completely. As a result, you get a clearer, wider field of vision in inclement weather. Plus, the silicone coating eliminates squeaks and reduces drag, making the ride a lot more enjoyable for both driver and passengers.



Available in carbon-fiber look (above) or all black.

In addition, Super Silicone wipers offer better resistance to harsh climates and environments, including heat, cold, ozone, acid rain and UV degradation.

How do these wipers work in the real world? Bob Weeks, one of our Customer Service reps, lives 90 miles north of the

continued on page 2



Have a question about your BMW? Ask that savvy old BMW enthusiast, “Bavarian Otto”.

See page 3...

fast times table of contents

The ultimate upgrade underfoot	2
The cupholders BMW forgot	2
Product Focus: Nokian snow tires	2
Ask “Bavarian Otto”	3
Bavarian Profile: Rob Gibney	3
D.I.Y.: replacing antenna masts	4
D.I.Y.: changing engine oil	4
D.I.Y.: replacing oxygen sensors	5
Product Focus: Bosch O ₂ sensors	5

BAVARIAN
autosport
PRODUCTS FOR BMW ENTHUSIASTS

Five reasons to upgrade to Ultimate mats.

One of the easiest ways to upgrade your BMW's interior is with a new set of floor mats. Our custom-fit Ultimate mats are the best:

1. Made with incredibly thick, 54oz. carpeting. (How thick are they? Nearly twice as thick as the BMW factory mats – see below.)



Left: BMW factory mat. Right: our Ultimate mat – nearly twice as thick for about the same cost.

2. High-quality serge edging in matching yarn for lasting beauty.
3. Lifetime warranty – if they ever wear out, we'll replace them for free. (Try getting free mats from your BMW dealer.)
4. Available plain or embroidered with our logo – for free!

Ultimate mats feature a non-slip foam backing and are available in eight colors to complement your BMW's interior (see page 39 of our Fall catalog or www.bavauto.com.)



Our Ultimate mats are custom-cut to fit your BMW precisely. Top: passenger's mat for 5 series 97 thru 03. Above: driver's mat for same model.

As for the 5th reason...

5. Now through October 31st, they're on sale. Originally \$139.95 set, they're now \$129.95 set. (That's just \$5 more than those thinner BMW factory mats.)

Add the cupholders BMW forgot.



Top: upholstered dual drop-in. Left: upholstered side-mount style. Right: burlwood style. Arms adjust to accept various containers.

Well, BMW didn't actually forget them; they simply chose not to include them on early models. And on later models, any cupholders they did provide were either flimsy or there weren't enough of them. Fortunately, we have the solution – flip-open cupholders that match your BMW's interior. (A lot of customers tell us their cupholders look like original equipment!) You can get single or dual models, in matching upholstery or with burlwood inserts. Plus, now thru October 31st you can take 10% off the original price. ✂

Dark and stormy night continued from page 1

office. In the winter, his commute can turn into a two-hour-plus adventure; during a really nasty storm (freezing rain, etc.), he may have to stop and clean his wipers several times. Since he put Super Silicone wipers on his car last fall, he says the ice literally falls off the blades.

PIAA's Super Silicone wiper blades are available with or without integral air foils for a wide range of BMW models. Prices range from \$16.95–28.95 each. For more details, see page 57 of our new Fall catalog, ask your phone rep or visit www.bavauto.com. ✂

Product Focus: Nokian Hakkapeliitta winter tires.

Living in New Hampshire, we often hear from friends and neighbors, "I would have bought a BMW, but they're not that great in snow." We don't know where this rumor started; we've been driving our BMWs in snow for 30+ years, and the only time we ever have any trouble is when we still have our summer tires on and get surprised by an early fall or late spring storm. But when we have our Hakkapeliittas on all four corners, there's not much our Bimmers can't handle.

What's so great about Hakkapeliittas?

Statistics show that lack of lateral (side-to-side) control is the cause of many snow-related driving accidents. Lateral control is one of the major handling features of Hakkapeliitta tires. The combination of innovative tread design, numerous sipes (small, deep grooves), specially formulated rubber and advanced tire structure have led many to call Hakkapeliitta the safest winter tire in the world. We agree:

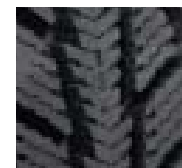
- Full-depth locking sipes and angled tread elements create 1000's of biting edges for unparalleled traction on snow, ice and dry pavement.
- Extremely dense siping generates tremendous grip while providing better handling characteristics.
- Arrowhead tread pattern expels water, snow and slush while providing uncompromised lateral grip.



