

fast times

the newsletter of **Bavarian Autosport**

summer 2004

Performance headers now available for 3 series 92 thru 98, M roadster thru 00 and 528i 97 on.



Our own Dan Curtis on the road course at New Hampshire International Speedway in his 1995 325i.

The idea behind performance headers is to replace the stock manifold with something that will improve the flow of exhaust gases and increase power and torque. Our performance headers do this in four ways:

1. Larger diameter tubes – allow more gas volume to pass through, reducing backpressure.
2. Longer tubes – improve velocity of gasses to provide a wider mid-range torque band.
3. Equal length tubes – exhaust gases reach the collector at the same time and velocity, reducing turbulence which increases torque, especially in the mid-range of 3500-5500 rpm.
4. Metallic-ceramic coating – many headers are coated on the outside; our performance headers are coated on both the outside and the inside.

Why is this so important? Read on.



Heat loss degrades power.

Your BMW's exhaust system absorbs tremendous amounts of heat generated by the engine's combustion process. Surface temperatures on exhaust headers can range from 700°F to 1500°F. As heat is sucked from the exhaust gases into the metal of the manifold, the gasses cool and slow down, robbing your car of power. This intense heat drives oxygen molecules out of the metal in your BMW's manifold, leaving it brittle and subject to cracking. Also, a hot exhaust system radiates this heat to other components under the hood,

hindering their performance and speeding deterioration of parts such as plug wires, alternators, hoses and belts. It's not a good scenario.

Sterling™ coating to the rescue.

Bavarian Autosport has Jet-Hot Coatings apply a Sterling finish to both the inside and outside of our headers. Sterling is a proprietary metallic-ceramic coating that insulates the metal of the header, reducing heat absorption by 25%. As a result, exhaust gases lose less heat and maintain more of their velocity. This added insulation also lowers underhood temperatures and gives our headers a longer useful life. In fact, the finish is warranted for three years, and the headers have a lifetime warranty against rust-through.

All our headers bolt directly to your BMW's engine and your exhaust (stock or free-flow). Early applications are for standard transmissions only, but headers for the 3 series 92 thru 98, M roadster thru 00 and 5 series 97 on, work with all transmissions. 🔧🔧🔧

Our performance headers are available for the following BMW models:

- 2002
- 320i
- 320/6 thru 82
- 323i thru 91
- 318i thru 86
- 325e/i thru 91
- 325i/is 92 thru 95
- M3 95
- 328i/is 96 thru 98
- 328ic 96 thru 99
- 323is/ic 98, 99
- M3 96 thru 99
- M roadster thru 00
- Bavaria
- 3.0si
- 530i thru 78
- 535i thru 88
- 528i 97 on
- 6 series thru 79
- 635csi



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

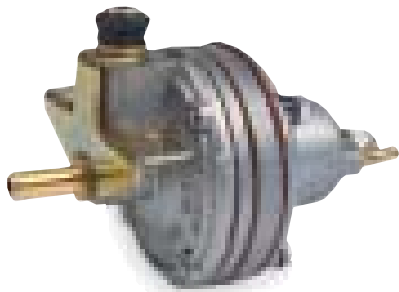
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BAVARIAN
autosport®
PRODUCTS FOR BMW ENTHUSIASTS

“Rising rate” adjustable fuel pressure regulator will boost your Bimmer’s acceleration.



Adding an adjustable fuel pressure regulator is a great way to improve your BMW's performance. As you apply throttle and the manifold vacuum drops, the regulator increases the fuel pressure which, in turn, boosts response during the lackluster mid-range of the acceleration curve.

The problem with many aftermarket fuel pressure regulators is you have to get out of the car and adjust them by hand to suit the conditions. Our fuel pressure regulator (AFPRM) is unique in that not only is it adjustable, it utilizes a “rising rate.” This means that the rate at which pressure rises is steeper than other regulators; the fuel pressure increases faster, allowing you to set

the regulator at a lower initial pressure (for idling and steady cruising), yet still get the increased pressure you want when accelerating.

There is an adjustment screw on the regulator itself, so you can select the pressure range you prefer. But as you drive, our AFPRM is continually varying the pressure to match the demands on the engine. Once you select your preferred pressure range, you shouldn't have to touch the AFPRM again.

The maximum pressure available depends on the fuel pump pressure. On a 1987 325es, for example, you could raise pressure above 50psi if you wanted to (stock pressure is 32psi). On this car we would suggest starting out at about 30 to 35psi at idle with the vacuum hooked up, and experimenting from there.

