

Seven simple ways to save at the pumps.

If you knew of a gas station that would give you a free gallon of gas with every fill-up, you'd make it a point to buy your gas there, wouldn't you? That's essentially what happens when you improve your BMW's gas mileage by just 8%. For example, the computer on our 2001 325xi says we average 24 mpg (city and highway combined). If we could improve that by 8%, we'd get almost 26 mpg (25.92 to be precise), which means for every 14 gallons we burn we would travel an additional 26.88 miles. That's like getting a free gallon with every fill up!



If this offer were real, can you imagine the line that would form?

"Eight percent," you think. "That sounds like a lot." It's not. In fact, depending on the condition of your BMW, you might be able to improve your mileage by 16% (or more!), which is like getting two extra gallons per fill-up. Here's what you can do to improve your mpg and save at the pumps.

NOTE: In this article we often refer to articles in previous editions of this newsletter. You can read or download all back issues of Fast Times at www.BavAuto.com/newsletter.

1. Perform an ignition/engine management tune-up. (See *Spring 2005 Fast Times*.) Studies have shown that a poorly tuned engine can waste as much as 10 to 20 percent of the gas in your tank, depending on a car's condition. Items you should check/replace include:

Cap & rotor. For BMWs without direct-fire ignition.



Above: high performance ignition wires, cap, rotor, spark plugs and connector boots.

Oxygen sensor. According to the Department of Energy (DOE), replacing a worn-out oxygen sensor can improve mileage as much as 40 percent. (*Fall 2004 Fast Times*.)

Spark plugs. We recommend Bosch spark plugs.

Ignition wires. Used on BMWs without coil-on-plug (direct-fire) ignitions. For an additional \$20 you can upgrade to our high-performance ignition wires. They provide a hotter spark for a more complete burn, giving you additional firepower and less carbon build-up.

Spark plug connectors. (Also known as spark plug boots.) For BMWs with direct-fire ignitions. Replace them when you replace your spark plugs.

Ignition coils. Older BMWs use remote coils; newer BMWs have individual coils on the spark plugs. For even greater fuel economy, use our high-performance ignition coils. They also create more torque at low rpm and give you more horsepower at high rpm. (*Summer 2005 Fast Times*.)

2. Change your filters. According to the DOE, replacing a clogged air filter can increase your mileage by 10 percent, depending on how dirty the filter is. Replacing the fuel filter is also a good idea because a partially clogged fuel filter can cause the

NEW! LED for Angel Eyes.



PIAA's replacement assembly turns angel eyes from yellow to white to match the color of your H.I.D. headlamps. Works with 5 series 97 thru 03, X5 02 thru 05. \$129.95 pair.

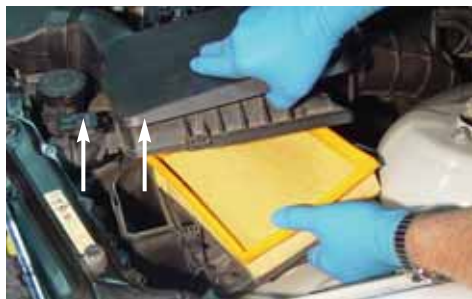


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PRODUCTS FOR BMW ENTHUSIASTS

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Changing the air filter on BMWs is a simple task.

engine to run lean (not enough fuel), which actually makes it use more fuel in order to produce the same power. And don't forget your BMW's charcoal canister! (*Winter 2005 Fast Times.*)

3. Change your oil. Using clean oil reduces wear caused by friction between moving parts. It also removes harmful substances from the engine. Using synthetic oil like Lubro

- **Synthetic differential oil.** We highly recommend Lubro Moly and Redline.
- **Synthetic manual transmission oil.** Again, we like Lubro Moly and Redline.

If your BMW is your “daily driver” (i.e. not taken to the track or autocross events), another way to save fuel is to **use a lighter weight engine oil**. The lighter the oil's weight, the less resistance the engine faces. That reduction in resistance translates directly into better gas mileage. We recommend Voll-Synthese 0w-40; it's thin enough for easier start-up, yet protects at higher temperatures.

