

fast times

the newsletter of **Bavarian Autosport**

winter 2007

Happy New Year! 11 new products for BMWs.

Every year, we go on numerous "shopping trips" to various car shows, tuning houses, parts manufacturers and the like, searching for new products we think BMW enthusiasts would like. Every month, we receive multiple samples of new products companies send for our consideration. And every week, one of the enthusiasts who works at Bavarian comes up with an intriguing idea for a new product.

We evaluate all these possibilities, considering such things as quality, availability, desirability, cost, value, etc. Out of all the potential new products we review and test each month, only a handful make the cut. Recently, however, we had some of our best trips ever. We won't know for a couple more months how many new products will end up in Spring catalog (coming in March), but as we write this article, we already have more than a dozen ready to go, including the following:



Beyern Multi wheel in 17", 18", 19", 20" and 22" sizes, in various widths. This is the third design from Beyern, and it promises to be as popular as the first two styles – Five and Mesh (which you can see in our catalog or on our web site). All three styles are available in your choice of silver or chrome. Prices start at \$179.95 each for 17" wheels.

Paint pen for wheels in silver that matches most BMW factory wheels. An easy way to cover up scratches, scuffs and curb rash – just press and color in. \$17.95



Quaife torque biasing (limited slip) differentials makes sure power is going to both drive wheels under most conditions, eliminating power-wasting wheel spin. It's gear-driven, so there are no clutch packs to wear out. And it comes with a limited lifetime

warranty – even if you race! Available for many BMWs and MINI Cooper S. \$1149.95-1449.95.

Pre-painted BMW shark fin using paint that matches your BMW's color precisely. No functionality – just some added style for your Bimmer. \$49.95. (Please allow 2-3 weeks for delivery.)

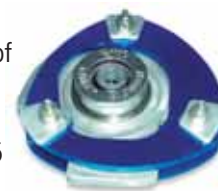


Powder-coated caliper covers. We have been offering red caliper covers for a while. **Now we have black and silver, too** – at about 2/3 the price. Originally \$199.95 set of four, they're now \$119.95!

Quixx scratch repair kit from Europe – now available here! This is the kit that MINI sells in its dealerships throughout Europe. Not a filler, this kit actually softens and re-blends your paint and clear coat. The kit includes two tubes of treatment, plus detailed instructions to guide you to success. The results are incredible! \$19.95.



Race-ready camber kits, made by the same people who make our urethane camber kits. These kits use spherical bearings instead of urethane, giving you more precise control of your suspension at the track. \$314.95-494.95 per pair.

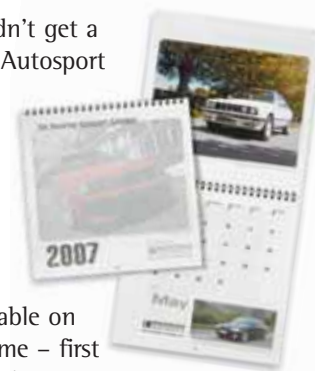


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BMW calendar supports breast cancer research

If you didn't get a Bavarian Autosport 2007 BMW calendar in your stocking, we still

have a few available on a first come – first served basis. 100% of the profits from the sale of this calendar goes to support the Susan G. Komen Breast Cancer Foundation. Start the New Year off right – buy yourself a gift that gives. They're just \$9.95 each. Call today or order it online at www.BavAuto.com.



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BAVARIAN
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PRODUCTS FOR BMW ENTHUSIASTS

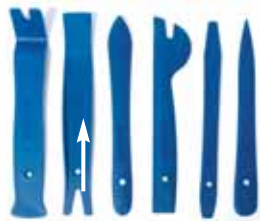
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Happy New Gear! *continued from page 1*



Miniature pry tool kit The same non-marring nylon as our 5-piece pry tool kit, but with more

and smaller tools. Great for interior panels, etc. \$29.95.

ZipLine pet safety cable & harness

keeps your dog safe while allowing freedom to roam the back seat. Super-easy installation using Velcro. Padded harness unhooks to become instant leash/harness for walking the pooch. Fits every BMW and MINI. \$39.95.



Texamatic 7045E automatic transmission fluid. Previously available in 20-liter drums only, we now offer this official, BMW "lifetime" fluid in 1-liter bottles. \$14.95 liter.