Hakkapeliitta winter tires feature a jointless nylon belt to help prevent tread separation and provide a comfortable ride.

Most of our winter tire packages feature the Hakkapeliitta 2 tire, which has a record-setting 1700 sipes – almost twice as many as the previous model. As a result, braking distance is 10–15% shorter than that of its predecessor. (Plus, for those of you where state laws allow, the Hakkapeliitta 2 can be studded locally.)

All our winter wheel/tire packages arrive mounted and balanced – just put them on your BMW and go. You should also know that our pricing is lower than it was 5 years ago! For example, in 1999 a set of four steel wheels with snow tires for the 3 series 92 thru 98 cost \$694.95; today it's \$634.95. Pricing for other models is on page 58 of our Fall catalog, or you can ask your phone rep or visit www.bavauto.com.



Nokian's Driving Safety Indicator (DSI) displays remaining tread depth in mm.

Act now! Buy your winter wheel/tire package by October 31 and we'll send you a \$50 savings certificate good on any order at Bavarian Autosport during the next 12 months.

from our tech team

ask "bavarian otto"



Over 200 years of BMW experience is just a phone call or e-mail away.

If you add up all the years the enthusiasts at Bavarian Autosport have been working on BMWs – and helping people like you work on theirs – it totals well over 200 years. That's a lot of BMW knowledge. And it's all yours just for the asking. Have a BMW question? Ask that savvy old BMW enthusiast, "Bavarian Otto" – just call 800.535.2002, e-mail otto@bavauto.com or go to www.bavauto.com/otto for his easy-to-use tech question form.

Idlewild?

Dear Bavarian Otto,

My 1991 535i runs great except at idle. I replaced the air flow meter 20k miles ago (for another reason) with a rebuilt unit. Any ideas on this issue, including how to test for whatever you suspect?

John C.

Otto replies:

What to do about rough idling is one of the most common questions we get. Typically, it's on an aging model such as your '91 535i. Assuming that the engine is currently in a good state (i.e. it doesn't need a general tune-up), what I would suggest is to first carefully inspect all of your vacuum hoses. Any loose or cracked hose can cause an idle problem. Next, I would suspect a possible problem with the idle control valve. This valve regulates airflow to keep the idle at a steady speed. If your idle "hunts" up and down 300-1000 rpm or more, and there are no vacuum leaks, this could be your problem. If there are absolutely no vacuum leaks and the idle valve tests OK per your repair manual, you can next look to the temperature sensors for the engine control unit (ECU). These sensors are located in the thermostat housing and send signals to the computer to tell it how warm the engine is. A faulty temperature sensor can change the amount of fuel the engine gets and can sometimes affect the idle. Again, this can be tested; the procedure will be covered in a good repair manual. (If you don't already have one, the Bentley manual is our favorite. We stock the manuals here. They're currently on sale through October 31.) All that said, I suspect you have a vacuum leak. Contact me if you have further questions.

Don't believe everything you're told.

Dear Bavarian Otto,

I was told that I couldn't use standard windshield washer fluid in my 1996 318is because it would damage the system. Is this true? What should I use?

Tom

Otto replies:

Thank you for your question about the washer fluid for your '96 318is. Rest assured you can use ANY brand of washer fluid you choose. It will not harm your system in any way. But no matter which fluid you use, we highly recommend adding P21S windshield wash booster to it. You'll get a cleaner windshield and a clearer view – especially critical during the upcoming "dark months" of the year. Hope this helps.

Dear Bavarian Otto,

On Saturday, I just finished replacing the rear brakes on my '99 528i. After completing the job in 105°F heat, I was frustrated that the brake light was still on. I knew it wasn't the front brakes, since I had replaced them 10,000 miles ago. The next morning, as I looked through my mail, I found your newsletter. I sat down and started reading the "Ask Bavarian Otto" section. Lo and behold, there was an article about my exact problem and the recommended solution. My wife, who by now thought my days as a mechanic were limited, couldn't believe what I was reading to her. You now have a customer and a real fan for life.

Dan P., Arizona

Feel the heat.