4. Regularly use Lubro Moly's Jectron and Ventil Sauber to clean the fuel system and control carbon

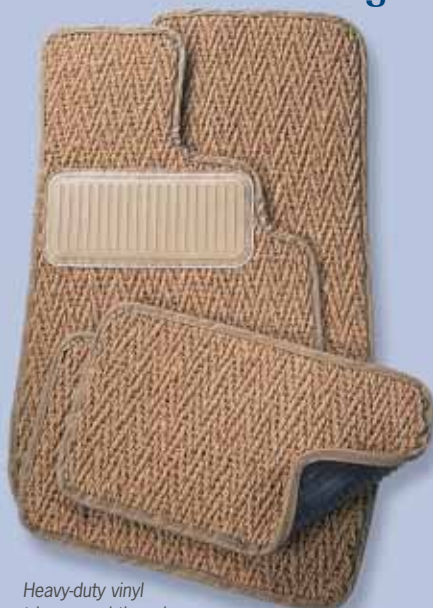


Save gas and service fees – change the oils yourself!

Retro style meets modern manufacturing.

Coco mats are made from coir, a rugged, natural fibre from the husk of coconuts. Years ago, coco mats were popular in cars that had no factory floor mats (e.g. early BMWs and Porsches). Those original coco mats had no backing, so dirt fell through the coco fibers to the floor. Our new coco mats have a rubber backing that catches the dirt before it hits your carpet. (To clean, just take 'em out and shake 'em out.) The backing also has nibs on the bottom to grab your carpeting, so the mats won't slide around underfoot like the originals.

Our coco mats are custom-cut to fit your year and model precisely, so please allow 2-3 weeks for delivery. Normally \$119.95 for a set of 4 (set of 2 for roadsters), they're on sale for \$109.95 through July 31, 2006.



Heavy-duty vinyl trim around the edges prevents our coco mats from fraying the way the original coco mats did.



Jasp Weave Black/Gray Weave Black Herringbone Natural Herringbone Black/Red Weave Calico Weave



build-up on valves. We recommend a program that starts with a can of Jectron (\$7) in one tank of gas, followed by a can of Ventil Sauber (\$5) in the next. (We like to refer to this as our “\$12 tune-up.”) We suggest you then alternate the two additives monthly; for example, Jectron in August, Ventil Sauber in September, etc. This regimen does wonders for engine performance. Both additives are available in individual cans or money-saving six-packs.

5. Read you BMW's engine fault codes. If your “check engine” light is on and you don't know why, you could be wasting a lot of gas. Our fault code reader can help you identify what to fix on your BMW. (*Spring 2005 Fast Times.*) Not only will a proper-running BMW use less gas and perform better, you'll have an idea of what's wrong before you take it to a mechanic, (which could save you even more money).



Reading fault codes is easy!

6. Maintain your tires. It's a simple fact of physics: underinflated tires require more energy to roll, and that means more frequent fill-ups. According to the DOE, you can improve your fuel economy by about 3 percent if you just keep your tires



If proper tire pressure saves 3% on gas, these will pay for themselves in no time.

inflated to their proper pressure. The recommended tire pressure for your BMW can usually be found on the jamb of the driver's door or inside the glove box door. (The psi number on the sidewall of your tires is the *maximum* pressure of the tire, *not* the proper inflation level.) Do not rely on the pressure gauges on those “Add-A-Quarter” air pumps. They can be off by 20% or more. Use something accurate, like our precision tire gauges or our easy-to-read digital tire gauge. Once your tires are inflated to the proper level, put a set of TireChecks or Air Alerts on your valve stems to let you know when your BMW's tire pressure drops too low.

7. Modify your driving habits. Nobody likes to hear this, least of all BMW drivers who enjoy spirited driving, but being smart about your driving can have a huge impact on your fuel consumption. Here are a few simple suggestions:

Minimize stop-and-go driving. In city driving, nearly 50 percent of the energy needed to power your car goes to acceleration. If you can anticipate traffic conditions and don't tailgate, you may be able to just slow down instead of coming to a complete stop, improving your fuel economy by five to ten percent.