Bassforms subwoofer enclosures are custom-molded to fit specific BMW models. You

can order them in four ways:

- Enclosure only, unpainted.
- Enclosure only, painted.
- Painted enclosure with subwoofer.
- Painted enclosure with subwoofer and amplifier.

Available for many newer BMW models. \$399.95–\$999.95.

If you'd like more information on any of the products included in this article, you can look them up on our web site – www.BavAuto.com – or call 800.535.2002 during normal business hours (Mon-Thu 8am-9pm; Fri 8am-7pm; Sat 9am-4pm) and speak with one of our friendly, knowledgeable phone reps.

The Ultimate floor mats for your BMW

Our Ultimate floor mats are the ultimate in luxury and durability. They're made with 54oz. carpeting that's so thick, you'll be tempted to drive barefoot. Yet it's so rugged, we back these mats with a lifetime warranty – if they ever wear out, we'll replace them for free! Ultimate mats are offered in eight colors (below), in your choice of plain or with our logo embroidered on the front mats. And through January 31, they're \$15 off – normally \$139.95 set, they're now \$124.95. (NOTE: Since these mats are custom-fit, please specify the year and model of your BMW when ordering.)



Sandstone	Autumn	Desert	Natural
Ebony	Navy	Titanium	Graphite

Make sure the color's right – ask for free samples!

Even our 32oz. Plush Mats (left) and 42oz. berber mats (center) seem to pale in comparison to our super-plush, 54oz. Ultimate mats (right).



Product Focus:

NOAH® car covers by COVERCRAFT: exceptional outdoor protection in custom BMW patterns.



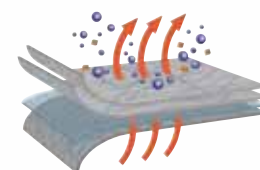
After more than 40 years of making custom car covers, no one does it better than Covercraft. Their BMW patterns are designed to fit each year and model securely, and all seams are overlapped and double-stitched for strength and durability. So a few years ago, when Covercraft started making covers out of NOAH fabric, we knew it would be a winning combination. NOAH is one of the best fabrics for a car cover. NOAH fabric is highly water resistant, yet it "breathes" to allow any trapped moisture

from seam seepage or condensation to easily evaporate. And NOAH fabric weighs just 4.75 oz./sq. yd., so it's easier to handle and fold than other multi-layer fabrics. Here's what makes NOAH so effective:

Protective outer layer comprised of bi-component spunbond using sheath-core technology, with an inner core of polypropylene for strength. This layer is also treated with UV inhibitors for extended outdoor use.

Micro-porous middle layer is made using a proprietary, stretch-film technology that creates microscopic holes smaller than droplets of water and dust particles, yet large enough to allow trapped moisture vapor to escape.

Soft, paint-protecting inner layer is a bi-component fabric made with polyethylene and nylon. This combination results in an exceptionally high strength-to-weight ratio, with the "soft touch" necessary for today's water-based paint finishes.



NOAH has a middle layer of film with microscopic holes to keep water out yet allow moisture vapors to escape.



*Add a **cable lock kit** for just \$9.95.*

When you add it all up – Covercraft's 40-plus years of experience, their custom BMW patterns, their unsurpassed construction techniques and the advantages of NOAH fabric – the result is a car cover that provides exceptional protection and value. *(It's an even better value in January – buy one and we'll include a savings certificate good for \$20 off your next purchase from us.)*

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 yours for the asking. Have a BMW question? Ask that savvy old BMW enthusiast, "Bavarian Otto" – just call 800.535.2002 or e-mail Otto@BavAuto.com.

The heat is on... wait, no it's not... yes, it is... I think...

Dear Bavarian Otto,

I'm having a problem with the heater in my BMW. I seem to get very little heat from the system when driving. If I am sitting in a parking lot or stuck in a traffic jam, the heat seems to work fine. But when I start moving, the heat goes away. It also seems like the air coming from the vents is warmer when I have the fan on low. When I turn the fan to high to defrost the windshield, whatever heat there is goes away. Can you tell me what's up?

Willie C.