Dear Bavarian Otto,

When the heater is on in my 1987 528e and the car is stationary, you will feel heat coming through the vents. As soon as you start driving, the air coming from the vents turns cold – so much so that I will turn off the blower. Any ideas would be appreciated.

Ron F.

Otto replies:

The first thing to check is that the coolant expansion tank is up to the full level when running and warm. Next, check the engine temperature gauge on the dash; does the gauge ride somewhere between the 1/4 and 1/2 range both idling and underway? If not, you may have a stuck-open thermostat. If the above points are OK, then I would suspect the heater valve is faulty. A faulty valve allows the hot coolant to flow to the heater core at low engine RPM, but as the RPM increases (and the flow of the coolant increases), the coolant flow closes the valve. We have the valves in stock and they are fairly easy to replace. If you need any further help, feel free to contact me.

Bavarian Profile Rob Gibney

Tired of the long hours he worked as a sous chef in a fine dining establishment in Maine, Rob decided to pursue his other passion – BMWs. He started at Bavarian Autosport in May of 2001 and hasn't looked back. He has owned a '79 320/6, an '80 320i and an '86 325e. His current car is a 1983 320i into which he's stuffed an '87 325i 2.5 liter engine he modified with a 524td forged crankshaft, custom oversized pistons and aluminum flywheel. The head has been ported and polished, the stock cam was replaced with a 288 Schrick cam, and the injection system was replaced with three Weber downdraft carburetors. For the exhaust, he's installed Bavarian Autosport headers that mate up to a 3" single pipe system in the rear. The suspension uses Bavarian Autosport springs, Bilstein sport shocks/struts and Bavarian Autosport stress bars front and rear. He also uses our Ultimate brake rotors, front and rear. He plans to dyno the beast soon and is expecting 210+ hp out of the motor. (Now that's what we call cooking with gas!)



How easy is this?!

do-it-yourself

Replacing an electric antenna mast. ✎

Typically, the only problem with a non-functioning electric antenna is that the mast has been broken, bent or is otherwise sticking - or the nylon retractor cord has been damaged or broken. All of these can be fixed by installing a new mast assembly. (In rare instances the actual motor may be faulty. In this case, the complete antenna unit must be replaced.)

Replacing the mast in your electric antenna is one of the easiest repairs you can perform on your BMW. There are two different types of antenna masts used in BMWs: the nylon retractor cord will either have teeth on one side (as shown in the photo at right) or it will be smooth with very minor serrations. You will need to determine which you have prior to purchasing a new mast.

Come along with us as we replace a stuck antenna mast on a typical BMW. You will need a helper to turn the radio on and off.



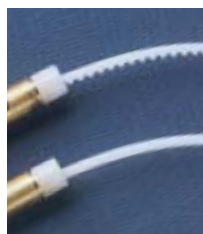
1 Using a 13mm open-end wrench (like the one in your BMW's trunk tool kit), loosen the upper collar nut on the antenna mast base. If the antenna mast is functional but sticks at some point, raise the antenna before loosening the collar nut.



2 Turn the radio on and the mast will start to push out of the base (above). Guide and help it out until the complete mast and nylon cord are out. If, after a few attempts (turning the radio off and back on), the

mast does not move, the motor is likely faulty and the complete unit must be replaced. Don't worry - we carry a selection of complete replacement antennas.

3 Before proceeding, make absolutely sure the nylon cord on your old mast is the same as the new mast - with teeth or without, (shown at right).



Insert the nylon retractor cord into the base with the teeth toward the rear of the vehicle.

Insert the cord until it stops. Turn the radio off (if it is already off, turn it on and then off) and feed the cord and mast into the base. Once the cord and the mast are fully installed, tighten the collar nut.



That's all there is to it! Now celebrate by going for a drive and listening to your favorite station.



Keep it clean! ✎

There's no two ways about it... You have to keep your antenna mast clean and well lubricated! Tolerances are so tight between the sections of telescoping antenna masts that the smallest amount of dirt or grime can prevent the mast from raising or lowering. We highly recommend Hirschmann lubricant/cleaner antenna wipes (#82 0511 011, \$0.50 each). Please do not use oil or popular spray lubricants - these tend to attract dirt and become gunky after a while, defeating the whole purpose of lubricating the mast in the first place. Just keep it clean on a regular basis and your antenna will perform better and last longer.