Avoid unnecessary idling. As a general rule, turn off the engine if you anticipate a wait of more than one minute. No matter how efficient your car is, unnecessary idling wastes fuel, costs you money and pollutes the air.

Remove excess weight from the vehicle. Avoid carrying unneeded items; an extra 100 pounds in the trunk reduces fuel economy by one to two percent.

Reduce drag. If you have a removable roof rack or rooftop carrier, install it only when absolutely necessary. Not only does it add extra weight, it increases aerodynamic drag on the vehicle, which contributes to a loss of fuel economy.

The majority of what we're recommending in this article are basic maintenance procedures you should be doing anyway. If you haven't done them recently, it might not be a bad idea to do them now. Besides, these procedures will not only save you money at the pump, they'll improve your BMW's performance. (Who doesn't want that?!) Plus... you can do every single one of these procedures yourself, saving you a bundle over what the dealer would charge.

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.

My air conditioning is cool but noisy...

Dear Bavarian Otto,

I have a 1997 528i that makes a noise in the area of the A/C compressor when the A/C is on. The system still makes cold air. Could it be the A/C clutch making the noise or do I have to replace the entire compressor as well? Any insight into this issue would be appreciated.

John

Otto replies:

We are starting to see what we would call "premature" issues with the A/C compressors on the later BMWs.... specifically the 6-cylinder models. Is the noise like a knocking or clunking? This is what we are finding to be the typical symptom. (Two of our employees have had this symptom and ended up having to replace their compressors.) I suspect your compressor needs replacing as well. If the A/C system is currently working, you can choose to let it go until it fails or you can plan on replacing the compressor before that. Please call and speak with one of our phone reps. He/she can give you a price and delivery time on a replacement compressor.

The truth about Kleen Wheels.

Dear Bavarian Otto,

Great stuff in the newsletter! Keep it coming. I have a 1998 740il. What is your thought on Kleen Wheels (the covers to keep the brake dust off the wheels). Everybody has a different take on them. I figured I might as well go right to the expert. Thanks.

Bill

Otto replies:

You are correct, John, there are many opinions on Kleen Wheels and we have heard them all. After decades of working with this product on BMWs, we believe Kleen Wheels are a great way to keep your wheels free of brake dust. Some people think that Kleen Wheels will trap the heat generated by the brakes and warp the brake rotors. This can happen, but only if you heat your brakes up super-hot under extreme driving conditions such as at a track day or autocross event. If you drive your car normally (even up to triple digits on occasion) you will have no problems whatsoever. Kleen Wheels actually have vents cut in them which pull air from the outside of the wheel and direct it in towards the rotor to help cool them. Out of the thousands of sets we have sold, not one customer that I am aware of has had any problems as a result of installing Kleen Wheels. If you decide that you would like order a set for your BMW, you'll need to get the part number off your wheels to get the correct fitment. You can usually find the number near the BMW emblem or on the back of the wheel. And remember, Kleen Wheels are available for OE BMW wheels only.

The only dumb questions are the ones you don't ask.

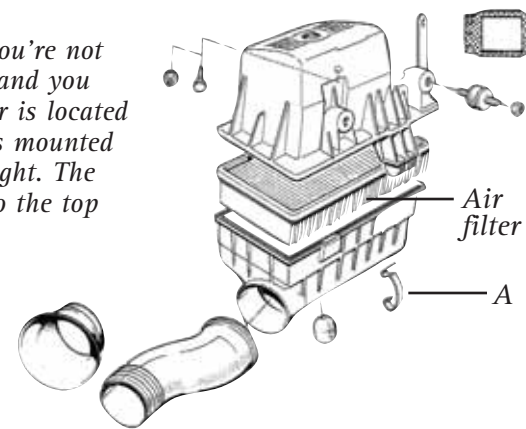
Dear Bavarian Otto,

I'm embarrassed to ask this question... I have never been able to find the air filter on my 1989 325i. Would you please give me the instructions for locating it, so that I can check the filter and replace it if required. Thanks.