Otto replies:

Thank you for your question, Willie. First, since you did not mention any problems other than the heating issue, I'll assume that all else is fine. You didn't mention what BMW model you have, but I think we can address this issue in a general fashion. Based on your description of the symptoms, my first thought is that the engine's thermostat may be stuck open. The heat source for your BMW's heater is hot engine coolant (a.k.a radiator fluid or anti-freeze). The coolant flows through the heater core, which is like a miniature radiator mounted deep inside the dashboard area. Cold air is blown over the core, warmed and blown into the cabin area. If the engine's thermostat is stuck open, the engine is, in effect, over-cooled. As a result, the coolant will not get hot enough to produce much heat through the heater. Check your engine temperature gauge. If the needle stays in the far left (blue) area of the gauge for a long time and then just climbs a bit but does not get to the middle of the gauge, you may have a thermostat that is stuck open. We stock all of the various thermostats for all BMW models. Some models, such as most 6-cylinder BMWs 92 through 05, should have other parts replaced when replacing the thermostat. Ask your phone rep or refer to your Bentley repair manual. Additionally, to protect the iron and aluminum parts of your BMW's engine, we highly recommend the use of either genuine BMW coolant or the NPG+ waterless lifetime coolant.

A battery of problems.

Dear Bavarian Otto,

I have a problem with the battery in my 96 525i. Everything seems to be fine, most of the time. However, when I let the car sit for a few days, the battery goes dead. If I get a jump, it will start and be fine until I let it sit again. I bought a new battery a couple of months ago and the problem seemed better for a while, but now appears to be back and it seems to be getting worse. Did I get a faulty battery?

Joe D.

Otto replies:

Your problem is not that uncommon and, to make matters worse, it is often mis-diagnosed. A battery in good shape can sit with no draw on it for a couple of months, minimum. If you have a new battery going dead in the vehicle, either the charging system is not up to par and you are slowly discharging the battery every time you use the vehicle, or there is an excessive static current draw when the engine is not running. The most common causes for the "dead battery syndrome" as you've described it, are: 1) old or damaged battery; 2) weak alternator/charging system, or; 3) a short or other fault in the electrical system that is discharging the battery when the engine is not running. Here are the diagnostic steps to follow to determine which of these possible causes is at fault:

1) The next time that you know the vehicle will sit for a few days (the period that would typically cause the battery to go dead), make sure that the battery is fully charged and disconnect the negative battery cable. If the battery still goes dead, the battery is faulty and must be replaced. Since you have recently replaced the battery, if this happens it is likely that a weak alternator or a static electrical draw has ruined your new battery due to multiple discharges. Once you have a fresh battery, or have determined that your existing battery is OK (i.e. it did not go dead when disconnected), you can continue to the following steps.

2) Make sure that the alternator drive belt is in good shape and is properly tightened. This is one of the most common causes of insufficient charging.

3) Check the voltage at the battery with the engine running. Place the leads from a voltmeter at the positive and negative battery terminals. You should see at least 12.5 volts at idle, (13 volts or more is better). If the voltage is low, you likely have a weak alternator. Go to the next step.

4) Turn on all of the lights, blower motor, rear defroster, wipers (pull the wipers up off the windshield), etc. You should still see 12.5 volts minimum across the battery. If the voltage is lower, rev the engine and then let it come back to idle. Is the voltage now higher? Rev the engine to 1500 RPM or so. You should have at least 13 volts with all the accessories on, (13.5 is better). If the voltage doesn't come to at least 12.5 at idle (more when the engine is revved a bit), the alternator needs replacing.

If this alternator tests come out OK, you likely have a static current (electrical) draw when the engine is off that is high enough to drain the battery in a few days. Let me know how you make out on these four tests. If all is okay, I'll tell you how to test for high current draw.

Bavarian Profile



Andy Douglass

Andy began his career at Bavarian Autosport in 2005. Well... that's when we started to pay him to show up. Prior to that, he was a regular lunchtime visitor to our showroom, where he nursed his passion for BMWs by discussing, shopping for, buying and installing parts on his various Bimmers. After many years of working in the graphic arts, Andy decided to shift gears, change careers and pursue

his passion for BMWs by helping other enthusiasts identify and order the parts they needed for their Bimmers. Andy has owned and worked on a 73 2002 tii, an 83 528e and his current ride, a 90 325is. "I love this car! I never want to get rid of it," says Andy, (though you might be able to tempt him into a trade for a 1967 1600 GT). Outside of work, Andy enjoys cooking and photography. In fact, a really nice, poster-sized print of a shot he took at Show & Shine 1999 has hung in our sales conference room for the past five years.

