

# AMG

TECHNICAL GUIDE

## THE PHILOSOPHY

Without exception, each Mercedes that rolls off the assembly line in Stuttgart is meticulously engineered and beautifully built--capable of satisfying some of the world's most discerning drivers. AMG takes these superb motorcars still further. In doing so, it appeals to an even more select, more demanding group: that of the serious automotive enthusiast. AMG engineers, technicians and top management understand the passion of such clients to continually push against the envelope, to challenge the road, to be able to take their cars to the limit--yet always with control and confidence that their machines will measure up to specifications. The magic, of course, is expanding the automobile's already significant capabilities to perform at such advanced levels of driving. To do so, the enhancements made must work together. The right power plant, the right wheel and tire combination, the right gearbox and differential, the right suspension system, all must work in harmony. Only by painstakingly orchestrating hundreds of mechanical details can AMG create the synergy that creates brilliantly tuned automobiles. Such technical mastery is, when you come right down to it, what separates AMG from the crowd.

*Every AMG-designed part not only meets AMG's own rigorous standards--it must also meet those set by TUV, the German government's equivalent of the U.S. Department of Transportation and the EPA. It should be noted that the standards set by the TUV consistently exceed those of their American counterparts.*

*This 2.3 liter 16 valve Mercedes was campaigned by AMG in the German Touring Car Championships culminating in a 2nd place Championship points in competition against more powerful V-8 and turbo powered rivals.*



## THE AERODYNAMICS

The front air dams, rear spoilers and side and rear skirts developed by AMG not only create a distinctive appearance, they also create dramatically different performance characteristics. For example, on the Mercedes 300E, the drag co-efficient goes from 0.31 to an incredible 0.27. The Hammer achieves a remarkable 0.25. By reducing drag, AMG improves both top-end performance and everyday fuel economy. By reducing lift by as much as 45 percent, AMG provides improvements in roadholding you and your passengers can feel, especially at higher speeds. As in the case with any enhancement AMG makes, these modifications are not arrived at by guesswork. Cheating the wind and defying the laws of physics is sophisticated stuff. AMG engineers spend thousands of hours conducting computer aided design simulations and intensive wind tunnel tests to turn their aerodynamic concepts into practical mechanics. The final proving ground is, of course, the road. There, AMG makes certain that each aerodynamic package cheats the wind without cheating the car of stability in forward or lateral motion.

*Virtually all AMG aerodynamic components are made in Germany of PU-R-Fim, a pliable plastic capable of withstanding the most abusive curbs and other hazards of the road, while providing characteristics that allow crisp detailing and exceptional finish.*

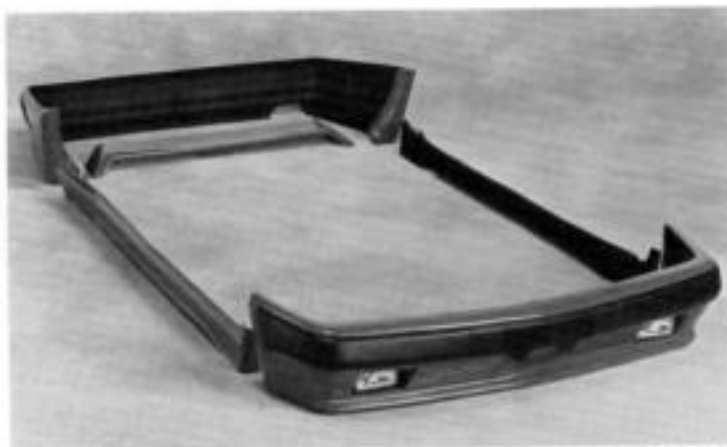


Photo: Richard Izzi



Photo: Richard Izzi

## THE WHEELS AND TIRES

In recommending various wheel and tire combinations, AMG takes into consideration all the extremes likely to be encountered at high speeds and harsh driving conditions to which its cars are so often subjected. The result is a tremendous range of wheel sizes, diameters and widths for you to consider and select from--each tailored to a specific Mercedes model. Every AMG wheel is precision cast and machined of the finest alloys to meet the most rigorous TUV testing. Numerous designs are available in natural finish aluminum, polishes, chrome plate as well as colors to match the overall color scheme of your AMG. All wheels feature a double bead rim for a more secure seating of the tire. Tires in a number of sizes and compounds recommended by AMG include a variety of high-speed rated Goodyear, B.F. Goodrich and Pirelli ultra-performance models. These have been carefully selected to provide the AMG owner with the best tire choices available.