The AFPRM works on many fuel injected BMWs made after 1974. To find out if it will work on your model BMW, ask your phone rep or visit bavauto.com. (P.S. Our AFPRM is normally \$199.95; it's on sale now for \$149.95.) 🔧

Beat UV degradation... and stay cool doing it!



One of the best things you can do to maintain the look and value of your BMW's interior is to protect it from the damaging effects of the sun's ultraviolet (UV) rays. If you leave your BMW sitting in the sun for a few hours each day



(e.g. in the parking lot at work, in your driveway, etc.), we highly recommend using our Bavarian Autosport windshield sun shade. Not only will it protect your BMW's interior against damage and fading, it'll help keep the cabin cooler so it won't be as sweltering when you return. (Plus the AC won't have to work as hard to cool the cabin down.)

Yes, we know, there are a lot of sun shades out there. But there are two things that make ours different from the others:

- Ours is custom-cut to fit your BMW's windshield precisely. No generic sizing with gaps on the sides or top. No need to wedge it in place with towels or tape. Just unroll it, slide the lower edge in front of your dash, tilt the top of the sunshade up and flip down the sun visors. When you're ready to drive away, simply roll it up and secure it with the attached velcro strap.
- As with all Bavarian Autosport brand products, our sun shade is backed by our two-year/24,000 mile satisfaction warranty. If you're ever unhappy with its quality or performance during this period, call us and we'll either replace it or refund your money, whichever you prefer.

(By the way, the Bavarian Autosport sun shade is normally \$39.95, but it's on sale now through August 31 for \$34.95.) 🔧

Product Focus: Scorpion



We think Scorpion exhausts are one of the best kept secrets of the BMW aftermarket. Here's why:

Scorpion exhausts are manufactured in Europe. The company was formed in 1991 by two partners with

over 30 years of combined experience in the development and manufacture of stainless steel performance exhausts. Today, Scorpion employs more than 100 people and is still growing.

BMW's were one of the first cars to be developed by Scorpion. The line has been a massive success ever since, with sales going to many tuning companies around the world. Each exhaust is developed on the specific BMW model it will serve. This allows the engineers to maximize performance,

looks, sound and ease of fitment. Not only do you get an excellent, sporty sound, you get a performance boost you can feel in the seat of your pants.

Scorpion exhausts are manufactured from T-304 stainless steel throughout, including the tubing, the perforated tubing, the sheets and the bars. The tips are also made from T-304 stainless steel that has been hand-polished to a mirror finish. State-of-the-art, computerized tube-bending machines are used to produce all the bent pipe, and a seam welding machine is used in the manufacture of the cans. All components are assembled in purpose-built jigs and finish-welded by hand. And everything is done under ISO 9001:2001 quality system guidelines.

Every Scorpion exhaust comes with a limited lifetime warranty, and they're priced to be an excellent value. They're an even better value right now at 10% off. Sale ends August 31. so don't delay. 🔧



Scorpion 100% stainless steel exhaust systems are offered with a choice of tip styles – 5" oval (top) or twin 3" (above).



Replace those missing tools!

We stock many common tools for BMW tool kits, (some popular examples are listed below). And we can get you any BMW tool we don't stock. For more tools, ask your phone rep or visit www.bavauto.com.

Channel lock pliers	71 11 1 179 522	\$20.95
Lug wrench, 17mm	71 12 1 179 953	\$10.95
Small screwdriver, grey	71 11 1 179 629	\$5.95
Wrench, 8mm/10mm	71 11 1 112 893	\$5.95
Wrench, 12mm/13mm	71 11 1 126 148	\$5.95
Emergency window tool	54 12 1 873 572	\$5.95
Hub cap wrench, 80mm (for BBS-style wheels)	36 13 1 179 325	\$8.95
Spark plug wrench, 21mm	71 11 1 179 745	\$19.95
Bar for spark plug wrench	71 11 1 093 774	\$5.95

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 our easy-to-use tech question form.

Give me a brake (light)!

Dear Bavarian Otto,

My first ever question to you! I own a black 1997 318ti. I recently had all my brakes done (front and rear pads, rotors and wires). The mechanic said the parts you sent me fit perfectly! The following day I took the car in for inspection and it failed due to the 3rd brake light being on. It's weird -- when the headlights are off, the third brake light works the way it should when I press the brakes. But when you turn on the lights, the 3rd brake light turns on as if I am pressing the brakes. The other two brake lights work fine whether the lights are on or off! I checked the fuse box under the hood and that doesn't seem to be the problem. Can you please help me? Thanks!