How easy is this?! do-it-yourself

Common BMW fault codes: what they mean and how to deal with them.

All BMWs from 1989 on (and some 87 & 88 models) have some form of self-diagnostic capability for the engine management system. When part of the system is performing outside of the parameters set by BMW, a coded note, commonly known as a fault code, is recorded and stored. The "Check Engine" or "Service Engine Soon" light will come on to alert you that a code has been generated. In the past, it was necessary to have a well-equipped shop or a BMW dealer check the codes... and charge you handsomely for the service. Today, you can check these codes yourself using our hand-held fault code

reader, saving you the time, trouble and expense of making unnecessary repairs. (Even if you don't plan on doing the repairs yourself, having a fault code reader is a great way to make sure the shop performs the appropriate repair and nothing more.)

Sometimes the fault will be associated with a noticeable change in your BMW's performance (e.g. idle fluctuations, running rough, refusing to start, etc.). Many codes are quite clear in identifying faulty parts. Examples of these codes include: "Camshaft sensor"; "Crankshaft sensor"; "Knock sensor"; and "Coolant temperature sensor." Other fault codes

point you only in the general direction of the problem, requiring further investigation on your part. This article addresses some of the more common ones that we are asked about on a daily basis.

Tech Tip: If you have a fault code and there is no detectable change in your BMW's performance, we suggest that you read the code, record it, erase it and see if it returns. If the code does not return, the fault may have cleared up on its own or the code may have been erroneous in the first place. If the code reappears, it is likely a genuine fault and you should address it.

Fault Codes Indicating Random Mis-fires.

These codes can be related to many possible faults. The most common sources would be vacuum leaks, standard tune-up items, (spark plugs, ignition wires, plug connector boots, coils, etc.), crankcase vent oil separator or check-valve, or oil in the spark plug wells. These codes will typically refer to a particular group, or bank, of cylinders. Here's what to do:



Cracked intake bellows.

- Inspect all of the intake-air rubber bellows, boots and hoses for any signs of cracks, loose fittings or whistling sounds (indicating a vacuum leak).
- Inspect distributor cap and rotor (if used) for cracks, very worn contacts or evidence of "carbon tracking" (the spark following a path to ground or another terminal). Inspect spark plugs for excessive carbon deposits or cracking of the insulator.
- Swap coils and connectors to see if the fault moves to the other bank, indicating faulty connectors or coils. (Refer to the Spring 2005 issue of *Fast Times* at www.BavAuto.com/newsletter.)
- Inspect for oil in the spark plug wells. If oil is present, replace the valve cover gaskets. (Again, see the Spring 2005 issue of *Fast Times*.)
- Check for vacuum leaks in the crankcase vent system. (V8 engines are especially susceptible to this.)

Save \$\$\$ – Get a Fault Code Reader

Our fault code reader and reset tool can save you money in two ways:

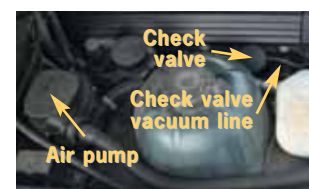
1. BMW dealers typically charge \$75 to read and reset fault codes and service interval reminders. Our BMW fault code reader/reset tool costs \$149.95 (\$129.95 for the MINI tool). Use it twice and it has paid for itself.
2. As shown in the article on these pages, a fault code can help you pinpoint what's wrong with your BMW so you can fix it yourself, saving you a bundle over having a repair shop do it. Or, if you're not into fixing your BMW yourself, knowing what's wrong can help you make sure the repair shop isn't performing any unnecessary repairs, potentially saving you a bundle as well.

To find out how easy it is to use our fault code reader, see the Spring 2005 issue of *Fast Times* at www.BavAuto.com/newsletter.



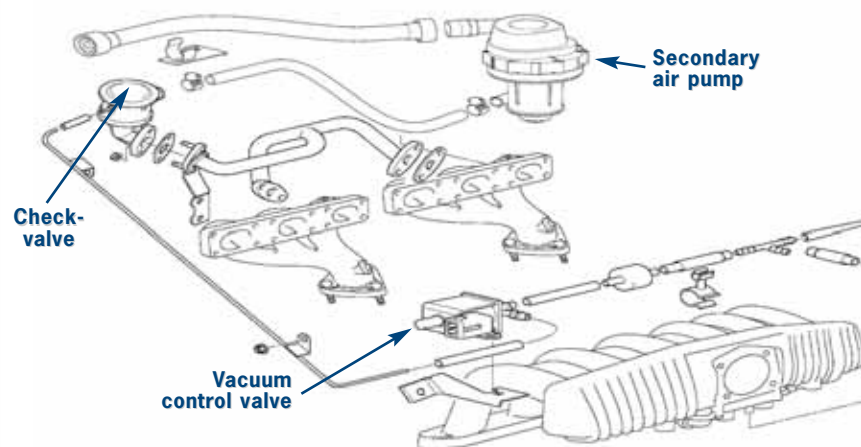
Fault Codes Indicating Secondary Air.