How easy is this?!

do-it-yourself

Changing engine oil. ✎✎

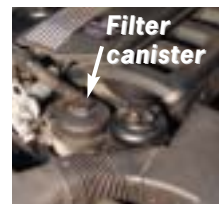
One of the most common questions Bavarian Otto receives is, "How do I change my own oil?" Not only is changing your own oil a relatively easy task, it saves money and provides a sense of accomplishment. Shown below is a typical oil and filter change on a late model, 6-cylinder BMW.



1 Raise and properly support the front of the vehicle with jack stands or ramps. Locate the drain plug on the oil pan sump (lowest part of the oil pan). On some models the sump is at the front of the engine; on others it is at the rear. Here it is at the rear. [Note: Some models require removal of a plastic splash shield to access the drain plug.]



2 Position the no-spill oil change pan (#601, on sale for \$9.95) under the drain plug and use a box end wrench or a socket and ratchet to remove the drain plug.



3 While the oil is draining, let's attack the oil filter. In this example, the filter is a cartridge filter that consists of a filter element enclosed in a permanent canister. This filter style is used on most BMWs. Some models (2002, 320i, 325e/es/i/is/ix/ic, 528e and 89-90 525i) use a "spin-on" filter which is typically accessed from underneath the vehicle.

4 Loosen the canister lid or spin-on filter. Depending on your model, you will need either a special oil filter wrench (#54760, \$8.95), 36mm wrench (#115040, \$22.95) or a ratchet and 13 mm socket.



5 For canister-type filters, remove the canister lid, then the filter cartridge element. For spin-ons (not shown), unscrew and remove the filter.

6 Replace the old o-ring on the canister lid with the new one supplied with the new filter, drop the new cartridge into the canister and replace the lid. Tighten the lid until it stops and then just snug it past that point (officially 18 ftlb). Next, install and tighten the oil pan drain plug (torque small plugs like this one to 18 ftlb; large plugs to 44 ftlb. See the applicable service manual for your BMW).



7 Remove the oil filler cap and fill the engine with the specified quantity of oil. Use only high-quality oil which matches or exceeds the BMW original specs. We highly recommend Lubro Moly oil from Germany. (It is endorsed by BMW, plus it is currently on sale.)

8 Lower the vehicle, start the engine and check for leaks. Watch to make sure the oil pressure warning light goes off within a few seconds. Turn the engine off, wait a few minutes and check the oil dipstick, the oil level should indicate full. Properly dispose of the used oil and filter.

After you've finished, you can reset the service interval lights on most BMWs using our reset tool (#SR 100, on sale for \$84.95). You can also use our fault code reader (#SR 300) which costs a little more (\$149.95-184.90), but it also reads and resets "check engine" codes on most BMWs, allowing you to diagnose problems and research possible solutions other than taking your car to the dealer.

How easy is this?!

do-it-yourself

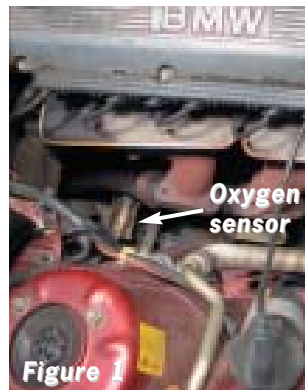
Replacing your oxygen sensor(s). *1* or *2*

Your BMW's oxygen (O₂) sensor is like the traffic cop at a busy intersection. In the same way that the officer is controlling the flow of traffic, the O₂ sensor has the final say on what is going on within the engine management system. By comparing the oxygen in the air to the oxygen content of the exhaust, the O₂ sensor can tell if the fuel mixture is too rich (too much fuel, not enough air). If so, it signals the ECU to reduce the amount of fuel being sent to the cylinders. If the mixture is too lean (too little fuel), the ECU will increase the amount of fuel being sent. Since the O₂ sensor is positioned directly in the engine's exhaust stream, it is exposed to all of the harsh chemicals in the exhaust. Even on a properly running engine, the sensor will, over time, become coated with exhaust byproducts, which reduce its ability to perform. As the sensor becomes coated, its ability to sense changes in the exhaust's oxygen content deteriorates... right up to the point where it totally ceases to deliver information to the ECU. Without this information, the ECU cannot run the engine at peak efficiency. The result is poor fuel economy and reduced performance.