Joel

Otto replies: Joel, you may want to double check to see if an incorrect bulb was installed somewhere in the taillights. You may have put a single filament bulb in a dual filament location and that could be back feeding the brake light circuit. It is really difficult to determine without spending some time with the car. I can offer you the Bentley Manual which will have all of the wiring diagrams in it. Please feel free to contact me with any further questions or comments.

Hey Otto!

Well, you were right! Apparently the bulb they gave me must have caused it! I just switched the right brake bulb with the left brake bulb and "Eureka!" the third brake light turned off and everything worked fine. The next day I passed inspection. And to think my 2 different mechanics said it was something with the brake pedal or the brake switch (gee, that would have cost some \$\$\$), when it was as simple as you said it was. Thank you! Thank you! Thank you!

Joel (Bavarian Autosport customer for life!)

I see the light, but I don't want to.

Dear Bavarian Otto,

After changing the brake pads on my 1998 528i, the brake service light is still on. How do I turn it off?

Glenn

Otto replies: Turning off the service light is easy, Glenn. All you have to do is put the key in the ignition and turn it forward as far as it will go without starting the car. Don't do anything else for two minutes, then turn the key off and start the engine – the light should be gone. (I am assuming you installed new sensor wires with the new pads. If not, you may need to install them. We have them in stock.)

Dear Bavarian Otto,

I received your latest Fast Times with the article about replacing a computer light bar. The one on my 1986 325e had just gone out two weeks earlier. I thought, "Why not?!" So... I gave it a try. After two very helpful phone calls to you, I completed the installation of the new light. I called my son and told him what I had done. He said, "Great! Save the instructions and you can do it again in another 18 years. Plus you'll be able to use the parts you no doubt have left over." I had to laugh – I was holding a brass screw and a clip in my left hand! Still, everything works great. Thanks so much for all your help.

Gretchen

My cap runneth over.

Dear Bavarian Otto,

My 1985 325e overheats. I replaced the thermostat and flushed the engine and it still overheats. Is there an easy way to check and see if the fan is working?

Mike

Otto replies: Is your 325e overheating when in stop-and-go driving and idling, or when you are driving at highway speeds? If it's OK at highway speeds and has trouble at slow speeds and idle, I would suspect a worn engine fan clutch and/or a non-functioning auxiliary fan. To test the auxiliary fan, pull the wires from the two temperature switches on the driver's side of the radiator. With the engine running or the ignition on, connect the two wires from one of the switches together. The fan should come on (at either the low or the high speed). Now, disconnect those wires and connect the two wires from the other temperature switch. The fan should now come on at the other speed (high or low). If the fan works on both speeds, I would suggest new temperature switches. (We also carry switches with lower-than-stock temperature settings that will turn the fan on sooner.) If the fan works only on high speed, you need a new low-speed resistor for the fan. If the fan does not work at all, turn the ignition on and check for 12 volts at the green and black wire for the temperature switches (from the green/black wire to ground). If there is 12 volts, the fan is bad. If there is not 12 volts, the relays or the fuses may be bad. Good luck! If you need additional help, feel free to call.

Bavarian Profile

Nick Theodorou



When we asked Nick how long he has been working on cars, he replied, "I can't remember anything else." For the past eight years, Nick has been helping Bavarian Autosport's customers. Among the BMWs he has personally owned are a 1600, 2002, Bavaria 3.0, 320i, E30 318i, E28 528e and others. He has also worked on dozens of other BMWs, making him

a walking repository of Bimmer knowledge. When he's not helping other BMW enthusiasts, Nick likes to spend time with his kids and follow their interests. ("They are into something different every week!") He also has a 200-year-old house that demands a good deal of attention, and he's collecting parts to restore a vintage Mustang.

Replacing BMW hood and trunk emblems. ✎

New emblems are inexpensive and can be replaced in a few minutes with just a flat-bladed screwdriver, needle-nose pliers and a clean rag. Follow along as we outline the simple steps for removing and replacing your emblems.



Figure 1

1 To protect your BMW's paint, fold the rag and lay it on the hood next to the 3 or 9 o'clock position on the emblem (figure 1). Use the tip of the screwdriver to poke the edge of the emblem. Using your thumb or finger as a fulcrum under the screwdriver, lift the edge of the emblem up just enough so you can fit the screwdriver underneath, then do the same to the other side.



2 Evenly work each side of the emblem up. DO NOT pull up on one side too far as this could damage the hood paint on the opposite side. To avoid scratching the paint with the screwdriver, lift with your fingers as soon as you can get a decent grip on the emblem.



3 Remove the emblem when loose.



4 Pull the grommets from the mounting holes in the hood panel. Insert new grommets and push them down to fully seat them.