Any codes that suggest anything to do with the secondary air system will be indicating a failure of the secondary air pump, check-valve or vacuum control switch, or a vacuum leak between the vacuum control switch and the check-valve. You may notice a rough idle when the engine is cold, noise from the secondary air pump or repeated failures of air pumps caused by not replacing a failed check-valve or vacuum control valve and hose. Here's what to do:



Secondary air system.

- Check the vacuum control of the check-valve. Remove the control vacuum line from the check-valve. With the engine fully cold, start the engine and check for vacuum at the vacuum line. (You must do this quickly! It would be best to have a helper start the engine.) There should be vacuum for the first few seconds of running and then the vacuum should be shut off (by the vacuum control switch) and should not return. If the vacuum does not shut off, or there is no vacuum, the control switch may be faulty.



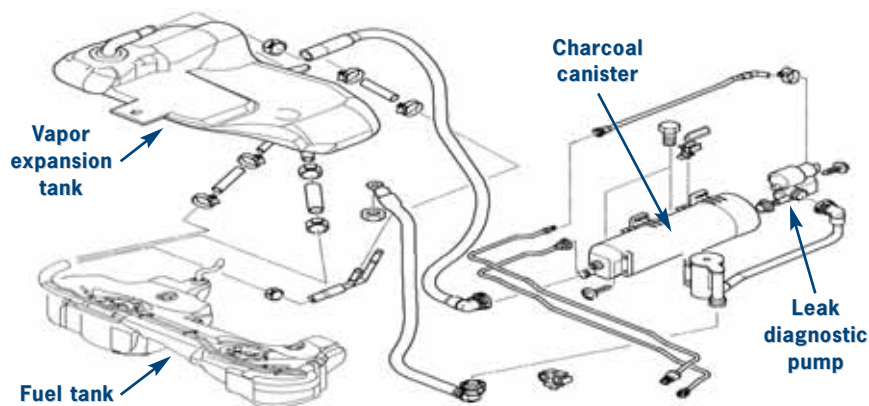
- Check the check-valve. Remove the larger hose and the vacuum hose (if equipped) from the check-valve. There should be no evidence of carbon deposits in the large nipple of the valve. Start the engine. When the engine is warm, there should be no exhaust coming from the larger nipple on the check-valve. If there is carbon in the nipple and/or exhaust coming from the nipple, replace the valve.
- Typically, when a secondary air code is generated, the pump has failed. We have already checked the other main components in the system which, when they fail, will cause the pump to fail. At this point, we likely will need to replace

the pump, as well. Keep in mind, the pump typically fails due to a prior failure of the check-valve and/or the vacuum control switch and hose, and will fail again if the problem(s) is not corrected.

Fault Codes Indicating Evaporative & Purge.

Codes relating to the fuel evaporative or purge systems are noting an inappropriate pressure in the fuel tank vent system. Pressure that is too high can be caused by a faulty purge valve, faulty charcoal canister or clog in the system. Pressure that is too low can be caused by the purge valve, a faulty charcoal canister, a leak in the line, or a loose gas cap. Here's what to try:

- Inspect the gas cap and the rubber seal on the cap. Make sure the cap is fully and properly seated. Reset the code and see if the fault returns.
- If you are in the habit of filling your gas tank to the top of the filler neck, you have likely introduced fuel into the vapor recovery system and saturated the charcoal canister. Replace the charcoal canister. Even if you do not overfill, if you do not know the history of the vehicle, this may still be the fault.



- Inspect the fuel vapor recovery and fuel vent system (as well as the pressure and return lines) for evidence of cracks or other areas for leakage. We suggest inspection of the system first or replacement of the canister and valve as a first step. Other possible causes of these codes include failure of one of the pressure sensors, the purge control/shut-off valve or the diagnostic leak pump.