Joe

Otto replies:

Don't be embarrassed, Joe – you're not the first to ask this question, and you won't be the last. The air filter is located in the black plastic box that is mounted behind the driver's side headlight. The bottom of the box is secured to the top by four spring clips (A in the attached diagram; the left side of the diagram is to the front of the car). To access the flat panel air filter, just pop the clips and drop the bottom down.



Should I mix them together, or keep them separate?

Dear Bavarian Otto,

Just purchased six each of the Lubro Moly Ventil Sauber and Jectron cleaner for use in our 2004 745li and 2000 528it. (By the way, your service is outstanding! I ordered these products, along with some others, on the afternoon of 4/3/06 and received the entire shipment the next day. Thanks!) My question is: can I use the Ventil Sauber and Jectron cleaner at the same time or do I have to use them separately (i.e. different treatments)?

Scott

Otto replies:

Thank you for your purchase... and the kind words! We recommend that you use the Jectron and Ventil Sauber separately (one in one tankful; the other in another tankful). After your initial applications, you can settle into a program of alternating the products every other month. [Ed. note: learn more about Jectron and Ventil Sauber in this issue's lead article, "Seven ways to save at the pumps."]

Bavarian Profile



Mike Bailey

This is actually Mike's second term of employment with Bavarian Autosport. He started with the company in June 2002, working behind the counter in the showroom. He left in September 2003 for (quoting here), "what I thought were greener pastures." A few months later, Mike asked to come back to Bavarian Autosport. (And we were glad to get him back... his knowledge of automotive parts is surpassed only by his incredibly cheerful attitude.) For as long as he can remember, he's been into cars. Growing up, he used to help his uncle work on trucks, tractors or one of his many race cars. Before coming to Bavarian Autosport, Mike worked in the parts departments at several import car dealerships. He's always loved BMWs and jumped at the opportunity to be working around them on a daily basis. His current project car is a 1985 Chevy Camaro IROC-Z, but his dream car is a 95-99 M3 Coupe. (A little fond of horsepower, eh, Mike?)

How easy is this?! do-it-yourself

Is your classic BMW's dash not what it's cracked up to be? 🛠️



We love older BMWs from the 70s and 80s, but it seems as though nine out of ten we see have unsightly cracks in the dash. Replacing a factory dash panel is

very expensive (if you can find one) and requires a significant amount of time and labor. An easier, more affordable alternative is the Coverlay – a molded plastic skin that installs right on top of your original dash panel. Manufactured from molds that were built using original BMW dash pads, Coverlay products fit perfectly over your dash and give it a “like new” appearance. And when we say a Coverlay is easy to install, this is almost making it sound too difficult. Come on along as we install one in a 1980 323i.

Note: You can glue the Coverlay to the dash with silicone glue, or simply install the Coverlay without any glue. Some models are more apt to need at least some gluing in order to sit properly. Others (3 series) are really fine without gluing. If the Coverlay is to be glued on, you should lightly sand the dash panel prior to cleaning.

1. Clean the dash panel with any ammonia type window cleaner.

2. Test fit the Coverlay prior to any gluing.

3. Gently move the Coverlay up over the dash toward the base of the windshield (figure 1).



4. Work the Coverlay over the dash pad being careful to assure that it is fully into the forward edge of the dash at the base of the windshield (figure 2).

5. If you like the way the Coverlay sits, at this point, you may choose not to glue it. If you decide to glue, remove it and apply the silicone adhesive as per the detailed instructions included with the Coverlay.



That's it! Coverlays are available for 3 series thru 91, 5 series 82 thru 88, 6 series thru 85 and 7 series thru 87. The cost is normally \$99.95, but for the month of July, we're putting them on sale for \$89.95.



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1979 323i – more than 25 years old, but still a blast to drive!



Make this image your computer's wallpaper – go to www.BavAuto.com/wallpaper.

How easy is this?! do-it-yourself

De-oxidize aluminum trim.