5 Install the new emblem into the grommets. Press down evenly until it is fully seated.

How to size our wheel emblem decals. ✎

Our emblem decals (catalog page 80) are an inexpensive way to customize the look of your BMW. They let you turn any of the blue and white "pie sections" in your existing emblems to black, red or silver. (You can change just two sections or all four.) While BMW's hood and trunk emblems are the same sizes for most models, the wheel emblems come in several sizes, depending on the style wheel you have. In the catalog, we say that our wheel decals are available in two sizes: 32mm (1 1/4") and 38mm (1 1/2"). (We're working on other sizes – stay tuned.)

These measurements refer to the diameter of the blue and white "pie sections" only, not the diameter of the entire emblem (see illustration). Before ordering, please measure your wheel emblems to make sure: a) your wheel emblems are one of these two sizes, and b) you order the correct size.

Also remember: you are getting the decals only – not the emblems as well. If you need new emblems, we have those, too, and would be happy to put together a package of new emblems plus decals.



Measure here... to here!

5 series 97 thru 03: Replacing cup holders. ✎

One of the most annoying things about the 5 series 97 thru 03 are the factory cup holders. While it's great that BMW finally saw fit to give us our beloved cup holders, these particular units are rather flimsy and prone to failure – the "fingers" that hold the cups won't close and end up hanging out. Fortunately, the cup holder assembly is inexpensive (part #51 16 8 190 205, \$31.95) and can be replaced by any BMW owner with a #1 or #2 Phillips head screwdriver in just a few minutes.



1 Open/close the cup holder finger a bit to expose the securing screw underneath. There is a screw on each side. Loosen and remove both of the screws.



2 Pull the cup holder assembly out of the center console. Insert the new cup holder assembly and reinstall the screws. You're done. (Wow... how easy was that?)

3 series 92 thru 98: Replacing fog lights. ✎

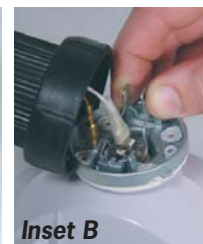
Two of the most common requests for help that Otto receives for this chassis is how to change the H1 fog light bulbs (\$5.95 each for replacement bulbs; \$84.95 pair for PIAA XtremeWhite) and what to do about cracked fog lights (\$69.95 each side). Both are simple; all you need is a medium, flat-bladed screwdriver. Observe:



1 The fog light assembly is held in its mounting bracket by a pivot pin on the outboard end and a simple snap-clip on the inboard end. To release the clip, insert the screwdriver into the upper access hole, press on the clip (shown in inset A) and remove the fog light assembly. [NOTE: M3 bumper shown above; on non-M3 bumpers access hole is at outer ends of the grill openings.]



2 Unplug the wiring harness. NOTE: a few new fog light assemblies come with the bulbs already installed. If your assembly does, proceed to Step 4.



Inset B

3 To replace the bulb, twist the black connector housing counterclockwise and remove it from the fog light bulb mount. Squeeze the ends of the bulb retainer clip (inset B) and pull out the bulb. Unplug the bulb wire and replace the bulb. (DO NOT touch the bulb's glass with your bare fingers.) Reassemble the connector housing.



4 To install the fog light assembly, align the outboard pivot hooks with the tabs on the mounting bracket and push the inboard end into the opening until the securing clip snaps closed.

How easy is this? do-it-yourself

Changing the brake fluid in your BMW. *🔧*

One of the biggest enemies of your BMW's brake system is moisture; specifically, moisture in the brake fluid. It's no secret that brake fluid is highly hygroscopic (absorbs moisture). Brake fluid pulls moisture from the air, through the reservoir cap and actually through the rubber brake lines and past the caliper seals. What does this mean? The hydraulic fluid that is used to operate your brakes will eventually corrode your brake system!

To help keep brake fluid free of moisture, BMW recommends flushing and changing your brake fluid every 24 months. While this is far better than some other manufacturers' recommendations (some do not list this service at all), we have found that changing your fluid yearly is much more effective at protecting your brake and clutch components from corrosion due to moisture in the fluid.

Flushing your BMW's brake fluid means simply moving fresh brake fluid through the system until the fresh fluid is coming from each bleeder valve. Thanks to the Bavarian Autosport Pressure Bleeder (part # PB01A, \$44.95), the job is now a one person task and can be done in a relatively short period of time. To flush your brake system you'll need the following tools and supplies:

- 2 liters brake fluid (you may not need two, but often do). We recommend ATE Super Blue or ATE Super Gold from Germany; the quality is unsurpassed and the colors make it easy to see when fresh fluid has reached the bleeder valves.
- Bavarian Autosport Pressure Bleeder
- 7mm combination wrench (for most models) with both 6-point and open ends.
- Clear container (to catch old fluid).
- Turkey baster or other suction device.