Fault Codes Indicating Oxygen Sensors.



Oxygen sensor.

Oxygen (O_2) sensor codes include “out of range”, “too long to closed loop”, “Lambda Control”, etc. These will typically mean the oxygen sensor must be replaced. (Oxygen sensors are generally rated for a lifetime of 60,000 to 100,000 miles.) BMWs produced through 1995 will have one or two oxygen sensors mounted in front of the catalytic converter.

BMWs produced from 1996-on will have oxygen sensors both in front of and behind the catalytic converter(s), (referred to as pre-cat and post-cat). There can be up to four sensors – left pre-cat, right pre-cat, left post-cat, right post-cat. The codes will usually indicate which sensor is at fault.

- “Out of range” means that the reading the ECU (Engine Control Unit) is receiving from the sensor is not what it expects for the given conditions. This can be due to an old sensor being slow to react (which can also show up as “slow response” and means the sensor should be replaced), or a vacuum leak in the intake system, or an exhaust leak prior to the catalytic converter, or secondary air problems and other issues that can change the air/fuel ratio. If there are no obvious faults, try swapping the left and right sensors (if equipped), clearing the code and seeing if it returns and indicates the other side. This means the sensor is, indeed, at fault.

- “Too long to closed loop” and “oxygen sensor heater” codes mean that the sensor is taking longer than expected to start sending meaningful data to the ECU (i.e. it is taking too long to heat up). This is typically a fault in the sensor heater. If this is the case, the sensor must be replaced. There are other codes that could state a direct issue with the oxygen sensor heater circuit. In this case, the fault is likely the actual heater in the sensor and the sensor must be replaced, or it could be an issue with the power through the circuit, such as a faulty relay. Additionally, a fault in the secondary air system can contribute to a longer than normal warm up period for the sensor.

- Any codes mentioning “lambda” are referring to the oxygen sensor system. Treat them in a similar fashion to the above points.

Fault Codes Indicating Catalytic Converters.

A typical catalytic converter (cat) code would be “cat efficiency too low”. Cat codes will only appear on 1996 and later models that have post-cat oxygen sensors that monitor the efficiency of the cats. The voltage reading from the post-cat sensors is compared the the voltage reading from the pre-cat sensors; the difference tells the ECU if the cats are working properly. When cat efficiency codes are generated, it is always best to consider replacing the post-cat oxygen sensors as a first step. This is because the system may be picking up a post-cat oxygen sensor that is sluggish but is not yet bad enough to register its own fault code. If replacing the oxygen sensor does not clear up the code, you may need to replace the cats, in which case you would need new oxygen sensors anyway.

Fault Codes Indicating Electric Thermostat.

Most BMWs 1999 and later have electrically operated thermostats. If codes such as “electric thermostat control” show up, replace the thermostat. Often times, other codes may be present at the same time because the bad thermostat is allowing the engine to run too cool or too hot. After you replace the thermostat, clear all codes and see if any return.

Fault Codes Indicating Mass Air Flow Sensor.



Hot film MAF.

There are various codes that refer to the Mass Air Flow (MAF) or Air Mass sensor (MAS). If any of these codes appear, the first course of action is to clean the sensor. We recommend “Mass Air Flow Sensor Cleaner” aerosol spray from CRC Industries, (available at many auto parts stores). Remove the sensor from your BMW and follow the directions on the product, spraying the metal plate or wires in the middle of the sensor. Install the sensor and clear the code. If the code returns, there may be a genuine fault in the MAF, which would likely indicate replacement is necessary.



Hot wire MAF.

Other Fault Codes.

As stated at the beginning of this article, these are just some of the more common fault codes. Our fault code reader comes with a booklet that explains in shorthand what the various codes indicate. *We highly recommend having the appropriate repair manual by your side!* (Our favorite is the Bentley manual, which is available for a range of BMW models.) Once you have determined the cause of a fault code, the manual will guide you, step by step, through replacing or repairing the offending part(s). If you can't find the answers to your questions in the manual, feel free to ask “Bavarian Otto.” You can reach us at 800.535.2002 during our normal business hours (Mon–Thu 8am–9pm; Fri 8am–7pm; and Sat 9am–4pm) or, if you're not in a hurry for your answer, e-mail Otto@BavAuto.com.