One of the things that makes a classic BMW look old and tired is the dull, cloudy, aluminum trim around the windows. We sell a lot of replacement trim, but we wondered if there weren't some way to make existing trim look like new without replacing it. We researched a little, found this kit and decided to put it to the test, choosing the worst looking BMW trim we could find on our lot.



1. Using the 2000 grit sand paper (included), wet sand the moldings to remove the worst of the outer oxidation (figure 1).

2. Prep the moldings for application of the clear-coat by brushing on the cleaning solution using the supplied foam brush (figure 2).

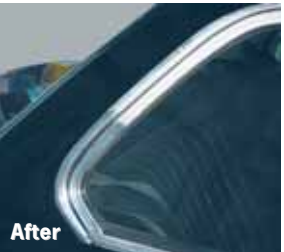


3. Apply the clear-coat in long gentle brush strokes, again using one of the supplied foam brushes (figure 3).



4. If you make any mistakes, use the included stripper product to remove the clear-coat and start again.

5. Allow the clear-coat to dry, then apply wax. (We highly recommend Wheel Wax, but you can use the same wax you use on your BMW's paint.)



The results are pretty dramatic. As mentioned above, we purposely choose the most faded trim we could find to show you how well this product works. A BMW with only moderately faded and cloudy trim would require less work and would finish-up even better. The kit contains everything you need, including a



step-by-step instructional video. To tempt you even further, we've put the kit on sale for the month of July. Originally \$59.95, it's now \$54.95.

How easy is this?! do-it-yourself

Replacing shock absorbers. *🔧🔧🔧*

Does your BMW have over 50,000 miles? If so, you are likely a candidate for a fresh set of shock absorbers. Unlike older domestic vehicles, BMWs do not typically start to act like a jack-in-the-box when the shocks are worn out. The degradation is a gradual loss of dampening that may not be noticeable because you've gotten used to it. Installing new shocks will restore your BMW's ride and handling to its past glory.

Replacing shocks is not terribly difficult and the only specialized tool required is a spring compressor (which can be purchased or rented). During the replacement process, you may also find that the compression absorbers, dust boots, spring isolators and upper mounts need to be replaced. All of these parts are included in the various shock installation kits we offer.



Front and rear shock installation kits.

What follows is NOT a detailed, step-by-step guide but rather an outline of the major steps involved in replacing shocks. We highly recommend getting the appropriate Bentley repair manual. For this article, we use a 3 series 92 thru 98. The specifics for other models will vary somewhat, but the procedures are basically the same.

Replacing front shocks.

1 Raise the front wheels off the ground by jacking up and supporting the front of the vehicle using appropriate jack stands. Remove the wheels.



Figure 1

2 Disconnect and set aside the ABS sender and brake pad wear sensor wires (figure 1).

3 Loosen the 3 strut-to-spindle bolts (figure 2).

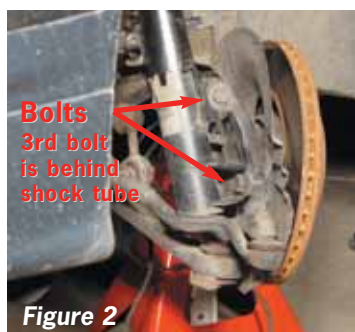


Figure 2

4 Place a floor jack under the strut & control arm assembly and raise it slightly. Remove the 3 upper strut mount nuts (figure 3).

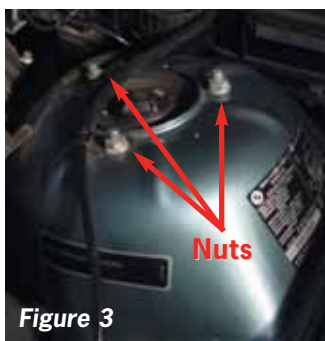


Figure 3



Figure 4

5 Lower the floor jack. Remove the three strut to spindle bolts that were loosened in step 3. Separate the strut from the spindle (figure 4) and lift the strut assembly out of the vehicle.