*The extensive selection of AMG 5-Spoke or Aero light-alloy wheels together with a broad choice of optional finishes offer you wide latitude for personalization. These wheel choices are shown in the tire wheel section under each model. Depending on the power option you specify, AMG may also recommend the installation of a complete Big Brake Kit. Favored by AMG's racing-oriented engineers, these brakes have proven their worth time after time in flat-out testing on Germany's famous Nurburgring circuit.*



6.5 x 16



7.5 x 16 Version II



8 x 16 Version II



9 x 16 Version II



7 x 15 Version I



8 x 16 Version I



9 x 16 Version I



10 x 16 Version I



7.5 x 16 Aero



8 x 16 Aero



8 x 17 Aero

## THE SUSPENSION SYSTEM

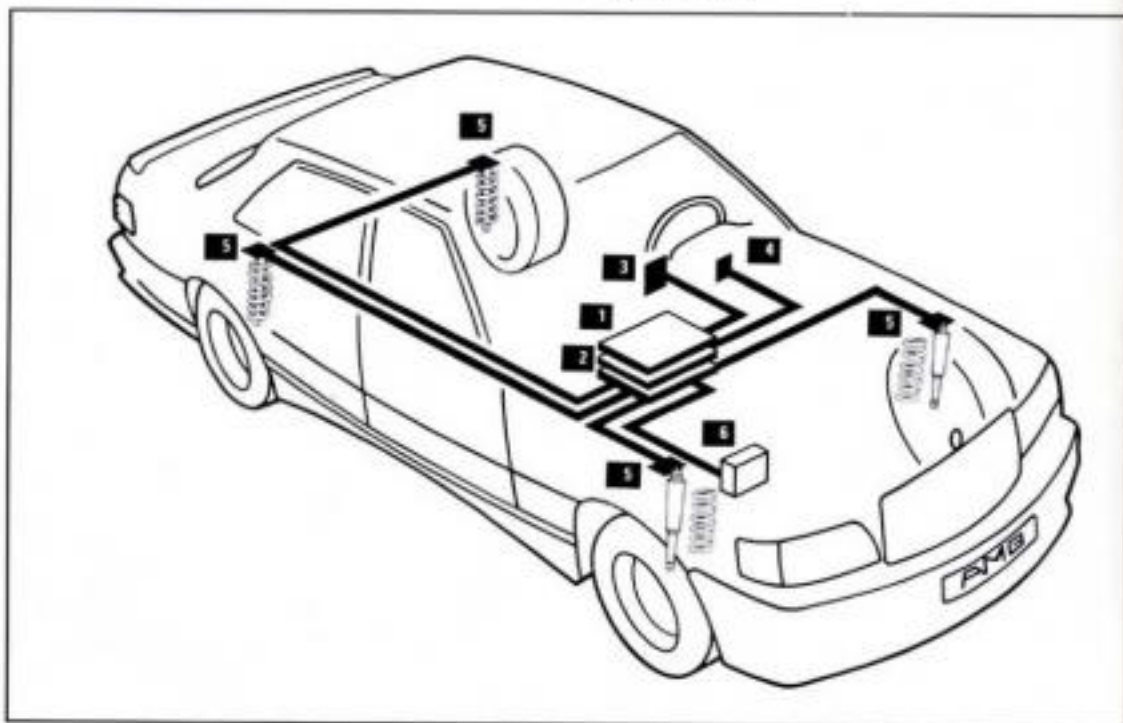
Suspension enhancements start with precision-wound, highly durable AMG springs. Shorter than the original parts, they lower the car by 1.5 to 2.0 inches. Coupled with AMG-exclusive gas-pressure shock absorbers, supplied by Bilstein, the car takes on new performance characteristics. Overall stability rises, handling limits increase significantly and susceptibility to crosswinds drops to near zero. Durability is engineered in. The coil of each spring is coated with a rubberized compound that resists the effects of salt, stones and road grime. The shock absorbers contain a stabilizing nitrogen charge that eliminates any chance for air to enter and contaminate the system. Their steel and alloy tubes, shafts and fittings are matched to tight tolerances. And each shock is sealed and cushioned with snap-fit plastic and rubber bushings to minimize friction and seal out weather. So not only does your AMG receive an enhanced suspension that provides exceptional handling balance, it receives one that's built to last.

AMG's line of suspension packages has now been joined by a unique computer controlled CD suspension system. Currently available for "S" class Mercedes, this system is a technological breakthrough developed by AMG, Bilstein and Kostal Electronics. Using the principle of computer-controlled damping, the system senses high speeds and hard cornering, then alters the damping to match. This improves directional control, minimizes body roll and effectively damps out vertical ride motion during rapid cornering, even on bumpy roads. A second sensor keeps the damping conditions constant when the car is heavily loaded.