NOTE: Raising your BMW and removing the wheels gives you greater access to the brake caliper bleeder screws, making the job that much easier.



Time-saving tip from Bavarian Otto:

If you're going to raise your BMW and take your wheels off anyway, this would be a great time to swap out your old brake pads and install new ones. Mintex makes an outstanding replacement pad; see "Product Focus" on this page. For my article on changing brake pads, go to bavauto.com/newsletter and download the Summer 2003 issue.

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1 Test the bleeder screws to make sure they're not seized (figure 1), but **DO NOT OPEN**.

2 On manual transmission BMWs, it is wise to add a hose clamp to the fluid line for the master cylinder where it attaches to the nipple on the side of the fluid reservoir. While this is not always required, we have seen the fluid line pop off once the reservoir is pressurized.

3 Using the turkey baster, remove old fluid from your BMW's brake fluid reservoir. Remove as much as possible and **DO NOT** touch the brake pedal or bleeder screws.

4 Fill the reservoir with fresh fluid.



Figure 2

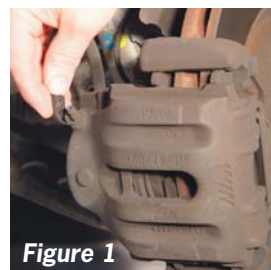


Figure 1

5 Remove the length of clear vinyl hose from the inside of the Pressure Bleeder tank. Add 1 liter of fresh brake fluid to the pressure bleeder and screw the outlet hose and cap to the brake reservoir (figure 2).

6 Pump the Pressure Bleeder to about 15psi for non-ABS cars and 20-25psi for ABS cars (figure 3).

7 Attach the supplied length of clear vinyl hose to the bleeder nipple on the right rear caliper and insert the free end into the clear container. Open the bleeder screw and let the fluid flow until fresh fluid appears (figure 4). Close the bleeder.

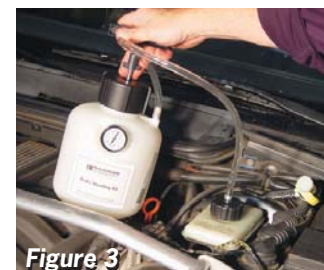


Figure 3

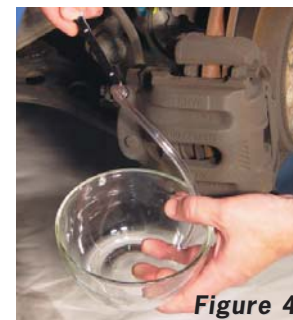


Figure 4

8 Proceed around to the left rear, right front and finally the left front calipers. Keep an eye on the fluid level in the Pressure Bleeder as well as the pressure. Add fluid or pump up the pressure as required.

9 Relieve the pressure in the system by unscrewing the pump cap on the Pressure Bleeder. Disconnect the

Pressure Bleeder from the brake reservoir and adjust the fluid level in the reservoir as required. Replace the reservoir cap.

Install and torque the wheels and lower the car. Before driving, test the brakes by pumping the brake pedal a few times. If you have any questions, please call 800.535.2002 or e-mail your questions to otto@bavauto.com.

ATE brake fluid is on sale now through August 31 – originally \$11.95/liter, now \$10.95/liter.

Product Focus: Mintex pads



Intelligent braking from Europe's No. 1 manufacturer of automotive friction materials.

After more than a decade of research, Mintex has

developed a family of vehicle-specific friction compounds. These compounds have been formulated to ensure safe braking with no noise, and no need for noise dampening attachments on the back of the pad.



Vehicle-specific friction means that Mintex brake pads have been engineered and tested to match the individual braking characteristics of each BMW model. BMW drivers demand brake pads that provide a consistent brake pedal feel on every brake application, whether

during cold braking or in a panic stop. The vehicle-specific compounds in Mintex pads deliver that consistency.



Additionally, Mintex pads offer long life with minimal rotor wear; they exceed all European and U.S. braking standards; and they've earned the "E" mark in Europe meaning they meet or exceed all OE specifications. Mintex pads are made by TMD Friction, the world's largest friction manufacturer and OE supplier to vehicle manufacturers in Europe, Asia and North America.

Vehicle-specific compounds, quiet operation, long life, rotor friendly... these are all great reasons to use Mintex pads. But the thing our customers tell us they like most about Mintex is they don't get as much brake dust on their wheels as they did with their OE pads. Plus, at just \$29.95 to \$54.95 a set, Mintex pads are friendly to your wallet, as well. *🔧🔧*