6 Using a spring compressor, compress the spring and remove the shock-to-mount nut (figures 5 & 5A).

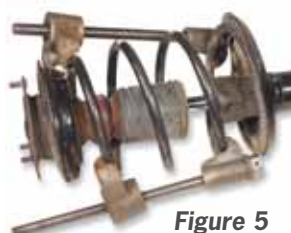


Figure 5

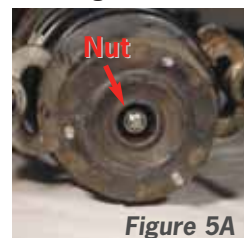


Figure 5A

7 Disassemble the upper mount, washers, spring perch, spring perch isolator, compressed spring, lower spring seat isolator, compression absorber and dust tube from the old shock (below).



8 Assemble all of the parts from step 7 onto the new shock. Replace any damaged or worn parts with the new parts from our shock installation kit (column one). Once the shock-to-mount nut is secured, remove the spring compressor, watching the alignment of the spring to the spring seats.

9 Install the strut assembly into the vehicle in the reverse procedure from removal. Reconnect the ABS and brake pad wear sensor wires. Install the wheels and lower the vehicle. And be sure to have the front-end alignment checked.

Replacing rear shocks.

1 Raise the rear wheels off the ground by jacking up and supporting the rear of the vehicle using appropriate jack stands. Remove the wheels.

2 Place a floor jack under the rear shock mount arm and raise slightly.

3 Access the upper shock mount by removing the side trunk trim panels (figure 6).



Figure 6

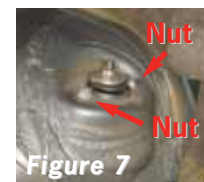


Figure 7

4 Remove the 2 upper shock mount nuts (figure 7).

5 Lower the floor jack and remove the lower shock mount bolt (figure 8), then remove the shock itself.

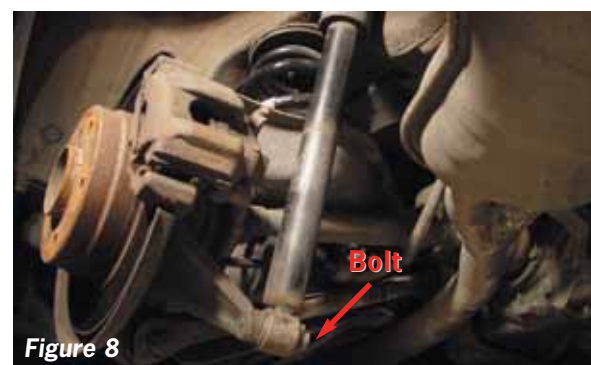


Figure 8

6 Remove the upper shock-to-mount nut and disassemble the mount gasket, upper mount washer, mount, lower mount washer, compression absorber and dust tube from the shock (see below).



7 Assemble all of the parts from step 6 on to the new shock. Replace any damaged or worn parts with the new parts from our shock installation kit (see photo in column one).

8 Install the shock assembly in the reverse procedure from removal. Install the trunk trim panels. Install the wheels and lower the vehicle.

Take 10% off Sachs replacement shocks now through July 31, 2006!

Sachs is an Original Equipment (OE) supplier of shocks for BMWs. Replacing your older OE shocks (60,000 miles or more) with perfectly-matched Sachs shocks will help give your BMW the ride and handling it had when it rolled off the production line.

Need a tool to work on your BMW? We've got you covered.



Have you ever started into a job – any job (home improvement, car repair, etc.) – and hit a brick wall because you needed a special tool to perform a specific task, and you couldn't find it at Home Depot or AutoZone? Or have you ever sent your BMW down the road to the mechanic because you don't have the specialized tool that would allow you to do the job yourself, (even though you know you could)?

Here at Bavarian Autosport, we're not BMW technicians; we just like to work on our BMWs. We break them, repair them, modify them and do preventive maintenance tasks. (See *Spring 2006 issue of Fast Times*.) Over the years, we have come upon many tasks that require a specialized tool to complete or do easily. As a result, we've built up an assortment of over 50 hard-to-find tools for the DIY tasks that one is likely to run into while working on a BMW. Here's a listing of the specialty tools we've assembled to date. (How many can you identify in the photo above?)