Photo: Richard Izu

AMG's CD Suspension System diagrammed: 1) Computer, 2) Microprocessor with eight programmed suspension settings, 3) Driver's suspension setting control, 4) Speedometer sensor, 5) Sevo motors, 6) Lateral acceleration sensor.



## THE POWERTRAIN

By changing the differential it is possible to substantially amplify the best traits of a Mercedes engine. AMG offers S-class limited-slip differentials boasting ratios of 2.65, 2.82, 3.06, 3.27 or 3.46:1 in your choice of factory style ABS or AMG's, exclusive to Mercedes, Gleason-Torsen ABS units. An optional limited-slip with a ratio of 3.27 is available to replace the 300E's stock ratio of 3.07. They not only boost acceleration, they allow significantly higher revs in top gear to make the most available powerband and achieve true top speed potential. For 4-speed automatic transmissions used with AMG modified engines, a specially modified valve body promotes firmer and quicker shift action.

*If you're considering one of AMG's highest powered machines, consider the AMG Gleason-Torsen (TM) Torque Sensing differential. This remarkable device "thinks" about what you need for stable power delivery--then smoothly delivers it. It's the choice of racing professionals from Formula 1 to Indianapolis to Baja. And it's the only differential that provides both traction and differentiation simultaneously. This gives you unsurpassed control for tackling extreme road conditions at high speeds--whether you choose a modest 2.65:1 or a neck-snapping 3.46:1 from the five final drive ratios available.*

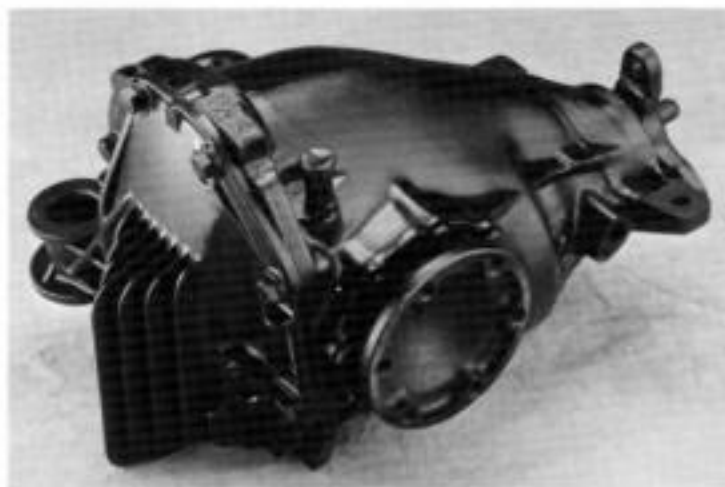


Photo: Richard Izui

## THE EXHAUST SYSTEM

At AMG, over the last three years, the dynamometer room has been a very busy place. One reason: The development of AMG's Sport Exhaust Systems, probably one of the most advanced exhaust systems in the world. Marked by their distinctive single or double chrome exhaust tip, the systems feature free-flow mufflers and precision-bent tubing engineered to bolt directly to the original exhaust manifold. By adding the system to your Mercedes, your engine immediately gains more power. It also gains a pleasantly throaty growl. More details: In the 190E and 300E, the systems use existing exhaust catalysts. Current "S" class and older models can receive high-performance catalysts developed for V-8 Porsches. All AMG Sport Exhaust Systems are constructed of formed sheet steel specially coated to prevent rusting. Also available are free-flow tubular exhaust headers designed to permit the greatest possible release of power. These are plated with nickel and recommended strongly (in some cases, required) with any major engine modification.

*This AMG Sport Exhaust System, available for SEL's, SEC's or SL's incorporates free-flowing catalytic converters for maximum performance. Tubular exhaust headers allow optimal power output.*



Photo: Richard Izui



Photo: Richard Izui 7

## THE POWER PLANT

There are two ways to enhance the power plant of your Mercedes: add an AMG Engine Package or exchange its original engine for one built by AMG. Whichever course you choose, you can expect to gain a significant increase in power, while maintaining durability, tractability and mechanical integrity. How much of a gain can you expect? Horsepower increases with AMG Engine Kits range from 25 to 47 percent. In addition, complete engine replacements are available for all Mercedes--be they six-cylinder or V-8. At the top of this power plant hierarchy is the incomparable 375 hp AMG 6.0-liter, four-cam, 32-valve V-8. In all, five engines are available in the V-8 engine line, with three engine sizes available for four and six-cylinder Mercedes. These options present the serious automotive enthusiast with many happy possibilities. One of the most intriguing, other than going to the expense of fitting the monstrously powerful AMG four-cam V-8 to an "S" class car or 300E to create the untouchable Hammer, is to put AMG's most powerful six-cylinder in the smallest Mercedes one can buy. The power possibilities are fairly mind boggling.