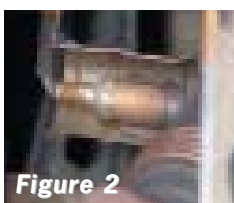
Replacing the O₂ sensor on your BMW is fairly simple. The sensors on most models are readily accessible without removing any additional parts. Let's take a look at a typical O₂ sensor replacement on a 1990 325is. This particular model is accessible from under the hood. On many models, the sensors are located under the car, in the exhaust, ahead of the catalytic converter. **NOTE: on a few models, the sensor is mounted on top of the exhaust pipe, requiring that the catalytic converter be disconnected from the exhaust manifold.**

1 If required, raise and properly support the front of the vehicle. (Note: The model in this example does not require this because the sensor is accessible from under the hood.)

2 Locate the O₂ sensor in the exhaust pipe or exhaust manifold (figure 1); rear sensors can be found just behind the catalytic converters.



3 Remove the sensor shield, if equipped (figure 2). The shield in this example clips onto the body of the sensor.



4 Follow the wiring from the sensor to the point where it plugs into the main wiring harness and unplug the sensor's wire from the main harness (figure 3 & 3A). On sensors that are mounted under the vehicle, it may be necessary to remove some protective plastic shielding in order to fully remove the sensor wire harness.

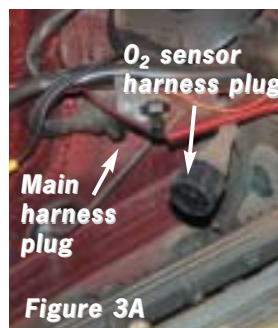
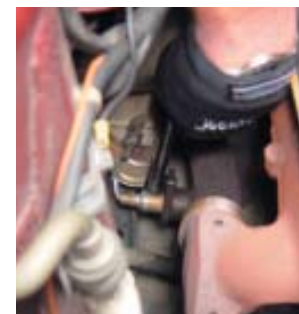


Figure 4



Figure 5

5 Use the Bavarian Autosport Oxygen Sensor Removal Tool (# OSW1) and a 3/8" drive ratchet (and extensions if required) to remove the O₂ sensor (see figures 4 & 5). We highly recommend using a penetrating solvent such as PB Blaster on the mating area where the sensor meets the pipe. Heat, corrosion and rust will typically have had their way with the threads securing the sensor into the pipe. PB Blaster is available at most auto parts stores and many discount department stores.



6 Install the new O₂ sensor (the new sensor will already have some anti-seize compound on the threads). Rout the wiring harness into its proper location. Plug the sensor's harness into the vehicle's harness. Replace any shielding that was removed, including the shield on the sensor itself.

Now thru October 31 get a **FREE Bosch Motorsports hat*** when you order a Bosch oxygen sensor.

* Limit one hat per customer.



Product Focus: Bosch O₂ sensors



Even though oxygen sensors have been standard equipment on most vehicles since 1980, most people don't know much about them. Bosch does. They invented the automotive oxygen sensor. In fact, Bosch sensors are the number one choice of car makers around the world. Replacing a worn-out oxygen sensor will do more than improve your vehicle's performance and reduce harmful exhaust emissions; it can also save you up to 10% a year in gasoline costs.

Over time, the engineers at Bosch have made various improvements in the design of their oxygen sensors. As a result, each "generation" of sensor has a different recommended replacement interval. What follows is a general guide for oxygen sensor replacement:

For most BMWs through 1984: These O₂ sensors incorporate a simple, ceramic element and rely on the exhaust gas to heat them up to operating temperature.

They are very susceptible to coating and contamination. Recommended replacement interval: 30,000 miles.

For most BMWs 1985 thru 1995: This next generation of sensors added a heater element to speed the heat-up time of the ceramic element. These sensors are more resistant to being coated or contaminated and therefore have a longer life expectancy. Recommended replacement interval: 60,000 miles.

For most BMWs from 1996 on: This more recent generation of oxygen sensors uses the latest technology to extend the typical replacement interval to 100,000 miles. **NOTE: BMWs 1996 and later have 2 sensors on 4-cylinder models (one front and one rear) and 4 sensors on 6 and 8-cylinder models (two front and two rear). The front sensors install in front of the catalytic converter and operate as described above. The rear sensors mount after the catalytic converter and are used to verify that the converter is working properly.**

BOSCH