Engine

- **Crankshaft holders** – Various tools that facilitate removal of crank hub nut/bolt.
- **Fan clutch wrench** – Required for removal of engine/radiator fan clutch.
- **Water pump pulley holder** – Used in conjunction with fan clutch wrench.
- **Fuel pressure test kit** – For diagnosing K-jetronic, L-jetronic, Motronic and later fuel injection systems.
- **K-jetronic fuel pressure test kit** – Used with the above kit for K-jetronic systems (CIS).
- **Oil filter tools** – Various tools to remove the specialized oil filter covers on most BMWs 92-on.
- **Oxygen sensor tool** – Greatly simplifies oxygen sensor removal/installation.



- **TDC whistle (shown at left)** – Facilitates location of piston to Top Dead Center (TDC) in an assembled engine.
- **Valve adjusting tool** – Makes valve adjustments on single cam BMW engines easy and ensures consistent results.

Transmission

- **Clutch alignment tools** – Various tools to properly align clutch disc and pressure plate.
- **Slave cylinder bleeder (shown at left with slave cylinder)** – Used to allow proper bleeding of hydraulic fluid in most BMW clutch slave cylinders.



- **Deep 30mm socket** – Required to remove special 30mm nut on transmission output flange.
- **17mm transmission plug hex (Allen) socket** – Required to remove fill and drain plugs on manual transmissions thru the late 1980s.
- **Pilot bearing puller** – Required to remove the pilot bearing from the crankshaft.

Drivetrain, Suspension & Brakes

- **Non-marring 17mm lug bolt socket** – Won't nick or chip your expensive wheels when removing and installing lug bolts.
- **Pressure brake bleeder** – Allows bleeding of brake system by an individual (no helper needed).
- **Brake bleed catch bottle** – For self-contained, no mess capture of old brake fluid during bleeding.
- **8mm, 8"-long Allen driver (shown below)** – 3/8" drive; facilitates removal of axle CV joint and shifter plate bolts.
- **CV/rack & pinion boot clamp pliers** – Required to properly crimp CV and steering rack boot clamps.
- **Control arm bushing tool** – Allows removal and replacement (R&R) of upper control arm bushings without a hydraulic press.
- **Control arm bushing arbors** – Allows R&R of upper control arm bushings with a hydraulic press.
- **Trailing arm bushing arbors** – Allows R&R of 3 series 92 thru 98 trailing arm bushings with a hydraulic press.
- **Hex (Allen) head sockets** – Various sizes specifically for brake rotor screws and caliper guide bolts.
- **Differential plug hex (Allen) sockets** – Various



sizes required for removal and installation of differential drain and fill plugs.

- **Rear toe adjuster** – Allows adjustment of the rear toe on 3 series 92 thru 98.
- **Tie-rod puller** – Facilitates removal of tie-rod end joints without damage to the protective boot.
- **Jack pad** – Allows use of a floor jack on lowered 3 series 92 thru 98 and 7 series 95 thru 98.

Miscellaneous Tools

- **Lock strip installer** – Required to install the chrome or black windshield gasket trim strips on most BMWs thru the early 1990s.
- **Memory saver** – Plugs into lighter socket to keep radio, OBC, seat/mirror memories when disconnecting battery for short periods, during service tasks.
- **Flexible hose clamp driver (shown below)** – Used for easy and accurate removal and installation of BMW and Wurth hose clamps, especially at odd angles.
- **Radio removal tool** – Required for removal of radio on most models thru the mid-1990s.
- **Non-marring puller/pry tool kit** – Perfect for removal of door panels as well as all the plastic rivets that BMW uses throughout the vehicle.
- **Precision screwdriver kit** – High-tech driver with multiple, snap-in precision bits.
- **Washer nozzle adjuster** – Facilitates aiming of windshield washer jets.



Do you know of other tools designed specifically for BMWs?

We're always on the lookout for affordable tools that make working on BMWs easier, safer and more fun. If you know of such a tool, or have an idea for a tool other BMW owners would appreciate, e-mail us at Otto@BavAuto.com.