Photo: Richard Iuzi



Photo: Richard Iuzi

*A 6.0 liter, 4 cam, 32 valve V-8 producing 375 horsepower tops the list of available engine conversions, while the 3.2 liter, 234 horsepower 6-cylinder above right can be installed in the 300E or 190E 2.6.*

## THE INTERIOR

Not content simply to improve the power and performance of your Mercedes, AMG also lavishes much attention on where you're certain to spend many exhilarating hours: the interior cabin. Here AMG creates a number of sybaritic cockpits to appeal to your individuality. AMG begins with the seating. It is by Recaro, of course--from the broad orthopedic version to the deeply contoured sport and fully-powered luxury models. Seats are upholstered in your choice of the finest fabrics or leathers, including Connolly hide, Roser leather, Alcantara and buffalo skin. You can also specify AMG's exclusive hand-tailored sheepskin seat coverings. Cool in summer, warm in winter, these plush covers feature one-piece construction of all major portions. Also offered are matching sheepskin head and armrest covers. Your AMG steering wheel can be covered in leather matching your seats or any factory color. If the standard white-on-black instrumentation is not to your liking, you can specify a color scheme matching the individual colors of your car--it can even be engraved with your initials. You can choose an AMG shift knob to match your leather choice, or you can select one of Burl, Zebra or other fine wood. Numerous other wood enhancements are also available. You can also specify various creature comforts. Among them, a specially installed television (with video cassette player) in a cabinet of fine Burl Walnut. You can also outfit your AMG with its own refrigerator-freezer unit. We overlook nothing in catering to your driving pleasure.

*Connolly leather upholstery is one of the most coveted AMG interior options.*

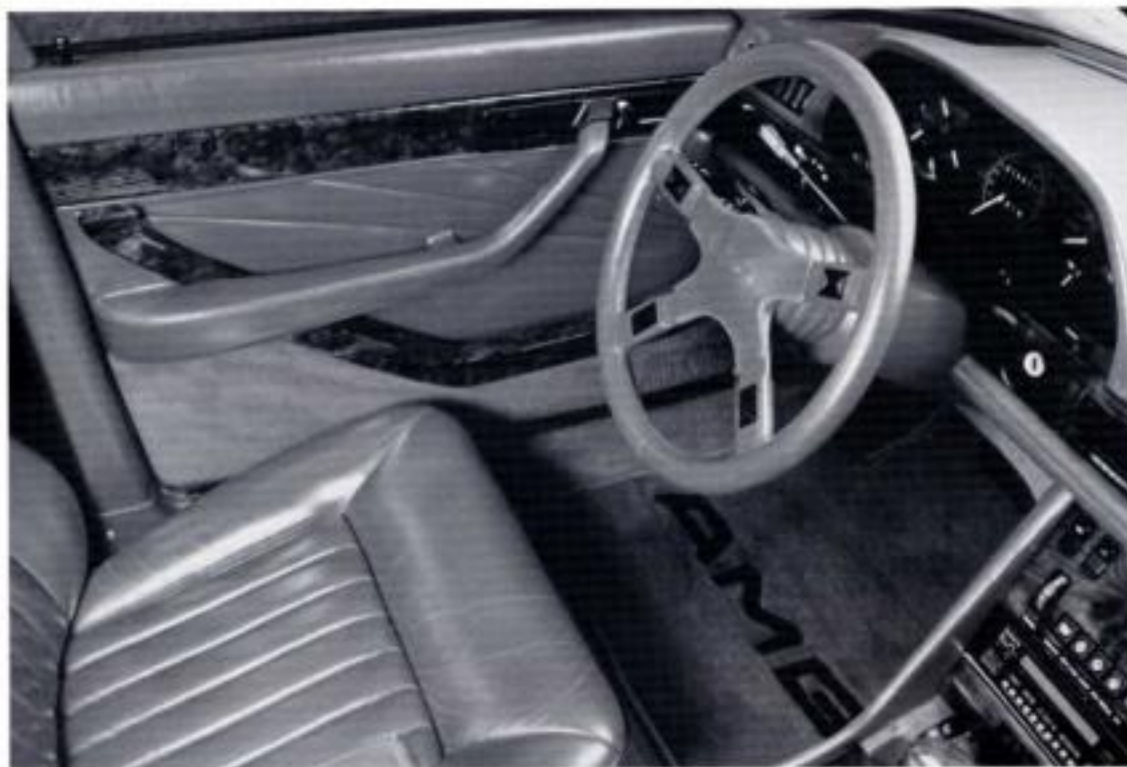


Photo: Richard Izzi